

VICTORIAN  
YEAR BOOK

1973

---

*Centenary  
Edition*

---

This page was added on 11 January 2013 to include the Disclaimer below.  
No other amendments were made to this Product

#### DISCLAIMER

Users are warned that this historic issue of this publication series may contain language or views which, reflecting the authors' attitudes or that of the period in which the item was written, may be considered to be inappropriate or offensive today.

This edition marks the centenary of the first official year book to be published in Australia. To commemorate the *Victorian Year Book* of 1873, the Victorian Office of the Commonwealth Bureau of Census and Statistics has prepared an account of the State's development which covers the saga of settlement until 1971.

Officers of the Bureau have co-operated with over two hundred contributors and consultants from academic, business, and public life to produce a book, much of which is based on first hand knowledge of Victoria over the last fifty years.

The result is an informative 750 page text describing the demographic, rural and urban, economic, social and political, and scientific and technological development of Victoria. This is supported by some 350 pages of statistics updating the 1972 edition (including a statistical summary extending, in some cases, back to 1836), 250 illustrations and maps, and a chronology, bibliography, and detailed index.

The book is a unique and important reference work on the State of Victoria, past and present, and includes much information unavailable elsewhere. It will be a useful and necessary publication for libraries, institutions, schools, businesses, and government departments and authorities as well as for the general reader.

ISBN 0 642 95296 5

Recommended retail price in Australia: \$7

VICTORIAN YEAR BOOK 1973

*Centenary Edition*

Number 87

(Front endpaper) S. T. Gill's view of Lydiard Street, Ballarat, from Bath's Hotel, first published in 1857.

*La Trobe Collection, State Library of Victoria*

(Back endpaper) A 1972 view of Melbourne, north-east from B.H.P. House, showing the eastern end of Bourke Street, Parliament House, and St Patrick's Cathedral on the right.

*The Broken Hill Proprietary Co. Ltd*

(Frontispiece) The central city area and inner eastern suburbs of Melbourne viewed from the west on 14 May 1972.

*Department of Crown Lands and Survey  
Crown (State of Victoria) Copyright*



# VICTORIAN YEAR BOOK 1973

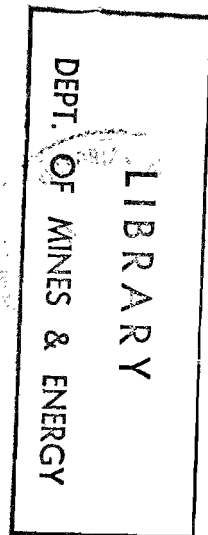
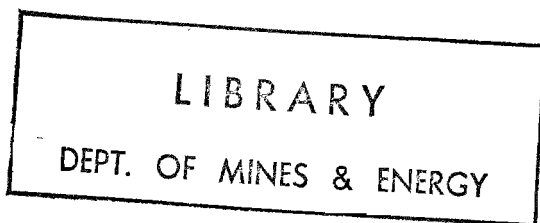
---

*Centenary Edition*

---

V. H. ARNOLD, F.I.A.

DEPUTY COMMONWEALTH STATISTICIAN  
AND VICTORIAN GOVERNMENT STATIST



NUMBER 87

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS  
VICTORIAN OFFICE

This edition first published 1973 by the Victorian Office of the  
Commonwealth Bureau of Census and Statistics,  
Commonwealth Banks Building,  
Cnr Elizabeth and Flinders Streets, Melbourne.

Registered at the General Post Office, Melbourne,  
for transmission through the post as a book.

This book is in International B5 format,  
the text is set in 10 on 11 point Times Roman and  
printed on Shoalhaven superlight printing paper,  
the illustrations are printed on Warren's cameo brilliant  
dull matt paper from plates made by  
Litho Colour Reproduction Pty Ltd, and the book is bound in  
Nylex Fabrex book cloth G quality.

National Library of Australia card number and  
ISBN 0 642 95296 5

Printed and bound in Australia by  
C. H. RIXON, Government Printer, Melbourne.



LIBRARY  
DEPT. OF MINES & ENERGY

FOREWORD

---

Readers of this centenary edition may be interested to know how the book came to be produced.

I suggested that a new approach to the *Year Book* be adopted when Mr H. L. Speagle became Editor of Publications in 1959. Each year since 1961, when the first of the new series of the *Victorian Year Book* was issued, we have included new material by adding a major article describing some aspect of the State's natural history and shorter articles on many other topics. These changes have been supplemented by the use of illustrations and were introduced to enhance the book's interest generally and to present a clearer and more comprehensive picture of Victorian activities.

The centenary edition of the *Year Book* traces the major environmental, social, economic, and technological factors which have affected the State. These have been put into historical perspective by covering the main developments that have occurred since settlement. This treatment, having a coherence of its own, led naturally to the separation of statistical tables from text and hence the book is published in two segments.

The decision to embark on the project in the first place was made in 1965. Once agreement was reached on the general outline of the book—and here a great debt of gratitude is due to the late Sir Samuel Wadham for his advice and foresight at the time—the Editor then set about the task of inviting contributors to give of their time to write the various articles. I am deeply grateful that most accepted the invitation enthusiastically, even if the actual task of doing the writing became somewhat of a chore for some. The problem of getting the articles on time from over two hundred contributors was not the least of the Editor's preoccupations.

Once the articles were received they had to be edited to achieve some uniformity of presentation. At this stage of the project we were fortunate in obtaining the advice of the Commonwealth Statistician and his staff as well as of other consultants whose knowledge, experience, and judgment enabled them to make many valuable suggestions. The Editor then had to piece the book together—a somewhat difficult task—as he endeavoured to soothe authors who felt aggrieved at having their work edited and to evaluate the comments of his colleagues and other consultants.

The preparation of this centenary edition has been a challenging project as it is the first book of its kind to be published in Australia. It has taken almost eight years to translate the initial concept into the finished article and this has been made possible only by the help, encouragement, and specific assistance of many persons and institutions. I am especially grateful to the Editor, Mr H. L. Speagle, M.A., B. Ed., for his wholehearted devotion to the task and

perseverance through all the inevitable crises which occurred. He has been ably assisted in this by the staff in the Publications Section.

I wish also to express my appreciation to the Assistant Deputy Commonwealth Statisticians, Mr N. Bowden, B. Ec. and Mr R. O. Spencer, for their advice and assistance in planning the whole project and to the staff generally. The Branch Supervisors, Mr J. F. Clark, B. Com., Mr J. Curtain, B. Com., Mr N. L. Dunstan, Mr R. A. Hamilton, B. Com., Mr D. J. Hourigan, M.B.A., B. Com., A.A.S.A., and Mr W. N. B. Pratt, B. Com., Dip. Pub. Admin., A.A.S.A. *p.s.a.*, and their staff have not only compiled statistical tables and text but have helped in the editing of contributed articles and in other material ways.

I am glad to express my thanks to all contributors and consultants as well as to the persons and institutions who supplied illustrations (many of which, for reasons of space, could not be used) and helped with the physical preparation of the book. The printing was carried out by the Victorian Government Printer and his staff, with the typographical advice of Mr Norman Quaintance. The book itself bears witness to the high standards of their work. I am grateful to the Melbourne University Press who generously gave permission to include the quotation in the introduction to this *Year Book*.

V. H. ARNOLD

*Deputy Commonwealth Statistician  
and Victorian Government Statist*

*April 1973*

# CONTENTS

---

Foreword  
Acknowledgments  
Introduction

## PART ONE DEMOGRAPHIC DEVELOPMENT

1	Statistical recording	3
2	Censuses	11
	<i>State Censuses 11 · Commonwealth Censuses 15</i>	
3	Aboriginals	23
4	Immigration	31
5	Population	38
6	Vital statistics	45
	<i>Births 45 · Marriages 48 · Deaths 50 · Causes of death 51</i>	

## PART TWO RURAL AND URBAN DEVELOPMENT

1	The land	63
	<i>Natural resources conservation 63 · Climate 70 · Vegetation at the time of discovery 73 · Wildlife (including fish) 79 · Natural disasters 81</i>	
2	Settlement	85
	<i>Discovery and exploration 85 · Surveying for land settlement and mapping 88 · Naming of rivers 92 · Land settlement 93 · Property distribution 100 · Rural development 103 · National parks and reservations 108 · Botanic gardens 109</i>	
3	Land use and farming	111
	<i>Forestry 111 · Timber milling 114 · Irrigation 116 · Soil management 119 · Pastoral and livestock 123 · Poultry 128 · Agricultural crops 129 · Horticultural crops 134 · Pest, weed, and disease control 135 · Power and machinery 137 · Early rural transport 140 · Extension and advisory services 143 · Agricultural education 145 · Life on the land 149</i>	
4	Mining	152
	<i>Geological Survey of Victoria, 1852-1970, 152 · Gold 155 · Natural gas and crude oil 162</i>	
5	Urban and suburban development	172
	<i>Siting of cities and towns 172 · Melbourne 175 · Provincial urban areas 183 · Town planning 186 · Regional planning 189</i>	
6	Housing, building, and services	192
	<i>Style and architecture 192 · Building and construction 197 · Housing Commission 204 · Local government services 206 · Melbourne and Metropolitan Board of Works 210 · Country town water supplies 215 · Electricity, brown coal, and gas 219</i>	

7	Transport and communications	229
	<i>Navigation on the Victorian coast 229 · Coastal shipping 232 · Melbourne Harbor Trust 234 · Geelong Harbor Trust 236 · Portland Harbor Trust 236 · Western Port 237 · Port Phillip Pilots 239 · Roads 240 · Road Safety and Traffic Authority 243 · Railways 244 · Tramways 253 · Aviation 253 · Postal services and communications 258</i>	

### PART THREE ECONOMIC DEVELOPMENT

1	The Victorian economy	265
	<i>Economic activity 265 · Trading relations 271 · The public sector 278</i>	
2	Financial relations with the Commonwealth	284
	<i>From Separation to Federation 284 · After Federation 288</i>	
3	Rural industry	307
	<i>Sheep 309 · Beef cattle 311 · Wheat 312 · Dairying 316 · Other primary products 319</i>	
4	Manufacturing industry	322
5	Private finance	337
	<i>Banking 337 · Insurance 342 · The Stock Exchange of Melbourne 347 · Company legislation 351 · Trustee companies 352 · Pastoral finance companies 353 · Instalment credit 356 · Housing finance 359 · Co-operative organisations 361 · Friendly societies 362</i>	
6	Wholesale and retail trade	365
7	Transport	372
8	Maritime trade	382
	<i>A note on the tariff 388</i>	
9	Employment and industrial relations	391
	<i>Employment and unemployment 391 · Factory legislation 396 · Industrial arbitration and conciliation 399 · Industrial stoppages 403 · Trade unions 405 · Employers' associations 408</i>	
10	Superannuation	410

### PART FOUR SOCIAL AND POLITICAL DEVELOPMENT

1	Constitutional and administrative development	425
	<i>Social and political development 425 · Parliamentary development and franchise 437 · Executive Council and Cabinet government 441 · Government administration 444 · Local government 450 · Armed Forces 455</i>	
2	Law and justice	461
	<i>Legal development 461 · Social factors affecting legal development 463 · The courts 465 · Law Department 467 · Regulatory functions of the Chief Secretary's Department 469 · Victoria Police 470 · Solicitor-General 472 · Legal profession 473 · Legal education 475</i>	
3	Education	477
	<i>Introduction 477 · Pre-school education 479 · Primary education 482 · Secondary education 484 · Technical education 488 · Teacher education 490 · University education 493 · Examinations 497 · Physical education 499 · Non-university tertiary education 501 · Libraries 502 · National Museum of Victoria 504 · Science Museum of Victoria 506 · Adult education 506</i>	
4	The arts	508
	<i>Painting 508 · Sculpture 512 · National Gallery and Arts Centre 515 · Art education 516 · Literature 519 · Music 524 · Theatre, ballet, and opera 527</i>	

5	Health services	532
	<i>Development of medicine 532 · Dentistry 543 · Health 544 · Commonwealth health services 559 · Medical education 561 · Pharmacy 563</i>	
6	Social services and welfare	565
	<i>Voluntary welfare 565 · Child welfare 568 · Social Welfare Department 570 · Prisons 571 · Social work education 573 · Commonwealth social services in Victoria 575 · Repatriation 577 · Migrant welfare 579 · Co-ordination in social welfare 583</i>	
7	Mass media	585
	<i>Broadcasting and television 585 · The press 595 · Publishing 603</i>	
8	Recreation	607
	<i>Sport 607 · Social, cultural, and recreational activities 620</i>	

#### PART FIVE    SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENT

1	Science in Victoria	627
	<i>Introduction 627 · Early beginnings 629 · Australian and New Zealand Association for the Advancement of Science 631 · Fellows of the Royal Society, London 632</i>	
2	Universities and institutes of advanced education	636
	<i>University of Melbourne 636 · Monash University 645 · La Trobe University 649 · School of Mines and Industries, Ballarat 652 · Bendigo Institute of Technology 652 · Royal Melbourne Institute of Technology 653 · Textile College, Gordon Institute of Technology 654 · St Vincent's School of Medical Research 654 · National Heart Foundation of Australia 655</i>	
3	Commonwealth Scientific and Industrial Research Organization	657
	<i>Historical outline 657 · C.S.I.R.O. in Victoria 658</i>	
4	Commonwealth research facilities	669
	<i>Australian Road Research Board 669 · Australian Wool Testing Authority 670 · Commonwealth Bureau of Census and Statistics 671 · Commonwealth Bureau of Dental Standards 672 · Commonwealth Bureau of Meteorology 673 · Commonwealth Radiation Laboratory 675 · Commonwealth Serum Laboratories Commission 676 · Department of Supply 678 · Forestry and Timber Bureau 682 · Postmaster-General's Department 682 · Toolangi Geophysical Observatory 684</i>	
5	State research facilities	686
	<i>Cancer Institute 686 · Country Roads Board 687 · Department of Agriculture 688 · Department of Crown Lands and Survey 691 · Epidemiological Research Unit, Fairfield Hospital 692 · Fisheries and Wildlife Department 693 · Forests Commission 694 · Gas and Fuel Corporation 696 · Institute of Mental Health Research and Postgraduate Training 697 · Melbourne and Metropolitan Board of Works 698 · National Museum of Victoria 700 · Royal Botanic Gardens and National Herbarium of Victoria 701 · Science Museum of Victoria 703 · Soil Conservation Authority 705 · State Electricity Commission 706 · State Rivers and Water Supply Commission 708 · Vermin and Noxious Weeds Destruction Board 710</i>	
6	Industrial research and development facilities	712
	<i>Introduction 712 · Computers 712 · Glass and construction materials 714 · Chemical products 719 · Industrial metals and machinery 729 · Textiles and leather 740 · Food technology 742 · Papermaking 746 · Rubber 747</i>	

<b>EPILOGUE</b>		
Victoria, Federation, and beyond		753
<b>STATISTICS</b>		
Preface		761
1 Physical environment		762
	<i>Geographical features 762 · Climate 763</i>	
2 Government and administration		768
	<i>Constitution 768 · Ministries 768 · Judiciary 769 · State Parliament 770 · State electoral system 780 · Commonwealth Parliament : Victorian Members 782</i>	
3 Demography		784
	<i>Population 784 · Vital statistics 808</i>	
4 Industrial conditions, employment, and prices		826
	<i>Industrial conditions 826 · Employment and unemployment 843 · Prices 848</i>	
5 Local government		850
	<i>Administration 850 · Statistics of local government 851 · Semi-governmental authorities 862</i>	
6 Primary production		873
	<i>Land settlement and irrigation 873 · Farming 879 · Primary industries other than farming 902 · Value of production 908</i>	
7 Manufacturing industry		910
	<i>Manufacturing activity 910 · Energy 915</i>	
8 Social conditions		917
	<i>Cultural and recreational 917 · Education 920 · Health and medical research 937 · Social welfare 948 · Justice and the administration of law 966 · Housing and building 980</i>	
9 Finance		987
	<i>Public finance 987 · Private finance 1008</i>	
10 Trade, transport, and communications		1037
	<i>Retail trade 1037 · Overseas and interstate trade 1038 · Transport 1043 · Communications 1064</i>	
<b>HISTORICAL STATISTICS</b>		
	<i>Introduction 1069 · Demography 1069 · Industrial conditions, employment, and prices 1076 · Primary and secondary industries and construction 1081 · Social conditions 1098 · Finance 1118 · Transport and communications 1120</i>	
<b>APPENDICES</b>		
A Chronologies		1131
	<i>Brief chronology of important events, 1770 to 1970, 1131 · List of important events, 1971 and 1972, 1143 · Representatives of the Sovereign 1149 · Ministries since responsible government 1150 · The Melbourne Cup 1152</i>	
B Select bibliography of Victoria		1153
C List of Victorian statistical publications		1161
D Index of special articles in the <i>Victorian Year Book</i> , 1961–1972		1162
E Index of maps in the <i>Victorian Year Book</i> , 1961–1972		1169
<b>INDEX</b>		
Index		1173
Corrigenda		1261

# ACKNOWLEDGMENTS

---

The following persons and institutions \* have assisted in the preparation of this book :

## GENERAL

Professor R. I. Downing, University of Melbourne	Professor G. W. Leeper Library Council of Victoria
Mr G. F. James	Professor W. Prest, C.B.E.
Professor J. A. La Nauze, Australian National University	Sir Colin Syme The late Professor Sir Samuel Wadham

## PART ONE DEMOGRAPHIC DEVELOPMENT

Commonwealth Department of Health Commonwealth Department of Immigration Department of Health	Professor D. J. Mulvaney, Australian National University National Heart Foundation of Australia
---	--

## PART TWO RURAL AND URBAN DEVELOPMENT

Dr D. H. Ashton, University of Melbourne	Melbourne and Metropolitan Tramways Board
Commonwealth Department of Civil Aviation	Melbourne City Council
Country Roads Board	Mines Department
Captain J. K. Crone	Ministry of Fuel and Power
Department of Agriculture	National Parks Authority
Department of Crown Lands and Survey	Mr I. J. Neeson
Dr R. G. Downes	Port Phillip Pilots
Faculty of Agriculture, University of Melbourne	Portland Harbor Trust
Fisheries and Wildlife Department	Ports and Harbours Branch—Public Works Department
Forests Commission	Postmaster-General's Department
Gas and Fuel Corporation	Premier's Department
Geelong Harbor Trust Commissioners	Road Safety and Traffic Authority
Mr J. Y. Harvey	Royal Agricultural Society of Victoria
Housing Commission	Royal Botanic Gardens and National Herbarium of Victoria
Mr C. E. Howlett	State Electricity Commission
Colonel A. N. Kemsley, C.B.E.	State Rivers and Water Supply Commission
Mr A. O. Lawrence	Mr P. S. Staughton
Professor B. B. Lewis	Mr I. M. Stewart
Mr M. B. Lewis, University of Melbourne	Town and Country Planning Board
Local Government Department	Mr G. H. Vasey
Hon. Sir Chester Manifold, K.B.E.	Vermin and Noxious Weeds Destruction Board
Marcus Oldham Farm Agricultural College	Victorian Railways
Melbourne Harbor Trust	Victorian Railways Historical Society
Melbourne and Metropolitan Board of Works	Victorian Sawmillers Association Mr J. W. Youl

\* Names of Commonwealth Departments are as at 30 November 1972.

### PART THREE ECONOMIC DEVELOPMENT

<p>Australia and New Zealand Banking Group Ltd The late Sir Kenneth Bailey, C.B.E. Mr W. D. Brookes, C.B.E., D.S.O. Commonwealth Bureau of Roads Commonwealth Department of Trade and Industry Mr M. A. Cuming, C.M.G. Department of Agriculture Department of Labour and Industry Mr T. C. Dickson</p>	<p>Mr C. F. Kerr Mr E. S. Knight Law Department Ministry of Fuel and Power Mr A. E. Monk, C.M.G. National Bank of Australasia Premier's Department Registrar of Friendly Societies Reserve Bank State Treasury The Stock Exchange of Melbourne Ltd Trustee Companies Association</p>
---	--

### PART FOUR SOCIAL AND POLITICAL DEVELOPMENT

<p>Professor R. R. Andrew, Monash University Professor A. G. Austin, M.C., University of Melbourne The Australian Ballet Australian Broadcasting Commission Australian Broadcasting Control Board Australian Red Cross Society (Victorian Division) The Reverend Sir Irving Benson, C.B.E. Mr L. J. Blake Mr C. H. Caldwell Rt Hon. the Lord Casey, K.G., G.C.M.G., C.H., D.S.O., M.C., K.StJ. Mr M. B. Cavanough Mr W. M. Chamberlain Chief Electoral Officer Clerk of the Parliaments Commonwealth Department of Health Commonwealth Department of Immigration Commonwealth Department of Social Services Commonwealth Repatriation Department Council for Legal Education Council of Adult Education Sir James Darling, C.M.G., O.B.E. David Syme and Co. Ltd Mr J. Davis The late Sir Arthur Dean Department of Agriculture Department of Health Professor D. P. Derham, C.M.G., M.B.E. Professor S. S. Dunn, Monash University Education Department Mr C. E. Edwards Faculty of Dental Science, University of Melbourne Mr G. C. Fendley, University of Melbourne Mr B. J. Finemore, National Gallery of Victoria Fisheries and Wildlife Department Dr A. E. Floyd, O.B.E. Professor H. A. J. Ford, University of Melbourne Forests Commission Dr E. L. French, University of Melbourne Mrs L. Gardiner Mr A. J. A. Gardner Mr H. A. Gordon</p>	<p>Mrs D. Green, Australian National University Mr T. S. Hancy Mr J. P. Holroyd Mrs A. V. Horne Hospitals and Charities Commission Mr K. U. Knox Mr C. F. Last, O.B.E. Law Department Mr J. S. Legge Local Government Department Mr G. Logie-Smith, M.B.E. The late Professor K. L. Macartney Rt Hon. Sir John McEwen, C.H., K.C.M.G. Melba Memorial Conservatorium of Music Melbourne College of Education Melbourne Kindergarten Teachers' College Melbourne Theatre Company Ministry of Social Welfare Ministry of Tourism Dr S. Murray-Smith, University of Melbourne National Fitness Council of Victoria National Gallery of Victoria National Museum of Victoria National Parks Service Mr H. V. Nunn Mr L. J. O'Neil Sir George Paton Pharmacy College of Victoria Mr F. Phillips Postmaster-General's Department Premier's Department Public Service Board Dr W. C. Radford, M.B.E. Mr E. S. Sayers Science Museum of Victoria Miss M. E. Scott, National Gallery of Victoria Dr Phyllis M. Scott, Monash University Professor R. J. W. Selleck, Monash University Dr A. G. Serle, Monash University The late Sir Frederick Shedden, K.C.M.G., O.B.E. Solicitor-General Mrs G. Solomon, Monash University State Rivers and Water Supply Commission Mr L. J. Tierney, University of Melbourne</p>
--	---



PART FOUR SOCIAL AND POLITICAL DEVELOPMENT—*continued*

Mr T. H. Timpson  
Mr P. C. Trumble  
Under Secretary  
Sir William Upjohn, O.B.E.  
Victoria Institute of Colleges  
Victoria Police

Victorian Bush Nursing Association  
Victorian Universities and Schools  
Examinations Board  
Dr A. W. Willee, University of Mel-  
bourne  
Judge S. H. Z. Woinarski

PART FIVE SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENT

Albright and Wilson (Australia) Ltd  
Alcoa of Australia Ltd  
Australian Consolidated Industries Ltd  
Australian Gypsum Ltd  
Australian Paper Manufacturers Ltd  
Australian Road Research Board  
Australian Wool Testing Authority  
Baker Medical Research Institute  
Bendigo Institute of Technology  
Berger Paints Victoria Pty Ltd  
Brick Development Research Institute  
The Broken Hill Proprietary Co. Ltd  
Bureau of Mineral Resources, Geology  
and Geophysics  
Sir Macfarlane Burnet, O.M., K.B.E.,  
F.R.S.  
Cancer Institute  
Carlton and United Breweries Ltd  
Commonwealth Aircraft Corporation Pty  
Ltd  
Commonwealth Bureau of Dental  
Standards  
Commonwealth Bureau of Meteorology  
Commonwealth Department of Labour  
and National Service  
Commonwealth Department of Supply  
(Victoria)  
Commonwealth Forestry and Timber  
Bureau  
The Commonwealth Industrial Gases Ltd  
Commonwealth Radiation Laboratory  
Commonwealth Scientific and Industrial  
Research Organization  
Commonwealth Serum Laboratories  
Commission  
Commonwealth Toolangi Geophysical  
Observatory  
Country Roads Board  
Cyclone Company of Australia Ltd  
Department of Agriculture  
Department of Crown Lands and Survey  
Dulux Australia Ltd  
Dunlop Australia Ltd  
Dr A. A. Ferris  
Fibremakers Ltd  
Fisheries and Wildlife Department  
Forests Commission  
Gas and Fuel Corporation of Victoria  
General Motors-Holden's Pty Ltd  
Mr E. D. Gill

Gordon Institute of Technology  
Mr J. F. T. Grimwade  
Hecla Electrics Pty Ltd  
H. J. Heinz Co. Australia Ltd  
Humes Ltd  
ICI Australia Ltd  
International Harvester Company of  
Australia Pty Ltd  
Johns and Waygood Ltd  
KMM Pty Ltd  
Kodak (Australasia) Pty Ltd  
Kraft Foods Ltd  
La Trobe University  
McPhersons Ltd  
Massey-Ferguson (Australia) Ltd  
Melbourne and Metropolitan Board of  
Works  
Mental Health Authority  
Monash University  
Monsanto (Australia) Ltd  
National Heart Foundation of Australia  
National Museum of Victoria  
Mr I. E. Newnham, M.B.E.  
Nicholas Institute for Medical and  
Veterinary Research  
Nylex Corporation Ltd  
Olympic Consolidated Industries Ltd  
Postmaster-General's Department  
RepcO Ltd  
Rocla Concrete Pipes Ltd  
Royal Botanic Gardens and National  
Herbarium of Victoria  
Royal Melbourne Institute of Technology  
Royal Society, London  
St Vincent's School of Medical Research  
The School of Mines and Industries,  
Ballarat  
Science Museum of Victoria  
Soil Conservation Authority  
Sir Henry Somerset, C.B.E.  
State Electricity Commission  
State Rivers and Water Supply Com-  
mission  
University of Melbourne  
Vermin and Noxious Weeds Destruction  
Board  
Vickers Ruwolt Pty Ltd  
Walter and Eliza Hall Institute of  
Medical Research  
Mr L. W. Weickhardt

## INTRODUCTION

---

Work on this special edition of the *Victorian Year Book* began in 1965 when I felt it would be appropriate to commemorate the centenary of the book in 1973. Henry Heylyn Hayter's first volume covered the year 1873 although it was not published until the following year.

There are various reasons for commemorating the event. Victoria was the first of the Australian colonies to publish a year book, and incidentally to win wide acclaim for doing so. The centenary of the *Year Book* falls at a time when the State is in the course of major social changes. Thus, the publication of a centenary edition covering activities in Victoria since settlement is not only timely but should also be rewarding in providing material for scholars and planners in all walks of life. Furthermore, there are many persons in positions of responsibility whose personal knowledge of events extends at least fifty years. Consequently it has been possible to obtain a first hand account of many changes which have occurred over the latter part of the period covered. To reveal the State in full perspective the coverage of the book starts prior to the first permanent European settlement in 1834.

The basic concept around which the book has been planned is that of Victoria's development. The result is the fruit of eight years work by Bureau officers as well as, notably, by over two hundred outside contributors and consultants from academic, business, and public life, all of whom contributed their time and abilities in an honorary capacity. This they did as a public service, and I offer my sincere thanks to them in detail in the acknowledgments and my apologies to any whose names have been inadvertently omitted.

The book is divided into two segments: one descriptive, the other statistical. The descriptive segment includes the contributions of the various authors and consultants in five parts: Demographic, Rural and Urban, Economic, Social and Political, and Scientific and Technological Development. The final form of this segment represents an edited consensus of information under the guiding principles that it should be as perceptive, authentic, and accurate as possible. Supporting and illustrative statistics appear in the selected historical tables and in greater detail in the statistical segment. This latter updates the regular annual tables in the sequence in which they have appeared in previous editions, and hence maintains unimpaired the statistical continuity of the *Victorian Year Book*. To summarise: the book has been designed in two segments so that readers will not be confused by the different character of the historical material of this centenary edition and to ensure that the statistical segment will be seen as a clear complement to its

historical companion and to the *Year Books* of previous years. The contents have been carefully checked throughout but I shall be grateful to those who will be kind enough to point out defects or make suggestions for future editions. In the *Victorian Year Book* 1974 it is proposed to revert to the previous presentation of contents.

In preparing this *Year Book* a number of problems had to be faced. Important among these was the problem of what was to be included. Obviously it was neither possible nor desirable to note every aspect of the State's development, as the size of the book limited the range of detail which could be included. Accordingly the selection of information has been made on the criteria of overall significance when viewed in the context of Victoria's past and the availability of reliable data. Omission of a subject has usually been prompted by one or other of these considerations.

Two other editorial problems encountered were repetition and differing styles in the treatment of information. The book was not planned as a chronological history but as a survey of five areas of development. Inevitably facts common to differing contexts are repeated. However, to prevent the risk of a stilted narrative no attempt has been made to avoid this. Thus, repetition has been permitted if it illuminates different contexts with additional understanding. The reader can therefore take up each part as a self-contained unit. Touching the second problem, contributors naturally wrote about their subjects in different styles. The book has aimed to steer a middle course between rigid conformity of style on the one hand and unbridled diversity on the other.

All authors and consultants in this, as in previous *Year Books*, were selected for their intimate knowledge of their subject. Nevertheless, a book with a coverage as wide as this centenary edition is likely to include historical information which, however well accepted and authenticated at present, may be revised in the light of future research. Moreover, the extensive study of Victoria's history from primary sources is a relatively recent and encouraging phenomenon and limitations in knowledge now apparent to the editor and authors will probably be removed by the efforts of later scholars in various fields.

The reader should bear in mind three technical considerations when interpreting *Year Book* information. First, rounded figures sometimes cause small discrepancies between totals and the sum of components. Second, the type of currency most appropriate to the context has been used. For historical tables and comparatively recent periods all values are stated in decimal currency, but where the context obviously demands citation in the old currency, this has been done. The use of decimal currency in all historical tables follows Bureau practice; the reader must make allowance himself for such matters as exchange rates and the value of money. Third, dates of origin used are those considered most appropriate to their context.

The statistical tables in the second segment give the latest figures available at the time of going to press and the book has generally aimed to include information up to June 1971. However, because of the time required for various phases of editing and printing, later and more detailed information on a particular topic is generally available in other Bureau publications which enable specialist readers to pursue a subject further. These publications are listed in Appendix C on page 1161 and are available from the Victorian

Office, which also provides library facilities where the public may consult a wide range of statistical references. Readers requiring the main statistical information of the *Year Book* in a concise form are referred to the *Victorian Pocket Year Book* which is usually published in July of each year. Copies can be obtained from the Victorian Office of the Bureau.

In conclusion a gentle caveat may well go with a historical volume of this kind. Notwithstanding the care taken by all who have contributed to this *Year Book*, one may perhaps recall the sobering reflections on history by a distinguished Victorian and Australian, Alfred Deakin, who as Prime Minister of Australia for the third time in 1909 wrote :

Having now seen history in the making for thirty years I am amazed to find how plastic the past becomes in the hands of its recorders and how all its figures changing every day under our imperfectly observing eyes change finally for the student of future times into forms and colours borrowed from prejudice, presupposition and ignorance until they throw the true story of any developments out of focus and the relation of events out of gear . . . for me the effect of my life experience is to discredit most of the personal estimates of history and many of its interpretations of times . . . tho—when men have done or written or said much—their orbits can be fairly estimated, their endless variations of mood and temper, of credulity and scepticism, and the cross currents of influence to which they have been subject are so numerous [that] no man knows himself thoroughly, or anyone else more than superficially, except by accident or by inspiration. \*

\* Quoted by J. A. La Nauze in *Alfred Deakin : a biography*. Melbourne University Press, 1965, page 572.

PART ONE

---

*Demographic Development*

STATISTICAL RECORDING

---

The first official statistics in Victoria derive from a decision taken by Sir Richard Bourke, Governor of New South Wales, within whose jurisdiction lay both Port Phillip and Portland Bays. Realising that settlement in these two areas was likely to be permanent, he took steps to record its progress, and in 1836 dispatched George Stewart, a Sydney magistrate, in a revenue cutter to report on the state of affairs in the Port Phillip settlement. Stewart's report stated that the District comprised a population of 177, of whom 142 were males and 35 females, and that there were 26,000 sheep and a number of horses and horned cattle. It is not certain that Stewart's report included the Portland Bay settlement; nevertheless, it provided the first official information about the Colony as at 25 May 1836.

The second Census of that area, then known as the Port Phillip District, was carried out on 29 September 1836. A third Census was taken nearly two years later in September 1838, and additional enumerations were held in 1841 and 1846. The need for frequent Censuses was caused by a lack of other statistics, especially vital statistics, which would have enabled the authorities to estimate the population.

In 1851 Port Phillip was separated from New South Wales, created an independent Colony, and named Victoria. The Census of 1851 was taken on 2 March, before the ratification of the new Colony's constitution on 1 July. Until 1853 the only records of Victoria's vital statistics were parish and church registers. This system was inadequate for statistical purposes, and in March 1853 the Registration Act was passed, providing for the compulsory registration of births, deaths, and marriages in Victoria. William Henry Archer, then Acting Registrar General of the newly established Registrar General's Office in Victoria, was made responsible for planning and implementing the system for the Colony. He had migrated to Victoria in 1852, having practised as an actuary in England where he had also been assistant to the famous Dr William Farr, the "vital" statistician, and to F. G. Neison, possibly the most eminent statistician and actuary of the day.

The initial difficulties of implementing the Registration Act were great. It was based on the English system, which was not always suitable to the circumstances of the new and thinly populated Colony, and difficulties arose from indifference to, or ignorance of, the Act among many settlers. Furthermore, the countryside was almost devoid of roads, and the peculiar conditions of life on the goldfields, where people were constantly on the move, added to the problems of the Registrar. One of Archer's first tasks was to find competent Deputy Registrars for the various districts and subdivisions of Victoria.

By 1855 seventy-six Deputy Registrars and fifty-one Assistant Deputy Registrars had been appointed, and, in addition, 133 ministers of religion registered marriages at which they officiated. At the end of each quarter the Deputy Registrars transmitted duplicates of their registers of births and deaths to the central office, retaining the original document in their own possession. These schedules underwent a thorough examination in the Central Office for the detection of errors and omissions, and, when finally ascertained to be as correct as possible, were bound in volumes and indexed. The death registers then underwent examination by medical personnel who classified diseases and ages, tabulated mortality, and calculated the percentage of deaths from various causes. These returns were published by the Assistant Registrar General from time to time in the Government Gazette. An abstract of vital statistics for Melbourne and Victoria was published for the first time in 1855 in the Registrar General's first annual report. The period covered was the year ending 30 June 1854. The report showed the number of births registered in Melbourne and suburbs, and in the remainder of the Colony, marriages celebrated by various denominations (and whether the partners were illiterate), deaths registered in Melbourne and suburbs and in the remainder of the Colony by disease group, and a detailed table of deaths from individual causes registered in each month.

The first population Census of Victoria as a separate Colony was taken in 1854. The Census publications and the Registrar General's reports on vital statistics were important sources of statistical information, but the development of regular statistical reports can be traced to annual returns supplied by the Governor to the Colonial Office in London. These returns, known as "Blue Books", were the forerunners of Statistical Registers. However, they were mainly documents for the guidance of the administration rather than statistical publications in their own right.

The first Statistical Register of Victoria appears to have been issued by the Colonial Secretary, Captain Lonsdale, in November 1851, but it was not until 21 September 1854 that Archer issued his "humble attempt to commence a series of Registers . . . that may . . . faithfully reflect the progress of this extraordinary Colony". The Register was an octavo volume of 447 pages. The following year it was increased to foolscap size under the title *Statistics of the Colony of Victoria* and was published annually by the Registrar General until 1873; after that edition the Government Statist took charge of the publication. In the early stages the Registrar General's Department was subdivided into six branches: Registration of Births, Deaths, and Marriages; Statistics; Blue Books; Patents; Census; and the administration of the Compulsory Vaccination Act. The statistical section of the Registrar General's Office in Victoria eventually became a separate body under the direction of Henry Heylyn Hayter.

Hayter was born at Edenvale in Wiltshire, England, in 1821, and was educated at Charterhouse and in Paris. He arrived in Victoria in 1852, and joined Archer's statistical staff as a temporary assistant five years later. Hayter was a brilliant scholar, and following the promotion of Archer to the position of Registrar General, was appointed Assistant Registrar General in 1859. On 14 May 1874 he became the first Government Statist for Victoria and earned a reputation as an outstanding statistician. In 1870 he was appointed to the Royal Commission which inquired into the Public Service, and in 1879,

when he was in London as secretary to the Berry "embassy", was twice examined by a committee of the House of Commons about his successful analysis of Victorian statistics. He also wrote and published poetry, as well as geographical and historical accounts of Victoria and New Zealand. When in March 1895 he died at his home in Armadale, Melbourne, at the age of 74, he had been appointed a Companion of the Most Distinguished Order of St Michael and St George, named an Officer of the Order of Public Instruction by the French Government, and made a Chevalier of the Order of the Italian Crown.

One of his most significant achievements was the publication of the first (1873) *Victorian Year Book* in 1874. Until 1873 the statistical publications in Victoria had consisted of the yearly Register, the Monthly Reports on Vital Statistics, and occasional pamphlets such as *Progress and Statistics*, *Progress of Victoria*, and *Facts and Figures, Statistical and General*. It had become necessary, however, to publish an annual summary of Victorian statistics, containing not only bare tabulations, but also analyses of the figures, and the *Victorian Year Book* was to fulfil this role. Hayter clearly stated his intentions in the preface to the first *Year Book* : " It will be my endeavour in this succession of volumes to record facts with correctness and impartiality ; to comment on them only so far as may be necessary to elucidate them properly ; to set up no theories except such as may be fairly deducible from the materials before me ; and, in drawing inferences, to exercise perfect fairness to all sections of the community." The *Year Books* closely followed the statistical sequence of the Register and their individual parts consisted of : Blue Book ; Population ; Finance ; Interchange ; Production ; Law and Crime ; Accumulation ; Vital Statistics ; and Religious, Moral, and Intellectual Progress.

One of Hayter's major tasks was to reorganise the statistical office to ensure that the machinery would be available to carry out a Census under the strict and exact statistical conditions he considered necessary. His reorganisation was perhaps the one act which advanced Victoria's statistics to the standard acclaimed by Sir Charles Dilke in his book *Greater Britain*. He commented : " The most economical position which Victoria occupies is easily ascertained, for her statistics are the most perfect in the world. The arrangement is a piece of exquisite mosaic."

Hayter supervised the taking of the Victorian Censuses of 1871, 1881, and 1891, and his report on the 1881 Census served as a model upon which many other colonies later based their own Census reports. It was a brilliant analysis of the Census results and also showed the organisation of the Census and the methods used in the compilation of data. Unusual interest was attached to the Census of 1881, as it was a simultaneous Census of British dominions ; it was also the first time that the population of the Australian colonies was enumerated at the same date. The various colonies, progressing separately, had developed their own systems of keeping statistics, and, as early as 1854, Archer had pressed for co-ordination of statistical work in the various colonies. Thereafter many proposals were made but, in fact, the divergence became more and more pronounced. A conference of statisticians was held in Melbourne in 1861 and some agreement was reached that comparable information was desirable. At a second conference, held in Hobart in 1875, Hayter represented Victoria. The aim was to establish a uniform



system of statistical reporting throughout Australia, but the disparity of legal requirements in the various colonies made this difficult. However, the 1881 Census of Victoria was carried out as part of an Australia-wide survey, with most of the data collected on a uniform basis, and the foresight of Hayter and his fellow statisticians in Hobart ensured its success.

Hayter's successor was his assistant, James J. Fenton, who carried on the administration of the Statist's Office for eight years. The Commonwealth of Australia was constituted in January 1901, and the first statistical conference after Federation was held in Hobart in January 1902. The object of the conference, which Fenton attended as Victorian representative, was to secure uniformity among the States in the preparation of statistical returns. In September 1903 another conference was held in Melbourne. The new Government Statist for Victoria, W. McLean, attended, and the main topic was the uniformity of population statistics.

McLean was born in Scotland in 1844 and arrived in Australia in 1864. He had held several positions in the Public Service, having been Chief Clerk in the Premier's Office, and Accountant and later Secretary of the Education Department. His position as Government Statist was, however, of short duration; after a period of less than three years he was succeeded by E. T. Drake. Drake was born at sea in November 1856, and arrived in Australia the following year. He was educated in Melbourne at the Church of England Grammar School and at Hawthorn Grammar School. In 1903 he became Inspector under the Audit Act, and was later Chief Clerk of the State Audit. He was nominated Government Statist in January 1906 and, at the end of that year, attended the statisticians' conference held in Melbourne.

Under the provisions of section 51 of the Commonwealth Constitution, power was conferred on the Commonwealth Parliament to make laws for the Commonwealth with respect to census and statistics. The *Census and Statistics Act* 1905 was passed, providing for the appointment of a Commonwealth Statistician and the creation of the Bureau of Census and Statistics. The Act also specified that the Census should be taken in 1911, and in every tenth year thereafter, and that statistics were to be collected annually in relation to all or any of the following matters: population; vital, social, and industrial matters; employment and non-employment; imports and exports; interstate trade; postal and telegraphic matters; factories, mines, and productive industries generally; agricultural, horticultural, viticultural, dairying, and pastoral industries; banking, insurance, and finance; railways, tramways, shipping, and transport; land tenure and occupancy; and any other prescribed matter. The Commonwealth Bureau of Census and Statistics was established in 1906 and was to be instrumental in achieving uniformity of certain Australian statistics. The Commonwealth Statistician presided over the 1906 Conference which defined the relations between the Commonwealth Bureau and State offices. It was determined that each State statistician was to represent the Commonwealth Statistician for the purpose of administering the Commonwealth Act; that the collection and compilation of statistical information by the State statistical offices should be co-extensive, and, within the limits indicated by the adopted forms, should be uniform in method, order, and date of compilation; that each State office should be adequately equipped; and that statistical publications of the Commonwealth and States

should be uniform in size and order of matter. Unanimously, the State statisticians pledged support and assistance to the Commonwealth Statistician in his approved operations.

Besides directing the work of the statistical office, the Government Statist also supervised the registration of births, deaths, and marriages in Victoria. Through the *Births, Deaths and Marriages Transfer Act* 1893 the Office of the Registrar General was abolished and his powers transferred to the Government Statist. This was a unique development, since originally the Statistics Branch had been part of the Registrar General's Office, and under his control and direction. The Victorian *Government Statist Act* 1908 also transferred the duties of the Actuary for Friendly Societies and Trade Unions to the Government Statist. It further stipulated that no person should be appointed to the office of the Government Statist unless he had passed the final examination of the Institute of Actuaries of Great Britain and Ireland, or of the Faculty of Actuaries of Scotland, or examinations of an equivalent standard set and examined by the University of Melbourne.

Drake was Government Statist for only two years. His successor, A. M. Laughton, F.I.A., F.F.A., F.S.S., was appointed in 1908, and held the position for a record number of 25 years. Born in the Orkneys in 1868, Laughton was associated with actuarial and insurance work for the greater part of his life. He was on the staff of life assurance companies in Britain and Australia for over twenty years, was elected president of the Insurance Institute in Victoria in 1907, and in 1920 became president of the Actuarial Society of Australia.

In 1911 the first Commonwealth Census was taken under the Commonwealth Constitution and the new Census and Statistics Act. The Commonwealth Statistician sought the services of each State statistician as a State Supervisor, and Laughton filled this role for Victoria.

During the First World War statistics assumed additional importance in planning the country's economy, but because of the shortage of funds and manpower, the publication of the Victorian *Statistical Register* was discontinued in 1917 and has not been resumed. Economic problems following the war drew attention to deficiencies in Australian statistical data. The creation of the Bureau of Census and Statistics, and the close and increasing liaison between officers dealing with the same subjects in the State and Commonwealth fields, did much to promote uniformity in the official statistical collections and methods, although there were still seven distinct statistical systems in operation. With a view to furthering uniformity the Prime Minister, the Rt Hon. S. M. Bruce, proposed to the 1923 Premiers' Conference that State statistical services be transferred to the Commonwealth. At the time Tasmania alone agreed, and this transfer was effected in 1924. Since then, the integrated office has functioned in that State as the Commonwealth Office, which also serves the State's statistical needs.

Laughton retired from the position of Government Statist in 1933, and was succeeded by Mr Oswald Gawler, F.I.A. in 1934. Mr Gawler was born in 1889 at Black Rock, Victoria, and was the first Victorian Statist born in the State. He was educated at Wesley College in Melbourne. Like his predecessor he had worked with insurance offices in Melbourne and Sydney, but in 1911 he had joined the Public Service in Western Australia. During the First World War Mr Gawler served with the A.I.F. In 1921

he left the Western Australian Public Service and became a consulting actuary in Melbourne and a member of the Stock Exchange. He moved to South Australia in 1929 and joined the Public Service in that State, remaining there until his appointment as Government Statist for Victoria.

The process of achieving uniformity in Australian statistics was further advanced during Mr Gawler's time. He was the Victorian representative at ten conferences of Commonwealth and State statisticians and participated in developments achieved in relation to uniformity of agricultural statistics, new collections of statistics of building operations and motor vehicles, and the effects of new post-war consumption patterns on the Retail Price Index. Like his predecessor, Mr Gawler was the chief statistician of the State during a time of war. He had to supervise the adaptation of statistics to a wartime situation and, after the end of hostilities, was faced with the restoration of statistical services discontinued during the war. Because of the war no Population Census had been held in 1941, and the fourth Australian Census was taken in 1947. Mr Gawler was associated with the preparations for the 1947 Census, as well as with the 1954 Census, but he retired later in 1954, and Mr V. H. Arnold, F.I.A., A.A.I.I., A.S.A., became the new Government Statist for Victoria.

Mr Arnold was born in 1914 in Croydon, England, and was educated at Perth Modern School and the University of Western Australia. He joined the A.M.P. Society in Perth in 1932. After his appointment as Government Statist and Actuary, he became the actuarial member of the State Superannuation Board in 1954. In 1958 he was appointed Chairman of the Board of Inquiry into Industrial Accidents, and when the Victorian Government Statist's Office became integrated with the Commonwealth Bureau of Census and Statistics in 1958, Mr Arnold also became the first Deputy Commonwealth Statistician for Victoria. In 1960 he was elected President of the Actuarial Society of Australasia, and in the following year became Chairman of the Third Party Insurance Premiums Committee. In 1967 he became Chairman of the State Superannuation Board.

In the years following Mr Arnold's appointment, considerable changes in development, reorganisation, and expansion affected most of the activities of the Government Statist's Office. The increasing volume and importance of statistical information stressed the need for uniformity, which could only be achieved if State statistical offices were integrated with the Commonwealth Bureau. Negotiations between the Prime Minister and the State Premiers resulted finally in the acceptance, by all State Governments, of draft agreements to integrate their respective statistical offices with that of the Commonwealth. Subsequently an agreement was made in May 1958 between the Commonwealth and the State of Victoria, to establish the Integrated Statistical Service. The function of this was to collect and publish statistics and supply statistical information for both parties. The Government Statist retained his title and existing duties, and added those of the office of Deputy Commonwealth Statistician for Victoria. Existing services and collections were to be continued and provision was made for diversifying statistical matter. It was stipulated that the *Victorian Year Book* and *Victorian Pocket Year Book* would continue to be published. To enable him to carry out his duties, the Deputy Commonwealth Statistician and Government Statist was given access to appropriate statistical records.

The Victorian Parliament passed the *Statistics Act* 1958 to consolidate the law relating to the Government Statist and statistics in the State. The Government Statist continued as the head of the Government Statist's Branch in the Department of the Chief Secretary with the right to collect statistical information from the State Government Departments, municipal councils, and every institution, corporation, and company in Victoria. He was also given authority to require the occupiers of land to furnish him with information relating to its cultivation and produce, the machinery used, the persons employed, and details about stock, and to obtain statistics from any factory, mine, or other establishment of productive industry or storage in relation to employees, power employed, articles produced, materials used, machinery employed, capital invested, and any other matter in connection with the establishment.

By this time the large volume of statistical information could no longer be handled efficiently by manual methods. Mechanical processing of statistical data became necessary and in 1958 the Government Statist decided to use the Powers-Samas system for the mechanical tabulation of factory returns. The following year the Victorian Office, now integrated with the Commonwealth Bureau, installed Hollerith machines—two sorters, one tabulator, one reproducer, and several key punches and punch verifiers. Soon many of the important statistical collections were processed mechanically, and the advantages of greater speed and more detailed tables became apparent.

The Commonwealth Statistician decided to instal a computer network in all States to supersede the existing mechanical tabulation equipment. The first computer for the Victorian Office was delivered to the premises in May 1965. It was a Control Data 3200 8K CPU and its peripheral equipment included four magnetic tape readers, one paper tape reader/punch, one card reader, and one printer. During the following years, the Automatic Data Processing Branch of the Bureau was expanded, larger capacity computers and additional peripheral equipment were installed, and more highly trained staff were engaged. The Computer Service Centre now performs not only statistical functions, but is also used for a wide range of accounting and administrative work for other government departments.

The increasing importance of statistics in planning and research, not only by the public sector of the economy, but also by private enterprise, greatly increased the demand for statistics, and existing collections were therefore enlarged and new ones instituted. The new collections aimed mainly at improving and enlarging the knowledge of various economic and social fields, for example, the labour force survey, capital expenditure and stocks, finance companies, retail hire purchase and other instalment credit, overseas investment, mining and quarrying censuses, monthly building approvals, quarterly housing finance, survey of earnings and hours, survey of awards and determinations, hospital morbidity, industrial accidents, crime statistics, and school censuses.

The shortcomings of many important economic statistical series and the recognition that many of these series had a common origin led to the idea of integrating economic censuses and surveys. This was one of the most important projects undertaken by the Bureau in the late 1960s and the early 1970s, and was part of a nation-wide project to integrate future economic censuses in such a way that the collections made in each industry

would fit together without overlap, duplication, or omission in coverage, and produce a range of economic data defined according to a common system of concepts. In a similar way, economic surveys were to be drawn from the same list of economic units as those of the censuses and were to use the same classifications; thus they could be related to, and replaced by, census figures as these became available. To do this it was necessary to standardise all data collected, e.g., valuations of stock, purchases, sales, etc., and to prepare a register of businesses operating in Australia. This register is maintained on magnetic tape and can be used for addressing collection forms, preparing collection registers, and other similar tasks. An Australian Standard Industrial Classification (A.S.I.C.) has been compiled as part of the Bureau's integration of economic censuses and surveys. The A.S.I.C. defines the industries in the economy for statistical purposes, thus permitting the scope of the different collections to be specified without gaps or overlapping between them. It also sets out standard rules for identifying the statistical units and for coding them to the industries of the classification.

The growth of the Bureau in Victoria can be gauged by comparing the number of staff employed at the time of integration with the Commonwealth in 1958, with the number of persons now employed. In 1958 the Victorian Office employed some one hundred persons, and by June 1971 the staff numbered 496.

When Mr Arnold became Government Statist in 1954 the *Victorian Year Book* was in its eighty-second year of publication. In the post-war years, the Victorian economy expanded greatly, while social changes had taken place so rapidly that the contents of the *Year Book* needed to be re-examined. This involved revision of the scope of the statistical information as well as the descriptive articles, whose purpose was to set the tables in a wider context. This task has been carried out since 1959 under the supervision of Mr H. L. Speagle, M.A., B.Ed., the Editor of Publications, who became responsible for the *Victorian Year Book* in that year. The first *Year Book* in the new series was the seventy-fifth volume, published in 1961. Besides revised statistical information, it published new special articles, dealing mainly with Victoria's industries, institutions, geography, and culture.

In 1956 another innovation, the *Victorian Pocket Year Book*, had been introduced. It shows statistical information similar to that in the *Victorian Year Book* in a concise form, and is a handy booklet for quick reference.

In addition to the *Year Books*, the Victorian Office publishes many other publications which are distributed free of charge. The *Victorian Monthly Statistical Review* provides monthly and quarterly statistics of economic indicators. Other periodical publications which deal with specialised subjects relate to building, demography, secondary production, finance, local government, transport, primary production, and social statistics. Altogether about 140 publications are prepared annually and released at regular intervals.

CENSUSES

---

The use of the census in ancient times for military or taxation purposes is a familiar one. Censuses of modern times are designed to provide information for both economic and social purposes for use not only by government but also by private users. In recent times world organisations such as the United Nations Organization have made considerable progress in promoting comparability in census taking between countries.

## STATE CENSUSES

*Early enumerations*

The enumerations of the people taken up to the time of the establishment of the Port Phillip District as a separate Colony in 1851 were generally, though not invariably, carried out in conjunction with the Censuses of New South Wales.

An officer sent in 1836 by Sir Richard Bourke, then Governor of New South Wales, to report upon the newly settled Port Phillip District, reported that on 25 May 1836 the population exclusive of Aborigines (of whom no estimate was made) consisted of 177 persons. A later return made by Captain Lonsdale, the first Resident Magistrate of the District, shows that the population on 29 September 1836 was 224. Two years later, by which time a considerable stream of migration, chiefly from New South Wales and Tasmania, had set in, it was decided to take a Census as a result of which the population was found to number 3,511 on 12 September 1838.

*Censuses of 1841, 1846, and 1851*

These enumerations were made in the Port Phillip District in connection with the New South Wales Censuses. In 1841 the population was recorded as 11,738; it had increased to 32,879 in 1846, and to 77,345 in 1851. The Census of 1851 was taken on 2 March before the proclamation of the Port Phillip District as a separate Colony on 1 July 1851.

*Census of 1854*

This was the first Census taken of Victoria as a separate Colony. Mainly as a result of the gold discoveries in 1851 a large influx of population had taken place, and it was therefore decided to enumerate the population on 26 April 1854. An Act was passed providing for the taking of the Census, and the various forms of schedules employed in the 1841 Census of the United Kingdom were adapted to the circumstances

and requirements of the Colony, which was divided into twenty-six districts, each in the charge of an enumerator. Police magistrates were appointed enumerators for their respective districts, except in Melbourne, where the Town Clerk acted as enumerator. The number of sub-enumerators employed was 194, their rate of pay depending on the nature and extent of the country they had to traverse, and on the number of people to be enumerated. The questions related to name, age, sex, religion, conjugal condition, education, and occupation. Returns were also collected for the area of land alienated. The population was tabulated according to counties and pastoral districts, electoral districts and provinces, goldfields, seaport towns, rural and mining districts, and towns and villages. The population enumerated was 236,798, including 2,500 Aborigines, and the estimated cost of the Census was £11,000.

#### *Census of 1857*

The Victorian gold rushes continued to cause a considerable addition to the population; another Census was taken on 29 March 1857. For the purpose of making the preliminary arrangements for the Census of 1857, a Commission was appointed by the Government to prepare the form of the householders schedule and to frame regulations and instructions for the guidance of the officers engaged in carrying out the provisions of the Census Act. The Commissioners obtained the co-operation of the municipal and other local authorities, and were thus enabled to frame a scheme of subdivision of the Colony whereby the greater part of the enumeration was taken and supervised by local agencies. The enumerators were selected by the local authorities, but were appointed by, and responsible to, the Government. A new and useful regulation framed by the Commissioners was that which required the sub-enumerators to fill in a return showing the name and residence of every householder with whom a blank schedule had been left. The Colony was divided into sixty Census districts which were again subdivided into 907 sub-enumerators' districts. The total number of persons employed in collecting the returns was 1,005, of whom sixty were enumerators, 930 sub-enumerators (of whom 477 performed their duties on horseback), and fifteen were Chinese interpreters or assistant sub-enumerators.

The schedule used at the Census of 1857 included questions on name, relation to head of household, conjugal condition, sex, age, rank, profession or occupation, birthplace, nationality, religion, education, and description of house. The tabulation of results was carried out on a similar plan to that adopted in 1854. The total population at the Census of 1857 was 410,766, including 1,768 Aborigines.

#### *Censuses of 1861, 1871, and 1881*

The *Census Act* 1861 provided that the Census should be conducted entirely by the Registrar General, and not by a Commission as had been the case in the preceding Census. This provision was also continued in the subsequent Census Acts of Victoria. The Census of 1861 was taken on 7 April; that of 1871 on 2 April; and that of 1881 on 3 April.

In 1861 and 1871 the general method of dividing the Colony into districts for Census purposes was the same as that adopted in 1857. In 1861

the Colony was divided into sixty-seven Census districts; in 1871 it was divided into sixty districts. In 1876 the Electoral Act Amendment Act was passed and the electoral districts upon which the enumerators' districts at previous Censuses were based were changed. In 1881 the Colony was entirely re-divided for Census purposes so that the Census districts might fit in as far as possible with the counties, which are permanent territorial divisions. The number of districts into which the Colony was divided for Census purposes in 1881 was seventy-eight.

In 1871 there were sixty enumerators and 1,568 sub-enumerators, and in 1881 there were seventy-eight enumerators and 1,869 sub-enumerators.

The nature of the information sought to be obtained at the Censuses of 1861, 1871, and 1881 was prescribed in the householders schedules appended to the Census Acts. In 1861 it comprised the same questions as in 1857, and an additional column was introduced for "health", in which entries were to be made of cases of sickness, infirmity, or accident, to determine reasons for unemployment. In 1871 the schedule was identical with that of 1861, but information was sought on land occupied or cultivated on holdings of more than one acre, and for numbers of livestock kept, while the inquiry as to rank, profession, or occupation was supplemented by a column specifying past occupation. The scope of the inquiry at the Census of 1881 was the same as in 1871 except for the inclusion in 1881 of a question on the type of educational establishment being attended and the exclusion of the question on land tenure.

For the first time in Australia, the Government Statist in Victoria used a manual card system for tabulating the 1881 Census results. When preparing individual tabulations the cards were sorted into groups according to required characteristics and the totals entered in columns of specially prepared summary sheets. This was an improvement on counting and handling the original householders schedules. In all operations connected with the 1881 Census the staff used mechanical appliances where possible and by means of these saved much clerical labour.

The population enumerated in 1861 was 540,322, of whom 1,694 were Aborigines. By 1871 the number of inhabitants had increased to 731,528 (1,330 were Aborigines), and by 1881 it had increased to 862,346 (780 were Aborigines). The total population of Melbourne and suburbs in 1861 was 139,916; by 1881 the number enumerated in Greater Melbourne had increased to 282,947. The total number of inhabited dwellings in Victoria was 129,196 in 1861, 150,618 in 1871, and 170,086 in 1881.

#### *Census of 1891*

The 1891 Census of Victoria, as well as those of all the other Australasian Colonies, was taken as referring to midnight on Sunday, 5 April of that year; this time corresponded to that appointed for enumerating the population of the United Kingdom and most of the outlying portions of the British Empire.

The subjects of inquiry were the same as in 1881 except that a separate question on occupational status appeared for the first time. There was also a question on average wages paid by employers; the answers were used to prepare estimates of gross income in categories of employment. For the information of the Education Department, separate provision was made for



obtaining information as to the name, sex, and place of residence of every child under 15 years of age, whether receiving education, and, if so, at what place.

The eighty-four electoral districts were taken as the basis for the Census districts, of which there were ninety altogether. Each Census district was divided by the enumerator into sub-districts of such size that in populous areas the work of enumeration could be completed in three days, namely, one day for delivering and two days for collecting the schedules. There were ninety enumerators and 2,330 sub-enumerators employed, 1,310 to travel on horseback. There were also forty-five interpreters to the Chinese. Four of the sub-enumerators were females.

The scheme of tabulation was carried out in accordance with the terms of the agreement arrived at by the Census Conference of 1890. A card system of tabulation was used similar to that used in 1881, but additional duplicate cards were used in those cases which were to be processed immediately without waiting for the finalisation of the main tabulations. Certain details of birthplaces, persons over 85 years of age, university graduates, divorced persons, and sick persons were tabulated in this way. The total number of duplicate cards used was about 30,000. Mechanical devices were again used to speed up the processing of the Census information.

The population of Victoria enumerated on 5 April 1891 was 1,140,653, of whom 565 were Aborigines. The population of Greater Melbourne at the same date was 490,896. The total number of dwellings in Victoria was 241,560, of which 224,021 were inhabited, 15,846 were uninhabited, and 1,693 were under construction.

#### *Census of 1901*

This Census was taken under the provisions of the *Census Act 1900*, on Sunday, 31 March 1901. No general report of this Census was issued, and the available information about Census methods is meagre. Generally, the system of preparation for, and the method of collection and tabulation of, the 1901 Census were carried out on much the same lines as in 1891. Census districts adopted in 1891 were used again for the 1901 Census. The State electoral districts were treated as enumerators' districts except in four cases; these were each subdivided into two or more Census districts. Ninety-four enumerators, 2,235 sub-enumerators, and thirty-seven interpreters to the Chinese were employed. Six of the sub-enumerators were women.

The Act specified the following subjects of inquiry: name, sex, age, marital status and duration of marriage, number of children born to each marriage, relation to head of the household, profession or occupation, sickness or infirmity, religion, education, birthplace and (where the person was born abroad) period of residence in Victoria, and nationality; and the materials of the dwelling and the number of rooms contained therein. Provision was also made for the collection of statistics as to the area, tenure, and cultivation of occupied land held in connection with or in the vicinity of the dwelling occupied, and details of livestock kept.

The population of Victoria increased from 1,140,653 in 1891 to 1,201,341 in 1901 including 271 Aborigines. The population of Melbourne and suburbs increased during the same period from 490,896 to 496,079, and the number of dwellings in Victoria from 241,560 to 253,656.

## COMMONWEALTH CENSUSES

*Census of 1911*

Under section 51 of The Commonwealth of Australia Constitution Act 1900, the Commonwealth Government was empowered to make laws for the peace, order, and good government of the Commonwealth, with respect to *inter alia* Census and statistics. In exercising this power a Census and Statistics Act was passed in 1905, and in the following year the Commonwealth Bureau of Census and Statistics was created. Part III of the 1905 Act provided for the taking of a Census decennially, and in accordance with this provision a Census of the Commonwealth was taken for the night between 2 and 3 April 1911.

The householders schedule referred to in the *Census and Statistics Act* 1905 consisted of a householders card and a personal card for each person in the household. The particulars which were asked for on the personal card in regard to each individual were set out under fourteen headings. New questions asked in the 1911 Census were date of existing marriage, children born to previous marriage, date of arrival in Australia if born overseas, race, occupation of employer, and duration of unemployment if out of work. Provision was made for the statement of cases of blindness and deaf-mutism, but questions about sickness and accidents were omitted from the card. One of the principal objects in providing the householders card as well as the personal card was to obtain detailed information for dwellings. The householder was required to fill in the class of building, material of outer walls, number of rooms, nature of occupancy, and weekly rent payable.

The Victorian Government Statist, A. M. Laughton, acted as the State Supervisor for Victoria. Large maps were prepared for the States showing the partition of the State into Census (enumerators') districts and the maps were forwarded to the State supervisors. The supervisors then selected for each Census district a qualified person willing to undertake the duties of enumerator at a specified rate of pay. When the appointment of each enumerator had been notified, a list of instructions was forwarded to him together with a large scale map of his division for subdivision into collectors' districts. These districts were to be of such size that the work of distributing and collecting the Census forms could be readily carried out in a specified time. The collection of the forms in populous areas was to be finalised within eight days of the Census date and in the scattered country districts within twenty-two days. After approval of each subdivisional scheme, a map of each collector's district was prepared for the collectors. The collectors were nominated by the enumerator and approved by the Commonwealth Statistician. The number of enumerators employed in Victoria for the 1911 Census was ninety-five and the number of collectors, 2,322.

Although devices for mechanical tabulation of Census data were already used in other countries, many of these were still in the experimental stage. However, an assessment of the advantages the machines offered at the time led to the decision not to use any of those offering for the punching, sorting, and tabulating of the cards. With few exceptions the tabulations were carried out entirely by means of hand-sorting and personal counting. The

exception to this rule was the use of electrically operated Burroughs adding machines when tabulating data according to localities. For various computations involved in the compilation of the Census figures, considerable use was made of the Millionaire calculating machine and several models of the Brunsviga.

The population of Victoria reached 1,315,551 in 1911 and the population of Melbourne increased to 588,971. By 1911, 44.77 per cent of the Victorian population resided in the Metropolitan Area. The total number of occupied dwellings in Victoria at the Census was 272,683, and the number of unoccupied dwellings 11,246.

#### *Census of 1921*

The Census of 1921 was the second carried out under the central direction of the Commonwealth Bureau of Census and Statistics and was taken under the authority of the *Census and Statistics Act 1905-1920*.

The Census schedule consisted of a personal slip containing information concerning one person only and a dwelling slip containing the names of all persons who passed the night of 3 and 4 April 1921 in each dwelling. Additional questions asked at the 1921 Census related to the birthplace of parents, nationality, reason for unemployment, number of children under 14 years dependent on head of household, number of persons usually in residence, and, in regard to dwellings, the material used for roofing.

For the 1921 Census the organisation of the Commonwealth Electoral Department was used. The Commonwealth Electoral Officer in each State became the Deputy Supervisor of Census, each electoral division became a Census division, and the divisional returning officer became the Census enumerator for that division, while the sub-enumerators supervising the work in Census subdivisions generally were the officers engaged in the electoral organisation as assistant returning officers or as electoral registrars. When the apportionment of a State subdivision into collectors' districts had been approved, the enumerator was instructed to procure suitable persons to act as collectors. The collecting staff employed at the Census time in Victoria comprised one deputy supervisor, twenty-one enumerators, 286 sub-enumerators, and 2,268 collectors. The Lands and Survey Branch of the Home and Territories Department prepared the Census maps. The Commonwealth electoral maps were used as a basis and were largely supplemented by maps obtained from various State departments and other sources. The 1921 Census marked the first occasion on which automatic machines were used for the tabulation of a Census in Australia. The replies shown on the Census slips were assigned numerical codes and the codes were punched on Hollerith cards. Electric card sorters and counters and a tabulating machine processed thousands of these cards per hour.

The population of Victoria at the 1921 Census increased to 1,531,280 and the population of Melbourne and suburbs to 782,979. The proportion of persons living in the Metropolitan Area increased from 44.77 per cent at the time of the 1911 Census to 51.13 per cent at the 1921 Census. The number of dwellings enumerated in the State was 346,284, of which 14,994 were unoccupied.

#### *Census of 1933*

The 1933 Census was taken under the authority of the *Census and Statistics Act 1905-1930*. In accordance with the provisions of this Act

the Census should have been taken in 1931. However, owing to economy in government expenditure in the depression years, it was decided to defer the Census, which was subsequently held on 30 June 1933.

The previous Censuses were held near the end of March or beginning of April, but in 1933 and subsequently, the Census day has been at or near 30 June.

At the 1933 Census the householders schedule was a combination of the dwelling and personal slips used in the previous Census; particulars concerning each inmate of the dwelling had to be inserted in columns under the name of each individual on the schedule. The number of questions was eighteen, together with six sub-headings, and also six questions concerning the description of the dwelling. Additional questions included in the 1933 schedule related to orphanhood, war service, industry, and income, while questions relating to children born to marriage, birthplace of parents, and occupation of employer were omitted and a few other questions were modified. The personal slip was still used, though for a different purpose—it was issued to individuals who objected to having their particulars entered on the householders schedule and was required mainly for boarders, servants, persons in hotels, institutions, etc. In Victoria, an additional form was distributed at the request of the Government Statist. This related to the number of poultry and livestock on the premises.

For the 1933 Census the organisation of the Commonwealth Electoral Department was again used. The Census divisions were thus identical with the electoral divisions, and Census subdivisions were either divided or grouped on the basis of electoral subdivisions. The Census subdivisions were apportioned into collectors' districts suitable for the most economic distribution and collection of the Census schedules. The Census staff in Victoria in 1933 comprised one deputy supervisor, twenty enumerators, 278 sub-enumerators, and 2,653 collectors. Automatic machines were again used for the 1933 Census, processing and tabulation of the Census results being carried out in Canberra.

The population of Victoria increased between 1921 and 1933 by 288,981 persons, and reached 1,820,261 at 30 June 1933. The number of Victorians living in the Metropolitan Area increased further to 991,934 and comprised 54.49 per cent of the population of the State. The number of occupied dwellings in Victoria at the Census was 432,872, and unoccupied 18,763.

#### *Census of 1947*

The fourth Census undertaken by the Commonwealth Bureau of Census and Statistics was taken on 30 June 1947 under the provisions of the *Census and Statistics Act 1905–1946*. The Census should have been taken in 1941 but because of war conditions it was postponed until 1947.

In 1947 the number of questions relating to each person was thirteen, together with nine sub-headings, and there were nine questions with twelve sub-headings relating to each dwelling. The personal questions asked in 1933 regarding orphanhood, blindness, and deaf-mutism, foreign language, place of schooling, war service, and income were omitted in 1947, while the question relating to existing marriage was expanded to again include particulars of the number of children born to that marriage. The questions regarding occupation were re-arranged to assist householders filling in the

schedule by providing separate subsections for persons not engaged in industry, those usually engaged in industry but out of employment at the time of the Census, and those engaged in industry at the time of the Census. There were additional questions about the dwelling relating to the material of the roof, gas, electricity and water supply, toilet, washing and cooking facilities, and date of building.

In 1947 the help of the Commonwealth Electoral Branch was enlisted again. The organisation was similar to the 1933 Census with the exception that while in 1933 the Commonwealth Electoral Officer in each State was made directly responsible to the Commonwealth Statistician, the Chief Electoral Officer for the Commonwealth was appointed as Chief Field Supervisor of Census and became responsible for the organisation of the field staff and the distribution and collection of the Census material. The field staff in Victoria consisted of a deputy field supervisor, twenty enumerators, 269 sub-enumerators, and 2,951 collectors. The preparation of the maps and plans required for the field staff was carried out by the Australian Survey Corps of the Department of the Army in Melbourne. The compilation took about nine months, the number of maps prepared was about 3,700 and the number of diagrams about 12,000. As in the previous two Censuses, Hollerith machines were employed for the processing of the Census results. The number of columns on the cards had been increased from forty-five to eighty with a resulting increase in potential space for additional codes. As office accommodation for the large number of temporary employees required for the Census tabulating staff could not be provided in Canberra, suitable office accommodation was secured in Sydney and the Census Office was established there in June 1947.

The population of Victoria reached 2,054,701. The population of the Melbourne Metropolitan Area now comprised 59.69 per cent of the total population of Victoria and stood, at the Census date, at 1,226,409 persons. The Census results showed the results of migration and of the long-term drift of the population from the countryside into urban centres and the metropolitan area. The total number of occupied dwellings in Victoria enumerated at the 1947 Census was 527,406 ; unoccupied dwellings numbered 11,412.

#### *Census of 1954*

The fifth Australian Census should have taken place in 1951 but this year was considered too near in time to the Census of 1947. It was therefore decided to take the fifth Census in 1954 as being the mid-point of the period 1947 to 1961, since it was planned that the sixth Census would be taken in 1961 in conformity with the general practice of holding Censuses in the first year of each decade.

For the 1954 Census a composite householders schedule of the same size as schedules used in 1933 and 1947 was again used. However, a horizontal arrangement of questions replaced the vertical arrangement in order to facilitate subsequent processing of the data. The question relating to dependent children was omitted and an additional question concerning place of work was added to supplement other particulars on occupation and industry. Some questions regarding dwellings were omitted, namely, persons sleeping out, water service, toilet, washing and cooking facilities, and material of roof. Additional questions relating to nature of tenancy (tenants paying rental to

a government authority were asked to write "Tenant (G)", possession of kitchen and bathroom, and whether or not the dwelling was on a rural holding, were added to the schedule.

The services of the electoral officers were used again in the 1954 Census and the divisions and subdivisions for Commonwealth electoral purposes provided the basic geographical subdivisions of the State used for Census purposes. At the Censuses of 1921, 1933, and 1947, Census divisions and subdivisions coincided exactly with electoral divisions and subdivisions (except for some degree of further subdivision or grouping where convenient). The electoral subdivisions (and collectors' districts within them) which existed in 1947 were retained for the 1954 Census (ignoring intercensal changes in electoral boundaries) and grouped into Census divisions which conformed as closely as possible with 1954 electoral division boundaries. The number of Census divisions in Victoria at the 1954 Census was thirty-three, the number of Census subdivisions 258, and the number of collectors' districts 3,680.

Hollerith machines were again used in processing the Census results. A notable development in the use of machines in the 1954 Census was the introduction of "mark sensing". The information contained in completed schedules was coded and the codes marked with a graphite pencil direct on to machine cards using the "cages" provided on the card for the purpose. The cards were then passed through a machine which electrically sensed the graphite marks and converted them into punched holes on the same cards. These were then ready for normal machine processing. For tabulation purposes four combination machines, Census Trios, especially designed for Census work, were used. These machines greatly increased the automatic nature of the machine card processing. Each Trio consisted of a special sorting machine with facilities for counting, sorting, and checking cards; a tabulating unit which accumulated totals as required and produced a printed record of them; and a summary punch which produced punched total cards containing data corresponding to the totals printed. Four high speed sorters were also used for additional tabulation work.

The enumerated population of Victoria at 30 June 1954 was 2,452,341, which was 27 per cent of the Australian population. The increase of about 400,000 between the 1947 and the 1954 Censuses was due in almost equal parts to migration intake and natural increase. The population of Melbourne and suburbs increased to 1,524,111 and constituted 62.15 per cent of the Victorian population. The increase in population in Victoria was also reflected in a corresponding increase in dwellings. The total number of dwellings recorded at the 1954 Census was 688,181, of which 27,491 were unoccupied.

### *Census of 1961*

The sixth Commonwealth Census was taken in 1961. It reverted to the original pattern of early Censuses envisaged by the statisticians, namely, to hold the Census in the first year of every decade. A householders schedule similar to the 1954 schedule was used again in the 1961 Census; the only additional questions asked related to qualifications used in present occupation, the State or Territory of usual residence, and whether the household had a television set.

For the organisation and administration of the Census activities, the States were divided, as in previous Censuses, into Census divisions, subdivisions and collectors' districts. Census subdivisions and divisions were formed in such a way that they approximated closely to Federal electoral boundaries operative in 1961. The comparability of the data for collectors' districts between the Censuses was to be preserved. Although some of the collectors' districts had to be subdivided because of changes in local government boundaries, increases in density of population, etc., the new collectors' districts could usually be re-grouped to maintain comparability. Maps for the 1961 Census were prepared by the Census Division of the Bureau. Basic material for maps and aerial photographs was obtained from the States, semi-government authorities, and private map publishers. The number of Census divisions in Victoria in the 1961 Census was thirty-three; there were 298 Census subdivisions and 4,290 collectors' districts. The field staff engaged totalled 4,438, of whom 4,087 were collectors.

A comprehensive scheme of publicity, aimed at reaching all sections of the community and designed to assist the distribution, completion, and collection of householders schedules, was planned by the News and Information Bureau of the Department of the Interior and the Chief Field Supervisor of Census. The programme commenced in April 1961 and increased in intensity towards Census day. There was a subsequent short follow-up campaign. For the first time a short official film was also prepared for use in theatres and on television. As an adjunct to publicity in foreign language newspapers, copies of a statement in seven languages (English, German, Italian, Maltese, Polish, Yugoslav, and Greek) which was prepared for use by Census collectors who might experience language difficulties with migrants, were distributed for display in appropriate clubs and other meeting places.

The methods of processing the collected data in 1961 were similar to those used in 1954. The original coding, sensing, and punching of the cards in 1961 was done in Sydney, while the sorting and tabulating of the punched cards was carried out in the Census Office in Canberra. The 1961 Census was the last Census to use machine tabulation for the processing of the collected data.

The population of Victoria at the 1961 Census stood at 2,930,113. During the preceding seven years it had increased by 477,772, an increase of 2.5 per cent per annum. The population of the Melbourne Metropolitan Area increased to 1,911,895, thus comprising 65.2 per cent of the total State population. The number of dwellings enumerated was 837,918, of which 47,389 were unoccupied.

#### *Census of 1966*

The seventh Australian population Census was held only five years after the previous Census had been taken in 1961. Originally, it had been intended to take Censuses at ten year intervals, but because of the general demand for better quality and more frequent statistics in the field of demography by both public and private interests, it was decided to hold a Census in 1966, five years after the preceding one.

Additional questions asked in the 1966 Census related to the level of schooling completed, the usual hours worked per week by persons having jobs, and the number of motor vehicles stationed at the dwelling.





Questions relating to duration and cause of unemployment and State or Territory of usual residence were omitted. Many other questions were modified or enlarged. Of thirty-three questions asked on the schedule, twenty-four related to personal particulars and nine to particulars of dwellings. The definition of the labour force was modified to conform with the recommendations of the Eighth International Conference of Labour Statisticians, 1954. Commuting patterns of the work force were derived from some questions.

One of the significant features of the 1966 Census was the new method used in the delimitation of urban boundaries. The Twenty-seventh Conference of Statisticians of Australia in August 1965 decided that in delimiting urban centres, certain uniform criteria (e.g., population density, dwelling density, and land use) should be applied throughout Australia. A detailed description of the criteria applied is contained in the Census publications. Around each principal urban centre with a population of 75,000 or more two boundaries were drawn. The outer boundary circumscribed the area which was expected to be in close economic and social contact with the principal urban area for the next two or three decades. The inner boundary delimited the principal urban area. In Victoria two principal urban centres were identified. These were the Melbourne Metropolitan Area (population 2,110,168) within the Melbourne Statistical Division (2,230,580), and Urban Geelong (105,059) within the Geelong Statistical District (111,364).

The population of Victoria at 30 June 1966 was 3,219,526 ; occupied dwellings numbered 888,984 and unoccupied dwellings 64,757.

#### *Census of 1971*

Planning for the 1971 Census began while the release of results of the 1966 Census was still at a relatively early stage. In order to review thoroughly the content of the Census schedule and of Census tabulations, major users of Census statistics were invited to join two special committees of Census users. These committees met several times and were kept informed of the progress of the Census.

From the views expressed by members of these committees it became apparent that there were many topics for which reliable statistics were lacking and for which information could most appropriately be collected at a Census. Not all of the topics suggested could be included on the schedule without imposing an unreasonable burden on the householder, thus affecting the overall quality of the response to the Census. However, as the final list of questions would be longer than in 1966, ways of making the schedule easier to complete were investigated. A booklet schedule was designed to accommodate tick-box style questions ; it was tested in Sydney in July 1969 and again, with revisions, in Melbourne in April 1970, with satisfactory results.

New methods for recruitment, training, and controlling field workers were also adopted for the 1971 Census after testing in Melbourne. The processing of the Census extended over a period of a year during which time nearly a thousand clerical assistants worked on the transcription of information from the Census schedules to anonymous computer tape records.

Preliminary results of the 1971 Census showed the population of Victoria to be 3,496,161. The population of the Melbourne Statistical Division was 2,497,993 of which Urban Melbourne comprised 2,388,941. The term

“metropolitan” was dropped for the 1971 Census and a new category “major urban” introduced, covering all urban centres with 100,000 or more inhabitants. Urban Geelong had 115,047 inhabitants in June 1971.

## ABORIGINALS

*Aboriginal prehistory*

Radiocarbon 14 age estimations have established that man colonised Australia over 30,000 years ago, and there are hints of even greater antiquity. To date, less archaeological research has been carried out in Victoria than in most other States, but there are indications of comparable antiquity for settlement during the later stages of the Pleistocene ice age, when Victoria and Tasmania were connected by land. Bass Strait was formed by a rising sea level about 10,000 years ago. Prehistorians therefore infer that the Tasmanian Aborigines moved through Victoria before this submergence, and that the material possessions of the early Tasmanians must have resembled those current in Victoria at that time. It is also relevant that stone implements excavated on Pleistocene age sites in Australia, including Keilor near Melbourne, possess the same characteristics as stone tools excavated in north-western Tasmania and dated older than 8,000 years. The most characteristic tools are termed scrapers. These are varieties of trimmed flakes which have been struck from cores ; frequently the cores themselves have also been utilised as tools. Their uses are conjectural, although likely functions were chopping, pounding, cutting, and wood shaving.

Ancient human fossils have been recovered in Victoria. The Cohuna cranium and the nearby Kow Swamp skeletons are under detailed investigation. They possess rugged "archaic" features, exhibiting traits which are reminiscent of Middle Pleistocene Javanese fossils. On the other hand, the two crania from adjacent soil pits at Keilor (termed Keilor and Green Gully) are in marked contrast, with their "modern" structural pattern consisting of a well rounded frontal area, moderate palate, and well filled vault. These also have Indonesian parallels in the presumed Late Pleistocene Wadjak remains in Java. Keilor may be older than 9,000 years, while the Green Gully burial occurred over 6,000 years ago. As the Kow Swamp remains are around 10,000 years of age, it suggests either the possible co-existence of two groups, or variants within a continuum. However, neither is considered to belong to a Negritoid race, and this once popular concept, together with the theory that Tasmanians were racially distinct from the mainlanders, has been abandoned by most authorities. Pleistocene Victorian prehistory must be visualised, therefore, as part of a continuum stretching from Tasmania to Indonesia. Future analysis of the numerous Kow Swamp burials should contribute considerably to an understanding of Aboriginal origins.

Recent fieldwork at Keilor has demonstrated that the river flats were frequented by hunters almost 20,000 years ago. Giant marsupials also lived there about 30,000 years ago, and although claims have been made that associated pebbles were trimmed artificially at this site, the contemporaneity of man with the extinct fauna remains to be proven conclusively. It is known that similar marsupials inhabited the Western District, perhaps as recently as 15,000 years ago. There are sites near Terang and Lake Colongulac where the association of extinct fauna and Aboriginal implements seems possible, but these discoveries were made before the development of modern archaeological techniques. In any case, fieldwork in other States has demonstrated that human occupation of Australia is contemporary with the giant marsupial fauna. It has been suggested that man, both directly as hunter and indirectly as fire-making agent, caused its extinction. It is also probable that prehistoric man effected many other changes in the landscape through intensive burning.

There can be little doubt that the Aboriginals witnessed volcanic eruptions on the basalt plains, as several eruptions post-dated their arrival. However, legends collected during the nineteenth century and cited as descriptions of these eruptions are better explained as wishful thinking on the part of eager European questioners.

#### *Prehistoric culture*

Excavations, so far limited to south-eastern Australia, including Keilor, Cape Otway, and Wilsons Promontory in Victoria, indicate that Aboriginal stone craftsmanship over that region was more highly skilled and diversified 1,000 to 5,000 years ago than at the time of European contact. By immediate pre-settlement times the production of several specialised implement types had ceased. These included delicately trimmed blades termed micro-liths. This is a reminder that although the Aboriginals are known as a Stone Age people, stone utilisation played a relatively unimportant role in Victorian economy and technology. The explanation is probably that the Aboriginals had adjusted to Victorian conditions which furnished them with a variety of plant and animal raw materials whose archaeological survival is uncommon.

Nineteenth century accounts of Aboriginal society, studied in conjunction with museum collections of ethnographic specimens, afford rich testimony to the crafts of the Victorian Aboriginal, particularly in basketry, skin dressing, and wood working. Some of the finest wooden objects were engraved with tools which had been made from the lower jaws of possums or wallabies, and others by miniature stone chisels, with ground working edges. Use of the tula-adze, a chisel common elsewhere in Australia for similar tasks, is not recorded within Victoria, and its characteristic stone flake has not been found. Some Victorian weapons decorated with intricate geometric designs are among the most attractive specimens of Aboriginal art. Photographs showing some of these artefacts are shown in the illustrations following page 32.

Skin cloak preparation was a feature of daily life. Usually possum skins were preferred, and the task of cleaning and pegging them out was a laborious one. Skins were sewn together with sinews, using bone awls, and were rendered both pliable and decorative with incised geometric markings on the inside of the skin. One of the few cloaks which has survived

measures 7 ft 6 inches by over 5 ft and contains eighty-one possum pelts.

It has not been sufficiently appreciated how aesthetic a sense pervaded Victorian life. Weapons, utensils, clothing, and sometimes even the interior walls of bark shelters were decorated. Each bark sheet was blackened over a fire, and simple drawings were scratched over this surface. Unfortunately, only two examples apparently survive. Their style resembles some of the motifs of the undated painted rocks, which are, however, uncommon in Victoria. About twenty-five painted shelters are known, almost all of them in the Grampians and the Victoria Range; only one engraved figure has been recorded.

A few ceremonial sites survive, demarcated by stone arrangements, while myths are associated with many natural features. Probably the best known antiquity in Victoria, however, is the extensive diabase quarry on the slopes of Mt William, north-east of Lancefield. It was still in operation when Melbourne was established, and the axes were widely in demand. Less permanent antiquities include scattered "canoe trees". These are eucalypts, whose scarred trunks still preserve the outline of bark removed for the simple canoes used on Victorian waterways.

Unfortunately, in the nineteenth century before the development of anthropological teaching, observers seldom understood the closely knit social and ceremonial structure of tribal society. Most accounts are superficial or anecdotal and concentrate on those matters of greatest interest to the writer. Tribal behaviour was interpreted in terms of European morality and political prejudices. It is not surprising that the Aborigines were claimed by most commentators to lack all religious concepts, or that "chiefs" were thought, erroneously, to rule tribes after the fashion of American Indians. It is possible, however, that individual leaders held more power than in other regions of the continent. Tribal organisation in Victoria can be reconstructed only conjecturally, which is of limited value. The total number of tribes is disputed; possibly there were about thirty. Several distinct languages were claimed, but probably most regional differences were not great. Recent opinion assumes a common linguistic origin for Victoria, but allows two major sub-groups within it.

#### *Population in 1835*

All population estimates are conjectural, as the population was ravaged by smallpox before European settlement. When the first official count was taken by the Board for the Protection of the Aborigines in 1877, only 774 natives of pure descent survived. Estimates made by early settlers ranged between 3,000 and 7,500 for the State, that is, between 12 and 30 square miles for each Aboriginal. Fifteen thousand may be postulated as the extreme limit, because this was a hunting-fishing-gathering society, where, despite regional bounties, the land only fed a population adapted for survival during the leanest season.

#### *Batman's Treaty*

On 6 June 1835 some natives of Port Phillip "ceded" 600,000 acres to John Batman and the Port Phillip Association. Unfortunately for Batman, the treaty was repudiated by the British Government which denied the Aboriginal title to the land. Indeed, if the eight "chiefs" who affixed their mark to the document had comprehended what it meant, they would

have agreed that there was such an intimate spiritual bond between the tribal land and its people that they could not have sold this birthright. Judging from the official reaction which this treaty provoked, it is best considered as a calculated bluff by the Association to force the issue on permission to settle in areas remote from Sydney's control. Batman's policy deserves credit as a rare, although expedient, example of conciliatory race relations and a token recognition of compensation. Yet an absence of anthropological understanding is evident in this treaty, which was probably modelled on Penn's agreement with American Indians, and it expressed sentiments more appropriate to South Seas trading than to Aboriginal society. Whatever the merits of Association welfare, the economic motive of pastoral expansion dominated.

*Port Phillip : 1835 to 1838*

In Britain, the post-Reform Bill Parliament, motivated by genuine humanitarianism, appointed a select committee in 1836 to report on native populations in colonial possessions. Governors Bourke and Gipps to some extent reflected this principle in their native policies. Gipps had Europeans executed for murdering Aborigines at Myall Creek in New South Wales in 1838, and Bourke instructed the Resident Police Magistrate, Lonsdale, to be humane to the Port Phillip Aborigines. Lonsdale arrived with 500 red night caps, 200 check suits, and 250 blankets for them. Bourke visited Melbourne in 1837, commended Lonsdale's work, and anticipated mutually beneficial race relations.

However, worthy intentions and uninformed enthusiasm proved insufficient. George Langhorne, who was sponsored by the Government and the Port Phillip Association from 1836, was unsuccessful in his missionary work, which was centred chiefly on a school near the present Royal Botanic Gardens, and death among the Aborigines, chiefly from disease and liquor, ended Lonsdale's attempt to develop a native police force. Armed conflicts were minimal in the Melbourne area, yet within four years the population of the Yarra tribe fell from perhaps 350 to 200, with disease a chief scourge. In the spreading pastoral areas there were signs of European brutality owing to isolation, privation, fear, and Aboriginal sheep spearing.

*The Protectorate : 1838 to 1850*

Victoria was the only colony in which the new British concept of protection for native people was implemented. In 1838 an official communication informed Gipps that a Chief Protector and four assistants had been appointed for the Port Phillip District: G.A. Robinson, who had been working for Tasmanian Aborigines, was in charge at an annual salary of £500; his assistants, each on a salary of £250, were coming from England. Robinson was to be based in Melbourne and the others were to live with the tribes, learn the language, induce them to cease nomadism, instruct them in agricultural and building pursuits, distribute food and clothing, collect data on their customs, preach Christian doctrine, and instil moral behaviour. In 1839 the assistants were based, respectively, in the Goulburn, Loddon, Geelong, and Mornington Peninsula areas. It is significant that, at this time, nine of the twenty salaried officers in the Port Phillip administration performed functions partly connected with Aboriginal welfare. Within four years £25,000 had been expended, and when the

scheme was abandoned in 1850 the total cost had been £42,200, an extraordinary sum for the decade of the Irish famine.

Although the Protectorate was an enlightened concept ameliorating the Aborigines' hardship to some extent, it was chiefly a failure. Robinson was a poor administrator and even worse at maintaining good relations with his staff and the Government; two of the assistants were incompetent; pastoralists were antagonistic, as they refused to co-operate with protectors who demanded that land be reserved from pastoral occupation; and the Aborigines continued to die through disease and drink. Too much was spent on staff salaries and not enough on food and health services. It is doubtful whether anyone could have succeeded against European antipathy. The decision to abandon the Protectorate was recommended by a committee of the New South Wales Legislative Council on the basis of written denunciations made by forty-five justices of the peace, almost all of whom were squatters, and none of whom had visited Victorian settlements; no informed witnesses were questioned. It was not recognised that by destroying hunting lands the Europeans had destroyed the Aborigines' spiritual past, their present, and their expectations for the future.

*Guardian Thomas : 1850 to 1861*

William Thomas was the dedicated champion of Victorian Aborigines from 1839 until his death in 1867. His diaries describe the arduous life he endured living with them, and indicate his personal friendship for many of them. Robinson consistently ignored his assistant's advice or requests, but after Separation, Thomas became Guardian of Aborigines and remained an influential consultant on government policy. During his time a modicum of protectorate policy was retained, even though he was the sole full-time official. During the decade of gold discoveries, annual expenditure on Victorian Aborigines fluctuated between £1,000 and £2,000, of which Thomas received a salary of £600. From the inception of responsible government in 1855 the same electoral laws applied to Aborigines and non-Aborigines.

Public opinion was to some extent affected by the developing missionary activity during the 1850s, and in 1858 the Victorian Parliament appointed a select committee to inquire about Aboriginal welfare. Its recommendations, a modified version of Thomas' advice, resulted in the appointment, on 18 June 1860, of the first public body in Australia to deal specifically with Aboriginal affairs and particularly with protection.

*Central Board for the Protection of Aborigines : 1861 to 1885*

About 2,000 Aborigines now survived in the Colony, but the seven Board members, of whom four were active in mission affairs and three were Members of Parliament, began working energetically. (They met twenty-seven times during 1862.) They intended spending £11,500 during their first year, but government economy limited them to £6,000. Working closely with Anglican, Presbyterian, and Moravian mission authorities, the Board adapted Thomas' scheme by establishing native reservations and supply depots in various parts of the Colony. By 1874, 24,692 acres had been reserved in thirteen localities, and seventeen depots, supervised by honorary correspondents, distributed

stores. Government stations at Lakes Tyers, Wellington (Ramahyuck), Hindmarsh (Ebenezer), and Condah, and at Framlingham and Healesville (Coranderrk), were supervised by managers or missionaries, and had resident populations totalling about 500; several times annual expenditure exceeded £10,000. During this time R. Brough Smyth, Secretary to the Board until 1875, assembled the data for *The Aborigines of Victoria* (1878).

The Board received statutory authority by the *Aborigines Protection Act* 1869, the definition of "Aboriginal" including all part-Aboriginals who habitually associated and lived with Aboriginals. It prohibited the sale of spirituous liquor, while Regulations under this Act in 1871 gave the Board wide powers over Aboriginal domicile, child custody, and contracts.

The guiding principles of the Board and the legislation were self-support and education. Some believed that the segregation of Aboriginals in reserves would isolate them from the evils of European society. Food and clothing were available to the aged and infirm at stations and depots, but the self-righteous attempts to inculcate habits of industry required the able-bodied to work hard for little return. Crops of hops, arrowroot, and vegetables were produced with some success.

High Aboriginal mortality rates continued, however, and the count of 1877 revealed an Aboriginal population of 774 full blood and 293 mixed blood persons. Concentration in villages on reserves encouraged pulmonary diseases, and exile from tribal territories may have increased psychological problems. Unsuitability of supplies also constituted a factor in the death rate. While European clothing of Victorian proportions was available, diet was deficient in protein. Quantities of flour, oatmeal, rice, sugar, tea, and tobacco were consumed, and 10,508 lb of soap was dispensed in 1877. By 1876 the significant mortality, together with public allegations of mismanagement on stations, resulted in the appointment of a Royal Commission. A Board of Inquiry into Coranderrk station followed in 1882. A related factor was that the decline in numbers was accompanied by mounting administrative costs. In 1885, £11,342 was spent, 81 per cent of it on the 556 station residents. It was widely noted that part-Aboriginals constituted a growing proportion of those on stations, and official reports indicated that drastic action was needed to curb expenditure.

#### *Aboriginal cricketers : 1866 to 1868*

Perhaps the most colourful episode in the story of Victoria's detribalised Aboriginals was their entry into the field of international cricket. In 1866 interested pastoralists in the Edenhope area recruited a number of Aboriginals. On Boxing Day 1866, before a crowd of 10,000, they made an undistinguished entry on the Melbourne Cricket Ground, but the following week they defeated the Corio team, and returned to win at Melbourne.

The team sailed for England in February 1868, a decade before the first representative Australian Eleven. They played forty-seven matches in England, both winning and losing fourteen. Johnny Mullagh was the outstanding player. In forty-five matches he scored 1,698 runs, took 257 wickets, and even acted as wicketkeeper.



*Self-help and extinction : 1885 to 1901*

The 1882 Board of Inquiry extolled the European values of self-reliance and virtue and, with the *Aborigines Protection Act* 1886, all part-Aboriginals were expected to conform to this pattern by leaving the reserves, fending for themselves, and integrating with the European community. Its effect was the exclusion of such persons under 34 years from the definition of "Aboriginal" and without a special Board permit their residence on any reserve was prohibited. Through this legal device Victoria's station population was virtually halved. By 1893, 227 of the 233 "legally white" residents on stations had been excluded and expenditure dropped to £6,057; in 1900 Aboriginal welfare cost under £5,000. It was intended that the ageing, full-blood Aboriginals should work harder to cut station expenses, but, in practice, no great pressure was exerted, as the death rate seemed likely to solve the problem. The Central Board observed in 1902 that its 388 wards were steadily decreasing in number, as were managerial expenses, and considered that, as the Aboriginal would probably become extinct within twenty years, those remaining should be treated generously. Fewer Aboriginals required fewer stations and depots. Between 1887 and 1902, 12,543 acres of reserve land were returned to the Crown and most supply depots were closed.

*1910 to 1957*

By 1910 it was evident that it was impossible and unjust to exclude part-Aboriginals. The policy was too harsh and the prejudice of citizens too great to allow for their absorption into the community, and the Board constantly received petitions from half-castes with no legal right to support. The definition of "Aboriginal" was therefore extended by the *Aborigines Act* 1910, the Chief Secretary claiming that maintenance costs would not substantially increase. Indeed, total annual expenditure never exceeded £4,500 between 1903 and 1921. In 1912 the Aboriginals of mixed ancestry receiving support from the Board outnumbered the 133 full bloods. A decade passed before the Board issued another report. In 1917 the Board decided to concentrate all activities on the 4,000 acre reserve at Lake Tyers, established as an Anglican mission in 1862 with State financial assistance and taken over by the State in 1908. Other stations were closed, although some Aboriginals continued to live on in these areas. Additional cottages were erected at Lake Tyers and the transfer was completed by 1926, by which time the Aboriginal population maintained or assisted by the Board numbered eighty-eight full bloods and 303 part-Aboriginals. The consolidating Acts of 1915 and 1928 did not alter the provisions of the *Aborigines Act* 1910.

*Aborigines Welfare Board : 1957*

In 1957 the McLean Report on the *Aborigines Act* and its Regulations suggested major policy changes, involving a reversion to the concept of assimilation. The recommendations were implemented in the *Aborigines Act* 1957 and consolidated in 1958. The Central Board for the Protection of Aborigines became the Aborigines Welfare Board and this change of emphasis was deliberate. Under the Chairmanship of the Chief Secretary, Board membership was increased to include the

Under Secretary, members nominated by the Ministers of Education, Housing, and Health, and five others, two of whom were to be Aborigines and one an expert in anthropology or sociology. The Board was to encourage the assimilation of full-blooded Aborigines as well as those of Aboriginal descent while promoting their moral, intellectual, and physical welfare. Under the *Aborigines (Houses) Act* 1959 the Board could contract with the Housing Commission to build houses for Aborigines, but in 1965 the Aborigines (Amendment) Act modified the Board membership, and made the Minister of Housing responsible.

In 1960 Aborigines within the meaning of the Act numbered about 2,260, but few of them were full bloods. A Superintendent of Aborigines' Welfare was appointed in 1958, and during 1958–59 expenditure by the Board totalled £33,587 ; during 1960–61 the net expenditure on Lake Tyers alone was £27,774. Attention was directed to Aboriginal welfare throughout the State and was not confined to Lake Tyers.

#### *Present position*

The existing legislation was repealed by the *Aboriginal Affairs Act* 1967, which came into effect from January 1968. The Act established a Ministry of Aboriginal Affairs, having a Minister, a Director, and an Aboriginal Affairs Advisory Council, at least three members of which are Aborigines. An important phase in Victorian Aboriginal affairs opened with the passage of the *Aboriginal Lands Act* 1970, which became effective in 1971. This Act transferred the ownership of two Aboriginal reserves to those Aborigines whose domicile entitled their names to be entered on the registers of residents. These persons constitute bodies corporate, respectively known as the Lake Tyers Aboriginal Trust and the Framlingham Aboriginal Trust. Each Trust has an elected committee of management of seven.

Over 5,000 persons of Aboriginal descent live in Victoria, and the number is increasing. Legally all Aborigines are citizens and subject to no civil disabilities or discrimination ; it remains a community responsibility to ensure that this is a reality.

#### *Conclusion*

Much has been written about the Victorian Aborigines and their way of life since the early nineteenth century, and the principal works have included R. Brough Smyth's *The Aborigines of Victoria* (1878), A. W. Howitt's *The native tribes of south-east Australia* (1904), and E. J. B. Foxcroft's *Australian native policy* (1941) ; more recent studies are *Cricket walkabout* (1967) and *The prehistory of Australia* (1969) by D. J. Mulvaney, and Peter Corris' *Aborigines and Europeans in western Victoria* (1968).

## IMMIGRATION

*From settlement to the gold rushes*

On 19 November 1834 Edward Henty, the first permanent settler in Victoria, landed at Portland Bay in the Port Phillip District. Many Launceston people had already known about the quality of the country on the northern side of Bass Strait from sealers as well as from the published accounts of the Hume and Hovell expedition in 1824, and the Henty family were to be the fore-runners of a vigorous pastoral expansion from Van Diemen's Land to the mainland shores.

Soon after Major Mitchell's return to Sydney in 1836, with his vivid accounts of the richness and potential of the soil, the first overlanders began to cross from the north. Some British migrants coming to Australia also landed in the Port Phillip District, and by 1840 there were over 10,000 persons in the District. Ten years later the population was approximately 76,000, the greater part of whom were British immigrants. At that time migration to Australia presented many problems. New South Wales had been founded as a convict colony and the cost of the passage, varying from £20 to £60, was prohibitive to the ordinary labourer. The long, arduous journey of approximately four months on the uncomfortable, cramped ships meant that North America was much more attractive, especially as it was easier to return to England. Between 1836 and 1850, 47,197 unassisted persons from Britain arrived at Port Phillip.

However, assisted passages were also available under various schemes. Britain at the time had wide unemployment, whereas New South Wales had a labour shortage. With the cessation of transportation to New South Wales in 1840, the labour problem, already difficult, became worse, and the British Government, partly influenced by the ideas of Edward Gibbon Wakefield, put forward the idea of linking land and immigration. The Ripon Regulations of the early 1830s were the first to suggest that money obtained from the sale of lands could be applied to assist immigration. In 1842 a law passed by the British Parliament apportioned half of Australia's land revenue for encouraging immigration.

Land and Emigration Commissioners were appointed in England to ensure that the persons assisted were suitable for the colonists' needs. They therefore selected only certain classes, namely, farm servants and shepherds, a limited number of artisans chiefly belonging to the building trades, and female domestic servants, practically all of whom were granted free passages. This method probably supplied the greatest number of assisted immigrants, although it is impossible to be certain because figures

available do not differentiate between the various forms of assisted passage. Another assistance scheme was known as the "bounty system". Since some colonists were not satisfied with the type of assisted immigrant selected by the Commissioners, they employed private labour agents in England to recruit for them. On the arrival of approved immigrants, the Government paid the colonist a bounty almost equal to the cost of passage. This method was, however, discontinued after the mid-1840s. Between 1838 and 1850, 28,632 persons were assisted, of whom 14,902 were males and 13,730 were females. The almost equal number of both sexes was an attempt to balance the existing disproportion in the Colony.

*Effects of gold discoveries*

The character of immigration changed during the 1850s. In terms of numbers, the Victorian gold rushes were a landmark in immigration history. The turnover of population was very high; young single men rather than families predominated, with many intending only to stay long enough to make their fortune. At least many thought this way in the beginning. Probably, after a few years in the Colony, a great number of them changed their minds. Whatever their motives, sufficient of the new immigrants remained to help change Victoria from a minor pastoral settlement to one of the most celebrated British colonies, and the population rose from 77,345 persons in March 1851 to 540,322 in April 1861. However, in spite of the great increase in population, labour requirements were not satisfied as most newcomers went digging for gold. Altogether 486,763 unassisted persons came to Victoria between 1851 and 1859; assisted migrants during this period numbered 86,227.

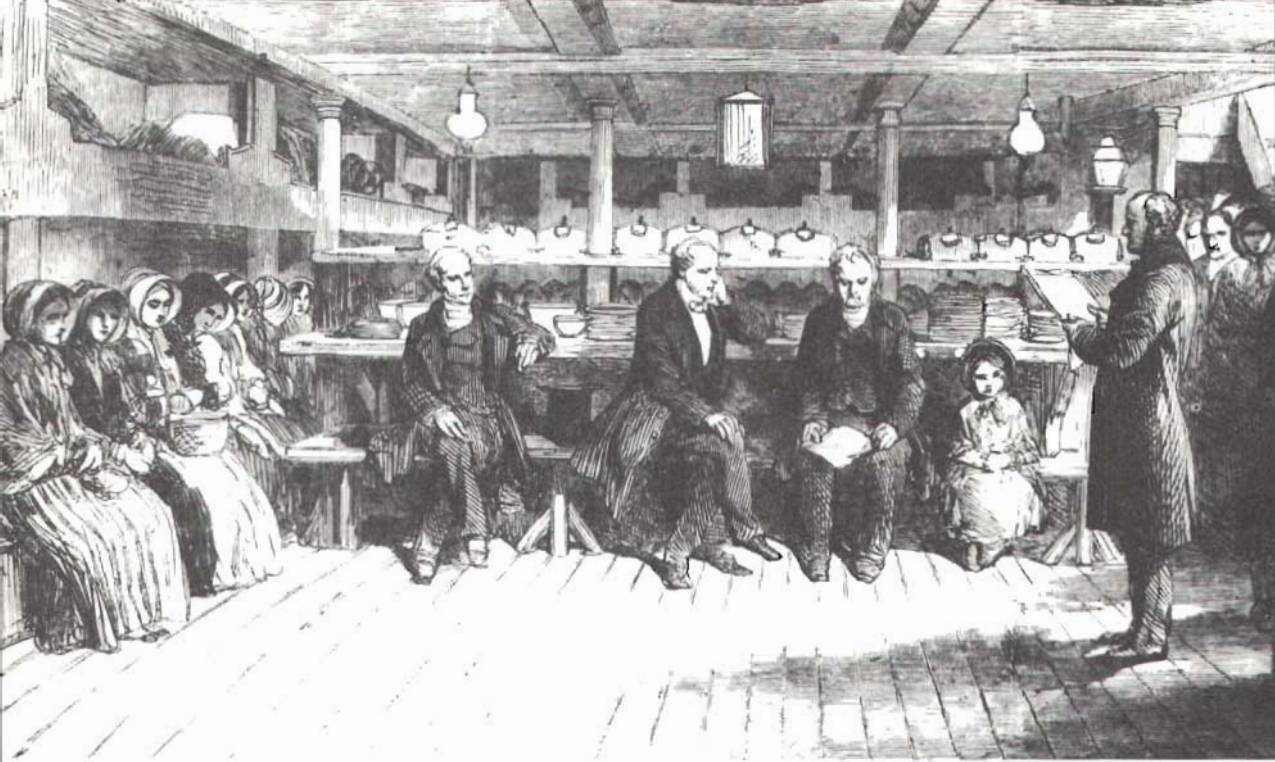
Overall, the gold rush helped develop Victoria as the most populated colony in Australia. In 1850 Victoria had a population of 76,162 persons and New South Wales had 189,341. Ten years later the figures were 538,234 and 348,546, respectively. Population figures for the six Australian Colonies in 1850 and 1860 are shown below:

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.
1850	189,341	76,162	n.a.	63,700	5,886	68,870
1860	348,546	538,234	28,056	125,582	15,346	89,821

n.a.: Not available.

The granting of responsible government in 1855 caused significant changes in the system of assisted migration. From this time, half the land revenue no longer went automatically into an immigration fund. Instead, the whole proceeds went into general revenue, and the immigration fund depended on Parliamentary grants. These fluctuated according to economic conditions. Also during the 1850s the remittance system was introduced. A portion of the passage money was required to be remitted by an employer or friend and the Government bore the rest of the expense. The only stipulation was that immigrants obtained in this way were to be persons of the same classes as those eligible for selection by the Emigration Commissioners.

A few philanthropic organisations like the Society for the Promotion of Female Emigration, and the Highland and Island Emigration Society



Migrants *en route* to Melbourne on the *Madagascar*, 1853.  
*La Trobe Collection, State Library of Victoria*

Sealers and their hut at Western Port, 1826.  
*La Trobe Collection, State Library of Victoria*





Aboriginal bark canoe on the Yarra River near Healesville, c. 1879.

*Dr. F. B. Smith*

Aboriginals in possum skin cloaks at Coranderrk (Healesville), c. 1879.

*Dr F. B. Smith*





a



b



c



d



e

Aboriginal artefacts : a. Bark drawing, 84cm by 60cm, from the Lake Tyrrell area. The design is scratched on smoked bark and includes traditional motifs and European features. Probably collected c. 1860, it is the earliest known surviving Australian bark. b. Wooden parrying shield with geometric design, approximately 1m long. c. Ground edge chisel, 19.5cm long. d. Curved fighting club, a standard weapon used in combat together with the parrying shield. e. Possum jaw engraving tool, 17cm long.

a. D. A. Casey; b-e. National Museum of Victoria



Portland showing the ship *Francis Bently*, 1858, by T. Robertson  
T. J. Fraby Collection, State Library of Victoria



also helped supply immigrants to Victoria at this time. Perhaps the best known was Caroline Chisholm's Family Colonisation Loan Society. She tried to exclude young men whose only purpose was to go to the diggings, and to choose as many family groups and young girls as possible. Immigrants were required to advance two thirds of their passage money, and the Society advanced the rest as a loan, repayable when the settler was established in the Colony.

Gold was not the only factor which influenced the great change in the character of immigration into Victoria after 1852. While gold generated the growth of shipping lines on the Australian run, ship-builders and owners were providing swifter vessels, notably the clipper, which facilitated migration.

#### *Immigration restrictions*

Immigration into Victoria until the 1850s was predominantly British, and the first immigration restriction Act was framed against Europeans. This was the *Convict Prevention Act* 1852, which debarred ticket-of-leave holders from entering the Colony, and required immigrants to produce evidence of their absolute freedom, failing which they were to be treated as convicts and placed under arrest. The measure was introduced principally because of the fear that the goldfields would be overrun by criminals.

However, during the 1850s non-British immigrants began to arrive in substantial numbers, with Chinese and Germans being the most numerically significant, in that order. Future immigration restriction Acts applied mainly to the Chinese. They had first begun to arrive in Victoria in 1853 and at the Census of 1854, 2,000 were enumerated. In 1855 an Act was passed limiting the number of Chinese males a ship might bring to Victoria to one to every 10 tons, and making it compulsory that the sum of £10 be paid for each immigrant. Despite these stringent provisions which were largely evaded, the Chinese, who landed in the adjacent colonies and came to Victoria overland, had increased to 25,370 by 1857; at the end of 1859 it was estimated that they numbered no less than 42,000. The Census of 1861 showed that many Chinese had left, probably for New South Wales, the number remaining in Victoria being only 24,732. In 1865 the Act which imposed restrictions on Chinese immigration was repealed, but by 1881 the number of Chinese in the Colony had further fallen to 12,128.

The agitation against the Chinese again became intense at the beginning of the 1880s. By that time thousands, who had in earlier years found a living on the goldfields, had drifted into other occupations, and several city industries, notably cabinet making, felt the effects of cheap labour competition. In 1881 the Victorian Parliament, acting in conjunction with that of New South Wales, not only re-imposed the £10 poll tax, but prohibited any ships from bringing in more than one Chinese passenger for every 100 tons of the vessel's burthen. This tended to lower the number of Chinese still further; later the Commonwealth's *Immigration Restriction Act* 1901 also controlled entry. The Chinese population of Victoria decreased from 24,732 in 1861 to 4,179 in 1921.

#### *Rise of the birth rate, 1860 to 1880*

By the end of the 1850s immigration had ceased to be the main factor in population increase, and during the 1860s and 1870s natural increase

(excess of births over deaths) became the major factor as is shown in the following table :

VICTORIA—INCREASE OF POPULATION BY EXCESS OF BIRTHS  
OVER DEATHS, AND THE GAIN OR LOSS BY MIGRATION

Period	Increase during period		
	Natural	Net migration	Total
1860-1864	69,249	7,682	76,931
1865-1869	74,639	24,120	98,759
1870-1874	81,902	7,444	89,346
1875-1879	66,473	-10,824	55,649

During this period, assisted immigration declined steeply, although the last assisted immigrant in this era was admitted in 1882. Indeed, in times of stress, the opposition of wage earners in Australia to the subsidised importation of additional competitors for employment forced most of the colonial governments to abandon assisted immigration. During the latter part of the 1870s persons leaving the Colony exceeded those entering it. Natural increase also declined during the period.

The net immigration figure from Tasmania of 30,994 was almost as high as that from Britain (33,043) for the same period. It was also in this period that New South Wales was making up the leeway in population growth because of its much greater gain through net migration.

*Prosperity and depression*

The 1880s, especially the latter years of the decade, were years of hitherto unequalled prosperity. Land values became highly inflated, wages and prices were very high, and expenditure by many sections of the community tended to be lavish. Moreover, Victoria occupied a more important position as a manufacturing colony than any other part of Australia, and by this time Melbourne had attained a considerable reputation overseas for its rapid economic development.

The net immigration figures for the years 1885 to 1889 were remarkable, especially when compared with those of the 1860s and 1870s. The gain of 85,457 through immigration was even more than that by natural increase (83,704). Prosperity undoubtedly was an important attraction, but the relatively swift and comfortable passages, lasting 40 to 45 days, provided by the ocean steamers of the Peninsular and Oriental, and Orient companies, and the French Messageries Maritimes, probably persuaded many British and European people to emigrate.

In the early 1890s the spell of apparently endless prosperity was broken and a period of commercial depression and financial crisis followed. This was the beginning of an exodus which continued into the first years of the twentieth century. The main causes were the recurring droughts, which affected the prosperity and progress of the agricultural, pastoral, and manufacturing industries; the restriction of credit as a result of loss of confidence, and the stoppage of large public works; and the discovery of gold in Western Australia. As Victoria had quite a large gold mining

population and since economic conditions were unfavourable, it is not difficult to understand why, in the 1890s and early 1900s, there was a substantial net emigration to Western Australia and departures to South Africa exceeded arrivals by some 10,000.

*From Federation to 1920*

Although the Federal Parliament was given power under the Constitution to deal with all matters concerning immigration, it was content at first to confine itself to measures of a negative kind, for example, passing the *Immigration Restriction Act* 1901. It was not until 1920 that the Commonwealth began to take a centralised approach, as opposed to the various individual policies of the States, to the problem of immigration. When assisted immigration was revived in Victoria in 1907 it was reproduced in much the same manner as it had been practised during the gold rushes. The emphasis was still on particular classes of persons who were especially needed, such as farm labourers, domestic servants, and workmen in certain trades. Those who would be prepared to occupy and develop land in the various irrigation districts served by State instrumentalities were also encouraged, and assisted passages were granted to persons who were nominated by friends or relatives in Victoria. Persons from the United States of America as well as Britain could now be nominated. In the years immediately before the First World War immigration to Victoria increased greatly, largely because of these assisted immigrants. Of these, 43,227 arrived between 1911 and 1915, and the net immigration for the period 1910 to 1914 was 64,191. The gain from migration ceased during the First World War.

*Commonwealth initiatives in the 1920s*

After the First World War a major change occurred in the control of immigration. In 1920, by agreement with the States, the Commonwealth took responsibility for recruiting, examining, and transporting assisted immigrants. The States, however, were still responsible for the number of migrants assisted through nominations and requisitions. After the passing of the Empire Settlement Act of 1922, the Commonwealth and Britain agreed to share the expense of providing assisted passages. In carrying out this scheme of imperial migration, stress had been placed on land settlement. Western Australia, New South Wales, and Victoria entered into joint agreements with the Commonwealth and Britain to establish British settlers on the land. The results were disappointing as the cost of these schemes greatly exceeded the estimates, and the numbers fell far short of expectations. As a result of these disappointments, the Commonwealth Government in 1926 created the Development and Migration Commission whose role was to appraise developmental projects seeking to exploit natural resources and encourage immigration. The Commission was disbanded in the early 1930s during the depression.

Nevertheless, immigration to Victoria in the 1920s was quite considerable; only two earlier intercensal decades had shown a greater net immigration (the 1850s and the 1880s). The assistance given by the Commonwealth and British Governments had much to do with the increase. In the nine years 1921 to 1929 Victoria received 65,239 assisted migrants and the net migration for the period was 80,414.

*From 1930 to 1945*

The economic depression of the late 1920s and early 1930s reversed the trend of migration once again, so that for the eight years 1930 to 1937 there was a net emigration from Australia of 10,675. Large scale immigration ceased during the Second World War.

*Post-war immigration*

After the war, the Commonwealth Government entered upon a vigorous immigration programme through the machinery of a separate Department of Immigration which was created in July 1945. Earlier, control of immigration had been carried out by a branch of the Department of the Interior. Among the reasons for this planned large scale immigration were the desire to develop Australia's resources in order to strengthen and diversify the economy, and to increase living standards; the realisation of the need to populate and develop Australia as rapidly as possible for reasons of national security; the desire to help many refugees and others in Europe who were unable or unwilling to return to their former homelands; and the knowledge that the low birth rate during the depression would mean an insufficient work force in the future to meet the needs of expansion.

This new policy was to prove a major break with the past, for the Commonwealth Government, while revising the traditional assisted schemes for British migrants (April 1947), also encouraged large scale non-British immigration. Assisted migration agreements or arrangements have been made with Germany, the Netherlands, Italy, Greece, Malta, Austria, Spain, Belgium, Turkey, and Yugoslavia. Many thousands of new immigrants came to Australia and of these Victoria received a large share. Between 1947 and 1966 Victoria's population increased by 1,164,825. Of this increase, 501,998 (43.1 per cent) were born overseas. It has been estimated that of all overseas born persons living in Australia at 30 June 1966 about 32 per cent were living in Victoria. In 1966 the major birthplaces of the overseas born were Britain and the Republic of Ireland (239,406), Italy (111,219), Greece (64,275), Germany (37,270), the Netherlands (34,646), Malta (26,452), Poland (24,697), Yugoslavia (24,634), and New Zealand (11,683).

Part of the attraction has undoubtedly been the post-war economic expansion in Victoria. During this century natural increase (excess of births over deaths) has been the dominant factor in population increase. However, in several years between 1949 and 1956 the gain from net migration actually exceeded natural increase. Another interesting point is that although the assisted migration schemes introduced a great many non-British immigrants to Australia in the post-war period, from January 1947 to December 1970 assisted British migrants (numbering 966,821) still exceeded other assisted migrants (761,742).

Although the Commonwealth Government has taken over most immigration functions, the Victorian State Government, through its own Immigration Office established in 1946, plays an important part in British assisted migration. It receives personal nominations for relatives and friends and employer nominations for workers, and is also responsible for the reception and after-care arrangements for those migrants. Between

January 1947 and December 1970 the State approved 63,644 personal nominations involving 158,802 persons. Under personal and group nominations 152,185 British migrants have arrived in Victoria. Many of these migrants have been skilled technicians sponsored by group nominations such as the Victorian Railways, Melbourne and Metropolitan Tramways Board, and the State Electricity Commission. Their arrival has greatly augmented Victoria's labour force.

In July 1970 the Commonwealth Government announced a series of new studies relating to immigration and population. These included investigations into desirable future population levels for Australia to which immigration programmes should contribute; the cost and benefits of immigration to Australia under current conditions; and time-span surveys of migrants during their early years in Australia. The population studies and the cost-benefit analysis of immigration are being financed by the Commonwealth Department of Immigration and are being carried out at the Australian National University and the University of Sydney, respectively. The time-span surveys of migrants are being made by the research staff of the Department of Immigration. Among a series of other measures taken by the Commonwealth Government has been the appointment of authorities on urbanisation and environment as consultants on the immigration programme.

Immigration has been affected mainly by the favourable economic conditions of the gold rushes of the 1850s, the economic expansion of the 1880s, and the years since the Second World War. The amount of government assistance and the presence in Victoria of friends and relatives, or of national groups, are other factors which have always had a significant influence on immigration.

## POPULATION

*Growth*

The first settlers in the Port Phillip District were mainly pastoralists who, since 1842, had been represented on the Legislative Council of New South Wales. However, Sydney was far away and difficult to reach, and the settlers complained that the distant government was only remotely concerned with the interests of the area. Dissatisfaction with the system eventually led to the separation of the District from New South Wales and the creation in 1851 of the Colony of Victoria.

The population of the District in May 1836 consisted of 142 males and 35 females. This increased steadily as settlers arrived from Britain and Van Diemen's Land (Tasmania), and others with their flocks and herds overland from New South Wales. By March 1851 Victoria had over 77,000 people.

The whole character of the community was radically altered following the discovery of gold in 1851. The first finds were at Clunes and Warrandyte. The predominantly pastoral community suddenly found itself invaded by an influx of a diverse population attracted from all parts of the world, and the small port of Melbourne became crowded with shipping. At the time of the 1851 Census the population of Victoria numbered 77,345 ; by 1861 it was 540,322 ; and by the 1881 Census had increased to 862,346. As the State registration system of births and deaths only came into operation in mid-1853, the exact relationship between the natural increase and the increase through migration is not available for this period. However, of a total increase of 785,000 in the 30 years to 1881, probably 45 per cent can be attributed to the excess of births over deaths, and 55 per cent to net migration, which was the more important component at the beginning of the period but which tapered off to a less significant proportion in the 1860s and actually was negative in the latter half of the 1870s.

Between 1881 and 1913 the natural increase amounted to 547,274 but the net increase from immigration was only 9,537. Before 1892 there was a net inflow of migrants into Victoria, but the financial crisis of 1892 was followed by a period of prolonged depression and population was attracted to Western Australia following gold discoveries there. Between 1892 and 1907 departures exceeded arrivals by 185,202. In three years, 1896, 1902, and 1903, the population of Victoria actually decreased, the net migration out of Victoria being higher than the natural increase.

Between 1914 and 1939 the population of Victoria increased by 31 per cent, most of this being natural increase. The population intake through

net migration was very low during most of the period and in the depression years between 1929 and 1937 there was a net migration of 13,535 persons out of Victoria.

The years following the Second World War have witnessed great economic expansion in Victoria and the period has been characterised by a notable population increase, as was the period 1851 to 1881. Since the end of the Second World War a programme of planned large scale immigration has been one of Australia's major objectives, and in 1966 Victoria had almost 32 per cent of the overseas born people in Australia. Unlike the experience between 1851 and 1881, the natural increase in this period exceeded the intake from net migration.

Only a handful of people resided in the new settlement in 1835. Victoria's population reached the first million in 1887, the second in 1945, and the third million in 1962, only seventeen years later. If current trends of development and growth continue, the fourth and possibly the fifth million could be reached before the turn of the century.

*Age distribution, masculinity, and conjugal condition*

Victoria's population in its early years showed a large excess of males over females; in 1854 there were 188 males for every 100 females. The gap between the number of males and females narrowed and by the time of the 1881 Census the masculinity ratio for Victoria had decreased to 110; in fact, in urban areas including Melbourne, females outnumbered males.

The large inflow of migrants in the 1850s also affected the age distribution of the population; more than half the males and almost half of the females in the new Colony at the 1854 Census were between the ages of 20 and 44 years, and the number of elderly persons was negligible. By 1881, although the Census presented a picture of a young vigorously growing colony with one half of the population under 20 years of age, it also showed an increasing proportion of people in the higher age groups. The increase in the number of elderly persons in the community was reflected in an increase in the proportion of females widowed from 2.52 per cent in 1854 to 5.30 per cent in 1888. The steady increase in the proportion of elderly persons can be traced through later Censuses.

In 1854, when there was an exceptional shortage of women of marriageable age, the proportion of females who were single was 53.68 per cent compared with 68.97 per cent of males. Ever married males were 31.03 per cent of all males compared with 46.32 per cent of females. By 1881 this disparity had lessened and ever married females were 36.02 per cent of all females compared with 31.09 per cent of males.

The masculinity ratio was reduced by the emigration from Victoria arising from the depression which began in the early 1890s and which did not lift until 1914. It fell to 101.07 in 1901 and to 99.34 in 1911, the first Census year in which the number of females for the State as a whole was greater than the number of males.

A decreasing birth rate and longer life expectancy began to be reflected in the age distribution of the population. Between 1881 and 1911 the proportion of population under 20 years decreased from 50 to 41 per cent, while the age group 20-44 years increased from 32 to 38 per cent and the proportion of persons aged 65 years and over more than doubled.

The age distribution of the population at the 1933 Census reflected the general trend which had already appeared in the nineteenth century—the decrease in the relative importance of younger age groups and the increasing proportion of elderly persons in the community. The low number of children under five years in 1933, which was nearly identical with that recorded at the 1911 Census, was mainly due to the sudden fall in births in the years immediately preceding the Census. To illustrate the increase in life expectancy, in the period 1881 to 1890 a male could expect, on the average, to live for 47 years, while between 1932 and 1934 his expectation of life was 63 years. The expectation of life for females during the same period increased from 51 years to 67 years. For the period 1960 to 1962 life expectancy for males was 68 years and for females 74 years. The survival to later ages is reflected in the average age of the population, which for males rose from 25.38 years in 1851 to 31.11 years in 1933, and for females from 20.21 years to 32.20 years. Following increased migration and higher numbers of births in the post-war years the average ages in 1966 were 30.65 for males and 32.45 for females. The 1911 Census and subsequent Censuses have shown a higher average age for females than for males.

The immigration programme in the years following the Second World War, with preference for young men, altered the masculinity ratio which in 1947 had stood at only 97.41, that is, there were approximately 97 males for every 100 females in the State. In that year females outnumbered males not only in the higher age groups but also at ages 20–34 years. In 1966, when masculinity of the population was 100.52, there were generally more males than females in ages under 60 years, with a large surplus of males aged under 45 years.

The high post-war birth rate profoundly altered the age structure of the Victorian population: there was a sharp increase in the number of young persons and children in the community, the proportion aged under 21 years increasing from 32.63 per cent in 1947 to 39.79 per cent in 1966. At the same time persons aged 21 to 64 declined from 58.57 per cent to 51.61 per cent. The proportion of elderly persons remained approximately the same. The responsibility of rearing the young, looking after the elderly, and developing the State generally now involved heavier individual burdens on the active population.

Generally there has been an increase in the proportion of ever married males and females (i.e., married, divorced, and widowed) in the population aged 15 years and over.

VICTORIA—PROPORTION OF EVER MARRIED  
MALES AND FEMALES IN POPULATION AGED  
15 YEARS AND OVER, 1881 TO 1966  
(per cent)

Sex	Census				
	1881	1911	1933	1947	1966
Male	48.23	51.32	58.75	67.80	69.59
Female	60.18	57.20	63.37	72.50	77.31



In 1881 ever married males were 48.23 per cent of the male population aged 15 years or more, and the corresponding proportion of females was 60.18. By 1966 the proportion of ever married males in the population aged 15 years and over had increased to 69.59 per cent and that for females to 77.31 per cent. Whilst temporary fluctuations have occurred, e.g., a surplus of females in the 20–44 age group had the effect of temporarily decreasing the proportion of married females in 1911, the upward trend has continued over the long term.

#### *Birthplace*

In 1854 the majority of the population were immigrants, by far the largest proportion coming from the British Isles. Only 13 per cent of Victorians had been born in the Colony. By 1881 there was a profound change in the position; nearly 58 per cent of the population had been born in Victoria and the percentage of persons whose birthplace was overseas (excluding New Zealand) had decreased from 82 to 37. The overseas population, always predominantly from Great Britain and Ireland, had decreased to less than 15 per cent by the time of the 1911 Census. This trend continued and by 1947 the Australian born population of Victoria had increased to 91 per cent, the highest ever recorded in the history of the State. The proportion of the population born in the United Kingdom and the Republic of Ireland had decreased to the lowest figure of 6.5 per cent. After 1947 the Australian born component of the Victorian population began to decline as a proportion, and in 1966 twenty-one persons out of every hundred living in Victoria had been born overseas. The number of immigrants coming from European countries other than the United Kingdom and the Republic of Ireland showed a significant increase and in 1966 comprised 11.76 per cent of the population.

#### VICTORIA—BIRTHPLACES OF THE POPULATION

Birthplace	Census 1947		Census 1966	
	Number	Per cent	Number	Per cent
Victoria	1,683,126	81.92	2,259,913	70.19
Remainder of Australia	192,975	9.39	279,015	8.67
Australian born	1,876,101	91.31	2,538,928	78.86
United Kingdom and Republic of Ireland	126,013	6.13	239,406	7.44
Other Europe	29,677	1.45	378,771	11.76
Other	22,910	1.11	62,421	1.94
Total	2,054,701	100.00	3,219,526	100.00

#### *Literacy*

Illiteracy was never high in Victoria; even in 1854 only 8.7 per cent of the population over 15 years of age could not read. The ability to write was especially high among the younger age groups as suggested by the number of men and women who could sign the marriage register during the period from 1886 to 1890. Between these years 98 per cent

of men and women could write their names on the registration forms. The system of free and compulsory primary education introduced in 1872 helped to increase literacy in Victoria and in 1911 practically every person over the age of 15 years could read and write.

### *Religion*

The religious denominations of the population at the Census in 1854 showed that 46 per cent were Church of England, 19 per cent Roman Catholic, 18 per cent Presbyterian, and 6 per cent Methodist. By 1881 the proportions had changed to Church of England 36 per cent, Roman Catholic 24 per cent, Presbyterian 15 per cent, and Methodist 13 per cent. In these years the numbers who did not state their religion were not numerous. The very large increase from 1933 onwards in the number of persons who apparently were unwilling to answer this question may be attributed to the explicit statement in the householders schedule and personal slip that an answer was not obligatory.

The proportion not answering the question on religion since 1933 has affected comparability of figures with earlier years, but the following table shows the proportions revealed by those who elected to answer the question on religion :

VICTORIA—RELIGION OF THE POPULATION

Particulars	Census 1933		Census 1966	
	Number	Per cent	Number	Per cent
Church of England	626,172	34.40	923,078	28.67
Roman Catholic (a)	342,135	18.79	889,495	27.63
Presbyterian	276,699	15.20	387,108	12.02
Methodist	193,096	10.61	279,300	8.68
Orthodox	(b)	(b)	100,387	3.12
Other Christian	129,241	7.11	233,733	7.26
Non-Christian	10,065	0.55	35,248	1.09
No religion and indefinite	7,287	0.40	37,443	1.16
No reply	235,566	12.94	333,734	10.37
<b>Total</b>	<b>1,820,261</b>	<b>100.00</b>	<b>3,219,526</b>	<b>100.00</b>

(a) Includes Roman Catholic and Catholic.

(b) Included with "Other Christian". Separate figures are not available for 1933, but the number of persons of Orthodox creed probably amounted to a few thousand only.

### *Occupations*

Following the gold discoveries in 1851, the 1854 Census showed 36,332 persons engaged in gold mining; this number increased to 87,428 in 1857, when about four persons out of every ten living in Victoria resided on the goldfields. Later Censuses showed a steady decline in the importance of this occupation and by 1881 the number of persons engaged in gold mining had decreased to 35,189.

Care must be exercised when comparing figures for occupations between various Censuses. The first attempt to classify occupations was made in 1846 when they were placed under seven headings. A more sophisticated system was adopted in 1854 and the new classifications evolved by 1871

and 1891 further improved the coverage in this area. Before 1933 no real distinction was made between occupation, industry, and occupational status. When the Censuses asked for occupation they really meant industry as well; the two were not separated. However, general trends in changes of the occupations of the people can be deduced.

During the latter part of the nineteenth century and the beginning of the twentieth century manufacturing industries developed further and the protective policies gradually adopted by governments indicated that manufacturing interests were exercising considerable power in the community. In 1881 there were 2,488 factories employing 43,208 hands in Victoria; in 1913 the number of factories had increased to 5,613 and the number of hands to 118,744.

Despite the temporary disruption brought by the First World War and its aftermath of reconstruction, 1919 marked the beginning of an expansionary period in which industrial production increased. During the depression of the early 1930s the economic development of Victoria suffered a severe setback; unemployment was high and growth was retarded.

Since 1947 there have been significant changes in the industries of the population. Although the total work force showed a large increase, the proportion of persons engaged in primary industries, including mining and quarrying, decreased from 14.17 per cent in 1947 to 8.51 per cent in 1966. The manufacturing industries, on the other hand, increased though their proportion of the total work force only rose from 30.50 to 31.84 per cent. The tertiary (service) industries showed a much faster growth and they now employ almost one half of the population in the work force. The economy of Victoria, which in the early period was based on primary production and mining and later became dominated by manufacturing industries, is now becoming increasingly oriented towards the service industries.

VICTORIA—INDUSTRY OF THE POPULATION, CENSUS 1966

Industry group	Males	Females	Persons	Percentage of work force		
				Males	Females	Persons
Primary production	92,791	19,179	111,970	9.76	4.49	8.13
Mining and quarrying	4,799	400	5,199	0.51	0.09	0.38
Manufacturing	311,680	126,810	438,490	32.80	29.71	31.84
Electricity, gas, water, and sanitary services (production, supply, and maintenance)	31,416	2,383	33,799	3.30	0.56	2.45
Building and construction	104,783	4,093	108,876	11.03	0.96	7.91
Transport, storage, and communication	86,104	13,077	99,181	9.06	3.06	7.20
Finance and property	30,219	20,520	50,739	3.18	4.81	3.68
Commerce	135,139	81,352	216,491	14.22	19.06	15.72
Public authority (n.e.i.) and defence services	41,966	11,254	53,220	4.42	2.64	3.87
Community and business services (Incl. professional) (a)	65,087	88,322	153,409	6.85	20.69	11.14
Amusements, hotels and other accom- modation, cafes, personal service, etc.	34,444	46,077	80,521	3.62	10.80	5.85
Other industries and industry inadequately described or not stated	11,799	13,354	25,153	1.25	3.13	1.83
Total in work force	950,227	426,821	1,377,048	100.00	100.00	100.00
Persons not in work force	663,677	1,178,801	1,842,478			
Grand total	1,613,904	1,605,622	3,219,526			

(a) Includes police, fire brigades, hospitals, medical and dental services, education, and business services such as consultancy engineering and surveying, accountancy and auditing, industrial and trade associations, advertising, etc.

*Urbanisation*

The proportion of Victorians living in Melbourne and suburbs at the height of the gold rush in 1854 was 32 per cent ; in 1861 it decreased to 26 per cent ; but from then on it began to rise ; every subsequent Census year with the exception of 1901 has shown an increasing proportion of the State population living in the capital city, and by 1911 nearly 45 persons out of each 100 living in Victoria resided in the metropolis.

The process of urbanisation of the Victorian population has been a long one. The Statistician's Report on the 1881 Census shows that the urban municipalities in 1871 and in 1881 were slightly more populous than the rural ones. In 1891, the population of Victoria's four main urban areas, Greater Melbourne, Ballarat, Bendigo, and Geelong, comprised just over 50 per cent of the population of the State and in 1921, 51.13 per cent of the Victorian population resided in the Melbourne Metropolitan Area alone.

The drift of people into capital cities and other urban areas has become a characteristic of post-war Australia. Melbourne and the other urban areas have been growing at a faster rate than other areas of the State. Over two thirds of the population of the State now live in Melbourne alone and an additional fifth in the other urban areas.

VICTORIA—URBAN AND RURAL POPULATION,  
CENSUS 1971 (a)

Population	Persons	Percentage of State total
Urban		
Melbourne	2,388,941	68.33
Other	677,859	19.39
Total urban	3,066,800	87.72
Total rural	427,101	12.22
Migratory	2,260	0.06
Total Victoria	3,496,161	100.00

(a) Field count totals.

## 6

# VITAL STATISTICS

---

The most important year in the history of Victoria's vital statistics was 1853 when the Victorian Government passed the Registration Act introducing compulsory registration by the Registrar General of births, deaths, and marriages. In the earlier years of settlement parochial and church registers were the only records of Victoria's vital statistics.

The first Annual Report of the Registrar General was published in 1855 and covered the year ending 30 June 1854. It showed the number of births registered in Victoria, the number of marriages celebrated by various denominations, and the causes of deaths tabulated in age groups and month of registration. From 1860 the Registrar General published a monthly abstract of vital statistics for Melbourne only in a publication entitled the *Monthly Report on Vital Statistics*. In 1874 the Office of the Government Statist was created and the name of the publication was altered to the *Government Statist's Report on the Vital Statistics of Melbourne and Suburbs*. These reports were last published in the early 1900s.

Summaries of vital statistics were also published in *Statistical Registers* for Victoria. The first such register was published in 1854 but it was only in 1861 that detailed tables appeared in a chapter on vital statistics. The registers were published annually until 1916.

In 1874 the first *Victorian Year Book* was published, and in it appeared a chapter dealing with vital statistics. Analyses and summaries of births, deaths, and marriages have been published regularly in all subsequent issues of the *Victorian Year Book*. In recent years the vital statistics of Victoria have appeared in *Causes of Death, Demography, and Marriages, Births, and Deaths : Preliminary Statement*.

### BIRTHS

In the new settlement of the Port Phillip District the first birth was registered in 1836 and it was the only birth for that year. Three years later the annual number of births exceeded 100 and in 1842 the number recorded was over 1,000. The total number of births in the first fourteen years of settlement amounted to about 16,000.

After the gold discoveries in 1851 the population began to increase very rapidly. The net intake through immigration reached unprecedented heights and the number of births rose every year. As early as 1859 the annual number of birth registrations reached over 22,000. The crude birth rate, which stood at 44.71 births per 1,000 mean population in 1862,

began a general decline after that year, mainly because of a changing age structure of the population. By 1880 it had decreased to 30.76.

The general prosperity of the 1880s was reflected in a temporary halt in the trend of the declining birth rate, but during the depression after 1892 both the birth rate and the actual number of births began to decrease and the low natural increase (births minus deaths) combined with large scale emigration from Victoria resulted in a population decline in the State in 1896, 1902, and 1903.

The principal demographic factors affecting the level of crude birth rates are the proportion of women in the child bearing ages in the population, their age distribution, and the proportion of such women who are married. These factors may vary considerably at different periods and to compare fertilities, total births should be related to the number of women of child bearing age, or nuptial births to the number of married females of such age.

The following table shows the crude birth rates, the fertility rates, and the nuptial fertility rates for the period 1860-1862 to 1910-1912. (The population of Victoria before this period was too small for rates based on such figures to have any statistical significance.)

#### VICTORIA—CRUDE BIRTH RATES AND FERTILITY RATES

Period	Actual rates			Index numbers (Base : 1860-1862 = 100)		
	Crude birth rate (a)	Fertility rate (b)	Nuptial fertility rate (c)	Crude birth rate (a)	Fertility rate (b)	Nuptial fertility rate (c)
1860-1862	43.27	215.41	306.14	100.00	100.00	100.00
1870-1872	37.13	187.62	297.83	85.81	87.10	97.29
1880-1882	30.93	143.17	299.02	71.48	66.46	97.67
1890-1892	33.17	143.74	296.81	76.66	66.73	96.95
1900-1902	25.64	103.94	226.11	59.26	48.25	73.86
1910-1912	24.73	99.84	219.73	57.15	46.35	71.77

(a) Crude birth rate : Number of births per 1,000 mean population.

(b) Fertility rate : Number of births per 1,000 females aged 15-44.

(c) Nuptial fertility rate : Number of nuptial births per 1,000 married females aged 15-44.

NOTE. These rates represent averages for 3 years centred on Census population.

The comparative magnitude of the decline in the above rates can be measured by the index numbers by taking 1860-1862 as the base. While the nuptial fertility remained relatively constant during the following thirty years, the fertility rate decreased sharply by one third. This was due to the increased proportion of females in the younger ages which contained a large number of single females and an overall higher proportion of spinsters in all age groups between the ages of 15 and 44 years. The crude birth rate similarly reflected the changing age structure of the population but did not decline as much as the fertility rate because it was not as directly affected by movements in numbers of females in the child bearing age groups.

During the depression years after 1892 economic and social conditions were responsible for a general decline in birth and fertility rates. The Census of 1901 revealed a serious surplus of females over males in the ages between 20 and 30 years, and this tended to depress the prospective number of marriages with the resultant effect on the number of births in the State.

Between 1920 and 1927 the number of birth registrations in each year exceeded 35,000 but the economic depression in the 1930s led to a significant decline in the number of children born in Victoria. In 1932 only 27,464 births were registered in the State, just slightly more than the number recorded in 1868, 64 years earlier. The low birth rate during the depression years had serious repercussions in the post-war period, when the number of young persons entering the work force in the 1950s was not sufficient to meet the needs of the expanding economy. This was one of the reasons for introducing a programme of planned large scale migration into Australia after the end of the Second World War.

After 1941 births in Victoria showed a significant increase. While the increase during the war would have been caused by a sudden rise in marriages between 1940 and 1942, several factors combined to bring the number of births to over 50,000 by 1951 and eventually to 60,000 by 1957. The higher level of post-war marriages, large scale immigration, and improved economic conditions were among the most important of these factors.

In spite of the large increase in the absolute number of births in the post-war period the nuptial fertility rate remained below the 1920-1922 level, reflecting a general trend towards smaller families since the last century. An increase in the numbers of married females in the age group 15-44 years contributed to the rise in the total fertility rates between the years 1946-1948 and 1960-1962.

#### VICTORIA—CRUDE BIRTH RATES AND FERTILITY RATES

Period	Actual rates			Index numbers (Base : 1920-1922 = 100)		
	Crude birth rate	Fertility rate	Nuptial fertility rate	Crude birth rate	Fertility rate	Nuptial fertility rate
1920-1922	23.29	96.94	190.70	100.00	100.00	100.00
1932-1934	15.32	64.58	123.35	65.78	66.62	64.68
1946-1948	22.74	100.56	157.54	97.64	103.73	82.61
1953-1955	22.37	107.50	148.66	96.05	110.89	77.55
1960-1962	22.27	110.83	153.43	95.62	114.33	80.46
1965-1967	19.98	96.68	137.25	85.79	99.73	71.97

See notes to previous table.

A temporary decline in the total number of births occurred after 1962 but a steep rise in the number of marriages of the "post-war babies" started to have a significant effect in 1968 when the number of children born showed a marked increase. Births in 1971 numbered 75,498.

## MARRIAGES

The first marriage in Victoria after permanent settlement in 1834 was celebrated in 1837. In the following year fifteen couples were married and in 1851 the annual number of marriages exceeded 1,000. By 1910 over 10,000 marriages were recorded and in 1971 the number of annual registrations exceeded 32,000.

The number of marriages in the community depends on several factors, among the more important being the propensity or the willingness to marry, the numerical balance between the sexes, and the social and economic conditions at the time. The numerical balance between the sexes in Australia and Victoria has often been a significant factor in limiting the number of marriages. During the early periods of the settlement the masculinity ratio was exceptionally high; in 1854, during the gold rush, there were 188 males for each 100 females and the surplus of males in the age groups in which most people are married was even more significant. However, in subsequent years the population became more balanced, the gap between the number of males and females in the community narrowed, and there was an actual surplus between 1871 and 1881 of prospective brides in certain age groups.

VICTORIA—MASCULINITY OF THE POPULATION  
IN CERTAIN AGE GROUPS (a)

Age group (years)	Census year				
	1854	1857	1861	1871	1881
17-19	n.a.	107.41	119.87	91.44	94.40
20-24	208.01	157.33	147.71	94.44	93.70
25-29	280.29	231.47	202.30	113.70	101.82
30-34	283.31	239.28	245.55	138.00	103.09

(a) Number of males per 100 females.

After the financial crisis in Victoria in the early 1890s the number of marriages decreased sharply and the marriage rate declined to less than 6 per 1,000 mean population in 1893. Many men left the Colony in search of work; some were attracted to Western Australia by the large gold discoveries. There was thus a shortage of young men and the high masculinity ratio, reflecting large immigration into Victoria during the period of prosperity before the crisis, fell significantly within the following ten years. This situation was later aggravated by the First World War when many young men died on the battlefields.

By 1933 the imbalance between numbers of males and females between the ages 17 and 34 had largely been corrected. The depression affected the economic and social life of the community and many marriages had to be postponed, and the marriage rate declined to an all time low of 5.66 in 1931. Only 10,182 couples were married in Victoria in that year, compared with an annual average of 12,955 between 1926 and 1930.



VICTORIA—MASCULINITY OF THE POPULATION  
IN CERTAIN AGE GROUPS (a)

Age group (years)	Census year				
	1891	1901	1911	1921	1933
17-19	97.74	96.64	100.58	102.32	100.83
20-24	102.86	87.78	95.17	91.99	100.97
25-29	114.25	86.05	93.98	90.23	103.75
30-34	120.12	96.82	92.14	93.39	101.93

(a) Number of males per 100 females.

The 1947 Census showed a surplus of females in most marriageable age groups but the decision of the Government to introduce large scale immigration of young men quickly resulted in a surplus of males. The continuous high masculinity ratio in the age groups of 15 to 34 years caused mainly by immigration created serious social problems for many men, especially for the young migrants. However, in recent years the Government has tried to adjust its migration policies and bring greater equality in the number of males and females.

VICTORIA—MASCULINITY OF THE POPULATION  
IN CERTAIN AGE GROUPS (a)

Age group (years)	Census year			
	1947	1954	1961	1966
17-19	101.36	105.71	105.13	104.21
20-24	98.04	108.47	106.81	102.55
25-29	97.47	108.93	108.48	105.95
30-34	97.11	105.66	110.07	107.07

(a) Number of males per 100 females.

The last forty years have seen trends towards earlier marriages and a greater overall propensity to marry. The proportions of married persons in the age group 45 to 54 years, which is a fairly close measure of the population who ultimately marry, has been steadily increasing and at the 1966 Census only 8.82 per cent of males and 6.76 per cent of females aged 45 to 54 years were shown as "never married". This compares with 18.56 per cent and 20.31 per cent for males and females, respectively, for the 1921 Census.

One of the important features characterising marriages in the recent period has been the sharp increase in the proportion of marriages involving minors. At the turn of the century, during the period 1900 to 1902, 1.98 per cent of bridegrooms and 15.53 per cent of brides were under 21 years of age. In the post-war years 1946 to 1948, these proportions increased to 5.13 per cent and 22.96 per cent, and in 1967, 12.56 per cent of all bridegrooms and 40.48 per cent of all brides were minors. The higher

marriage rate among minors can also be shown by relating the number of bridegrooms aged 18–20 and brides aged 16–20 to the number of single males and females in those age groups.

#### VICTORIA—MARRIAGES OF MINORS

Period	Bridegrooms		Brides	
	Marriage rate <sup>(a)</sup> of minors aged 18–20	All bridegrooms under 21 as percentage of total marriages	Marriage rate <sup>(a)</sup> of minors aged 16–20	All brides under 21 as percentage of total marriages
1900–1902	5.12	1.98	22.78	15.53
1946–1948	22.61	5.13	67.43	22.96
1960–1962	30.73	9.09	84.22	35.84
1965–1967	39.23	12.15	90.25	39.61

(a) Average annual number of marriages of males aged 18–20 and females aged 16–20 per 1,000 Census population of the same age and sex.

In spite of the difficulties experienced by some migrants in finding suitable marriage partners, the extent of post-war migration was such that immigrants contributed significantly to the number of marriages celebrated in Australia. Between 1946 and 1970 in 10.61 per cent of marriages both partners were born overseas, and 15.16 per cent of marriages were between an Australian born person and an overseas born person. Similar figures are not available for Victoria but using the same proportions, out of 568,120 marriages celebrated in Victoria during that period, in about 146,400 marriages at least one partner would have been born overseas.

#### DEATHS

In 1836 only three deaths were recorded among the small group of settlers in Victoria but by 1851 the annual number of deaths had increased to 1,165; by 1860 deaths registered in the Colony were 12,061. In these early years the death rate fluctuated widely from year to year, partly because of the small numbers involved and partly because of the outbreaks of infectious diseases which occasionally occurred in the Colony; in 1851 the crude death rate (deaths per 1,000 of mean population) stood at 13.42, and in 1860 it was 22.77. However, after 1860 the death rate showed a general decline; the adoption of public health measures, improvements in the availability of medical facilities to private persons, and advances in medical techniques all had their effect. Since 1902 the rate has exceeded 13 per thousand only once, in 1919. Although the proportion of elderly persons in the community had been increasing, the crude death rate continued to decline and was under 10 for the first time in 1922. It hovered around 10 for the next thirty years but in the last two decades has declined further and in 1971 was 8.7 per 1,000 of mean population.

The decline in the death rate has been most dramatic among infants and children in the earlier years of life. In 1870, 12 per cent of infants died within a year of birth; in 1970 less than 2 per cent failed to survive the first year of life.

Age-specific death rates for Victoria are given in the following table for the trienniums 1856–1858, 1910–1912, and 1965–1967:

## VICTORIA—AGE-SPECIFIC DEATH RATES (a)

Age	Period		
	1856-1858	1910-1912	1965-1967
Under 1 year (b)	139.79	73.38	17.23
1-4	26.58	6.71	0.82
5-9	3.75	2.33	0.36
10-14	2.91	1.75	0.32
15-24	7.83	2.94	0.99
25-34	10.51	4.53	1.15
35-44	15.22	6.80	2.26
45-54	20.39	11.23	6.20
55-64	32.81	22.03	15.64
65-74	54.25	53.62	40.41
75 and over	96.97	144.52	113.21
All ages	18.24	11.79	8.81

(a) Average annual number of deaths per 1,000 of population in each age group.

(b) Infant deaths per 1,000 live births registered.

Over the years age-specific death rates declined for most age groups, although the relative advantage at later years is less than might popularly be supposed. This can be demonstrated with data on life expectancy which, although relating to Australia, can serve as a useful indicator for Victoria. The expectation of life at birth for the period 1881-1890 was less than 50 years. Australian life tables calculated for the period 1960-1962 show that for males the expectation of life was 68 years and for females 74 years. In the period 1901-1910 a male of 50 years could expect to live 21 more years on the average compared with 23 more years in the period 1960-1962. A woman aged 50 years in the former period could expect to live an additional 24 years and in the latter period an additional 28 years.

## CAUSES OF DEATH

Deaths have been classified by cause in Victoria since 1853. Classifications used have followed closely those determined internationally. Initially the nosological table (a system for classifying deaths by cause) in use followed that used in the Office of the Registrar General of England. In 1853 the first International Statistical Congress had requested Dr William Farr of England and Dr Marc d'Espine of Geneva to prepare a uniform nomenclature of causes of death applicable to all countries, and from 1861, with retrospectivity to 1853, causes of death in Victoria were arranged in classes and orders according to their system. Following some revisions of this list in the intervening years, in 1893 the International Statistical Institute, the successor to the International Statistical Congress, adopted the International List of Causes of Death. The first International Conference for the Revision of the International Classification of Causes of Death was held in Paris in 1900. After successive decennial revisions the classification was broadened in 1948 to meet the needs for diagnostic data in morbidity statistics. Sweeping changes were made in the International List of Causes of Death to serve the dual purpose of classifying both morbidity and mortality data. In addition, the 1948 Conference approved the International Form of Medical Certificate of Cause of Death, which was

introduced into Victoria in 1952. The Conference also accepted the underlying cause of death as the main cause to be tabulated and endorsed the rules for its selection. The most recent major revision in the classification came with the Eighth Revision of the I.C.D. in 1965. Since the end of the Second World War the preparation of the decennial revisions of the International Classification of Diseases and the publication of the manuals has been done under the auspices of the World Health Organization, which also co-ordinates the work of the various national statistical bodies.

Changes in the classifications, of course, have reflected developments in medical knowledge and diagnosis, and the needs created by these developments. The particular types of classifications used in Victoria since 1853 are given below, with the time periods during which each classification was applied to deaths registered in the State :

Type of classification system used in Victoria	Location of detailed listing	Period when used in Victoria
Nosological Index used by the Registrar General	First Annual Report of Registrar General	1853-1860
Nosological Index compiled by H. H. Hayter (Based on system proposed by Dr Farr and Dr M. d'Espine at International Statistical Congress 1855-56)	<i>Victorian Year Book</i> 1877-1878	1861-1885
The Nomenclature of Diseases drawn up by a Joint Committee appointed by the Royal College of Physicians of London. First Revision 1885	<i>Victorian Year Book</i> 1886-1887	1886-1906
Bertillon Index of Diseases (International List of Causes of Death, First Revision 1900)	<i>Statistical Registers</i> 1907-1909	1907-1909
International List of Causes of Death, Second Revision 1909	} <i>Manual of the International List of Causes of Death</i> }	1910-1921
International Classification of Diseases and Causes of Death, Third Revision 1920		1922-1930
International Classification of Diseases and Causes of Death, Fourth Revision 1929		1931-1939
International Classification of Diseases and Causes of Death, Fifth Revision 1938		1940-1949
International Classification of Diseases and Causes of Death, Sixth Revision 1948	} <i>Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death</i> }	1950-1957
International Classification of Diseases and Causes of Death, Seventh Revision 1955		1958-1967
International Classification of Diseases and Causes of Death, Eighth Revision 1965		1968-

During the early years of settlement disease took a very heavy toll; even in the 1890s eleven out of every 100 born alive did not survive one year. Of these deaths, more than one quarter were from preventable diarrhoeal disease, and even in the early 1900s infant deaths from this cause were nearly nine in every 100. There has been a marked decline in the infant mortality rate from 118.97 per 1,000 births in 1863, when infant mortality was first recorded, to 14.5 in 1970, and an indication of this trend may be seen from the figures in certain intervening years: 1900, 95.39; 1920, 73.70; 1940, 39.45; and 1950, 20.09. The decline in the neo-natal mortality rate (deaths under one month of age) from 41.9 per 1,000 in 1867 to 10.4 in 1971 reflects the improving standards of ante-natal care, obstetrical care at birth, and paediatric care in the post-natal period. One of the greatest challenges is that of immaturity, the leading cause of death in neonates, particularly during the first week of life. However, the most significant factor has probably been the work of the infant welfare movement, the first centre of which was opened in 1919. It became a specialist branch of the Department of Health in 1926. There have also been basic social changes affecting standards of living and education.

Although improved standards of diagnosis and alterations in nomenclature have complicated direct comparison between statistics of earlier and more recent periods, the statistics nevertheless reflect the general trends in epidemic diseases. Gastro-intestinal illness was the greatest scourge between 1835 and 1887 and was significantly aggravated by the arrival of migrants following the discovery of gold in 1851. At one period over 3,000 left Melbourne each week for the fields, where muddied streams were used for washing gold as well as for drinking water and ablutions. By the end of the 1850s, when alluvial mining gave way to quartz mining, the mobile population began to settle, and control was essential to provide safe water supplies and to introduce some basic hygienic measures. The first Public Health Act was passed in 1855, and Dr William McCrea was appointed President of the Central Board of Health. As Chief Medical Officer, he had previously referred to the undrained, crowded, badly ventilated, and filthy state of Melbourne. Infectious diseases had been spreading, particularly among the young, and of the 23,906 born in 1863, 2,844 failed to complete the first year of life. In 1889 a Royal Commission was appointed to inquire into sanitary conditions, and its report was critical of low standards. An important result was the creation of the Melbourne and Metropolitan Board of Works to take over responsibility for the water supply, drainage, and sewerage, and in 1897 water borne sewerage and underground drainage were introduced in the metropolitan area.

#### *Gastro-intestinal diseases*

For the triennium 1860–1862, when the population of Victoria was about 540,000, the annual average deaths caused by the major intestinal infections were diarrhoea 694, dysentery 646, and typhoid fever 401. For the triennium 1900–1902, the averages were 298, 97, and 207, respectively. No deaths from typhoid fever were recorded in the triennium 1968–1970; there was an annual average of 56 deaths from diarrhoeal disease (including dysentery) over this period.

Typhoid fever was the most dreaded of the gastro-intestinal diseases because of the suffering caused and the high fatality rate, which was between 15 and 20 per cent, and it may be used as a model to illustrate the development in hygiene and sanitation. The decline in incidence after 1890 was most marked in the Melbourne metropolitan area, and although there was a resurgence in 1898, there has been a general downward trend since then, interrupted only by sporadic food-borne epidemics. Although no cases due to reticulated water have been reported, there were three epidemics in which milk was responsible. Milk from Jolimont was responsible for 43 cases in 1879; in 1931, 35 patients had the origin of their illness traced to a source in Chelsea; and 23 deaths were recorded among the 433 patients of the Moorabbin epidemic in 1943. Apart from the impact of public health measures, which include water supply, food control, sewage disposal, general sanitation, the isolation of infected persons, and the tracing of the source of infection in human carriers, typhoid as a fatal disease has been controlled since the advent of chloramphenicol. This broad spectrum antibiotic has reduced the case fatality rate to a negligible level in all except the most advanced cases.

This control has not been paralleled in certain other diarrhoeal diseases such as dysentery, where traditional public health measures are not so successful if personal transmission is involved. Fortunately mortality is low owing to the mild nature of most of these diseases, as well as to the use of modern drugs and supportive therapy.

In 1880 diarrhoea was second only to atrophy as the commonest cause of death in infants under one year of age, but during 1970 only twelve infants died in their first year of life from diarrhoeal disease out of a total of 1,060 infant deaths from all causes.

#### *Scarlet fever*

Scarlatina (scarlet fever), caused by the bacterium streptococcus, was considered in 1865 to be one of the most devastating of all diseases and during 1875 and 1876 a total of 3,225 persons died out of a population of approximately 800,000, the disease sometimes killing entire families. An early quarantine station in Victoria was established at Point Nepean in 1862 as an emergency measure to house victims of a scarlet fever epidemic which had developed on board the American ship *Ticonderoga*. This vessel arrived with 646 passengers, most of whom were Scots from the Shetland and Orkney Islands. One hundred passengers and crew died on board and another seventy-eight after landing.

There has been considerable scientific conjecture about the marked fluctuations in case fatality rates at that time. It was usually mild in character when first diagnosed in 1841, but in 1848 it assumed a malignant aspect, with severe and rapidly progressive symptoms, culminating in the deaths of large numbers of victims. The epidemics of 1875 and 1876 were the most serious communicable disease outbreaks to have affected children in Victoria, but at the beginning of the twentieth century a much less virulent form developed. This trend is reflected in a comparison of the mortality from 1871 to 1880, when there were 4,101 deaths, with 1901 to 1910, when 188 deaths occurred. Although scarlet fever remains a relatively common disease in the community, death is now rare, and between 1961 and 1970 only two deaths from scarlet fever and streptococcal infection were registered

in Victoria. The success in specific therapy resulted from the chemotherapeutic drugs, the sulphonamides, in the early 1940s, followed by penicillin a few years later.

#### *Measles*

Measles first appeared in Victoria during 1850, when it was introduced by passengers of the ship *Persian*. As the natural immune status of the community was low, a subsequent high attack rate during epidemics became manifest every 4 to 6 years. As with scarlet fever, death was all too frequent, particularly in 1875 when 1,541 persons, mostly children, died, a mortality rate of 194.9 deaths per 100,000 of the population. From 1871 to 1880, and 1891 to 1900, the loss was 2,080 and 1,523, respectively, and it was the leading cause of death in 1880 among children aged between 1 and 5 years. During the respite between the epidemic years, the deaths dropped sharply. The last of the crippling episodes occurred in 1898, when 671 deaths were recorded, a mortality rate of 56.8 per 100,000. The character of the disease changed after this period, however, and the death rate declined to less than 10 per 100,000, except in 1920 when 220 persons died, a rate of 14.5 per 100,000. There were only 45 deaths between 1961 and 1970 in a population of approximately three million, and because of the use of chemotherapeutic drugs since the early 1940s, most deaths have been caused by secondary bacterial invasion with subsequent pneumonia. Public health agencies now aim to eradicate the disease by mass vaccination of children.

#### *Tuberculosis*

Insanitary conditions on migrant ships as well as in the Colony encouraged the spread of pulmonary tuberculosis (phthisis). It was the leading cause of death, and the bovine type of tubercle bacillus was also rife through consumption of raw milk from infected dairy cattle. There were 230 deaths per 100,000 of the population from all forms of tuberculosis in 1854, but by 1871 the death rate had fallen to 146 per 100,000. This trend did not continue, however, and in 1887 the rate had risen to 172. From that time onwards there has been a continuous decline; the mortality rate in 1970 was 1.4 and the crippling non-pulmonary forms of the disease affecting bones have become a rarity.

The decline of tuberculosis mortality after 1887 is not completely understood but it was not peculiar to Australia and may have been the result of any number of factors, including a possible change in the virulence of the organism (this has been discounted by some authorities), or economic changes such as better housing, improved nutrition, better working conditions, and improvement in personal hygiene. The improvement in the first decade of this century was not spectacular, although the mortality rate per 100,000 did fall from 149 in 1901 to 103 in 1911. The impact was felt after 1948, when streptomycin was introduced, followed by P.A.S. and isoniazid. The average annual mortality rate for the years 1940 to 1942 was 44 per 100,000, and by 1950 to 1952 it was down to 17; by 1970 it was down to 1.4. Pulmonary tuberculosis has been the major cause of the tuberculosis mortality. Improved surgical measures, anaesthesia, and supportive therapy have played an important role as well as the chemotherapeutic and other life saving drugs. During the early years preventive

measures were not developed, and it is only since the 1920s that direct anti-tuberculosis activities have had a significant effect. These include early detection by mass X-ray surveys which became compulsory in 1963, the routine tuberculosis testing of school children, and the administration of B.C.G. vaccine to all children of 11 years and over who are negative reactors to the Mantoux skin test. The majority of active tuberculosis sufferers are eligible for the Commonwealth Tuberculosis Allowance ; this encourages patients to enter sanatoria without undue financial hardship, and as a public health measure helps to prevent infection by removing a potential reservoir of infecting organisms from the community. The pasteurisation of milk has been of value in preventing transmission of the bovine organisms to humans, and the Department of Agriculture is pursuing a test and slaughter scheme aimed at eradicating tuberculosis in dairy cattle. The diminution in the death rate from tuberculosis has been most remarkable in young persons ; until recently, females suffered a higher incidence of mortality than males. At present, among elderly sufferers, more males are affected.

### *Cancer*

While it is apparent that refinement in diagnostic techniques must be considered as an important factor when comparing cancer mortality rates for the last century or more, the fact remains that more persons per 100,000 of the population are dying from this disease.

An important aspect of this problem relates to the age distribution of the population. There is now a population with an increasing number of elderly persons (the so-called "ageing population"), who will be expected to experience those diseases which commonly appear after middle age, including cancer and heart disease. In 1861, 1.49 per cent of the population was aged 60 years and over, in 1911 the proportion was approximately 7 per cent, whereas in 1966 it had increased to 12.4 per cent. Although the expectation of life at birth was calculated for Victoria from 1879 to 1910 only, and for the whole of Australia from 1881 onwards, the two sets of figures for the period 1879 to 1910 are comparable for both sexes. The life expectancy at birth in 1879 for males was 49.2, and for females 52.3 years. In the 1960-1962 life tables, these figures had risen to 67.9 and 74.2, respectively. Cancer is now the second most common cause of death after heart disease, and the average annual mortality rates have been rising ; the figures for 1860-1862, 1910-1912, and 1965-1967 were 15, 88, and 139, respectively, per 100,000 of the population. In 1969, 59 per cent of those cases of cancer registered in Victoria with the Central Cancer Registry were in persons aged 60 years and over. The greatest contribution towards the increasing death rate in this disease is cancer of the lung in males, with a risk of a fatal termination in approximately 95 per cent of patients.

The great advances in radiotherapy and surgery, together with supportive therapy and life saving drugs, have reduced mortality from cancer of the internal organs over the last 50 years, although the change has not been as great as for infective diseases. At present, early diagnosis and treatment offer the best chances of ultimate cure or prolongation of life. In 1958, therefore, the Anti-Cancer Council of Victoria began an extensive education



programme to overcome fears, and to encourage those who notice one of the so-called early warning signs to seek medical advice.

As the outlook for patients suffering from lung cancer is so poor, preventive measures are imperative. Efforts have been made to reduce the recruitment rate to cigarette smoking among adolescents. In women in Victoria, if one excludes skin cancer, cancer of the breast is the most common, followed by cancer of the uterine cervix (neck of womb), and in 1965 the Council began a campaign to encourage women to seek routine examination by their own doctors to detect early cancers of the uterine cervix, even before symptoms have appeared. At the same time, women are encouraged to practise self examination in order to detect early cancer of the breast. In both instances, early detection greatly enhances the possibility of cure.

### *Diphtheria*

The first death from diphtheria was recorded in 1858, with 509 deaths in 1859 and 792 deaths in the following year. In 1890 the figure for diphtheria and croup rose to 1,031, which is the highest recorded number, and in 1897 the death rate from these diseases was 27.0 per 100,000 of the population. Various attempts to combat the disease were made. In 1872 a Royal Commission appointed to inquire into infant mortality rates could only advocate the burning of sulphur to produce fumes as a treatment. In 1894, however, a diphtheria anti-toxin was introduced, and a marked reduction in the death rate resulted. The incidence was still high, however, and even in 1921 notifications reached 9,450. Diphtheria immunisation was introduced to Melbourne in 1924, when a toxin-antitoxin was used as a prophylactic, and the demand for this treatment increased until 1928, when a contaminated batch of the material caused the deaths of twelve children in Queensland. Within a few years, however, this mixture was replaced by the formalinised toxoid, and, as a result, notifications of the disease had fallen to 1,746 by 1938. The number recorded fell below 100 in 1957 and has only once exceeded 100 since that date. Only four deaths occurred between 1961 and 1970.

### *Diseases of the circulatory system—heart disease*

The effects of such aspects as changes in diagnostic practice and age distribution of the population need to be taken into account in a refined consideration of changes in the incidence of heart disease. Nevertheless it can be shown that a hundred years ago recorded deaths from circulatory disease, including heart disease, represented less than 5 per cent of all deaths, and this has increased progressively until in recent years more than 40 per cent of deaths are being recorded specifically to arteriosclerotic and degenerative heart disease.

The classification of causes of death in use in Victoria in 1853 included diseases of the heart under "sporadic diseases of the circulatory system", which in 1853-54 accounted for 85 out of a total of 5,826 deaths, or 1.5 per cent of deaths from all causes in that twelve month period. In 1861 the classification recorded circulatory diseases under "pericarditis", "aneurysm", and "heart disease, etc." Applying this classification to deaths for the period from July 1853 to December 1885 gave 976, 1,869, and 14,794 deaths under each category, respectively. The total of 17,639 deaths

from circulatory diseases was 5 per cent of deaths from all causes during the thirty-two year period.

With a revised classification from 1886 to 1906 circulatory diseases totalled 31,896 (9 per cent of deaths from all causes) including endocarditis, valvular disease, 7,073, pericarditis, 2,008, hypertrophy of heart, 281, angina pectoris, 365, syncope, 3,647, and other specific circulatory diseases, 2,961; a residual item "other diseases of the circulatory system" numbered 15,561 and included heart ailments, atrophy, dilatation, dropsy, fatty degeneration, spasm, and palpitation, as well as heart disease not otherwise specified, all of these being mentioned in the alphabetical reference list.

The Bertillon Index of Diseases, later to be the International Classification of Diseases, was adopted in 1907. Heart diseases from 1907 to 1921 were recorded as pericarditis, 335, acute endocarditis, 1,830, angina pectoris, 518, and organic diseases of the heart, 25,294. Conditions included in this last category were atheroma of heart, blood clot of heart, cardiac thrombosis, chronic endocarditis, chronic myocarditis, and rheumatic heart disease. Diseases of the coronary arteries were assigned to "diseases of the arteries", 2,718 for the period, along with cerebral arteriosclerosis and general arteriosclerosis. Deaths from circulatory diseases in this period were 14 per cent of deaths from all causes.

From 1922 to 1930 heart diseases were recorded as 226 to pericarditis, 1,422 to infective endocarditis, 92 to other acute endocarditis, 105 to acute myocarditis, 1,159 to angina pectoris, and 17,836 to other diseases of the heart in a total of 24,619 deaths from diseases of the circulatory system. This was 17 per cent of deaths from all causes.

The classification introduced in 1931 provided, for the first time, a separate category for diseases of the coronary arteries. From 1931 to 1939, 115 deaths were recorded to pericarditis, 376 to acute infective endocarditis, 38 to other acute endocarditis, 4,414 to diseases of coronary arteries, and 5,101 to chronic endocarditis, valvular diseases. Diseases of the circulatory system totalled 44,916, being 27 per cent of deaths from all causes.

From 1940 to 1949 deaths from heart diseases were recorded as 130 to pericarditis, 235 to bacterial endocarditis, 32 to other acute endocarditis, 4,666 to chronic affections of the valves and endocardium, 36,381 to diseases of the myocardium, 17,874 to diseases of the coronary arteries and angina pectoris, and 3,588 to other diseases of the heart. Diseases of the circulatory system, 69,629, were 33 per cent of deaths from all causes.

The comparability of figures given above from one period to another should be viewed with caution because of possible effects of factors such as changes in the classification, changes in diagnostic patterns, and the effects of an older age structure of the population. For example, deaths from acute cardiac infarction which are often sudden, in the earlier years of this century could have been attributed to apoplexy, stroke, syncope, sudden death or other ill-defined causes, or senile debility in the case of the aged. In the 1930s myocarditis was frequently diagnosed, but many of these cases would now be recognised as ischaemic heart disease.

From 1950 to 1967, 356 deaths were recorded to rheumatic fever with heart involvement, 3,970 to chronic rheumatic heart disease, 129,952 to arteriosclerotic and degenerative heart disease, including coronary disease,

12,635 to other diseases of the heart, and 8,768 to hypertension with heart disease. Deaths from circulatory diseases were 180,076 or 40 per cent of deaths from all causes for the period. Deaths from arteriosclerotic and degenerative heart disease have been analysed in age groups for triennia about the Censuses of 1954, 1961, and 1966 and rates per 100,000 population in each age group are given below :

VICTORIA—DEATHS FROM ARTERIOSCLEROTIC  
AND DEGENERATIVE HEART DISEASE:  
RATES PER 100,000 POPULATION

Period	Age group			All ages
	15-34	35-64	65 and over	
	MALES			
1953-1955	6.31	284.97	2,632.65	294.02
1960-1962	5.39	330.72	2,718.40	307.27
1965-1967	4.41	364.82	3,001.83	333.31
	FEMALES			
1953-1955	1.76	96.53	1,754.56	207.38
1960-1962	1.71	96.08	1,662.56	201.71
1965-1967	1.47	106.49	1,827.84	222.86

The problem of heart disease, and for that matter other circulatory diseases, is not only to be measured in terms of mortality, which is not restricted to older age groups, but also having regard to permanent or temporary disablement and the combined effects of all these in welfare and in the economic sense. Considerable research is being undertaken into the identifiable risk factors such as stress, overweight, and smoking, as well as the needs and rehabilitation of the invalided, and resources are being brought to bear on this national problem by the National Heart Foundation, which provides assistance to both the public and the medical profession, as well as by government and private research.

PART TWO

---

*Rural and Urban  
Development*

# 1

## THE LAND

---

### NATURAL RESOURCES CONSERVATION

#### *Basic factors*

Conservation of natural resources means their wise use and management to provide for all the needs of the community. This demands the setting aside of areas for all these purposes and their subsequent management in a manner which will ensure that their usefulness for the chosen purpose will be maintained. As population increases, some of the less significant needs of the past become more pressing needs in the future.

Natural resources originally available in Victoria depended on the character of the different types of land and their varying capabilities. The character of land is determined by the particular combination of its features such as its geology, topography, soils, hydrology, flora, fauna, and the climate of the area in which it is located. The pattern of distribution of different kinds of land is the result of a long period of interaction between the features to produce different combinations of them from place to place. Particular communities of plants and animals are associated with certain soils in particular climatic, geologic, topographic, and hydrologic situations. Where similar conditions have prevailed, there have been similar interactions to produce similar types of land with similar character and capability.

The seemingly unchanged character of any particular kind of undisturbed land does not mean that it is a static system. In fact there is a continuing interaction between the features to produce a dynamic stability, at which there is the highest possible sustainable production which can be attained from the array of plant and animal species in the locality. Although all types of land are naturally stable, some are inherently more stable than others when changes are imposed on them. For example, in those situations where the climate, topography, and soils provide favourable conditions for a large number of plant and animal species such as on volcanic tuffs in good rainfall areas as at Ballarat or Koroit, there is a high degree of stability. Where the conditions are only suitable for a few highly specialised plant and animal species which have evolved to exist under such conditions, such as the Bogong High Plains (cold environment) or the hot arid north-west, the stability is precarious.

The character of the land determines its potential as a natural resource, its capability of being changed by man to suit his own purposes, and how far its stability and productive capacity are affected when these changes are

made. Much of the land in Victoria is the result of a long evolutionary period on old land surfaces, frequently on parent materials naturally deficient in plant nutrients and with a peculiar array of plant and animal species not found in other parts of the world. When European settlers arrived they found an unusual environment in which the natural biological productivity was not of much value to them. They were faced, therefore, with the task of changing the land by clearing, burning, and cultivating so that more useful species of plants and animals could be introduced.

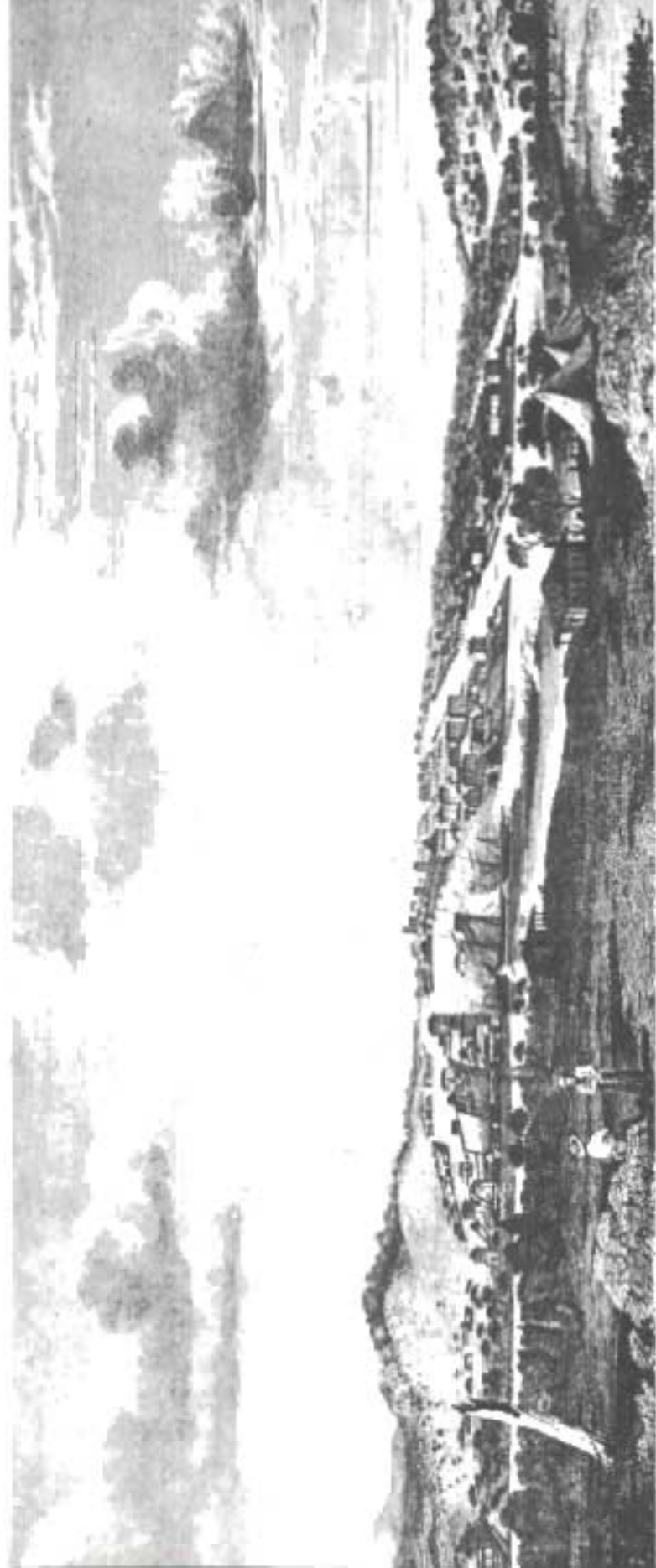
Their efforts affected the land in different ways because they did not understand the nature of the dynamic systems on which they were imposing significant and drastic changes. On land having an inherently weak stability, such as the light textured soils of the Mallee, the effect of man was to create almost immediate instability and there was soil erosion and loss of productivity. On other land such as the Eppalock catchment, constant hard grazing of vegetation not evolved under such conditions and the introduced close-cropping hard-hooved animals caused gradual degradation and instability many years later. Current forms of soil erosion, such as tunnelling and salting, are the result of this unknowing misuse. Many plants and animals which were introduced provided the basis for productive agriculture; others, such as the blackberry and the rabbit, having been introduced into environments which suited them, at times became almost uncontrollable pests.

On some inherently stable land man has been thwarted in his attempt to convert it to his purpose. The changes he has made merely provided conditions for another set of vigorous native species to dominate and retain the stability of the system, often at a lower level and in an even less useful form of biological productivity. In south Gippsland, some land cleared of forest has now become overrun by bracken or blackberry. Man's knowledge of the land has, however, improved. Not only are fewer mistakes being made in land use and development, but also the effects of past misuses are gradually being corrected. Nevertheless, some resources which were available initially have been lost, but more than sufficient remain to ensure that the various needs of the community can be satisfied if there is wise allocation and use of land for various purposes.

The resources available to the early Europeans did not provide all essentials for survival. They needed food and water, fibre for clothing, and timber for shelter and fuel. Although there was water and timber, the peculiar flora and fauna did not provide the food they desired or to which they were accustomed, nor did it produce fibre. Thus domesticated plants and animals were introduced. To grow and maintain these, arable and grazing land was required and accordingly the pattern of development was determined by the type of land available in areas which had water.

#### *Resources*

The environment at the time of settlement is illustrated by the available water resources and the nature of the vegetative cover. The original water resources as shown on the accompanying map can be described in three categories. First, there were areas in which the annual rainfall exceeded the annual use by vegetation and loss by evaporation, to give an excess of water. In these areas there were perennial streams, lakes, or swamps, and water



Melbourne from the south side of the Yarra River, 1839.  
*La Trobe Collection. Image Library of Victoria*



Mail coach from Geelong arriving at Ballarat, 1854.  
*La Trobe Collection, State Library of Victoria*

The main road in Ballarat East, 1859.  
*La Trobe Collection, State Library of Victoria*



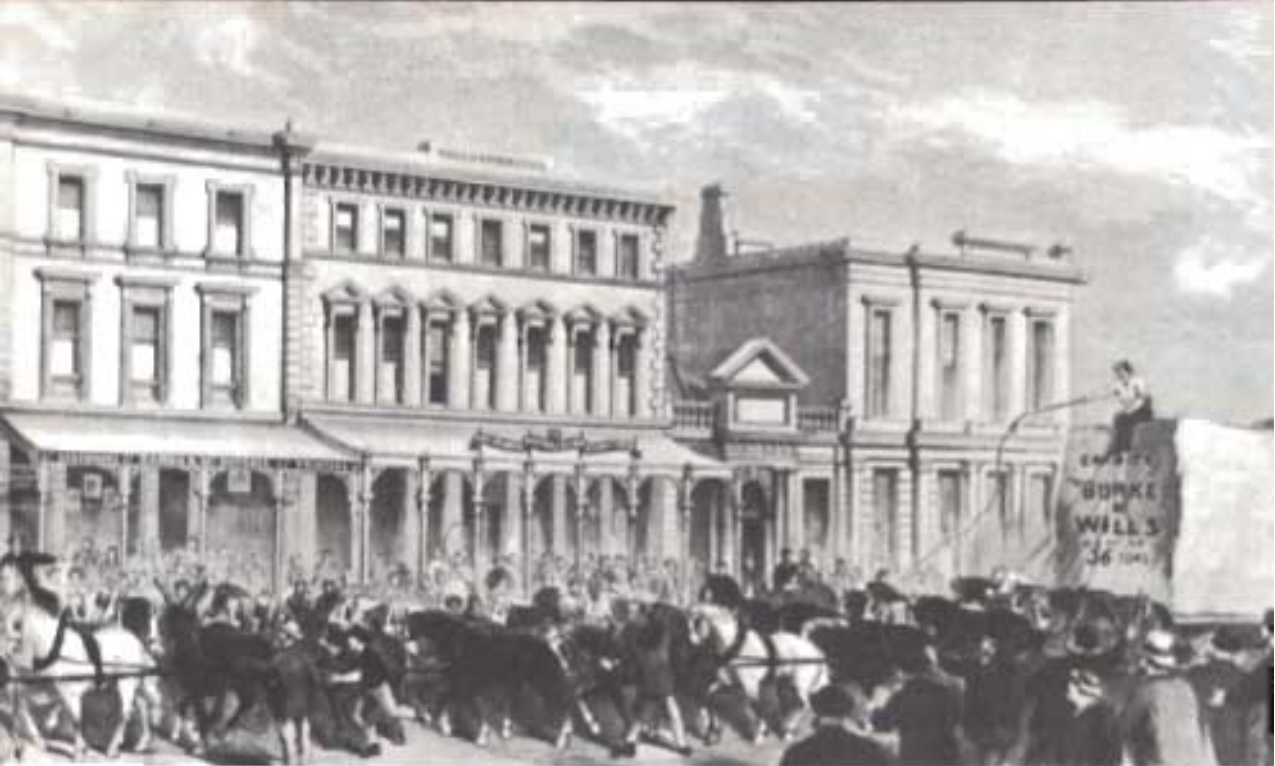




Golden Square, Sandhurst (Bendigo), c. 1875.  
*La Trobe Collection, State Library of Victoria*



Pall Mall, Sandhurst (Bendigo), 1864.  
*La Trobe Collection, State Library of Victoria*



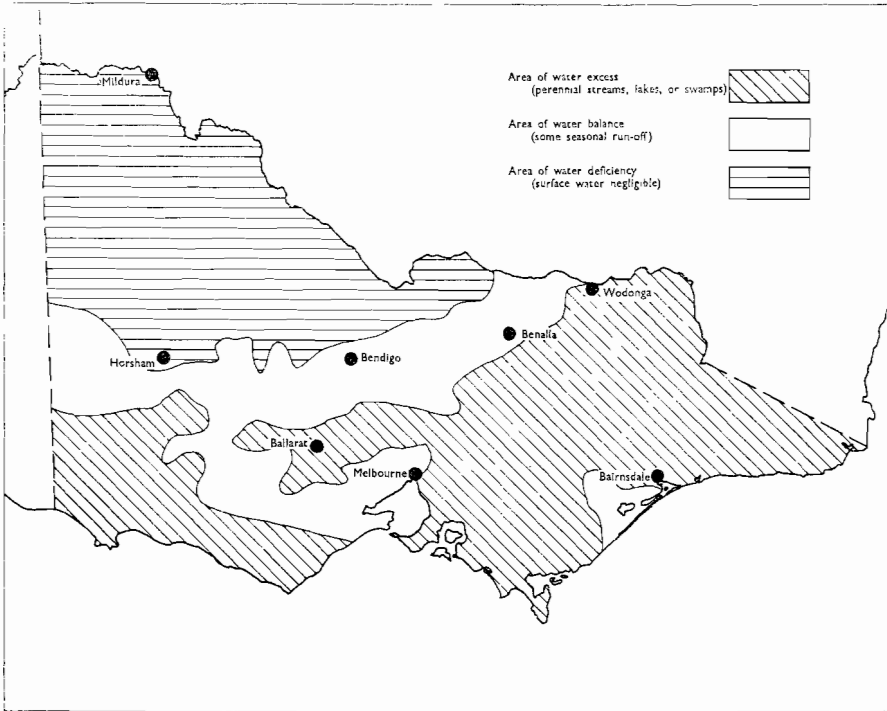
The monolith commemorating the expedition of Burke and Wills being moved along Collins Street, September 1864

*La Trobe Collection, State Library of Victoria*

Governor La Trobe's cottage at Jolimont in the early 1850s

*La Trobe Collection, State Library of Victoria*





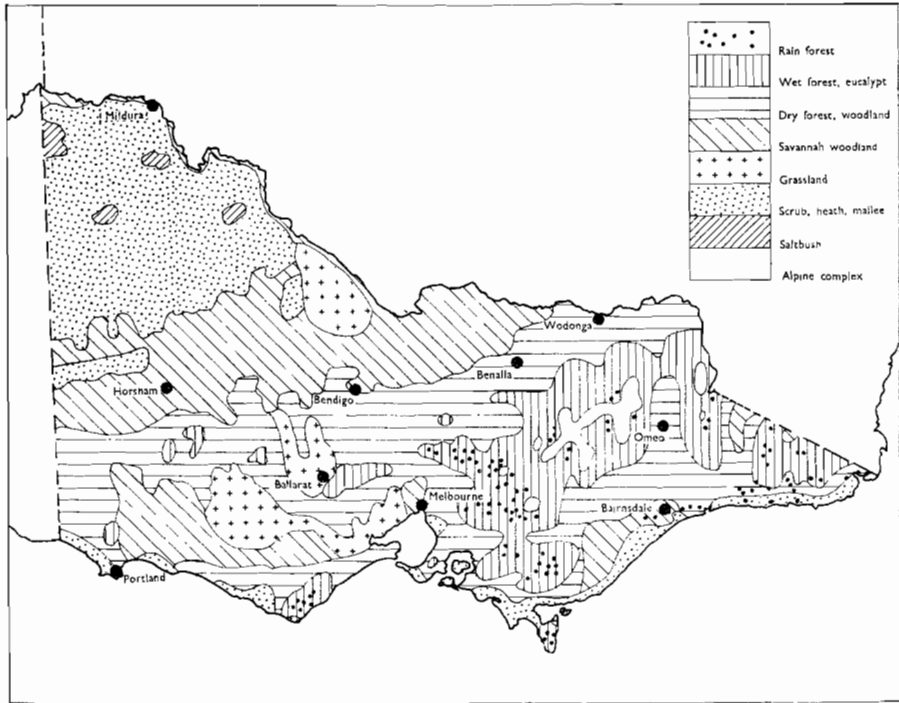
Victoria—Original surface water resources (generalised). R. G. Downes

was readily available. Second, there were areas in which the rainfall only just balanced the needs of the vegetation and so run-off was infrequent, local, and seasonal. In these areas, water was available in a few major perennial streams having their origin in areas of water excess, but, away from the streams, the settlers were forced to collect the occasional run-off in surface storages. Third, there were areas in which there was a water deficiency, and, although a few streams from wetter areas flowed into this country, they were mostly dry during the summer.

The nature of the original vegetative cover is shown in the following map, and indicates the degree of ease or difficulty with which the land could be used for cultivation or grazing. The areas most useful to the settlers were those which were already devoid of trees, such as the grasslands of the Western District and some parts of central Victoria, or alternatively, the savannah woodland, in which the trees were sparsely scattered, the native grass beneath them suitable for grazing, or the soil suitable for cultivation after clearing. The next most useful areas were those of dry forest which could be converted to pasture land by the simple but laborious job of ringbarking.

Melbourne was ideally situated for the early settler. It was reasonably close to an area of water excess and to good forests; nearby were grasslands and savannah woodlands, and these in fact were some of the earliest of the settled areas to be used for productive agriculture and grazing.

Before the passing of the *Land Act* 1869, which stimulated more dense settlement, most of the land was held in large runs for grazing. Around the towns and the goldfields there were areas of local agriculture, and

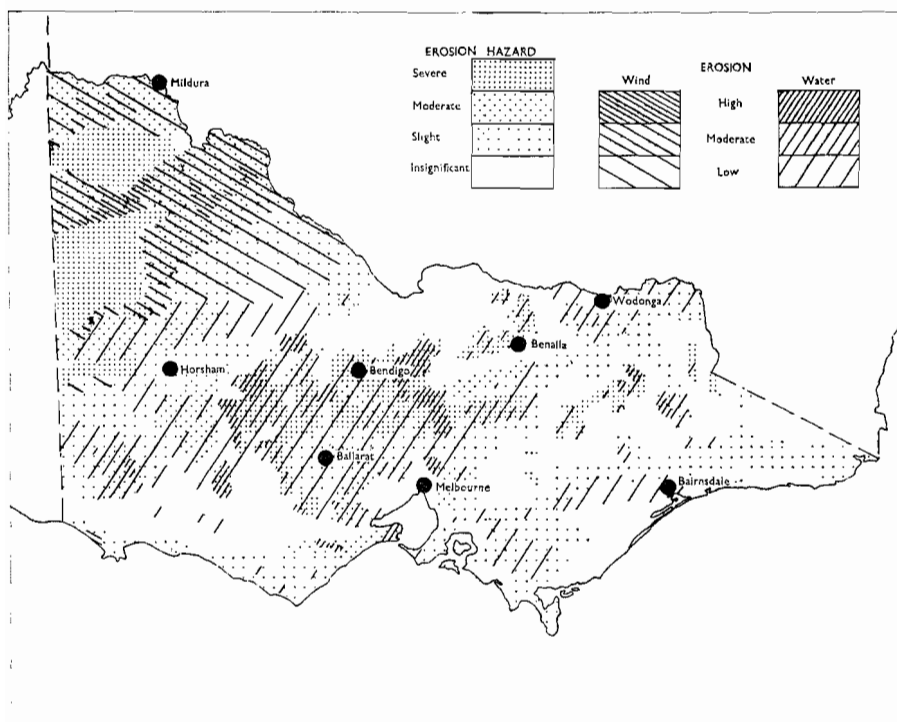


*D. H. Ashton and R. G. Downes*

Victoria—Predominant original vegetation (generalised).

forests near these settled areas were used extensively to provide timber and firewood. The rest of the country, however, was still in good condition because the grazing was not heavy. The more dense settlement began to create problems of instability. Cultivation up and down the slopes to accomplish "drainage" initiated gullies in areas north of the Great Dividing Range where it is now known that moisture conservation is important for success in arable agriculture. More intensive grazing on much smaller holdings caused a degradation of pasture cover, increased run-off, and the uneven absorption of water. These phenomena are now known to be the cause of the slow initiation of tunnelling or salting, and eventually the rapid degradation of land as has occurred near Stawell, Benalla, and Eppalock. On areas where the soils had higher fertility and better structure near Ballarat and Colac, and in Gippsland, few problems arose because these soils were better able to support the imposed use.

In later years some misuse of the land became apparent. The clearing of high class forest country in some parts of south Gippsland to create farms on steep exposed country did not succeed agriculturally and in fact rapidly destroyed a timber resource which would have been extremely valuable today. In the development of the Mallee country not only did some farms fail economically for some decades, but clearing also caused considerable destruction of productive resources under the original farming system of crop-fallow. The consequent soil erosion created maintenance and management problems for water supply, roads, and railways. A general picture of the effect of past land use is given in the following map, which



*R. G. Downes*

Victoria—Inherent erosion hazard and the occurrence of soil erosion.

shows the inherent erosion hazard of the different kinds of land, and the degree and extent to which soil erosion has occurred.

On the other hand, from the beginning of settlement some land has been used well; for example, the use of phosphatic fertilisers and later trace elements with various introduced legumes and other pasture species has improved productivity on grazing lands. Wider rotations have therefore been possible, as well as more stable systems of cereal-animal farming in the drier areas such as the Mallee where erosion was a serious menace. Improved productivity has been helped by the breeding of more suitable varieties and strains of plants and animals, and by checking diseases and pests.

Water conservation has also helped to increase productivity. The control of the water resources by the State subsequently implemented by means of a statutory authority was most significant. Water conservation in zones of water excess, and the control of rivers and streams to give more reliable flow throughout the year and water for irrigated agriculture, have enabled some semi-arid areas to be developed for highly productive agriculture. But some irrigation areas were not successful. The original notion that any arid land only needed water poured on it to grow crops successfully was shattered when some kinds of irrigated land in northern Victoria developed salinity and drainage problems. Another important aspect of water conservation was the provision of the domestic and stock supply for the dry north-western part of the State. Without this the Mallee, parts of which are now useful and productive, could not have been developed.

Forest resources were used rather prodigally in the early days ; there seemed to be no end to them. Fire was the main instrument in destroying forests ; graziers often burned areas in an attempt to produce ground forage for their animals, and this led to the deterioration of the forest resource in some areas. For example, a most valuable timber species, mountain ash, has not survived in a considerable part of its original habitat. Since then the trend has been reversed by setting aside areas of dedicated forests and establishing a statutory authority for the protection and management of all State forest resources.

The conservation of flora and fauna received little attention in the early days of settlement as there appeared to be a boundless source of wildlife and plenty of areas of untouched country. Furthermore, the scientific importance of reserving special areas was not understood. A few species appear to have been lost for all time ; others such as the koala and the platypus were reduced to small numbers and would have been exterminated if a conscious effort had not been made to preserve them. Although the loss of species may have been due partly to predation by man, undoubtedly the main cause for the diminution of numbers of certain species has been the continuing loss of habitat which is essential for their survival : river control along streams has altered the environment to such an extent that the native fish now find it difficult to breed and survive ; the introduction of exotic fish species has affected native populations ; the excessive drainage of swamps has reduced the habitat for water-birds ; competition for food by sheep grazing in certain areas has caused a decline in some species, notably the Mallee fowl ; and persistent and frequent fires in forest areas have altered the plant communities to the detriment of particular animal species.

#### *Patterns of settlement*

During the early stages of settlement the urgency and need to occupy the country stimulated exploration and subsequent settlement on large holdings on which little improvement was carried out. Except for areas near to the centres of population the main form of land use was open range grazing. The second stage came when the increased population created a pressure for land and a demand for different products. Closer settlement, by breaking up the large holdings for more intensive use, was followed by clearing, fencing, and the development of agriculture. At this time farmers very often mismanaged their land, mainly because they were over-optimistic about its potential and ignorant of its inherent instability. The clearing and cultivating of unsuitable areas such as the western Millewa, and the more intensive stocking of pastures elsewhere, showed their effects both on the land and on the settlers.

In the third stage there was a sorting out of land potential and suitability for different forms of production, mainly on the basis of economic success or failure, rather than on the basis of any reasonable study of the land or its reaction to the uses imposed. The final stage was the technological improvement of the forms of land use found suitable for different types of country. This now includes the study of the land, its hazards, and capabilities as the basis for soil conservation and determining the most appropriate systems of land use for a high level of permanent production.

By comparison with many other countries, significant changes to the environment by man in Victoria have been of recent origin. Although the full implications and effects of these changes are not yet known, there are sufficient areas in various stages of development to show the nature of the problems which can arise and to indicate how quickly the land resource can deteriorate when improper systems of land use and management are imposed.

In retrospect a major misjudgment in land development and use appears to have been the failure to preserve in their natural condition areas of many productive types of land. By this omission, all future generations have been denied the possibility of scientifically studying and knowing the original nature and dynamics of these important types of land.

Just as there were evolutionary stages of development in the use of land, so too there were evolutionary stages in man's attitude towards the land and its resources. In a newly-settled country the first stage is inevitably exploitive. Settlers are always hopeful of making a fortune and returning to their former homes with quickly acquired wealth. This applied not only to the first settlers coming from Europe, but subsequently to those from settled areas who went to pioneer new land in another part of the State. Few such people envisaged living their whole lives in newly settled areas. Those farmers who were unsuccessful in this objective did one of two things: they either abandoned the land and went elsewhere, or they realised that they could make a living but not a fortune, and that this was to be their home and that of succeeding generations. The development of this attitude has been followed by consolidation, conservation, and improved productivity up to a level which can be maintained. Instead of abusing the land to make a fortune, the farmers began to use it within its capabilities to make a permanent living. Most people now have this attitude and are looking towards conservation.

#### *Conservation*

In this last stage basic problems of certain difficult kinds of land are better understood. Technological advances have opened the way towards determining more appropriate systems of land use and management, and the changes are gradually being made. Further, there is a better understanding of the overall needs of the community in the use of its land. The early settlers only had to worry about uses which provided for their subsistence. They did not have to concern themselves about the need for open space for recreation and enjoyment, or for the preservation of particular types of land for scientific study, or for the preservation of particular communities of plants and animals. They were not worried by the increasing need for land for transport and communications, nor by the rapid expansion of urban areas, nor the need for carefully selecting areas for industrial uses so that insurmountable pollution problems could be avoided.

The Government has accepted responsibility for conservation of natural resources within a broader context. Apart from having individual departments and statutory authorities whose functions are specifically directed to the conservation and better use of individual resources, a more integrated approach to the assessment, development, and use of the State's natural resources is being made. The Land Conservation Council has the

statutory function of advising the Minister about the future use of Victoria's public lands, as well as of assisting the Soil Conservation Authority in the protection of water supply catchments from bad land usage. The State Planning Council has been established to develop planning policies to guide town and country planners in the development of plans for the future use of land, with particular emphasis on the problems of the urban-rural fringe, and the provision of public utilities required for a rapidly increasing population. The Environment Protection Authority, aided by its advisory Council, is responsible for protecting and improving the environment, particularly with regard to the prevention of pollution due to the discharge of waste matter. All these authorities are helping to provide a higher quality environment as a suitable habitat for human beings.

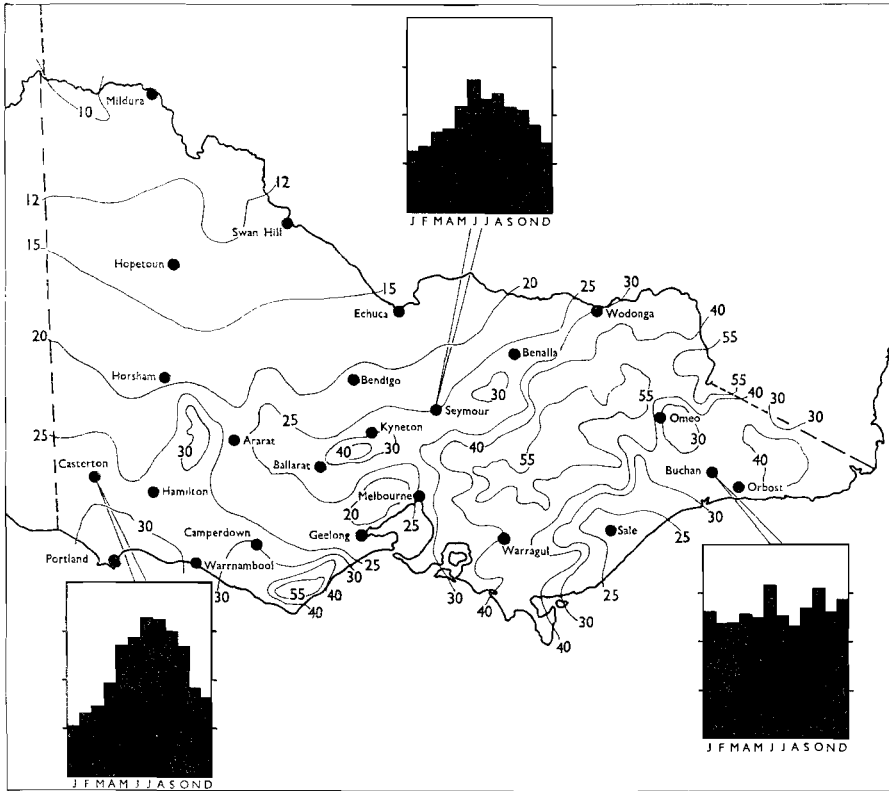
#### CLIMATE

Climate is described here as one of the main influences which the early settlers encountered—something which had controlled the vegetation of the countryside as they found it, and something which had limited, and still limits, man's success in growing crops.

Victoria covers a wide range of climates, from the almost drought-free western coast to the edge of the continental desert, and from the mountains with their winter snow to the hot inland. The snow country is of only small extent, and the major concern in Victoria, as in most of Australia, is how dry the weather is and for how long. This is so whether one is interested in the native plants or in the introduced economic crops; among the native plants the dominance of the eucalypt is evidence of the long dry periods which marked past centuries and which still limit man's use of the land. The starting point, then, is the map of average annual rainfall. This shows, first, the general decline of rainfall in going inland from the coast (best seen in the western half) and, second, the concentration of rain in the highlands. Besides the effects of elevation and distance from the sea, minor features can be seen, of which the rain shadows in southern Victoria, lying south-east and north-east from the high country, are of most interest.

The whole of Victoria can be thought of, as a first approximation, as having a dry and warm to hot summer and a wet and cool winter. In the far west of the State this "mediterranean" feature of dry summer and wet winter is simply shown by the monthly average rainfalls. The further east one goes, and so the closer to the Tasman Sea, the greater is the contribution of summer rain to the total as shown by the graphs on the average annual rainfall map. Yet even with an approximately equal distribution of rain through the twelve months (as in Melbourne, midway from west to east) the effective rain is far greater in winter and spring than it is in summer, when the soil's reserves of water are rapidly transpired into the air during the dry spells. Thus the popular idea of summer as the dry time and winter as the wet is correct not merely in terms of hours of rainfall (which are much greater in the winter), but in terms of plant utilisation as well. Further, the rain falling during the summer months is unreliable, being derived from erratic inflows of moist sub-tropical or tropical air, while the winter-spring rain, being derived from regular depressions in the westerlies to the south, is reliable.





*Based on Commonwealth Bureau of Meteorology map*

Victoria—Average annual rainfall, and monthly distribution at selected stations. Isohyets in inches (generalised). The three graphs show the average monthly rainfall distribution in inches at Casterton, Seymour, and Buchan, illustrating the change from predominantly winter rainfall in the west to a more even distribution throughout the year in the east of the State.

The most obvious contrast among climates is in terms of latitude, which also means distance from the coast. But the commonly quoted and more helpful contrast is in terms of the Great Dividing Range. The cool and moist south-westerlies coming off the southern seas often bring cloud or showers to coastal and rising country in the south, but after crossing the Divide the same winds may form little cloud; the weaker southerlies may not even persist into the hot north-east during summer. The north is a good deal hotter than the south in summer. The mean January maximum is below 80°F. in the south, and is over 85°F. in the Mallee, northern Wimmera, and generally over the northern plains. In winter skies are clearer in the north than in the south, but the average temperature is much the same; the more frequent blanket of cloud in the south makes for milder nights, with less range of temperature.

A marked feature of Victorian climates is the regular changes of weather. While changing weather is a feature of the temperate latitudes, the most

southerly parts of the Australian mainland are unusual in that a continent which is warm to hot for most of the year adjoins a cool ocean along a line from west to east ; so, most of Victoria is dominated in turn by warm air from inland and by cool moist air from the ocean. As the weather systems travel from west to east, there is a cycle starting from cool, warming up, then going rapidly back to cool, a cycle which varies greatly in length but is often from five to seven days. The weather during much of the year can be thought of as dominantly mild with occasional invasions of hot air from the inland which raise the temperature 20°F. or even 30°F. above normal.

The hot northerlies are associated with bush fires. At a temperature of 100°F. and the common vapour pressure of 12 millibars, the relative humidity falls to 18 per cent, and on some of the worst days it has fallen to below 10 per cent. In this condition the forest is easily ignited during the hottest four to six hours of the day. Most of the hottest days are dry. On a few days in each summer the vapour pressure exceeds 17 millibars, which could be called a dividing line between humid and non-humid days ; on most of these moister days the temperature is not high. There is not much difference in this respect throughout the State, although the west is drier than the east.

Days much colder than average are rare; the southerlies of winter and spring are seldom derived from sub-antarctic latitudes. But on rare occasions there is a really cold invasion, and dry snow has fallen at sea level in southern Victoria. Snow falls on the higher land every winter, and lies on the mountains from June to September. Ground frosts are common through the State on clear winter nights, but severe frosts (with air temperatures falling at night below 30°F.) are rare away from the mountains.

It is usually convenient to think of Victoria as a unit: the weather is changeable ; the summer is typically dry and the winter showery ; north of the Divide the summer is hotter; and many rain-bearing storms do not reach far inland. All this is a matter of more or less; often a wet season is a wet season and a dry season is a dry season throughout. But eastern Gippsland must be excepted from all these generalities ; if it belongs to any part of Australia climatically it is not to Victoria but to coastal New South Wales. Eastern Gippsland may have drought while western Gippsland is receiving ample rain from the regular westerly storms, or it may be deluged with rain from east coast cyclones which hardly affect the rest of the State. Summer here brings a higher proportion of the year's rain than anywhere else in the State.

#### *Variability of rainfall*

Average rainfall is a valuable figure to know, but it is necessary also to know how often the rainfall will be far above or below the average. For any one locality this information may be taken from the records, by noting (e.g., for Swan Hill) that while the average is 13 inches, the total has fallen below 8 inches four times in 50 years. One may compare the variability of two towns by recording the mean deviation as a percentage of the mean. When this is done it is found that the lowest variability (under 15 per cent) is in the Western District and the western part of Gippsland and the highest (over 20 per cent) is in the northern part of the State and the Mallee. While the Mallee is the most variable, it should be noted that most other parts of the world with the same low annual rainfall are even more variable. The western

coast has the least variable rain. Generally the greater the exposure to the south-west the more reliable the rain ; among the wetter areas, eastern Gippsland has the most erratic rainfall. This can be explained partly by the relative importance of its summer rain, and partly by its protection from the westerlies in winter.

The variability of the annual rainfall is itself a composite figure, since over most of the State the summer and early autumn months are erratic while winter and early spring months, with their more frequent showers, are reliable.

### *Droughts*

Both droughts and floods are of concern to most parts of the world since rainfall is everywhere variable, and in this Victoria is no exception. Floods are much less widespread than droughts in their effects in Victoria, and may be expected to become less important as more storages are built in the headwaters, so providing buffers against heavy rains, and as better drains are built in basins such as Koo Wee Rup, which was formerly subject to floods. But man cannot as yet order rain to fall on dry places, and the chief interest in variability lies in droughts, which show their effects both on native vegetation and on introduced crops.

Summer drought is a regular recurring event. Agriculture is adapted to it, mostly by using annual plants such as wheat and subterranean clover which make their growth from autumn to spring and have died before the summer sets in. The various perennial species of the native vegetation have survived according to the severity of the drought ; the time of surplus rain is during the cooler months of the year, and for the rest of the year the store in the soil is being used up. The time of annual stress is progressively longer towards the north-western corner of the State.

In speaking of drought, however, it is not a single summer which is considered, but rather a period in which the rain fails during the normally sufficient time of the year, namely winter and spring. Perennial plants then enter on the next summer without the normal reserves in the soil; reservoirs for cities, for stock, and for irrigation fall too low to do their duty for the next season ; and the annual crops and pastures fail with a dry spring. The fairly reliable spring rain is one great merit of the climate of much of Victoria.

The word "drought" may be used of one year (such as 1967, the worst recorded in much of Victoria), or of a succession of years with less than average rainfall. This second meaning is more common in the dry inland of Australia (where there is no regular wet season) than it is in Victoria. However, a succession of dry years will multiply the bad effects of one dry year. It must leave its mark on the native vegetation and may kill some perennials among the introduced plants ; it may cause great hardship to all those in city or country who depend on reservoirs.

### VEGETATION AT THE TIME OF DISCOVERY

Natural vegetation in Victoria is now confined mainly to areas too unproductive or inaccessible for agriculture, grazing, or intensive forestry. It is, therefore, to be found in national parks, wildlife and water catchment reserves, and undeveloped Crown land. Modification and replacement of original vegetation is virtually complete in large areas of the Mallee, the

Wimmera, the western and central parts of the State, and southern Gippsland. The original vegetation of the more fertile soils is conjectural and only fragments exist along road and railway reserves and in country cemeteries. Early descriptions of vegetation were mostly poor and fragmentary, and were nearly always evaluated in terms of potential land use for sheep and dairying. In this section each of the main divisions shown in the map on page 66 is described in turn.

#### *Grasslands and grassy woodlands*

The vegetation which first attracted the early explorers and settlers was the grassland and grassy woodland of the central, northern, and western areas. These areas ranged from treeless grassy plains to open park-like woodlands. Relatively treeless plains occurred on the heavy basalt soils west of Melbourne and through the drier Western District (rainfall 17–20 inches). Other areas occurred on parts of the northern plains. Tussocks of kangaroo grass were characteristic of this vegetation but numbers of spear grasses and wallaby grasses also occurred. Perennial herbs, particularly of the Compositae, were characteristic and were prevalent where burning was frequent. Temporarily wet areas contained tussock grass and lignum. River red gum lined the banks of streams.

The relatively open savannah woodlands occurred in the slightly wetter areas ranging to 30 inches rainfall. These were frequently burned. The trees ranged from 40 to 60 ft in height and the grass stratum was very well marked. These woodlands north of Melbourne and in the Western District were composed of river red gum on the drier and manna gum on the wetter areas. Volcanic hills were either treeless or were sparsely timbered with she-oak or manna gum depending on the rainfall of the region. Yellow gum was also an important tree of the western and northern plains. In the rain shadow of the Sale plains extensive tracts of forest red gum occurred. In the Wimmera the heavy soils carried open stands of buloke and grey box. In the northern plains woodlands of grey box, yellow box, buloke, and Murray pine occupied extensive tracts of country. The pine occurred especially on the drier and sandier soils.

River red gum or black box followed the watercourses, the latter where the flow was less reliable, and in the flood plain of the Murray these formed extensive, relatively dense, forests, the nature of which depended on the frequency and duration of flooding. The woodlands of red gum had an understratum dependent on the flooding regime ; in good seasons it consisted of abundant moira grass and cane grass.

#### *Dry open forest and woodland*

This area comprises a wide range of forms from grassy forest to heathy forest, with a rainfall from 25 to 40 inches. The eucalypts which dominated these stands were 50 to 100 ft high and showed great regional differences. The grassy forests tended to occur on the better soils and the heathy forests on the poorer. Grassy forests were dominated by grey box and yellow box and red gum on the better soils of the northern and western plains. In the southern areas of the Western District manna gum and swamp gum were common, while in the areas to the east of Melbourne the important trees were narrow-leaf peppermint, yellow box, long-leaf box, candlebark, messmate, and manna gum.

Low heathy forests occurred in the shallower soils of the northern plains as at Bendigo; red ironbark and red stringybark were dominant and pea shrubs and epacrids were common. In the sandstone areas of the Grampians and the poorer soils near Portland forests of messmate and brown stringybark occurred over a rich heathy understorey of bush peas, common heath, and grasstrees. Similar forests occurred in the ironstone-rich tablelands of the Central District, where messmate and red stringybark were common, and on the poorer sandy soils of southern and eastern Gippsland, where various forest types included messmate, yellow stringybark, white stringybark, silvertop, and yertchuk. The understoreys were similar to those further west, but contained numerous species such as geebung, acacia, and saw sedge, which are characteristic of New South Wales. In the far east of the State bloodwood and gum myrtle occurred, indicative of the tropical affinities of this part of the State.

Many areas of dry sclerophyll forest were relatively open, as observed by Howitt; McMillan, however, observed that some areas were very thick at the time of discovery. Many open areas were observed to have regenerated freely following occupation by Europeans, and previously grassed areas became shrubby and dense.

#### *Wet open forest*

With rainfall above 40 inches, the vegetation was tall wet sclerophyll forest with tall undergrowth and ferns in altitudes reaching to about 3,500 ft. The forests of mountain ash grew to heights of over 300 ft in areas with a rainfall of 45 to 90 inches in the central highlands, southern Gippsland, and the Otways. This dominant species was associated with a variable tall undergrowth of hazel, musk, correa, blanket leaf, austral mulberry, blackwood, silver wattle, and dogwood. Soft and rough tree-ferns and ground ferns were conspicuous, particularly below 3,000 ft. These forests away from the ridge tops were dense and many were not penetrated or cleared until the late nineteenth century.

Above 3,500 ft the montane forest of alpine ash and shining gum became increasingly grassy up to the sub-alpine snow gum woodlands at 4,500 ft. In drier areas (40 inches) and below the mountain ash zone were tall stringybark and gum forests with fairly tall shrubs, bracken, and wiregrass. These forests were dominated by messmate, grey gum, and manna gum in the central districts; blue gum, mountain gum, and narrow-leaf peppermint in the north-east; mahogany gum, yellow stringybark, and blue gum in eastern Gippsland; and messmate and manna gum in the wettest gullies of Mt Cole, the Grampians, and near Portland.

The wet sclerophyll forests in particular have suffered greatly from repeated fires, and many areas have been destroyed completely.

#### *Closed forest (rain forest)*

##### *Cool temperate forests*

Dense rain forests of beech occurred in the gullies with a rainfall over 55 inches, and on mountain sides with over 70 inches. The forests had dense canopies, with copious soft tree-ferns and ground ferns (shield fern, water fern). Sassafras was a common associate in the Central District and Gippsland and extended with blackwood as a riparian rain forest type into somewhat drier areas (45 inches). Progress of the explorers to the

headwaters of the major streams was impeded by these dense, ferny, and mossy forests. Beech occurred in the Otways, in the central highlands, and in southern Gippsland, and extended up to sub-alpine thickets at 4,800 ft on the wettest mountains (e.g., Baw Baw).

#### *Warm temperate forests*

Lilly pilly forests occurred in eastern Gippsland and on Wilsons Promontory at low altitude, both along gullies and on sheltered slopes of mountains. Most of these forests were close to the coast, with an annual rainfall of 30 to 35 inches, but with a higher contribution of summer rain and, therefore, a less severe summer than elsewhere in Victoria. These forests were rich in ferns, epiphytic orchids, and lianes. Along the rivers kanooka was co-dominant with lilly pilly. The tall wet sclerophyll eucalypts were, and still are, frequently found as a scattered or dense overstorey to both rain forest types. This is the result of past catastrophic fires. Today many rain forests have been destroyed by repeated fires and converted to wet sclerophyll forest.

#### *Sub-alpine plateaux complex*

The grasslands and woodlands and low forests of the "high plains" between 4,500 and 6,500 ft were opened up for grazing at a later date than the lowlands. Mallee-like woodlands occur up to 6,000 ft on rocky ridges. The snow gum areas were grassed with coarse-leaf and fine-leaf snow grass and were associated with shrubs and herbs. The lower slopes of the broad valleys were grasslands associated with abundant floriferous herbs of the Compositae and Umbelliferae. Dwarf shrubs of the pea family, Rutaceae, and Compositae were present, though not so commonly as today. Above the tree line at 6,000 ft herbfields of snow daisy and grasslands of snow grass were the chief vegetation types. In the swampy floors of the valleys and in seepage areas, sphagnum moss beds developed, with spreading rope rush swards and various Epacridaceae such as *richea*, alpine heath, and coral heath. These areas held much water and helped to regulate stream flow; many have been irreparably damaged by fire and grazing.

#### *Scrub*

##### *Heath and thicket*

Heathlands occurred on poverty-stricken deep coastal sands and were dominated by silky tea-tree and dwarf she-oak. This rich flora included common heath, tassel rope rush, and bush peas, and was found from Portland to Mallacoota ranging in rainfall from 25 inches at Melbourne to 40 inches at Wilsons Promontory. Stunted eucalypts (brown stringybark, messmate, and manna gum) were sometimes present in more sheltered sites.

On rocky sites with shallow poor soils or areas with impervious subsoil at shallow depths, wet heath occurred (Grampians, Portland, Yanakie, and Wilsons Promontory). Such heath may have been dominated by manuka, dwarf she-oak, swamp heath, coral fern, and spreading rope rush. In swampy areas between 30 and 40 inches, thickets of swamp paperbark and woolly tea-tree occurred. Vast thickets at Koo Wee Rup were a barrier to the access to Gippsland until the swamps were drained at the turn of the century.

On calcareous dunes along the central-western coasts, scrub of coast wattle, beard heath, and tea-tree were dense or grassy. In the much drier climate of the inland dune systems of white sand of the Big and Little Deserts (12 to 18 inches), a sparser heath occurred dominated by green tea-tree, fringe heath-myrtle, wheel fruit, and desert banksia. In these areas copses of mallee and cypress pine occurred with yellow gum and yellow box in areas of better water supply.

### *Mallee*

The occupation of the Mallee was generally delayed until the 1860s and 1870s. Explorers in earlier years such as W. L. Morton venturing into the waterless region beyond the pastoral fringe, recorded a wide variety of mallees, much the same as was seen in the region until the 1920s. Open mallee (red mallee) park-like areas with seasonal herbs and grass were common on the flat stretches. Low dense twisted mallee with porcupine grass occurred on sandhills and made progress difficult. Temporarily wet flats were clothed with yellow mallee and broombush. Red sandhills were covered with numerous and taller mallee species (oil mallee), with variable developments of wattles, salt bushes, and other elements of a rich though often ephemeral flora. Extensive areas of Murray pine, slender pine, and belah also occurred on the more loamy soils. On the clay pans, gypsum was present and shrub steppes or open shrublands of semi-succulent saltbushes and blue bushes were found. Where salt encrusted the surface in dry seasons, samphire dominated the shrub steppe. In general, the patterns described by Morton are still evident today in the areas which have been preserved.

### *Fires*

Many of the early writers mention the frequent burning of the lowland forests by Aborigines (Howitt), and others refer to the blackened state of the trees (Hume and Hovell, and Macalister). It is certain that lightning was a natural cause of fires, then as now. The openness of timbered areas might have been due to the absence of fire and to competition of grass with tree regeneration for limited water, but in some areas it might also have been due to very frequent light burns which inhibited the establishment of eucalypts. The adaptations of the various species in woodlands, heathlands, and grasslands suggest that they have long been exposed to fire. On the other hand, the species growing in the wettest areas are sensitive. The mountain ash forests have undergone catastrophic fires at intervals of 100 to 300 years, and although the trees were killed the fires have served to perpetuate the forests through re-seeding. At the wettest extreme, beech forests flourished only in the complete absence of burning.

Thus, the pattern of the original vegetation was related to climate, soil, and fire. Man's subsequent entry into these ecosystems has had far-reaching effects during the last 130 years.

### *Glossary of plant names*

Alpine heath	<i>Epacris bawbawiensis</i>
Austral mulberry	<i>Hedycarya angustifolia</i>
Beard heath	<i>Leucopogon parviflorus</i>
Beech	<i>Nothofagus cunninghamii</i>
Belah	<i>Casuarina cristata</i>
Black box	<i>Eucalyptus largiflorens</i>

Blackwood	<i>Acacia melanoxylon</i>
Blanket leaf	<i>Bedfordia salicina</i>
Bloodwood	<i>Eucalyptus gummifera</i>
Blue bush	<i>Kochia sedifolia</i>
Blue gum	<i>Eucalyptus st-johnii</i>
	<i>Eucalyptus maideni</i>
Bracken	<i>Pteridium esculentum</i>
Broombush	<i>Melaleuca uncinata</i>
Brown stringybark	<i>Eucalyptus baxteri</i>
Buloke	<i>Casuarina luehmannii</i>
Bush pea	<i>Pultenaea</i> spp.
Candlebark gum	<i>Eucalyptus rubida</i>
Cane grass	<i>Eragrostis australasica</i>
Coast wattle	<i>Acacia sophorae</i>
Common heath	<i>Epacris impressa</i>
Coral fern	<i>Gleichenia microphylla</i>
Coral heath	<i>Epacris microphylla</i>
Correa	<i>Correa lawrenciana</i>
Cypress pine	<i>Callitris columellaris</i>
Desert banksia	<i>Banksia ornata</i>
Dogwood	<i>Cassinia aculeata</i>
Dwarf she-oak	<i>Casuarina pusilla</i>
Forest red gum	<i>Eucalyptus tereticornis</i>
Fringe heath-myrtle	<i>Micromyrtus ciliatus</i>
Geebung	<i>Persoonia linearis</i>
Grass tree	<i>Xanthorrhoea australis</i>
Green tea-tree	<i>Leptospermum coriaceum</i>
Grey box	<i>Eucalyptus microcarpa</i>
Grey gum	<i>Eucalyptus cypellocarpa</i>
Gum myrtle	<i>Angophora floribunda</i>
Hazel	<i>Pomaderris aspera</i>
Kangaroo grass	<i>Themeda australis</i>
Kanooka	<i>Tristania laurina</i>
Lignum	<i>Muehlenbeckia cunninghamii</i>
Lilly pilly	<i>Eugenia smithii</i>
Mahogany gum	<i>Eucalyptus botryoides</i>
Manna gum	<i>Eucalyptus viminalis</i>
Manuka	<i>Leptospermum juniperinum</i>
Messmate	<i>Eucalyptus obliqua</i>
Moirra grass	<i>Pseudoraphis spinescens</i>
Mountain ash	<i>Eucalyptus regnans</i>
Mountain gum	<i>Eucalyptus dalrympleana</i>
Murray pine	<i>Callitris columellaris</i>
Musk	<i>Olearia argophylla</i>
Narrow-leaf peppermint	<i>Eucalyptus radiata</i>
Oil mallee	<i>Eucalyptus oleosa</i>
Phebalium	<i>Phebalium bullatum</i>
Porcupine grass	<i>Triodia irritans</i>
Red mallee	<i>Eucalyptus calycogona</i>
Red ironbark	<i>Eucalyptus sideroxylon</i>
Red stringybark	<i>Eucalyptus macrorrhyncha</i>
Richea	<i>Richea continentis</i>
River red gum	<i>Eucalyptus camaldulensis</i>
Rough tree-fern	<i>Cyathea australis</i>
Samphire	<i>Arthrocnemum arbusculum</i>
Saltbush	<i>Atriplex vesicaria</i>
Sassafras	<i>Atherosperma moschatum</i>
Saw sedge	<i>Gahnia radula</i>
She-oak	<i>Casuarina stricta</i>
Shield fern	<i>Polystichum proliferum</i>
Silky tea-tree	<i>Leptospermum myrsinoides</i>
Silvertop	<i>Eucalyptus sieberi</i>
Silver wattle	<i>Acacia dealbata</i>



Slender pine	<i>Callitris preissii</i>
Snow daisy	<i>Celmisia longifolia</i>
Snow grass	<i>Poa australis</i> (fine)
Snow gum	<i>Eucalyptus pauciflora</i>
Soft tree-fern	<i>Dicksonia antarctica</i>
Spear grass	<i>Stipa</i> spp.
Sphagnum	<i>Sphagnum cristatum</i>
Spreading rope rush	<i>Calorophus lateriflorus</i>
Swamp gum	<i>Eucalyptus ovata</i>
Swamp heath	<i>Spengelia carnea</i>
Swamp paper bark	<i>Melaleuca ericifolia</i>
Tassel rope rush	<i>Hypolaena fastigiata</i>
Tea-tree	<i>Leptospermum</i> spp.
Tussock grass	<i>Poa australis</i>
Wallaby grass	<i>Danthonia</i> spp.
Water fern	<i>Blechnum procerum</i>
Wheel fruit	<i>Gyrostemon australasicus</i>
White stringybark	<i>Eucalyptus globoidea</i>
Woolly tea-tree	<i>Leptospermum lanigerum</i>
Yellow box	<i>Eucalyptus melliodora</i>
Yellow gum	<i>Eucalyptus leucoxydon</i>
Yellow stringybark	<i>Eucalyptus muellerana</i>
Yertchuk	<i>Eucalyptus consideniensis</i>

## WILDLIFE

(Including fish)

Most of Victoria has a temperate climate and forms a major faunal region with Tasmania, eastern New South Wales, and south-eastern Queensland, but the north-western part of the State exhibits the botanical and faunal characteristics of the semi-arid fringe of the inland. To the early white settlers the most remarkable items of the fauna were the conspicuous or unfamiliar forms such as the kangaroo, platypus, lyrebird, and emu. Worldwide interest in Australian wildlife has always centred on the remarkable diversity of its marsupials. The present-day vertebrate fauna of Victoria (excluding the whales, dolphins, and marine fish) comprises approximately 40 species of freshwater fish, 30 frogs and toads, 3 tortoises, 65 lizards, 35 snakes, 420 birds, 2 monotremes, 33 marsupials, 9 rodents, 12 bats, the dingo, and the fur seal.

As early as 1800 professional sealers from Sydney had operated on the Victorian coast, but before Melbourne was founded the seal herds had been so depleted that the industry ceased. By 1850 the "squatters" were grazing six million sheep on huge runs in western and central Victoria, altering much of the open forest and grassland ecology and reducing the food and shelter available to many birds and ground feeding marsupials. During the 1850s gold attracted many thousands of people to the central districts, and large areas of forest were cut for fuel, building, and shoring and other mining works. In Melbourne and on the diggings pigeons, broilgas, cockatoos, lyrebirds, emus, and kangaroos all provided a cheap alternative to mutton; and wild duck from West Melbourne, Altona, and Mordialloc also helped supply the town market. Kangaroos, possums, koalas, water-rats, and platypuses were taken for leather and fur. The Land Acts in the 1860s opened the way for intensive farming and by 1881 more than one third of the State's area had been alienated. Ringbarking of trees, land clearing, drainage of swampland, burning, and a lack of knowledge of appropriate agricultural techniques changed the countryside and often damaged the soils.

The Acclimatization Society was founded in 1861 and over the next thirty years introduced many exotic species such as the fox, hare, rabbit, squirrel, antelope, blackbird, minah, thrush, white swan, skylark, partridge, pheasant, ostrich, seventeen species of deer, and at least ten species of fish. The first Game Act in 1862 was designed to protect these introduced animals, but only three species of deer and three or four fish can now be considered useful additions to the fauna. At least ten species which had been introduced purposely or accidentally, or had escaped from domestication, became pests and reduced the number of native animals by preying on them or competing with them for food and shelter. Attempts to control rabbits, foxes, dogs, and mice continue up to the present day using traps and poison, but these imprecise techniques inevitably kill many native species as well.

Much reliance is still placed on the old Game Act concept of protecting individual animals against wilful destruction. The idea of protecting habitat for animals to live in was slow to evolve. The Land Act of 1869 provided for the establishment of national parks, but an authority to plan and administer a system of parks was not set up until 1956. In 1959 the State wildlife reserves system was introduced to cater primarily for the reservation and management of wildlife habitat. State forest reserves are managed primarily for timber production but they provide important habitats for a diverse fauna, particularly in eastern Victoria.

Fish are now the only native vertebrates regularly used for commerce, although occasional licensed seasons to take water-rat or possum furs are proclaimed, primarily as a control measure. Apart from fish, ducks and quail are today the only recognised native game animals, and when drainage of wetlands caused a gradual decline of waterbirds it was the hunting clubs in the 1950s and later which strongly supported habitat reservation. Similar interest by angling clubs had long promoted the conservation of introduced trout as game fish, and deer populations may ultimately benefit from the same kind of interest. Wide sympathy in the 1940s and 1950s led to a successful project to rehabilitate koalas in suitable forest land, but most support for general conservation ideals still comes from amateur naturalist clubs and conservation organisations. Until the 1960s considerable uncertainty about their aims limited their efforts, but they are now exercising much more influence in the community.

From 1860 to 1940 an important commercial fishery used native species from northern rivers. However, with the high priority given to the use of water for irrigation, town supplies, and industry, native fish have declined in numbers; introduced fish are better adapted to the relative stability of managed streams and reservoirs. Murray cod, Macquarie perch, silver perch, golden perch, tupong, blackfish, and catfish are all becoming less common, and the Australian grayling is in danger of extinction. Such a process is typical of the many changes in the environment which adversely affected most elements of the fauna. As forests, heaths, grasslands, and swamps diminish, birds become fewer and their distribution more limited, and although no species are yet extinct several are in danger, including the State's emblem bird, the helmeted honeyeater. Eleven species of bats appear to be safe but five rodents and fourteen marsupials (mainly from western Victoria) no longer survive. Over large areas of the Mallee which were stripped of natural vegetation the reptile fauna dwindled from thirty species to three.

In the latter part of this century new influences will undoubtedly further affect wildlife habitat. More Crown land will need to be alienated for many purposes; the massive use of agricultural chemicals and the disposal of industrial and domestic wastes pose the major identifiable problems at present. In anticipation of such problems related either to human health or conservation generally, the Government received a report in 1966 from a committee inquiring into the effects of pesticides; it later set up a Pesticides Review Committee, and in 1970 passed the Environmental Protection Act to control all forms of pollution. The *Land Conservation Act* 1970 was designed to control the further alienation and use of the State's remaining Crown land.

#### NATURAL DISASTERS

Long before the advent of European settlement Victoria had suffered from flood, fire, and drought. Hume and Hovell on their journey from Lake George to the sea recorded that the trees had been burnt, and very early in the era of European settlement drought was experienced. The 1838 drought, however, did not have any lasting effects. There was relatively little stock in Victoria; it sufficed to move a few miles to fresh pastures. Similarly with the floods of 1839; there was very little to be damaged. In the early days the effects of flood and drought were relatively easy to counter; fire, however, engulfed all in its wake. The worst fire in the early years was that of "Black Thursday", 6 February 1851, when virtually the whole Colony was on fire. This series of fires followed on a period of nearly four months of abnormally dry weather; it is not known how much damage was done, but inquests were held into the deaths of ten persons. For some twenty years after this the settlers did not have to contend with much Colony-wide disaster.

The following list indicates those natural disasters which have occurred since 1849 and which in most cases have caused sufficient damage to necessitate the granting of relief.

#### *Floods*

Floods have occurred in many years but early records are meagre for areas outside Melbourne.

*November 1849.* Severe floods on the Yarra and nearby rivers. Great loss of livestock and damage to buildings.

*December 1863.* In central parts of the Colony; gales and high tides together with flooding caused some damage in Melbourne.

*September 1870.* Wide-spread flooding caused much damage.

*December 1893.* Heavy flooding on Snowy River.

*June 1917.* Severe floods in north, to the east of the Goulburn River.

*October 1917.* Floods on Murray River and tributaries caused much damage to crops.

*January 1934.* Severe flooding on Snowy River with main road bridges being washed away.

*December 1934.* Severe flooding on Yarra, La Trobe, Thomson, and Goulburn Rivers.

*June 1952.* Severe flooding in Gippsland on the Snowy, Thomson, and La Trobe Rivers; much damage in Goulburn valley; some loss of life.

*April to June 1956.* Serious flooding with much damage on northern flowing rivers and the Murray.

*September 1959.* State-wide flooding with considerable damage.

*February 1971.* Severe flooding in central and east Gippsland; Snowy River reached record height, causing over \$2m damage in Orbost area.

#### *Fires*

Fires have occurred in most years, but have not often been of disastrous proportions; in many cases reports have tended to magnify the events or their results.

*January–February 1898.* Fires widespread throughout the Colony, but most severe in Gippsland; Neerim and Thorpdale townships destroyed; hundreds of settlers burnt out; great loss of stock; no loss of life.

*January–February 1919.* Severe fires ranged over the northern, central, and north-eastern parts of the State, the Otway Ranges, and the Maffra–Rosedale area.

*November 1919–April 1920.* Fires burnt about 120,000 acres of forest land, much of it in the Grampians.

*December 1922–May 1923.* Fires broke out continually in the mountain areas of the State, burning over 500,000 acres of forest.

*January–February 1926.* Fires most severe in Gippsland; 976,000 acres of Crown land burnt; over fifty lives lost.

*January–February 1932.* Severe fires in Powelltown–Noojee–Erica area; 510,000 acres of forest and Crown land burnt throughout the State; eighteen lives lost.

*January 1939.* Disastrous State-wide fires, severest in western Gippsland; over 3 million acres of forest and Crown land burnt; over 700 houses destroyed; seventy-one lives lost; about 1,500 people homeless.

*January–February 1944.* Severe fires in Western District, also in Gippsland and the north-east; Yallourn open cut coal mine on fire; over 350,000 acres of forest and Crown lands burnt, heavy stock losses; over 700 houses destroyed; forty-nine lives lost.

*January 1962.* Fires in the Dandenongs burnt only a small area but destroyed 470 houses and damaged sixty others in three days; six lives lost.

*March 1965.* Severe fires in Gippsland; 808,000 acres of forest, farm land, and national park burnt.

*January 1969.* Many outbreaks State-wide (except Gippsland) on 8 January; 1,000 square miles of grassland and 7,200 acres of forest and national park burnt; 230 houses destroyed; 22 lives lost.

### *Droughts*

The major droughts which have beset Victoria are noted. Again records of the early years are meagre.

*1865.* Rainfall less than two thirds normal; north-western parts of the Colony particularly affected.

*1877.* Severe drought in the western and northern parts of the Colony.

*1902.* Rainfall less than two thirds normal, particularly in north and north-west of the State; average wheat yield for the State fell to 1.29 bushels per acre.

*1914.* State-wide; almost no winter rainfall; northern part of the State particularly affected; average wheat yield only 1.38 bushels per acre.

*1944.* State-wide; much crop failure in the north-west; hand feeding of stock necessary.

*1967.* Severe in northern and western areas of the State; evacuation of stock necessary from the most affected parts.

The impact these natural disasters have had is shown by the attempts of man to control them or at least alleviate their effects. Flood control, river improvement, and water conservation programmes to a large extent control the flow of water and eliminate much flooding; Lake Eildon impounded some 2.3 million acre ft of water during the floods of 1955 and 1956, thereby easing the flood position in the Goulburn valley; and Rocklands Reservoir near Balmoral, besides providing water for the Wimmera–Mallee Domestic and Stock Water Supply, now ensures that the areas downstream do not suffer periodical flooding as formerly. Access roads in forest areas and the provision of four-wheel drive vehicles have facilitated the movement of fire-fighters and equipment in the event of a fire. The modernisation of fire-fighting equipment of the rural brigades, together with the installation of modern communications equipment, has provided a basis on which a sizeable body of fire-fighters can be built up quickly in times of need. The recent use of aircraft for fire spotting has also speeded up the response to fire calls. Greater water storage, pasture improvement, and better fodder conservation help mitigate the effects of drought. The speedy evacuation of livestock from the most affected areas to less affected parts, and even to other States, or the importation of baled

fodder for hand feeding can save countless head of stock; when the drought has run its course these can also help in the speedy re-establishment of the country.

*Fires of January 1939 and their aftermath*

The summer of 1938-39 was the culmination of two years of abnormally dry conditions with poor pastures and depleted water storages. The forests were tinder dry. The first warning of danger came in August 1938 when a destructive fire caused serious damage to State forests in the Ballarat-Creswick district. From then on fires broke out in timbered areas on both private and Crown land with increasing frequency and intensity and, early in January 1939, led to what the Royal Commission later described as "the most disastrous forest calamity the State of Victoria has known". The numerous fires alight at the time "reached the climax of their intensity and joined forces . . . on Friday the 13th of January". Seventy-one people died, sixty-nine sawmills were burnt, and some 700 dwellings, one hospital, and ten guest houses were destroyed. Of the State forest, about 3,900,000 acres including the prime mountain ash forests of the central highlands, a vast resource of untapped timber, were destroyed. Fires on grass country were of little consequence because of the little fuel there.

Mr Justice Stretton was appointed as the Royal Commission to investigate the cause of the fires and to propose measures to eliminate the possibility of a similar recurrence. The Commission sat for eleven weeks in Melbourne and in country centres, and its report stressed the fact that the disaster was caused by man in that practically all fires had been deliberately lit. It made many recommendations including the establishment of a State fire authority and the complete control by the Forests Commission of fire prevention and suppression in all State forests. Towards the end of 1939 an amending Forests Act was passed. National parks were placed on the same legal basis as State forests and it became an offence to light a fire in any national park or reserved forest at any time of the year except by direction or as prescribed.

The involvement of Australia in the Second World War diverted public attention from many of the local problems which developed as an aftermath of the fires, but it made the Forests Commission's task more difficult as machinery and labour became increasingly scarce. It was only because timber was recognised as an essential commodity for the war effort that it was possible to build any roads. Meanwhile the Commission began an educational programme directed towards the public as well as its own staff to take the fullest advantage of the lessons learnt from the January 1939 disaster. Continuous staff training, the introduction of the most modern equipment available from overseas, and the demonstration of repeated successes in the suppression of fires by new methods gradually built up public confidence. Nevertheless a false sense of security could have followed the January 1939 disaster had it not been for the events of 1944.

The spring of 1943 was one of the most bountiful ever experienced in Victoria. The height of grass on the basalt plains of the Western District and the pasture lands of the north and north-east was astonishing. At the end of November 1943 the rains ceased and dry winds, especially from the north, sprang up. The long grass became tinder dry. On 23 December 1943 a grass fire, accidentally started near Wangaratta, took the lives of twelve people. The town of Beechworth and the valuable pine plantations of Stanley

and the Ovens valley were threatened. Fires of great intensity swept the Western District pastures, and by the end of summer the toll was fifty-one people dead, 240,000 sheep lost, 927 dwellings destroyed, 7,460 miles of fencing burnt, and a total material loss of £2.6m. The State forests had remained moist long after the grasslands had become tinder dry and were relatively safe within themselves. Nevertheless 351,000 acres of State forests were severely burnt.

Victoria had never faced grass fires of such intensity before. Losses had been of a minor character although there had been occasional fatalities, but this disaster, coming so soon after January 1939, finally convinced public opinion of the need to support the fire authorities. The Royal Commission's recommendations relating to a State fire authority were promptly implemented by establishing the Country Fire Authority and co-ordinating the volunteer brigades into an efficient force.

## 2

# SETTLEMENT

---

### DISCOVERY AND EXPLORATION

#### *The coast*

The main purpose of Tasman's voyage of 1642 was to discover the extent of "The Great South Land". However, he touched only the southern half of Tasmania (Van Diemen's Land), and therefore believed that this formed part of the continent's southern coast. In 1770 Captain James Cook, on his first voyage to the South Seas in the *Endeavour* to observe the transit of Venus at Tahiti, explored and charted New Zealand and then ran west towards New Holland, by which name Australia was then known. At 6 a.m. on 19 April by nautical reckoning \*, Lieutenant Hicks sighted land which Cook named Point Hicks. By noon on the same day a round hillock was sighted further east, and Cook named this Ram Head. He proceeded easterly to Cape Howe which he named, and then continued northwards, charting the coast as he sailed.

In February 1797 the *Sydney Cove*, under the command of Guy Hamilton, ran ashore on Preservation Island in the Furneaux group. Hamilton sent a long boat under Hugh Thompson, the mate, with sixteen others to Port Jackson for help. Reaching the Victorian coast Thompson was cast ashore and the boat broke up approximately 20 miles west of the entrance to the Gippsland Lakes. Although only three survivors reached the Sydney settlement, they were the first Europeans to traverse the east Gippsland coast. In October 1797 fourteen convicts, having heard news of the wreck, left Port Jackson in a stolen boat, hoping to float the ship or claim the cargo. They reached an island to the west of Wilsons Promontory, where seven deserted their companions, returned to Sydney and surrendered.

In December 1797 George Bass, who was surgeon on the *Reliance* and had explored along part of the New South Wales coast, received permission from Governor Hunter to sail a whaleboat along the unexplored section south of Botany Bay. This voyage led to the discovery of Wilsons Promontory and Western Port, the latter so named because of its situation relative to every other known harbour on the coast at that time. Eventually, Bass found the remaining seven convicts and took two of them aboard his boat. As far as the existence of a strait was concerned, Bass only knew that Van Diemen's Land was not connected to the mainland as far west as

\* As recorded in the log of the *Endeavour*.

Western Port, and he also observed the ebbing tide towards the east and the swell from the south-west. Bass returned to Port Jackson, reaching there on 24 February 1798. Later in the same year Bass and Flinders in the *Norfolk* circumnavigated Van Diemen's Land, and the strait was named after Bass at the instance of Governor Hunter.

As a result official instructions were sent from London to James Grant, in command of the *Lady Nelson* at the Cape of Good Hope and on his way to the Colony, to survey the newly found strait. He reached the western shores of Victoria on 3-4 December 1800, and from Cape Bridgewater examined the coast eastward to Cape Patton. From there the coast ran northward and Grant, presuming he had found another bay, named the area between Cape Patton and Cape Liptrap after Governor King, successor to Governor Hunter. Although he had not sighted the coast continuously in the vicinity of Port Fairy and Warrnambool, the western part of Victoria became known as Grant's Land. At the time it was popularly believed that the interior of Australia was a vast inland sea stretching from the Gulf of Carpentaria to the Southern Ocean, and King, interested in the depth and size of Portland Bay, again sent Grant to investigate. However, he sailed no further than Western Port.

By 1800 the whole coast of Victoria had virtually been discovered, apart from the gap known to Captain Grant as Governor King's Bay. Lieutenant John Murray in the *Lady Nelson* was ordered to explore the Bass Strait area, and on 4 January 1802 he sailed west from Cape Schanck, on the western side of the entrance to Western Port, and bore 12 miles along the coast to the mouth of a bay. He did not enter, but made for Cape Otway and King Island, returning later to Western Port, where he anchored. A launch was sent on 31 January to explore, and it returned on 4 February to report that the bay was larger than Western Port, and that there were probably several rivers. Murray then sailed the *Lady Nelson* into the new harbour on 15 February and named it after Governor King, who later altered the name to Port Phillip, honouring the first Governor of New South Wales.

A French expedition under Nicolas Baudin also made extensive explorations of the Australian coast, and, travelling from east to west, passed the entrance to Port Phillip Bay on 30 March 1802. Following the coast closely to Cape Otway, Baudin completed its discovery, as well as the Port Fairy-Warrnambool area which had not been seen earlier by Grant. Meanwhile fears of French conquest prompted further exploration, and on 18 July 1801 Matthew Flinders left England in the naval vessel *Investigator*. On his way to Port Jackson he traversed the southern coast from west to east, making an inspection of Port Phillip in May 1802. He climbed Station Peak in the You Yangs and reported on the good soil of the surrounding country. Baudin, having spent several weeks in Port Jackson, had met Flinders at Encounter Bay, and raised further suspicion about the intentions of the French Government. An account of his voyages was published later. French presence hastened a further investigation of Port Phillip in 1803 by Charles Grimes, Acting Surveyor-General. In the schooner *Cumberland* under the command of Lieutenant Robbins he surveyed the shores of the bay, and, discovering the Yarra River, followed it upstream by boat to its fresh water reaches.



R.B.S. 3A VICTORIAN RAILWAYS BOOKSTALL DIVISION

DATE

12.10.73.

Sec

TO STALL NO.

Deputy General Manager

No

4495

GOODS HEREWITH SUPPLIED FROM

~~MR~~ C/- 108.

To 1 copy

Vict. Year Book. 1973

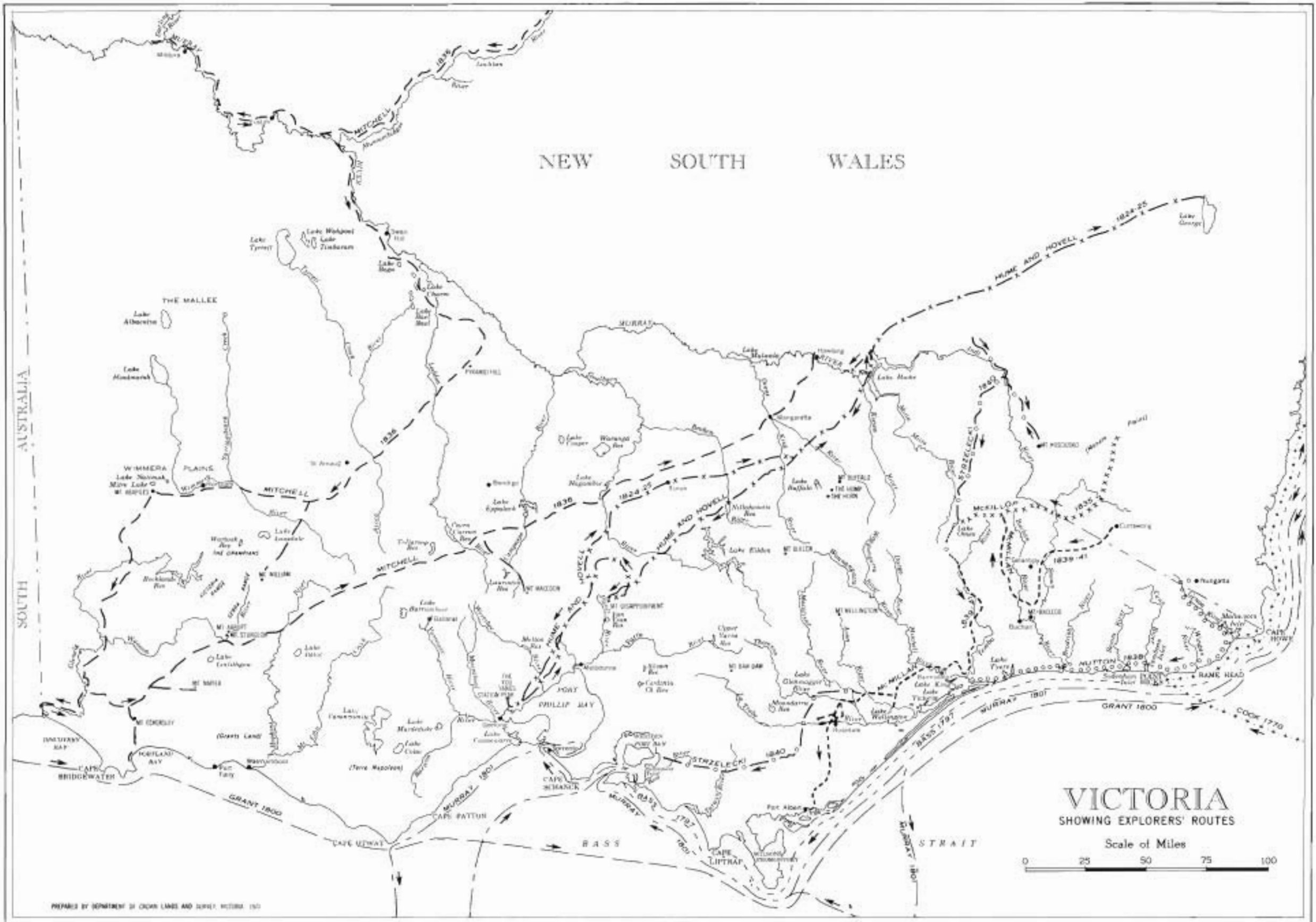
Centenary Edition

(x Commonwealth Bureau  
of Census/Statistics.)

Received by.....

3551-701

KINDLY ACKNOWLEDGE RECEIPT OF BOOKS



It was unfortunate that reports of this survey had not reached England by the time Lieutenant-Colonel Collins left with the first settlers on the *Calcutta* and the *Ocean*. Landing on the Nepean Peninsula near the site of the future Sorrento in October 1803, Collins found the fresh water supply inadequate for 400 persons, and no better site could be found on an excursion to Western Port. Fearing the Yarra Aborigines if he moved the settlement further round the bay, he remained for four months, then left for Hobart. However one of the 299 convicts, William Buckley, escaped on 27 December 1803 and travelled round the bay to the Geelong area where he remained with the tribes for thirty-two years. When John Batman arrived in 1835, Buckley's experiences furthered knowledge of the Port Phillip area.

### *The interior*

By the 1820s settlers in the Colony of New South Wales had spread as far south as Lake George and the Monaro plains. Hamilton Hume, a skilled bushman who occupied the most southerly station of the Colony, was approached by Sir Thomas Brisbane, the Governor of New South Wales, to lead a party from Wilsons Promontory to Sydney. Hume preferred to attempt to reach the coast from Lake George, and agreed to take Captain Hovell with him, to share men and expenses. They began their journey on 24 October 1824, and reached what they believed was Western Port on 16 December. In fact they were not far from the site of Geelong or "Jillong", as the Aborigines called that area. The journey was important for the discovery of the Rivers Hume (later named Murray), Mitta Mitta, Ovens, and Hovell (later Goulburn), and the naming of Mount Disappointment, prompted by a reversal of fortune in crossing the Great Dividing Range. This discovery of rich land was not publicised and further settlement south of the Murray was delayed until after 1834. However, one settlement, prompted by rumours of French occupation, was attempted at Western Port by Captain Wright under orders from the Governor of New South Wales. Settlement Point on the eastern side was chosen on 24 November 1826, but the site was abandoned in January 1828.

Captain Charles Sturt traversed the course of the Hume River from its junction with the Murrumbidgee to the sea in January 1830, and named this section the Murray to commemorate Sir George Murray, then Colonial Secretary. Major Mitchell, then Surveyor-General of New South Wales, set out in March 1836 to test the validity of Sturt's claim about where the Darling entered the Murray, and, returning to his base at the junction of the Murrumbidgee, he crossed the Murray and camped at Swan Hill on 30 June. Ascending Pyramid Hill, he saw rich plains. During the following years, many squatters, travelling from across the Murray, were to find the tracks of his drays in the dark cracking clay soils of the Wimmera plains and Glenelg valley. Near the junction of the Glenelg and Crawford Rivers, Mitchell's party embarked in two boats and followed the Glenelg to its mouth, reaching the sea at Discovery Bay on 20 August. He then returned to the main expedition on its route eastwards. He left it again to move south to Portland Bay, near which he found the Henty brothers' thriving community. Going homeward Mitchell passed east of the Grampians, and named the prominent peaks; he ascended Mount Macedon, and later crossed the Campaspe, Goulburn, and Ovens Rivers, finally reaching the

Murray about 20 miles west of the site of the future Albury on 17 October. His report of his discoveries in "Australia Felix" and New South Wales was published in London in 1839.

Squatters arriving over the Murray from the north-east then became explorers, giving names to mountains and streams as they sought pastures. Mountainous areas in Gippsland had prevented many settlers from travelling southwards, but in 1835 George McKillop crossed the Snowy River from the Monaro district and travelled as far as Lake Omeo. Droughts in 1838 also caused Andrew Hutton to move 500 head of cattle from Nungatta along the Genoa River to the sea, and from Mallacoota Inlet westerly along the coast to Lake King, but he was forced back by Aborigines. Edward Baylis later discovered the pastoral lands at Buchan and Gelantipy, but it was Angus McMillan, engaged by Lachlan Macalister, who finally established a passable route from the Monaro Plains to Lake Victoria. He had his first sight of "Caledonia Australis" from the top of Mount McLeod on 3 June 1839, and had penetrated as far as Port Albert by 14 February 1841.

Meanwhile Count Strzelecki had followed McMillan down the Tambo River. Skirting Mount Wellington he made for Western Port and finally reached Melbourne on 28 May 1840. He gave his own names to rivers and creeks previously discovered by McMillan, as well as the name Gipps' Land to the area traversed.

The Mallee had first received significant attention in 1847 when an agreement had been made to mark the boundary between Victoria and South Australia. Surveyor Henry Wade went to the edge of the country explored by Edward John Eyre in 1832. Pastoralist J. M. Clow made several excursions into the Mallee before occupying Pine Plains station and his reports aroused interest. Surveyor E. R. White completed Wade's task along the boundary in 1849.

F. J. H. Mueller also explored extensively while collecting botanical specimens, and was the first to climb certain peaks in the Victorian Alps. In September 1853 he was on the Horn and the Hump in the Buffalo Ranges and on Mount Buller, and he also travelled along the La Trobe River. Two months later he visited the Grampians and the Serra and Victoria Ranges. During 1854 and 1855 he again explored the Alps, then visited the Baw Baw area in 1860 and the Macalister River valley with Angus McMillan in 1861. By this time most important features of the Colony had been explored.

#### SURVEYING FOR LAND SETTLEMENT AND MAPPING

Three men were sent to Port Phillip from Sydney in 1836 with instructions to prepare a plan showing the natural features and the positions of the dwellings of settlers who had come from Van Diemen's Land. One of the party, Robert Russell, prepared a plan of their survey.

Early in 1837 Sir Richard Bourke came from Sydney to Port Phillip with Robert Hoddle. They decided upon locations for the two new towns, which Bourke named Melbourne and William, after Viscount Melbourne, England's Prime Minister, and William IV, respectively. Hoddle rapidly laid out the first portion of Melbourne by marking the alignments of the future Flinders, Spring, Bourke, and Spencer Streets. For this survey

he used a Gunter's measuring chain and a circumferenter. He was appointed surveyor-in-charge at Port Phillip, but all the survey plans were sent to Sydney for the approval of the Surveyor-General.

The nucleus of a map of the Port Phillip District was established in the early years from the marking of the boundaries of town and suburban sections. From these surveys, traverses were made along streams, thus obtaining the location of the settlers' huts, the tracks, and the natural features.

Mapping began with a trigonometrical survey which was made in 1839 to determine the longitude of the mouth of the Glenelg River near the 141st meridian which had been proclaimed as the eastern boundary of South Australia. This determination was formally accepted as a portion of the border by the South Australian Government, but was disregarded later, when observations with larger and more precise instruments showed that the boundary should have been marked about two miles further east. The resulting dispute, which began in 1868, was not resolved until 1914 when the Privy Council rejected a South Australian appeal against a High Court decision in favour of Victoria.

In the early years settlers who had purchased or leased Crown land frequently complained that surveys were in arrears. Generally the Government could not be convinced of the importance of accurate surveys, and administrators who did realise this necessity did nothing because accurate surveys meant slower surveys. The lack of competent surveyors meant, therefore, that many squatters who held their runs under pastoral licence never received the leases promised. Many surveyors were in fact unsuited to Australian conditions, while some were appointed for political reasons with no regard for their lack of qualifications. The system of contract surveying also meant that no check was made of the survey field work.

Twice the Imperial Government ordered "Special Surveys", but they had little effect and were very unpopular with Port Phillip settlers. The first was for a sale of blocks, each being of eight square miles. This entailed only a boundary survey, the task of internal subdivision being left to private surveyors. English investors were encouraged to lodge £5,120 in London and later to come to Port Phillip to choose a 5,120 acre block where they desired. As a result several surveys were carried out in the 1840s including Dendy's Special Survey at Brighton, Elgar's at Kew, and Unwin's at Bulleen. Clarke's Special Survey of 31,375 acres near Sunbury was made possible when blocks of land of not less than 20,000 acres were put up for sale at £1 per acre without competition.

Surveys were further confused by the use of unsuitable instruments. Several theodolites had been imported from England in 1840 to replace circumferencers but the Governor of New South Wales, Sir George Gipps, did not enforce their use, largely because more scrub clearing was necessary for a theodolite survey and thus fewer surveys would be made. Before the 1870s, therefore, no reliance could be placed upon the land settlement surveys, and it was often impossible to obtain agreement of two adjacent surveys for issue of Crown grants, unless they had been made at the same time by the same surveyor.

By 1851 the Victorian survey administration was in great confusion. The rise in population from 77,000 to 539,000 within the succeeding decade was to cause more difficulties; it was almost impossible to satisfy demands

for topographic surveys of the goldfields, for geological surveys, for surveys for railways, electric telegraph, and public works, and for marine surveys. Only surveys defining land boundaries were being carried out, while no survey framework had been established with which surveys for settlement could be co-ordinated.

In the 1850s the Government recognised that basic surveys on trigonometrical principles were essential for accurate mapping and survey. As a preliminary to a detailed survey for the public works of Melbourne, the Government directed that a trigonometric survey be carried out, and another was then made in preparation for improvements in Hobsons and Port Phillip Bays. A small party from the Corps of Royal Sappers and Miners from England cleared hilltops and erected beacons for trigonometric stations. This was the beginning of a proposed primary, secondary, and tertiary triangulation of the whole Colony, and it formed the framework for future topographic and cadastral surveys. In 1858 a variation of the proposed triangulation was approved by the Government. Geodetic surveyors were to be appointed to proceed with geodetic triangulation from a base line near Werribee; from that survey the Colony was to be divided into "geographical squares" of one degree each of latitude and longitude, each "geographical square" in turn to be divided into a hundred blocks (parishes) of about 24,000 acres. The parishes were to be subdivided for land settlement, the work being done by contract surveyors who were to use the block boundaries as base lines.

The establishment of the survey framework was not successful. Some meridional lines and parallels were laid down over country too rugged or too heavily timbered to be suitable for agricultural settlement, while public demand for surveys in distant fertile agricultural land could not be satisfied. Furthermore, the geodetic divisional lines were generally disregarded by the contract surveyors conducting settlement surveys.

In 1868 the Government decided to abandon the geodetic survey, although it was far from complete. It was considered necessary, however, to define the New South Wales-Victoria boundary from the source of the Murray River to Cape Howe, as the authorities wanted to know whether those engaged in mining operations on the Delegete, and on other streams near the border, fell under New South Wales or Victorian jurisdiction. The definition of the boundary on the ground was a difficult and intricate survey covering rugged country in the most isolated part of the Colony, and it required an extension of the major triangulation from east Gippsland into New South Wales. Although far from complete the Victorian geodetic survey provided a basis for scientific mapping. Following the border survey some geodetic work was done through the Mallee by contract surveyors, but proof of accuracy was difficult to obtain because the country lacked elevations suited to triangulation.

Following the introduction of the Torrens land title system in 1862, land legislation in 1865 permitted free selection before survey within 30 miles of the goldfields, and in one year several thousand occupation licences were granted for a total area of more than 2 million acres. The result was that public requirements, including the retention of water frontages for the Crown, reserves, and access roads were often disregarded, while many allotments were left unnecessarily irregular in shape; surveying

became slower, and small, inferior portions of Crown land were often left without access. Moreover, since the occupation licensees demanded that their land should be surveyed, inexperienced contract surveyors were often employed.

In the Survey Department the charting of the surveys was much in arrears and there were numerous cases of the same land having been sold twice by the Government. A Royal Commission in 1870 found that the compilation of the Melbourne district plan was twelve years in arrears, that original surveyors' plans were being mishandled, and that detached surveys were often unchecked and frequently worthless. Reforms included the periodic checking of equipment and the preparation of a re-survey programme. For several years afterwards, up to 50 per cent of the Department's survey expenditure was for re-surveys. In every district the re-survey of numerous blocks, and in some districts of whole parishes, had to be effected before the issue of Crown grants. Re-survey was found to be essential for all goldfield townships which had not been abandoned.

In the following fifty years changes were made in the type of settlement surveys, and variations were made in the original programme of surveys of townships, roads, and subdivisions of unimproved Crown land. There were the village settlements; swamps were reclaimed and subdivided for intensive cultivation; freehold lands were re-purchased and subdivided for workmen's home sites; much larger areas of re-purchased rural land were subdivided for closer settlement; and lands suitable for dairying and fruit growing by irrigation were re-purchased and subdivided.

During this century the topographic mapping of Victoria has mainly been independent of surveying for land settlement. It has become a joint activity of the State and Commonwealth Governments: the State uses it as a basis for its own maps, and for co-ordinating geodetic and cadastral surveys; the Commonwealth uses it for mapping for defence needs and to ensure mapping co-ordination between States.

Production of strategic maps was first attempted by a branch of the Royal Engineers who attempted unsuccessfully to use the Victorian cadastral plans by adding contours and other topographic detail. Between the two world wars aerial photography for mapping was carried out by the Royal Australian Air Force, and photogrammetry supplemented the plane table, finally replacing it. Victoria's map coverage was still entirely inadequate in 1939, and an emergency mapping scheme resulted in compilation of hastily prepared topographic maps of certain previously unmapped localities.

In 1940 Victorian legislation provided for the co-ordination of Victorian cadastral surveys and for increased co-operation with the Commonwealth in a national mapping scheme. It also provided for the establishment of standard permanent survey marks with which later surveys would make connection for the laying down of standard traverses as a subsidiary to major triangulation.

After the end of the Second World War a precise geodetic survey for mapping of proposed developmental areas was begun. Aerial photography was used, and later, electronic measuring devices. The progress of land boundary definition during the same period was much less spectacular, although a great deal of work was done on the subdivision of re-purchased estates for the settlement of former members of the Armed Services.

Names of counties, parishes, settlements, and natural features are inter-related with the survey and mapping of a country. Before the proclamation of the *Survey Co-ordination (Place Names) Act 1965* and the establishment of the Place Names Committee, naming was unsystematic: some places had received the names of local natural features and some had Aboriginal names; others were named according to prevalent flora or fauna, or with historical names given by the explorers; the name of the first resident of a locality might also be used, or that of an innkeeper, or of a driver whose bullock team had often camped in a certain spot; and many places had been named by the early surveyors. In assigning names the Committee ensures, as far as possible, that no duplications are created, and that careful discrimination is exercised to avoid the introduction of names void of significance and inappropriate to the permanent nomenclature of the State.

#### NAMING OF RIVERS

In Australia, with the notable exception of the Murray River downstream from Yarrowonga, rivers are too small for any major navigation and the early explorers and settlers more often crossed than followed them. Where crossing places cannot be identified, it is not easy to decide whether the rivers crossed and named by the explorers are those now known by the names given them. Because of the nature of major rivers with numerous tributaries, their naming is more controversial than the naming of localised geographical features. Different names can and do apply to the different parts of a stream; where streams unite, the name of one may continue to be used for the lower part, or a new name may be given; and streams or parts of streams may also have different names at different times in their history. Sometimes a multiplicity of streams have the same name: in Victoria the name Stony Creek appears 63 times; Back Creek, 45 times; Deep Creek, 35 times; and Sandy Creek and Spring Creek, 32 times each.

By 1803 the coastline of Victoria had been delineated by Flinders, Bass, Grant, and Murray. Bass, landing and searching for water in 1798, discovered and showed on a map the stream on the east coast of Western Port which now bears his name. Grimes, sailing round Port Phillip Bay in 1803, referred to streams but did not bestow any names.

In 1824 Hume and Hovell journeyed southward from Lake George to the sea and named the Hume (now Murray), Ovens, and Hovell (now Goulburn), and gave other names including King Parrot Creek and Sunday Creek to streams north of the Great Dividing Range; the names Arndell and Exe which they used south of the Range have disappeared as their location of the streams was vague.

In 1836 Major Mitchell, passing through "Australia Felix" on his journey of exploration to the sea, gave names to many streams. The Loddon, Avon (near St Arnaud), and Avoca were named after streams in England and Ireland; he named the Richardson, Norton, McKenzie, Chetwynd, Stokes, and Glenelg after various persons; and he used the native names Wimmera and Wannon. On his return journey he named the Crawford, Fitzroy, Surrey, Grange, Hopkins, Barnard (now known as Coliban), and the Campaspe.

Run holders had entered Gippsland from the Monaro plains before 1840, but did not publicise their activities. However, in 1835 McKillop, in a sketch



of his route to Omeo, showed nearby Livingstone Creek (named after a member of his party). Although McKillop's Crossing on the Snowy was named after him it is possible that he crossed this river further north in New South Wales and that it was McMillan in 1839 who crossed near McKillop's Crossing. The name Glengarry, for many years applied to the La Trobe River, is normally attributed to McMillan. In 1839 the native name Bukkin (Buchan) was used by Baylis, another run holder from Monaro.

Strzelecki's route in 1839 and 1840 from Monaro to Western Port followed Cowrang (Corryong) Creek for part of the way. Although Corryong takes precedence historically, this stream is known on various maps as Nariel Creek, Zulu Creek, Jeremal Creek, and Wheelers Creek. Strzelecki, never modest in his claims, showed on his map the entire courses of the rivers he crossed. These alignments were soon proved faulty, thus providing argument in favour of McMillan's names. McMillan had made various journeys in Gippsland; by January 1840 he had reached the Macalister and by February 1841, Port Albert. He presumably kept a journal, and he described his journeys in letters a number of times, often many years later. A letter to his employer, Macalister, in 1850 mentions the Nicholson, Mitchell, and Avon Rivers. Tyers used Strzelecki's names on a map in 1844; McMillan's names, with the addition of Macalister [*sic*] were published in Sydney in 1845. Ham's map of Victoria published in 1847 generally used Strzelecki's names but later maps often showed both sets of names.

To resolve early conflicts in bestowing names, Mitchell as Surveyor-General had sought advice from the Church authorities as to who was entitled to bestow names. The relevant section in the Victorian *Land Act* 1869 remains and permits the Governor in Council to alter names but apparently not to give them. Under the *Survey Co-ordination (Place Names) Act* 1965 a six member committee representative of several departments now carries the responsibilities connected with the naming or re-naming of geographic features, including the spelling of the names. It works in consultation with municipal councils and other authorities. Since the Place Names Committee has been in operation determinations have clarified the position regarding the Maribyrnong and the Yarra, Mount William, Deep and Jacksons Creeks, and tributaries of Dandenong Creek. The Committee has also conferred with the Geographical Names Board of New South Wales about the Murray River being so named from its source near Forest Hill to its mouth at Goolwa, South Australia.

## LAND SETTLEMENT

### *Early settlement*

The first official attempt at settlement in the Port Phillip District, which eventually became the State of Victoria, was under the leadership of Lieutenant-Colonel David Collins, whose party established a camp near the site of the future Sorrento in 1803, and who described the area as an unpromising and unproductive country. After four months Collins departed with his party to Hobart. A second attempt at settlement was instigated in 1826 when a party led by Captain Wright landed in Western Port. This settlement was abandoned early in 1828. The first lasting settlement was

established by the Hentys at Portland in 1834 ; this was followed by Batman's landing at Indented Head and later at the head of Port Phillip Bay in 1835, and by Fawkner's expedition in the same year. These settlements were not, however, authorised by the Government, nor did they conform to Bourke's proclamation of 1835 providing for prosecution of trespassers on Crown lands. Despite this, Bourke, acknowledging the facts of the situation, sent a police magistrate to report on conditions in 1836 ; he found 177 people with more than 25,000 sheep established with stations as far as 80 miles inland. Captain William Lonsdale was sent to act as magistrate later that year ; in 1839 Charles Joseph La Trobe took office as Superintendent.

Unauthorised pastoral settlement continued to expand to new areas, and in 1836 an Act designed to legalise squatting was passed. Territories outside the previously determined settlement boundaries were divided into Districts under the control of a Commissioner of Crown Lands. Each squatter was allowed to occupy as much land as he could obtain for a yearly payment of £10. When the alienation of Crown land in country areas began the land was auctioned at 12s per acre. The first country land was sold in the Parish of Will-will-rook, north of Melbourne, in September 1838, and under this system the land was acquired at once in fee simple on payment of the purchase money. The first sale of town lots had been held in June 1837 ; it was of land in Melbourne and Williamstown. In 1839 the Legislative Council passed an Act providing for a tax on stock, the proceeds of which were to be used to finance the Border Police. In return for the annual fee and the stock tax, the squatter was to receive protection and supervision.

By the 1830s settlement in New South Wales had passed the Murrumbidgee, and for a time southward movement slackened. However, Major Mitchell's journey through the Wimmera and the Western District (Australia Felix) and his published reports of vast areas of open plains, together with the Acts of 1836 and 1839, stimulated further rapid expansion. Squatters (the overlanders) moving from the north reached Carlsruhe and the Coliban in 1837, and runs were established in the Goulburn valley as far south as Seymour. By 1838 stations had spread to the Campaspe, and within two years country as far west as the Pyrenees had been taken up. Settlement of southern Victoria from Melbourne and Portland was proceeding at the same time. From 1836 to 1840 the squatters occupied the area from Werribee to the Grampians and virtually all of the Western District. After 1844 there was a move by pastoralists to take over the less favoured Wimmera and Mallee. Between 1840 and 1844 the Gippsland plains between the mountains and the sea were occupied, and by this time almost three quarters of Victoria was held by the squatters.

However, the existing system of tenure was seen by the Governor, Sir George Gipps, as being unfair and as imposing a penalty on small land holders. In 1844, for example, four of the largest squatters occupied 7.7 million acres carrying 1.2 million sheep, and paid £560 in licence fees, whereas fifty-six of the smaller squatters, paying the same fee, depastured 68,000 sheep on 433,000 acres. To overcome the situation two sets of regulations were drawn up in 1844. The first limited the size of runs to 20 sq miles or 4,000 sheep, and provided that each licence should cover only one run. The second, the purchase regulations, were designed to give security of tenure and provided that after occupying the land for 5 years, the

squatter could purchase 320 acres of his run at £1 per acre. In return, he was to be given possession of the run for 8 years, when he could purchase a further 320 acres, and occupy the run for a further 8 years. If the squatter did not buy, any other person could do so and thus obtain possession of the whole run.

There was a violent reaction to these proposals from the squatters; they held that the fees and purchase prices were too high, the powers of the Land Commissioners too great, and the stock tax illegal. The report of Cowper's 1884 Committee on Land Grievances supported these views, but the Colonial Office did not act on the report. However, agitation continued and in 1846 the Waste Lands Occupation Act was passed. This retained some features of Gipps' system relating to security of tenure but omitted the safeguards. It was brought into operation by Orders in Council in 1847, and was intended to apply generally to Australia. The Act divided New South Wales into three districts—the settled, intermediate, and unsettled districts. The settled districts included most of the area in the existing nineteen counties, the nearer areas surrounding Port Phillip and Portland Bays, and land within three miles of the coast. The intermediate districts comprised parts of certain counties which had not been taken up and thirty-one new counties stretching from Brisbane to Portland Bay. The unsettled districts comprised the country beyond.

In the settled districts leases were to be granted for one year, and in the intermediate districts for not more than 8 years, with the Crown having the right to sell all or part on 60 days notice at the end of each year. However, the lessee had a pre-emptive right to purchase, or to receive compensation for improvements if he did not exercise this right. In the unsettled districts the runs were to be leased for not more than 14 years at the rate of £10 per annum for not more than 4,000 sheep, with an extra £2.10.0 for every additional 1,000 sheep carried. The lessee was to have a pre-emptive purchase right during the currency of the lease and could purchase portions of not less than 160 acres at a minimum price of £1 per acre. If the runs were sold at the end of the lease, the lessee was to receive compensation for improvements.

The 1847 Orders in Council should have clarified the position of the squatters and given them security of tenure, but in the Port Phillip District there were differences of opinion on the interpretation of the Orders. In particular, the squatters held that leases for definite periods of 8 or 14 years were implied, and that pre-emption meant that the squatter had the general right to purchase land within his run at any time during his lease. On the other hand, the Government held that leases were to be for periods of 8 or 14 years, and that pre-emption gave only the right of purchase, confined solely to the homestead, at the end of the lease. These differences of interpretation led to legal action, with the result that, although a workable compromise was put forward by the Colonial Office in 1853, and leases were granted to squatters in New South Wales in 1854, no leases were issued in Victoria. In their place, and as a result of a Royal Commission of 1854, yearly licences carrying the privileges of pre-emptive purchase of homestead and compensation for improvements were issued.

By this time Victoria had been created an independent Colony. The discovery of gold in 1851 resulted in a dramatic increase in the population

from 77,000 in 1851 to 539,000 in 1861, and emphasis on land policies changed from definition of the rights of squatters to the problem of opening the land for agricultural rather than pastoral production. As the surface gold diggings became less profitable, the greatly increased population began to demand the release of the land for agricultural purposes. Until this time land transactions were legally very cumbersome, and it was fortunate that in 1858, when most Colonies were considering Acts for small settlers, the Robert Torrens' Real Property Act was passed in South Australia. The merits of the system of registration of title certificates with details of encumbrances appearing on the titles were recognised, and in 1862 similar provisions were introduced into Victorian law.

#### *Selection Acts*

The general pressure, together with government concern about the slow rate of agricultural development, resulted in Nicholson's *Land Act* 1860, the first legislation passed by the Victorian Parliament concerning the disposal of Crown lands. Land could be selected after survey and payment, but no one could select more than 640 acres within a year unless the additional area had been open for selection for over a year. The price was £1 per acre, and where two or more applicants applied for the one block, a limited auction (confined to the applicants) was held. The selector had the option of paying cash for the whole of his block, or for half and renting the second half for 1s per acre with the right to purchase later. When the Act was passed about 4 million acres of the best land had already been sold. However, the squatters were in a better financial position to buy their land, and the problem of settlement of smaller farmers remained unsolved.

Approximately 800,000 acres, mainly in the Western District and around the goldfields, had been disposed of under this Act by 1862, when a further attempt was made to prevent competition between squatters and farmers by setting aside agricultural areas for selection. It was hoped that instead of the land passing to large landed proprietors it would be taken over by tenant farmers, farm labourers, and the large number of persons who had initially been attracted to the Colony by gold.

The Duffy Land Act was introduced by Charles Gavan Duffy who was then responsible for lands. As before, the price was £1 per acre, but the drawing of lots was substituted for limited auction in the event of there being more than one applicant. Half the area was to be paid for at once, and the remainder of the purchase price, at the annual rate of 2s 6d per acre, was to be paid over a period of 8 years. No more than 640 acres could be selected by any one person each year. Three alternative conditions on occupation were imposed; each selection was to be enclosed with a substantial fence, a habitable building was to be erected on the land, or one acre out of ten was to be cultivated within twelve months. In the three years of the operation of the Act almost 2 million acres were sold, but the squatters, through "dummy" purchasing, were able to obtain large areas, and it was not possible to enforce the restrictions designed to retain the land as agricultural. Consequently most of this land passed into the hands of the squatters and the alienation of the western plains was almost complete. In 1863 the improvement clauses were withdrawn because they could not be enforced.



Wheat harvesting at Cope Cope near St Arnaud, using auto-header, with silo in the background.

*Australian Wheat Board*

Hop field in the Ovens valley near Myrtleford.

*Department of Agriculture*



Hay cutting with reaper-and-binder, and stooking, at Werrbee, c. 1935.

*Department of Agriculture*





Grading apples for export, c. 1910.  
*Department of Agriculture*

Spreading sultanas on drying racks at Red Cliffs.  
*State Rivers and Water Supply Commission*





Row crop irrigation in northern Victoria (top). Ploughing before potato planting at Mt Evelyn (centre). Aerial application of seed retention chemical to phalaris grass crop at Alexandra (bottom).

*I.C.I. Australia Ltd*



It was not until 1865, however, that the problem of settlement on small holdings was overcome by Grant's Act, which added a provision to the existing legislation requiring the land to be taken up on a leasehold for 3 years before purchase, and requiring residence on the block during the 3 years. Rental was 2s per acre each year, and improvements to the value of £1 per acre had to be carried out within 2 years. If the conditions were complied with, the lessee had the right to purchase at £1 per acre. If he did not wish to exercise this right, he could require that the land be offered at auction and he could recover the value of improvements made. The Act stimulated settlement, but did not eliminate the "dummy" purchases. Under this Act, approximately 3 million acres were selected, although because of forfeitures only 1.5 million acres matured into freehold titles. Provision was also made for the licensing of land for residence and cultivation purposes in areas of up to 20 acres adjacent to the goldfields. Eventually the licensees of each area were given the right to convert their areas to freehold providing that no mining objections existed.

In 1869 Grant's second Land Act was passed and became operative in 1870. Selection before survey was introduced, the area to be selected was reduced to 320 acres, and a person was allowed to select only once. The three year preliminary lease and requirement for carrying out improvements were retained. The lessee was required to enclose the block and to cultivate 1 acre in 10 before the end of the three year period. The rent payable was 2s per acre, which was credited to the selector as part payment of the £1 per acre purchase price. At the end of three years, on certification of compliance with the conditions, the selector could either purchase his block outright by paying 14s or take out a 7 year lease at 2s per acre per year, the amount to be credited as payment of capital. The Act also contained provision for sale of up to 200,000 acres of Crown land each year by auction at an upset price of £1 per acre. The ballot system of obtaining priority for simultaneous applications was abolished, and public hearings, called Local Land Boards, were instituted. Dissatisfied applicants could appeal for a hearing from the Minister. This Act checked the earlier abuses and the more liberal conditions made it very effective.

Apart from encouraging agricultural settlement, the 1869 Act clarified the provisions governing pastoral occupation. Runs on unalienated and unselected Crown lands were divided into two types. "Existing runs", those in existence before the operation of the 1869 Act, were unlimited in size, and were held under pastoral licence, renewable annually. "New runs" were to be held under any term not exceeding 14 years, the right to the lease having been purchased at auction in the first instance. They were limited in size to a capacity of 4,000 sheep or 1,000 cattle and carried the pre-emptive right to purchase 320 acres at £1 per acre. The former were by far the most extensive and numerous. The annual rent for both types was based on carrying capacity (1s per sheep or 5s per beast). The establishment of new runs without conditions was not popular and was discouraged by the Government, which later offered an alternative of "grazing rights". The possessor of a right could graze livestock on Crown lands not forming part of a run. Under this system unoccupied pastoral lands were divided into blocks and offered for tender annually.

There were economic difficulties during the 1870s, as well as a long  
C.2784/69.—5

drought during the decade. A Committee of Inquiry in 1879 found that the drought and the need for improvement in the first 3 years caused hardship to the selectors on agricultural land. Consequently the 1869 Act was amended by Longmore's Act, which removed the need for unproductive expenditure in the early years. The drought broke in 1878 and settlement went ahead rapidly, aided by an Act of 1877 which imposed a land tax to attenuate the large estates. Grant's Act of 1869 as amended expired in 1880, but it had largely achieved its objectives of safeguarding selection for agricultural purposes. Almost all of the then recognised agricultural land had been allocated, including 11 million acres (mostly in the Wimmera, Goulburn valley, and Gippsland) between 1869 and 1880. The only substantial areas remaining were in the hill country of Gippsland and the Otways, and in the Mallee.

### *The Mallee*

Because the legislature was preoccupied with other matters, land tenure problems were held in abeyance for several years. However, circumstances directed attention to the Mallee—in particular rabbits and wild dogs which were using it as a breeding ground and had reached plague proportions. The Mallee had been partly settled since the late 1840s but because of the vermin there were only 145 runs carrying 122,000 sheep and spread over 9 million acres. The area produced 5,000 bales of wool in 1875, and only 900 in 1882. To cope with the situation the *Mallee Pastoral Leases Act* 1883 came into force on 1 December in that year. The Act divided the Mallee into two divisions—one of about 10 million acres being known as the “Mallee country”, and the other, of about 1.5 million acres, along the southern and eastern fringes, called the “Mallee border”. The “Mallee country” was divided into blocks of various sizes and each block into two parts. At the option of the applicant a lease was granted for one of these and carried the obligation of occupying the other. The main conditions were that the lessee was to destroy vermin on the whole block within the first 3 years, surrender to the Crown the unleased portion after 5 years, and maintain improvements in good order. The time of the lease was not to exceed 20 years, and on expiration the land and improvements reverted to the Crown. Annual payments for “Mallee blocks” leased portions were fixed at 2d per sheep or 1s per beast for the first 5 years, 4d or 2s, respectively, during the second 5 years, and 6d and 3s over the remaining period. For the unleased portion, rates were 2d per sheep and 1s per beast carried, over each of the 5 years of occupancy. The “Mallee border” was subdivided into “Mallee allotments” (of less than 2,000 acres) which were available for lease on the same terms as the leased portion of a “Mallee block”. The Act proved to be entirely successful and previously abandoned country was reoccupied.

Approximately 25 million acres had been alienated when the *Land Act* 1884 replaced the *Land Act* 1869, and subsequent Acts (except, of course, the *Mallee Pastoral Leases Act*) dealt with the remaining fragments of unalienated Crown land. It classified those lands into pastoral lands, grazing and agricultural lands, auriferous lands, lands which could be sold by auction, forest reserves, timber reserves, and water reserves. The pastoral lands were leased as pastoral allotments, capable of carrying from 1,000 to 4,000 sheep, for a term not exceeding 14 years,

after which they reverted to the Crown. Rental was 1s per sheep or 5s per beast, and the lessee had the right to purchase 320 acres as a homestead during the period of the lease. The agricultural and grazing lands were leased in areas not exceeding 1,000 acres for periods of up to 14 years. Rental was fixed by appraisal at between 2d and 4d per acre. The lessee had the right of selection of 320 acres.

In 1887 it was discovered that the Mallee had great potential for crop production. This, together with the development of cheaper clearing and cultivation methods using the scrub roller and stump-jump plough, led to a land rush to the Mallee. The Mallee Act of 1889 permitted the lessees of "Mallee allotments" to select 320 acres under the same conditions as selections under the 1884 Land Act. This privilege did not apply to lessees of "Mallee blocks"; however, many of these subdivided their leases into allotments and sold them to newcomers.

Under the Act of 1883 subdivision of "Mallee allotments" as a means of permitting selection to continue was held to be illegal. By 1891 the new settlers were paying the lessees as much as £1 per acre. As a result of a Committee of Inquiry this practice was officially stopped in 1891, but it unofficially continued although the settlers had no legal right of selection. They and others, however, agitated for the right for all Mallee settlers to select 640 acres of their leases. This right was eventually granted under Cuthbert's Act in 1895. The Act also reserved all land within 3 miles of the Murray River and prohibited the single ownership of more than 3 square miles of Mallee land. As a result of the concession, and despite the drought, there were 60,000 persons in the Mallee by 1898. Acts of 1898 and 1899 fostered the advance by allowing classification of Mallee land and by setting up small settlers in the Little Desert. By 1907, 3.25 million acres of Mallee country had been taken up.

### *Gippsland*

The settlement of the hill country of Gippsland had been delayed because the area was densely timbered and when cleared the country was suited to dairy farming rather than to cropping. As early as the 1870s the local market was over-supplied with butter, and with no other market available there was little interest in developing the area. Innovations in the 1880s, including refrigeration and the factory manufacture of butter, made exports possible. Rough roads were gradually developed for transport to the factories and the south Gippsland railway was opened in 1891. Under these conditions and the provisions of the Land Act, settlement, although still difficult physically, went ahead rapidly.

### *Other land legislation*

Besides legislation outlined above and that concerning closer and soldier settlement, various Acts have been passed in Victoria to regulate the sale and occupation of Crown land. Since 1860 there have been ninety Acts (including the consolidations) which have dealt with some aspect, although many, having served their purpose, have been repealed. Furthermore, even in the earliest legislation there was provision for residential industrial licences and leases, and for the reservation and management of Crown lands for public parks, recreation, etc.

Apart from closer settlement legislation the next major amendment to land legislation was the *Land Act* 1911, which introduced a system of selection by purchase leasehold. The area of allotment varied according to the quality of the land, the maximum being 960 acres outside the Mallee and 1,600 acres within that territory. Purchase money ranged from 5s to £1 per acre and was payable over 20 years (or 40 under special circumstances). This continued until 1956, when the Improvement Purchase Lease was introduced. Under this, the lessee had to carry out more improvements than necessary under any previous legislation before freehold was permitted.

#### PROPERTY DISTRIBUTION

There was a continual demand for agricultural land even after the initial process of alienation had been virtually completed by the 1880s. This could only be met by resumption and subdivision of alienated land which the squatters, by "dummy" purchasing and circumventing the intention of the early land legislation in other ways, had built up to relatively few large pastoral "runs"; they did not establish small farms devoted mainly to agriculture. A policy of acquiring this private land and re-distributing it was first put into effect by the Victorian Government in 1898. The Land Act of that year authorised the purchase of private lands suitable for closer settlement, and thus gave the first authority for government schemes which were to be of considerable importance, particularly after the First and Second World Wars. The provisions of the 1898 Act were incorporated in the Act of 1901. These Acts allowed the Crown to repurchase land, but each individual agreement had to be ratified by Parliament. This was a cumbersome procedure, and, without powers of compulsory acquisition, progress was slow; in six years of operation to 1904 less than 34,000 acres were acquired. The main provisions were that sale was to be by agreement, and that new settlers were to pay a price sufficient to cover the costs of the land, subdivision, roads, clearing, draining, and fencing or other improvements. The purchase money plus interest at 4.5 per cent was payable in 63 half-yearly instalments. The conditional purchase lease included provisions for personal residence for 8 months during each of the first 6 years; improvements to the extent of 10s per acre which were to be carried out before the end of the third and sixth years; and a stipulation that the land was not to be transferred, assigned, or mortgaged within 6 years. The land so acquired was generally subdivided into agricultural farm allotments, but in some localities small holdings of up to 20 acres were made available to enable farm labourers and their families to obtain part of their living from the land. Several areas were also purchased for subdivision into workmen's home sites.

A new Act designed to overcome problems in the earlier Acts was passed in 1904. This Act introduced the concept of compulsory purchase and for administration of land allotment by a Board, thus removing the necessity for Parliament to approve individual transactions. The Minister administering the Act could direct the Board to acquire the land (at auction, by direct purchase, or by exchange of land) at a price not exceeding the Board's valuation. Should the owner refuse the offer, then by resolution of both Houses of Parliament the land could be acquired compulsorily. The owner could claim exemption of land up to £10,000

in value, and the price payable for the remainder would be fixed by a Judge of the Supreme Court. The Board could dispose of acquired lands as agricultural allotments at fixed prices on terms similar to those under earlier legislation. The Act also provided for finance for the scheme to be raised by the issue of government stock or debentures up to £500,000.

The *Closer Settlement Act* 1906 relaxed provisions covering repayments in the event of hardship. The Act of 1907 empowered the Board to grant allowances (at 5 per cent interest repayable over 16 years) to lessees who had used all their capital on improvements. The Act was further amended in 1909 when the powers of the Land Purchase and Management Board were expanded to permit acquisition of land in irrigation districts for future settlement on the recommendation of the State Rivers and Water Supply Commission. The Water Acts of 1905 and 1909 entrusted management of all irrigation works (except the First Mildura Irrigation Trust) to the newly created State Rivers and Water Supply Commission. The Commission had power to collect rates and to allot water as a right to properties in channel districts. A vigorous policy of closer settlement was undertaken, and more extensive use of water occurred. The area irrigated increased from 86,000 acres in 1910 to 245,000 acres in 1915. In 1915 and 1916 a Royal Commission investigated the progress of settlement schemes and this led to many administrative changes. By 1917 over 570,000 acres had been resumed and about 4,500 settlers were in occupation, but in the next few years land acquisitions for soldier and civilian settlement and for other schemes sponsored by the Government were on a much larger scale.

Closer settlement progressed rapidly because of government policy to settle discharged soldiers on the land. This settlement was based on legislation introduced in 1917 and amended several times in minor ways until 1924. Conditions of settlement were similar to those operating under the ordinary scheme, but there were several concessions, one of the most notable being that no payments were required during the first three years of occupancy. The operation of the Acts was under the control of the Closer Settlement Board, with the limitation that closer settlement areas under irrigated conditions and situated within an irrigation and water supply district were managed by the State Rivers and Water Supply Commission. In 1925 a Royal Commission appointed by the Victorian Government investigated soldier settlement, and this resulted in deferment of instalments and the writing off of some debts. The Discharged Soldier Settlement Acts were consolidated and incorporated into the *Closer Settlement Act* 1928. Over the period of independent operation almost 10,500 soldiers were settled on the land. Unfortunately many of the settlers met difficulties because the scheme had been based on over-optimistic price expectations. In fact, many of the areas were not sufficient for what was known as a "home maintenance area". The prices for a number of products had fallen by 1924, and in 1927 a Royal Commissioner, Mr Justice Pike, was appointed by the Commonwealth to inquire into losses owing to soldier settlement and the respective responsibilities of the Commonwealth and States. In 1929 he estimated that only 83 per cent of settlers remained on their blocks and that losses (principal, interest, and administration) from the scheme in Victoria were close to £7.7m.

A Royal Commission in 1933 inquired into the position of about 300 migrant settlers and concessions were made to them. By this time many

settlers suffered great hardship caused by a cycle of adverse seasons, by the uneconomic size of holdings which were not proving as productive as originally estimated, and above all, by the prevailing financial depression. The difficulties had become so great that the Government launched a five year plan to increase areas where necessary, to revalue all properties, and to write off sufficient debts so that settlers would be able to meet their commitments and ultimately obtain freehold titles. This plan was completed in 1938 and the remaining settlers, about 11,000, were given new terms of repayment of adjusted liabilities. This virtually finalised the settlement schemes at the time with the following results :

## VICTORIA—ASSISTED LAND SETTLEMENT TO 1938

Particulars	Soldier settlement	Closer settlement
	acres	acres
Non-irrigable areas—		
Purchased land	1,771,183	1,150,991
Crown land	584,028	69,214
Irrigable areas—		
Purchased land	125,186	181,144
Crown land	1,889	1,219
<b>Total area</b>	<b>2,482,286</b>	<b>1,402,568</b>
	number	number
Settlers who had—		
Fully repaid their liabilities	803	4,827
Left their holdings	6,677	6,663
Remained under contract	5,448	5,240
<b>Total settlers</b>	<b>12,928</b>	<b>16,730</b>

The second major period of closer settlement took place after the Second World War. Although legislation was similar in many ways to that of the earlier period, the administration of the scheme was based on recommendations made by the Rural Reconstruction Commission. In Victoria the enabling legislation was the *Soldier Settlement Act* 1945. The Act established a Soldier Settlement Commission and provided for the raising of an initial £15m for soldier settlement. The Commission had powers to acquire land for development and subdivision, and to make advances to soldiers for the purchase of single unit farms. Under the provisions of the War Settlement Land Agreement (an agreement between the State and the Commonwealth) the State undertook to develop the resumed land to a stage where it could be brought into production quickly. The agreements also provided for financial arrangements between the Commonwealth and the States in relation to soldier settlement. The Commission acquired over one million acres of freehold land, and set apart 50,000 acres of Crown land for the purpose. Over 3,000 holdings were allotted to ex-servicemen for all forms of farming, both under rainfall and irrigation conditions. Before allocation, the Commission advanced holdings to a stage of development by providing houses, out-buildings, and basic farm improvements. Practically all settlers under this scheme have been successful, largely because of the care taken in their selection, favourable seasons and prices over the ensuing

years, a concessional interest rate of 2 per cent on the capital liability placed on each holding, and a repayment period of 55 years. At the conclusion of the scheme, 3,292 soldiers had been settled on Commission estates, and in addition the Commission had made advances to 2,878 settlers to assist in the purchase of single unit farms.

After the conclusion of soldier settlement the *Land Settlement Act 1959* provided for general settlement under provisions broadly similar to soldier settlement, but without advances for single unit farms. The Rural Finance and Settlement Commission, formed in 1962 by merging the Soldier Settlement Commission and the Rural Finance Corporation, adopted a policy of developing unproductive virgin Crown land, and of acquiring and re-subdividing areas opened up for irrigation, where dry farming had previously been carried out. The first type of development on such a large scale was unique in Australia. In the Heytesbury area south of Camperdown over 100,000 acres of virgin land was set apart for development which began in 1956, and over 71,000 acres had been cleared and sown to pasture by 1966. Other large projects included Yanakie (Wilsons Promontory), and the East Goulburn Irrigation Settlement where eighty-eight dairying and seventy-nine orchard blocks have been allotted. Until 1966 the Commission had acquired 20,489 acres of freehold land and set apart 106,681 acres of Crown land for "civilian" settlement schemes, and 421 holdings had been allotted. The target for future allocation is fifty holdings each year.

#### RURAL DEVELOPMENT

Victoria is the most intensively farmed State in the Commonwealth. Its 38 million acres of farm land produce annually more than 100 million bushels of cereal grain, about 0.25 million tons of potatoes and many thousands of tons of other vegetables, fruit, and other produce. Its pastures are grazed by more than 33 million sheep and 4.5 million cattle, producing some 300 million lb of wool, 100,000 tons of butter, large quantities of milk, cheese and other dairy products, and over 500,000 tons of meat each year.

In the early 1800s whalers operating along the coast grew crops sporadically for their own use, and in 1834 Henty settled at Portland Bay and set up a farm. By 1836 Captain Griffiths had settled at Port Fairy to combine farming with whaling, and in the same year Thomas Manifold landed sheep at Point Henry near Geelong. This embryo farming community did not remain near the coast for long. In 1837 the Learmonth set out for Lake Colac and J. H. McLeod discovered Lake Corangamite, and in 1838 Hugh Murray with 100 sheep occupied the site of the future town of Colac. The following year David Fisher and the Mercer brothers established Mt Shadwell Station, and in 1839 the Brown brothers, with sheep from Tasmania, settled at Brown's waterhole (now Lismore). In the same year the Hopkins River was reached by Watson, and the first land in the Terang district was occupied. By the early 1840s the squatters had reached the Grampians.

The Western District was not the only part of Victoria to be settled during this period. C. H. Ebdon established the Bonegilla run on the river flats at the junction of the Murray, Kiewa, and Mitta Mitta Rivers about 1835. In 1836 Major Mitchell explored the Wimmera, also the north-east of

the State to where, as a result of his reports of excellent grazing land, pastoralists moved from New South Wales. George Faithfull settled in the Wangaratta district in 1837. A severe drought north of the Murray in 1841 accelerated the southward movement. By the mid-1840s most of the best grazing land had been claimed as runs, many up to 250,000 acres in extent. An economic depression early in the decade caused wool prices to slump, but by 1850 wool production was re-established as a profitable enterprise with ready markets in England, and was the basis of the rural economy.

The potato shortages in Ireland in the 1830s and 1840s, culminating in the disastrous famine of 1847, caused migration to Australia, and the migrants mainly settled on small holdings purchased from the Crown in the vicinity of the developing towns of Warrnambool, Port Fairy (then named Belfast), and Koroit; however, it was the discovery of gold in the early 1850s which prompted the first major change in Victorian agriculture.

Cultivation before the discovery of gold had been confined to the production of feed for horses and of produce for household use, but large numbers of miners created an opportunity for rich returns from dairy farming and cash cropping. Wheat, oats, and vegetables were grown, and dairy herds were established on land adjacent to the goldfields. Barley was a crop which found a ready market in the malt houses of the mining towns. The demand for horse feed increased dramatically with the growth of mining, and many graziers turned to the production of hay and oats. It is only in comparatively recent years with the decline in the use of horses for farm power and transport that this demand has declined. The gold rush brought some hardship to the pastoralists, who found it difficult to keep shepherds, but it gave them a chance to diversify their activities and consolidate their fortunes by supplying meat, and later flour, to the diggings. Gold was also the catalyst of the beef and lamb industries; its discovery led to a change in the type of livestock carried on pastoral runs. Because of the demand for meat, cattle numbers increased on pastoral runs and Merino sheep were crossed with British breeds, although after the gold boom the breeding of fine wool Merinos reached a new peak.

Interest in agricultural development intensified as the amount of easily recovered alluvial gold began to decline. Many of the diggers needed a new source of livelihood and agitated for the release of land, and the squatters wanted legal title to the areas they held. A series of Land Acts in the 1860s and the 1870s sought to satisfy both these demands. The opening of pastoral runs for selection during these years brought about a wider diversification of the agriculture practised. Cereal production became more important, and flocks of dual purpose sheep continued to increase on the arable land while beef cattle tended to be restricted to areas unsuitable for cultivation. Horse breeding became a profitable occupation as the demand for horses for farm work and transport expanded; orchards and vineyards were planted; and dairying and tobacco and hop growing were established in the river valleys. The general pattern of land use which emerged by the 1880s has since remained basically the same, at least until the early 1970s, except for the development of irrigation districts, the extension of wheat growing and animal husbandry into the Mallee, and some minor changes in other parts.



Cereal growing began in the higher rainfall districts near the centres of population. This was partly because the environment in the future wheat belt was not suited to the late maturing varieties which had been evolved in Europe, and partly because wheat was not valuable enough on a weight basis to cart long distances by bullock and horse teams. Initial attempts to grow wheat in the Wimmera were abandoned after crop failures in the 1850s. Purple-strawed wheat imported from England about 1860 was better suited to the lower rainfall districts, and afforded the potential for extending wheat growing in these areas, but transport was still the barrier and often it cost more to carry a bushel of wheat to the seaboard than it did to ship it to England. Initial expansion of wheat growing took place in the northern part of the State and was associated with the completion of the railway line through Bendigo to Echuca in 1864. By the early 1870s the Wimmera was included in the wheat growing statistics. A railway line through Maryborough to St Arnaud was opened in 1878, a line to Stawell built in 1876 was extended to Horsham in 1879, and lines were built to Warracknabeal in 1886 and Serviceton in 1887. By 1900 most of the Wimmera was served by railways, which encouraged growers to take advantage of new techniques to increase production.

The early cereal growers had problems in a land where animal production was the main enterprise and unwanted animals a dominant pest. In the absence of adequate fencing, squatters' sheep were prone to graze crops; the rabbit, a newly introduced pest, reached plague numbers in the late 1870s and caused some properties to be abandoned. The Government erected a rabbit-proof fence in 1885, so cutting off the Mallee from Swan Hill to South Australia, and rabbits were brought under control in the Wimmera. By the end of the 1880s hope had revived, but drought and outbreaks of rust were features of the last decade of the century. From 1892 to 1896 the average wheat yield for the three Wimmera counties was 7 bushels an acre, and landholders turned to other sources of income, notably prime lamb raising and butter production.

In the 1890s development in the Mallee took place. The first meeting of the Closer Settlement Board to receive applications for wheat growing blocks in the Mallee was held in 1893; selections were first made in the southern Mallee and later in the central and northern parts of the region. Railway lines were also extended to the area during this period.

In the late 1890s the value of phosphate application for crop production became apparent and the benefit of bare fallowing, a practice brought from South Australia, was also demonstrated, especially in the dry season of 1902. The establishment of wheat growing in the Mallee and Wimmera was helped by development of agricultural machinery. The wheat stripper invented by Ridley in South Australia in 1843 was in general use from the beginning. The stump-jump plough was introduced in the late 1870s, and the seed drill made its appearance in about 1890. The introduction of Federation wheat soon after the turn of the century enabled wheat growing to be extended still further into the lower rainfall areas, and provided growers with a variety which could take full advantage of the improved fertiliser and cultivation techniques.

The use of pasture legumes was the most important innovation of later years. Until the late 1920s wheat growers enjoyed good yields and favourable

prices. However, prices fell rapidly during the depression in the early 1930s and at the same time deterioration of soil fertility and structure, caused by intensive cropping methods, began to show in reduced wheat yields. In addition, soil erosion caused serious problems in the Mallee, and the 1944-45 drought brought further hardship. Work at Rutherglen Research Station during the 1930s and 1940s encouraged the introduction of a ley system of farming. In the late 1940s the value of medic pastures in increasing soil fertility and boosting crop yields in the Mallee became apparent; in this region the release of the new wheat variety Insignia in 1946 played a major role in lifting average wheat yields further.

Cattle for both meat and milk occupied a place of minor importance in the grazing industries during the early days of settlement when the only outlet was the local market. Refrigeration opened up new possibilities. In 1880 the first consignment of Australian frozen meat was delivered in England, and the following year a shipment of butter fetched a good price in London. The butter was consigned from a farm at Egerton, near Ballarat, by David Wilson, who was later to become the first dairy expert appointed by the Victorian Government. Total cattle numbers were about 1.5 million at the turn of the century. This population showed no marked change during the next thirty years, as the increase in dairy herds was offset by a decline in beef cattle numbers.

Sheep flocks brought in by the early settlers multiplied rapidly during the first four decades to reach a plateau of about 10 million from which there was little permanent upward movement until the 1920s. Outside forces—local demand, export prices, refrigeration, gold, and drought—all exerted an influence on the development of the State's grazing industries, but their long term development and expansion depended primarily on a fundamental change in the pastures the animals were to graze. The pasture which was native to Victoria comprised mainly hardy perennial grasses growing in tufts and surrounded by bare ground. Species which had evolved under conditions of light spasmodic grazing were satisfactory for sheep for wool where there was plenty of land and not too many sheep, but they were unsuited to more intensive grazing. Efforts had been made to introduce pasture species from Europe, and success was generally limited to the more fertile soils in the high rainfall districts. Perennial ryegrass, cocksfoot, Timothy grass, Yorkshire fog grass, white clover, red clover, lucerne, and many other species were established during the first forty years or so, some deliberately, some by accident, but they did not contribute a great deal to the total needs of flocks and herds. Soil phosphate levels were too low and summer rainfall too meagre for these plants to flourish over a wide area.

Superphosphate and subterranean clover were to be the basis of a pasture revolution which occurred between the First and Second World Wars. The value of superphosphate for cereal crops had been demonstrated just before the turn of the century in South Australia. About 20 years later its trial on pasture land was fortuitously coincidental with the introduction of subterranean clover. By 1925 the use of "sub and super" was gaining momentum, and this continued into the 1930s. Subsequent research demonstrated the need for potassium and for certain "trace" elements on

certain soil types. The most important discovery in the early 1950s was of a widespread deficiency of molybdenum in the soils in the highlands which extend through central Victoria. These soils did not respond to superphosphate by itself, and the correction of a molybdenum deficiency, together with the development of aerial top-dressing, has encouraged the establishment of productive pastures on land which previously had a very low carrying capacity. The total area of sown pasture increased steadily from 1 million acres in 1920 to 3.5 million acres in 1940 and 10 million acres in 1960. It continued to rise during the 1960s and exceeded 18 million acres in 1969. During the same period total livestock numbers rose from 14 million sheep and 1.6 million cattle in 1920 to over 33 million sheep and 4.5 million cattle by March 1970. The subdivision of large holdings for closer settlement following the First and Second World Wars provided further stimulus for pasture improvement, and the introduction of myxomatosis to control rabbits in the early 1950s made higher stocking rates possible.

Most of the early settlements in Victoria had a dairy herd which provided milk, cheese, and butter for the settlers. In areas of rainfall above 25 inches dairying was stable and expanded to meet local needs; it was virtually impossible to market perishable goods far from the source of production. However, the dairying industry in both western Gippsland and the Western District was greatly stimulated by the introduction of refrigeration and by the use of the cream separator from the 1880s. Exports of butter to England realised 16d per lb as compared with 1d per lb before refrigeration. In 1888 the Gillies Government allocated money for bonuses for the establishment of butter and cheese factories in Victoria. As a result, exports of dairy produce rose from £50,000 to £1.1m five years later. Between 1891 and 1901 the number of cows in the State increased from 395,000 to 522,000. Following the First World War closer settlement schemes gave further stimulus to dairying in the southern parts of the State and in the northern irrigation districts. Low returns for dairy produce early in the 1930s reduced many farmers to a subsistence level, but by the end of the decade returns had improved, and cow numbers rose to 890,000. After the Second World War prices improved further, and soldier settlement schemes in the irrigated Murray valley, Goulburn valley, and Nambrok-Denison areas, as well as in natural rainfall areas in Gippsland and the Western District, greatly increased dairy output. Victoria now produces more than half of Australia's dairy products. Factors which have enabled the Victorian dairy farmer to improve output in spite of rising costs are pasture improvement, mechanisation in the milking shed and on the farm, herd improvement through artificial breeding and herd testing, improved shed design, and the use of bulk transport between the farm and the factory. By 1969 the cow population in Victoria had reached nearly 2 million. Prospects on the world market have been causing some decline in dairying in marginal areas throughout the Commonwealth. Future agricultural development in view of changing world trends is likely to be slower than during the past fifty years. In all fields fewer persons are tending to produce more goods largely because of improved technical knowledge, the increased use of fertilisers, improved varieties of plants, selection of stock, and increased mechanisation.

## NATIONAL PARKS AND RESERVATIONS

Although the National Parks Authority was actually established in 1956, the history of reserving Victoria's national parks goes back for many years. As early as 1866 Tower Hill near Warrnambool had been temporarily reserved under the Land Act; in 1873 it was permanently reserved and in 1892 was granted to Koroit Borough to manage as a national park. In 1882 part of the Ferntree Gully National Park was reserved under the Land Act, but it was not until 1928 that it was permanently reserved as a national park. Two of the State's most spectacular areas, Wilsons Promontory and Mt Buffalo, were first reserved in 1898, followed by Bulga (1904), Wyperfeld, Tarra Valley, Mallacoota Inlet, and Wingan Inlet (1909), Alfred (1925), Lind (1926), The Lakes (1927), Kinglake (1928), and Churchill (1930). The total of thirteen national parks of 313,166 acres when the National Parks Authority assumed control in 1956 did not include Tower Hill. Previously national parks had been under the control of the Lands Department, and day to day management was usually the responsibility of a committee; in some cases a ranger or part-time caretaker was employed. During these early days progress was slow because there was little public demand to develop the areas and finance was not readily available. In some ways this was advantageous because at that time there was no definite policy on the use and management of national parks, and rapid unplanned development could have impeded the conservation value of these areas.

In 1949 a deputation to the Minister of Lands requested the Government to establish a constituted authority for the control of national parks, and following an investigation by the State Development Committee, Parliament passed the *National Parks Act* 1956. It provided for a National Parks Authority of eleven members representing government bodies and other interested organisations. An initial establishment grant of \$50,000 was made by the Government. Since then the allocation has been gradually increased, and in 1970-71 it was \$287,000 for works, \$117,000 for administration, and \$100,000 for roadworks. The Act also provided the first guide lines for managing national parks by setting out the duties of the Authority. These were to provide for the establishment and control of national parks; to protect and preserve indigenous plant and animal wildlife and features of special scenic, scientific, or historic interest; to maintain the existing park environment; and to encourage visitors and provide for their education, enjoyment, and control. In 1971 the Authority was abolished and the organisation was re-named the National Parks Service.

Increasing interest in national parks has been reflected in both the visitor statistics and park revenue. Wilsons Promontory National Park had 28,000 visitors in 1958-59, but by 1969-70 the number had risen to 94,000. Development of tourist facilities is the most costly item of expenditure in national parks. Between 1959 and 1969 more than \$1m had been spent at Wilsons Promontory, most of it aimed at bringing the existing facilities up to acceptable standards rather than increasing accommodation for visitors. Other national parks have shown a similar increase in visitors. Since its beginning the Authority has continued to formulate policies on management, many of these being attempts to reconcile the conflicting aims of conservation and recreation. This is the reason for the recent introduction

of a classification scheme which will allow parks, and parts of parks, to be set aside for specific purposes and managed accordingly.

Between 1959 and 1969 the Authority spent \$155,000 on the construction of fire access tracks and fire breaks, on the provision of fire-fighting equipment, and on training personnel in fire protection.

#### BOTANIC GARDENS

Botanic gardens have been intended to fulfil three main purposes. First they have a scientific use. The maintenance of a collection of growing plants, from as many parts of the world as are climatically comparable with the region concerned, means that they are always available for scientific study. Second, the botanic garden should be an educational institution. The public is supplied with the correct names of trees and shrubs and the interested gardener may view all the various kinds of plants which can be grown in the particular climate where the garden is established. Third, a botanic garden may serve as a place for relaxation and peaceful contemplation.

In Victoria the foundation of such gardens originated with the early settlers who missed the particular kind of trees which grew in their native country. These were mostly deciduous with lush green foliage in the spring and brilliant leaf colour in the autumn. Gardens laid out in Melbourne, such as the Flagstaff, Fitzroy, and Botanic Gardens, were typical of that period. In addition, country centres such as Ballarat, Bendigo, Geelong, Colac, and Portland also began their own gardens.

The Royal Botanic Gardens in Melbourne were begun in 1846 on a site at South Yarra adjoining the Yarra River. The area was selected by the Superintendent of the Colony, C. J. La Trobe, and the Gardens have now been expanded to an area of approximately 88 acres. Noted for their collection of trees, and beautifully landscaped into a park setting, they are the product of the labours of two famous directors, Baron Sir Ferdinand von Mueller from 1857 to 1873, and William Guilfoyle from 1873 to 1909. Mueller, a scientist, brought to the country many thousands of plants, hoping that at least some would be of economic importance. Among others, he introduced *Pinus radiata*, now widely grown and used commercially. Guilfoyle used many of Mueller's trees and shrubs as the basis for what later became an outstanding piece of landscaping. The granting of the prefix "Royal" to the Gardens in 1958 was a recognition of their importance in the botanical and horticultural life of Australia.

Mueller and Guilfoyle also influenced botanic gardens throughout Victoria. The botanic gardens at Ballarat, Kyneton, Castlemaine, and Bendigo, with their fine plantings of northern hemisphere deciduous and evergreen trees, are typical of the Mueller era; on the other hand, the memorable landscaping of the gardens at Colac and Warrnambool, much later than the others, is the product of Guilfoyle's work.

The oldest of the other botanic gardens in Victoria is at Geelong, where in 1849 an area of land at Eastern Beach was set aside for the purpose. Under the directorship of Daniel Bunce, an English nurseryman who came to Victoria from Tasmania in 1839, the area rapidly became established as a high standard garden known locally at the time as "the Garden of Eden on a small scale". Although many changes have taken place since then, these gardens are still regarded as among the best in

Victoria. Modern improvements have included the construction of a new conservatory.

Closely following Geelong, Portland set aside an area of 45 acres for a garden in 1851. This was quickly established by a local committee, with several members of the Henty family playing leading parts. Later, the Botanic Gardens in Melbourne and the Royal Society in Tasmania supplied many plants to supplement the existing collections. By 1866 William Allitt, the Curator, claimed that he had 2,000 plants representative of 700 different species growing in his gardens.

The well-known Ballarat botanic gardens, now famous for their annual Begonia Festival, began in 1856. After an initial period of slow development the Botanic Gardens in Melbourne again provided many thousands of plants and cuttings, and it was from this source that many of the now famous giant Californian redwoods came. The later addition of fine pieces of Italian marble statuary, combined with the development of the growing of tuberous begonias and the annual Begonia Festival, has made these gardens famous throughout Australia.

At Warrnambool and Colac serious development of botanic gardens came about the mid-1860s. The emphasis was on English landscaping, as would be expected in an area that had been developed largely by settlers from Great Britain. William Guilfoyle influenced both these gardens, particularly at Colac, where, as late as 1910 he prepared plans for the reorganisation and redevelopment of the area. A similar pattern was to be seen at Hamilton and in parts of central Victoria where good gardens were established at Kyneton, Castlemaine, and Malmsbury. These, however, have never developed to the same extent as the others.

During the last half century a number of other gardens of quite different calibre have been laid out in Victoria, particularly in the north-eastern part of the State : at Wangaratta the King George V Memorial Garden and a smaller one in the inner city have sought to help visitors by providing named plants ; at Bright the emphasis has been on gardens providing spectacular autumn foliage ; and at Benalla, in addition to a fairly comprehensive collection of general trees and shrubs, special emphasis has been placed on an extensive rose garden.

LAND USE AND FARMING

---

## FORESTRY

Records left by the pioneer European settlers indicate that at the time of their arrival forests covered much of Victoria. Timber was available freely and abundantly to all, with no controls or limitations. The pioneers marvelled at the size of the unfamiliar trees they encountered, particularly the towering mountain ash, *Eucalyptus regnans*, which often soared to heights of over 300 ft. During the gold rushes in the 1850s large areas of these forests were exploited for mining timber and fuel. As farming developed, forests were treated as a hindrance and prime areas were extensively destroyed by axe and fire.

The sporadic attempts of far-sighted legislators and conservationists to introduce some semblance of control met with little encouragement. The *Land Act* 1869 contained a schedule of lands reserved for timber production, but these gazetted reserves were of a temporary nature and revocable at short notice. Various attempts were made from 1870 onwards to legislate for proper management and conservation of the reserves, but the situation deteriorated. The Government engaged two foresters from India, Vincent in 1887 and Ribbentrop in 1896, to investigate the causes of the poor condition to which the forests had been reduced and to recommend measures for improvement. A Royal Commission "to investigate the general question of forestry and forest control and management in Victoria" was constituted in 1897. Its final report, presented in 1901, resulted in the first effective forest legislation in the form of the *Forests Act* 1907. Until this time nominal control of State forests had been exercised by a Forests Branch which at various times was attached to the Departments of Agriculture, Lands and Survey, and Mines.

The principal provisions of the *Forests Act* 1907 included constitution of a Department of State Forests under a Minister of Forests, appointment of a conservator with necessary staff, confirmation and creation of permanently reserved forests and provision for future dedications, placement of control of timber on unoccupied timbered Crown land in the hands of the Forests Department, and authorising collection of royalties on forest produce. These and other provisions were closely in line with the pattern recommended by the Royal Commission of 1897. From 1907 to 1918 steady but unspectacular progress was made in permanent forest dedication, strengthening control of timber utilisation, silvicultural improvement of forests which had suffered abuses from unrestricted cutting in earlier decades, extension of softwood

planting, and in the provision of fire protection safeguards. However, lack of assured finance and a shortage of qualified staff prevented full attainment of all these objectives. In 1910 the Victorian School of Forestry was established for the training of professional foresters.

The year 1918 marked a milestone in the history of Victorian forestry when the Forests Commission, consisting of a chairman and two commissioners, was established by the *Forests Act* 1918. Control of State forests was vested in the Commission and a statutory Forestry Fund was established for the improvement and development of State forests. The Commission was authorised to recruit, employ, and organise all staff. These provisions for the first time enabled a sound, constructive, and continuous forest policy to be followed, with assured funds to carry it out. The *Forests Act* 1918 was the basis of the *Forests Act* 1958 and its later amendments.

Soon after the formation of the Commission, softwood planting was transferred from areas of coastal sands to the foothill areas which carried low quality eucalypt forests. Planting had been increased because of the need to employ returning ex-servicemen; the Commission started new plantation projects at Ballarat and Castlemaine, and plantations at Creswick, Scarsdale, Bright, and Macedon were expanded.

Mountain ash came into general use for moulding and cabinet work in the early 1920s, following the discovery of new seasoning techniques. Many firms constructed kilns and used steam to recondition the boards after they had been dried in the kilns. Licensed and State tramways were extended deep into the ash forests during the 1920s and 1930s to haul logs and sawn timber. Their construction often called for engineering skill of a high order as well as heavy investment. Logs were dragged to forest tramlines by horse or bullock teams or by steam winch. Winching was still used to a very great extent until the 1930s. Crawler type tractors were first used in a Victorian forest in 1934. By 1937 several diesel tractors had brought a new mobility to logging. The depression years prompted a substantial increase in planting, since reforestation was an activity which could absorb large numbers of men at comparatively short notice and with very little capital expenditure.

Serious fires occurred in 1926, after which the Commission was given additional power to protect forests. The Commission first used fixed-wing aircraft for spotting fires in 1929. The holocaust of January 1939, when fire damaged over three million acres of forest and killed 71 people, caused the whole fire protection system to be overhauled. The Commission first used radio communication experimentally in 1940; communications have since been developed to provide this facility in district fire offices, fire towers, and most field vehicles.

On 28 June 1939 the Government created a Department of State Forests with the Chairman of the Commission as the permanent head. The staff of the Department was no longer recruited, appointed, and employed by the Commission, but was transferred to, and became an integral part of, the Victorian Public Service. Two other events in 1939 initiated a new era of forestry utilisation and protection: in September the Second World War broke out, and in October Victoria's first wood pulping mill went into production in an ambitious effort to salvage a huge volume of timber which had been killed in the fires of January 1939. The Commission



built 50 miles of major roads and 18 miles of tramlines within the first two years to provide access for log haulage. By mid-1941 a total volume of 39 million cu ft of timber had been salvaged from the trees killed by the 1939 fires.

In the early 1950s significant changes took place in silvicultural practices being applied to indigenous forests. The Commission began fundamental studies on the major commercial forest types to define the silvical characteristics of the principal species. These studies laid the foundation for applied research to evolve techniques which regularly provide satisfactory stockings of regeneration on over-cut and poorly stocked areas. Direct seeding occupies a prominent place in these techniques, and during the period 1964 to 1968 seeding of eucalypt forests from the air was developed for a range of forest types. Apart from its application in regeneration programmes following clear-felling, aerial seeding is being applied with advantage in reforestation of potentially highly productive forest lands at present covered with scrub species.

The stringybark and gum forests of the foothills of the Dividing Range, of Gippsland, and of the western highlands, cover ten million acres, comprising two thirds of the total State forest area. These forests produce the timbers used in housing and general construction, poles for electricity and telephone lines, and pulpwood for manufacture of hardboard and paper. Within the stringybark-gum forests there are several areas where a steady yield is being maintained after over eighty years of utilisation, and there are some virgin areas, but much of this forest requires rehabilitation to regain its productivity after many fires and heavy cutting over past decades.

The mountain and alpine forests produce fine light hardwood timbers and occupy about 500,000 acres. They are confined to good soils in areas of high rainfall, are very productive crops, and form the protective cover of most of the important water catchments. These "ash" timbers are seasoned and moulded for use in joinery, flooring, and weatherboards; they also produce good veneers, and make strong hard paper. Young regrowth stands at present comprise the greater part of the ash forests. The forests of ironbark and box trees in central and northern Victoria were very important in the early days for use as fuel and for heavy durable construction timber for mining and railways. There are now 800,000 acres of these forests, but the firewood, durable sleepers, and poles they produce are not in strong demand. The red gum forests on the flood plains of the Murray River and its tributaries still produce a steady output of sleepers and durable construction timber.

The area of softwood plantations now exceeds 115,000 acres. The softwood timber is very versatile in joinery, veneers, housing, and light construction work; it is also suitable for paper pulp, particle boards, and when chemically impregnated, for posts and electricity poles.

Each year more Victorians rely on their forests for supplies of timber and other wood products, outdoor recreation, greater supplies of pure water, forage for livestock, safe habitat for native animals and birds, and for other forest products such as honey and eucalyptus oil. To meet these many and varied demands, foresters apply multiple use management to the 16 million acres of State forests. This ensures the maximum benefit to the community, while at the same time the continuing health and well-being of the forests is sustained.

## TIMBER MILLING

The earliest supplies of "squared" local timber were probably provided by splitting the more fissile local eucalypts into slabs for walls and floors, as well as into palings for walls and shingles for roofing. The slabs were often adzed to provide smooth and regular surfaces, and adzing was also used to fashion split members into "squared" framing timber, a method which was still widely in use in isolated country areas as late as 1900. Pitsawing was the means by which the first sawn timber was produced, but production was limited by the labour shortages which plagued the District's early development. Steam power introduced to sawmills in Melbourne in the early 1840s increased the production of sawn timber, which then sold at lower prices than previously. Elsewhere in the Colony, production of sawn timber grew rapidly, especially for the goldfields where it was a necessary commodity for the extraction of gold. By 1859 there were 71 sawmills in Victoria (of which nine were in operation in or near Melbourne); during the 1860s the number reached 141.

Power was supplied by steam using stationary, portable, or traction engines, except for a very few water powered mills; few mills had mechanical aids, even in the largest and most advanced milling operation. The simplest mill comprised a saw bench on which the logs were broken down into fitches which were then sawn to the required dimensions. At some mills logs were often "spotted" (hewn to provide a flat side) with a broad-axe prior to being sawn, to facilitate handling on the bench. Mills were usually located close to or in the forest, and logs were snigged by horse or bullock power, but over longer distances logs were carted by either horse or bullock drawn wagon. Occasionally steam traction engines were used for snigging and carting. Tramways also operated to carry logs to the mill; horses, steam locomotives, and later petrol driven tractors were used to haul the tramway trucks which transported the sawn timber. In the early years the only restriction placed on operation of mills on public land was generally the payment of a nominal annual licence fee; there was no limit to the quantity of logs to be used, but in the early 1900s payment of royalties for specified quantities of forest produce was introduced.

The location of the mills closely followed the growth of population in various parts of the State, particularly in the gold mining districts; it also followed the development of the State railway system, and sawn timber became a major item of rail freight. Early sawmilling centres were located in and around Melbourne and the Dandenong Ranges, the mining districts, Portland, Yarram, the Otway Ranges, and the red gum forests along the Murray River. From Yarram, a tramway transported high quality sawn timber to Port Albert from where it was shipped to Melbourne, but an attempt to ship sawn timber from the Otways failed for lack of a suitable harbour. A use of sawn timber which created employment for mills from the 1890s until the 1930s was the provision of wooden blocks, each approximately the size of a household brick, to form level and solid foundations for many of Melbourne's streets.

During this period there were many developments in logging and milling operations. The axe and crosscut saw were still used for felling, but snigging by horses and bullocks was largely replaced by steam powered winches using steel cables to haul the heaviest logs over considerable distances. These

winches, together with forest tramways, made log procurement possible and economic in some of the State's most difficult mountain terrain, and brought about the development of milling in the major forest regions at Warburton, Powelltown, Noojee, Erica, Rubicon, and the Otway Ranges. This made available large supplies of the lighter type eucalypt hardwoods such as mountain ash, alpine ash, manna gum, and shining gum ; these comprise the best " appearance " and most easily seasoned hardwoods.

Two major developments in the utilisation of these seasoning-quality eucalypts have been the application in the 1920s of the kiln-drying and reconditioning process (this was further improved by research by the C.S.I.R.O.) and the introduction of tariffs on imported timbers in 1931. Before this, it was necessary to import high grade timbers for joinery, flooring, furniture, mouldings, etc. The tariffs enabled the use of the new techniques to replace imported timbers with the lightweight, high quality Victorian hardwoods, and drying kilns with planing and other equipment were established in Melbourne and in country areas.

Since 1934 the major logging developments have been the general replacement of the steam winches by crawler tractors (a limited number of logging winches powered by diesel motors are still used), and the replacement of the tramways by logging roads carrying specialised motor vehicles for hauling logs and sawn timber ; mills can now be located at conversion centres, usually in country towns outside the forest area. The former mill settlements have almost disappeared ; changing living standards, the demand for more and better amenities, and the loss of life in the disastrous bush fires of 1926, 1932, and 1939 have been factors contributing to their disappearance.

Since the late 1930s there have been radical changes in the mechanisation of sawmills. Generally, diesel and electric power have replaced steam power, with the diesel giving way to electric power when this became available. Sophisticated equipment was installed where the size and life of the log supply warranted the financial outlay involved, and mobile machines for handling logs replaced the earlier primitive manhandling. The chain saw, much faster than the crosscut or the axe, was adopted for felling and for trimming logs. Early in the century the twin breaking-down saw had become common equipment for milling large logs ; those saws have now often been replaced by bandsaws to reduce saw-kerf. Fast log carriages with pneumatic log turning, adjusting, and dogging devices have largely replaced the Trehwella hand jack and hand dogs as well as the log turning winch.

The four-man breast bench, which is uniquely Australian, still operates in most hardwood mills ; its flexibility permits recovering the best sawn material from faulty logs and avoids excessive " spring " in the sawn product. It is cheap to instal, but is labour-intensive when compared with the highly mechanised techniques employed in softwood mills. With the increasing availability in recent years of softwood logs, mostly of *Pinus radiata*, these specialised mills have been introduced giving cheaper milling costs.

In recent years the number of mills has been reduced but overall output has remained fairly constant. Some have closed through lack of log supplies, others through amalgamations. In 1938-39 a total of 327 mills produced 118 million super ft of sawn timber ; by 1955-56 there were 636 mills producing 342 million super ft ; and by 1969-70, 314 mills had an output of 323 million super ft, much of it graded according to the rules of the

Standards Association of Australia and assembled into easily handled packages. The total number of men employed in country sawmilling operations in Victoria was then approximately 12,000.

#### IRRIGATION

Early settlement in Victoria was hampered by insufficient and unreliable natural water supplies, and success or failure came to depend on the attention the early pioneers gave to water storage and use. On the farms many of the early settlers who lived near streams built small weirs and dams. Although some water was used to irrigate natural pastures, the main purpose was to conserve drinking water for stock. As early as 1857 David Milburn of Grange Farm, Keilor, was irrigating two acres of orchard with water pumped by hand from the Maribyrnong River.

With the passing of the *Land Act* 1869 settlement expanded considerably. Most of the well-watered lands of Victoria had previously been occupied by the squatters, and thus land was rapidly taken up along the creeks of the northern plains. By this time the surface alluvial diggings on the goldfields were coming to an end, and many miners took full advantage of the new land legislation to begin farming. Most began by cropping wheat, oats, and barley, while others grazed sheep and cattle or established dairies where fairly reliable supplies of water could be obtained, if necessary by pumping from creeks or swamps. Only in a few instances did settlers use the water for irrigating their land. Fortunately for them rainfall from 1870 to after 1877 that great losses were experienced because of insufficient water. additional water was not realised by most of the settlers, and it was not until after 1877 that great losses were experienced because of insufficient water.

One of the earliest farmers to irrigate a large area was John Garden of Cohuna, a pioneer of irrigation in Victoria. He built an earthen dam across Barr Creek near Cohuna, and in 1882 irrigated 300 acres of wheat and 600 acres of grass with about 5 inches of water. The yield he obtained reached over 20 bushels per acre (the average district yield being about 2 bushels per acre) and the income cleared the cost of his plant.

The drought years of the 1870s provided a marked contrast. Crop and stock losses were heavy, and the farmers agitated for the Government to improve water supplies. In 1880, therefore, an engineer and a surveyor were appointed to report on the best means of conserving water in the dry northern areas. Their report led to the Water Conservation Acts of 1881 and 1883, the first Victorian legislation to provide for the construction of irrigation works. Several projects were started, including weirs on the Broken, Loddon, and Avoca Rivers, and the Wartook Reservoir in the Grampians. Other works were begun by the Echuca and Waranga irrigation trusts founded in 1882 to irrigate from the Goulburn River.

By 1884, however, only 163 farmers were irrigating 7,000 acres, mainly in the Swan Hill shire (which then included Kerang and Cohuna). Most of this land was sown to wheat. In 1884 the Commissioner of Water Supply, Alfred Deakin, persuaded the Government to set up a Royal Commission on water supply in Victoria. Its recommendations led to the *Irrigation Act* 1886, which stipulated that the waters of all Victorian rivers, streams, lakes, and water courses belonged to the State, and also provided for the establishment of irrigation trusts. The State was to advance funds to the

trusts to meet the cost of irrigation works, but the more important works of regulation and storage would be undertaken by the Government. In 1886 Cohuna, Wandella, and Tragowel Plains, the first trusts, were set up, and by 1899 ninety irrigation and waterworks trusts operated in Victoria, watering about 100,000 acres. The first construction undertaken by the State was the Goulburn Weir near Nagambie, where work began in 1887. Two years later construction of the Laanecoorie Weir began on the Loddon River, as did works for the diversion of water from the Murray River to Kow Swamp and the Loddon River.

In 1890 the first irrigation conference in Victoria was held. Convened by Deakin, it gave farmers an opportunity for exchanging ideas on methods of preparing land for irrigation, on the types of crops and pastures to grow, and on watering practices. At Deakin's invitation, two young but experienced and successful irrigation engineers, George and William Benjamin Chaffey, had come to Victoria from California in 1886. Their arrival inaugurated a new era in the history of Victorian irrigation. At Mildura they demonstrated that the arid regions of the Murray valley could be permanently settled in small holdings for growing vines and citrus fruits. This project was one of the earliest of its kind, and the Chaffey family put over £300,000 into the venture; by 1890 there were over 3,000 persons living in the settlement, whose subsequent fortunes, though chequered, came ultimately to be profitable.

However, the development of irrigation under the trusts was not very successful, and landholders, who usually had large areas, could not really be called irrigators. When the seasons were good they did not want the water, and when they were bad insufficient water was conserved. Most people had little knowledge of irrigation techniques, and the local trusts were unable to compel irrigators to use the water properly. When George Swinburne became Minister of Water Supply in 1904 he asked Parliament to approve legislation to set up a new form of public authority to plan the use of water resources and to handle irrigation and stock and domestic water supply for the whole State. The resulting establishment of the State Rivers and Water Supply Commission was most significant in the development of irrigation, and in the intensification of settlement in Victoria. Dr Elwood Mead, an American, was Chairman of the Commission from 1907 to 1915. During 1910-11 he introduced a system of farm water rights which had to be paid for whether the water was used or not. This was to ensure that the farmers used the water which had been provided, paid for it if they did not use it, or sold their farms to those who wanted to be irrigators and would use the water.

Mead also believed in intensive irrigation on small farms, and that irrigation should not merely be an adjunct to large area "dry" farming, as was the case on most properties at that time. His policy of acquiring and subdividing large holdings for closer settlement was followed from 1910 to 1930. During that period more than 4,000 new farmers were established on irrigated holdings at Merbein, Shepparton, Tongala, Rochester, Cohuna, Werribee, and Red Cliffs. After the Second World War land acquisition and disposal was in the hands of the Soldier Settlement Commission, but the task of planning subdivisions and carrying out the works for irrigation remained with the Water Commission. Since 1945 the soldier settlement

areas of the Murray valley, Robinvale, and central Gippsland have been developed and have provided farms for more than a thousand ex-servicemen.

Concurrent with this development and improvement in the management and techniques of irrigation farming, large "carry-over" storages were built. In Victoria, where the seasonal flows of rivers and streams can vary greatly over a number of years, it is necessary to conserve surplus and flood flows in the wet years to compensate for the large deficiencies in drier years. The Commission, from the time of its inception in 1905, had built a number of major storages which saved winter flows for release during the summer. But, as irrigation became more accepted and the demand for water increased, even these could not cope with long periods of drought. The first of the carry-over storages, the "Big Eildon" reservoir, increased the storage capacity of Eildon from 306,000 acre ft to 2,750,000 acre ft. This increase enabled a significant volume of water to be carried over each year in storage as an insurance against a run of dry seasons. Eildon was followed by Eppalock, Tullaroop, Buffalo, Nillahcootie, and others, which together form a grid of water storages operated on the carry-over principle.

The following table lists the major rural water supply reservoirs in Victoria :

VICTORIA—MAJOR RURAL WATER SUPPLY RESERVOIRS

Storage	Maximum capacity acre ft	Year of completion	Location	Main use (a)
Eildon	2,750,000	1955	Goulburn River	I. ; H.E.
Hume (b)	2,500,000	1936	Murray River	I. ; H.E.
Waranga	333,333	1905	Goulburn River	I.
Mokoan	300,000	1971	Broken River	I.
Rocklands	272,000	1953	Glenelg River	D. and S.
Eppalock	250,000	1964	Campaspe River	I. ; Bendigo W.S.
Glenmaggie	154,000	1929	Macalister River	I.
Cairn Curran	121,000	1956	Loddon River	I. ; D. and S.
Yarrowonga Weir Pool(b)	95,000	1939	Murray River	I.
Toolondo	86,000	1952	Glenelg River system	D. and S.
Bellfield	60,000	1966	Fyans Creek	D. and S. ; I.

- (a) I. : Irrigation  
 H.E. : Hydro-electric generation  
 D. and S. : Domestic and stock water supply  
 W.S. : Water supply  
 (b) Half share under River Murray Agreement.

A significant factor in water conservation has been the development of large earthmoving machinery. Fifty years ago steam engines, horses and drays, and wheelbarrows were used for dam building. Today, high-speed diesel-powered machines permit very large dams to be constructed in a few years with minimal risk from flooding during construction, at costs which are lower, in relation to wage rates and material costs, than could have been achieved in the earlier years. Dam sites which would not have been considered (on grounds of economic viability rather than engineering difficulty) can now be quite feasible for this reason. Since 1963 the State Government has guaranteed an allocation of funds to make possible a ten year storage programme.

### *Murray River waters*

The Murray River and its tributaries form the largest river system in Australia. The Murray catchment exceeds 400,000 sq miles in area, or about a seventh of the Australian continent. It includes most of New South Wales, about half of Victoria, and portions of Queensland and South Australia. The length of the Murray is about 1,600 miles and two principal tributaries, the Darling and the Murrumbidgee, are 1,760 and 1,050 miles long, respectively. For much of its length the Murray is of very slight gradient and the river is slow moving. Several inquiries into the sharing of the Murray waters preceded an interstate conference of engineers in 1913, when an agreement was reached which was later to be ratified by River Murray Waters Acts in the Parliaments of the Commonwealth and the States of New South Wales, Victoria, and South Australia. These Acts provided for the construction of water supply works, the allocation of Murray waters between the three States concerned, and the appointment of the River Murray Commission to give effect to the Agreement.

The River Murray Commission, which consists of four commissioners representing the four contracting Governments, is not a constructing authority, but arranges for the design and construction of works by the existing State authorities. Works under its control comprise Lake Hume above Albury, Lake Victoria near the South Australian border, sixteen weirs on the Murray and Murrumbidgee, and barrages to prevent salt water from entering the Murray estuarine lakes and the lower river in South Australia. The Dartmouth project to construct a new 3 million acre ft storage on the Mitta Mitta River was started in 1972.

### SOIL MANAGEMENT

The early settlers found that the soils were naturally low in productivity. North of the Great Dividing Range and in the Wimmera this was mainly a result of the low and uncertain rainfall, but south of the Divide inherent infertility was the cause. As the soils are geologically old, there has been ample time for the essential nutrients to be leached downward beyond the reach of the roots of plants, especially in the south where the rainfall has generally been so much higher and the inherent soil impoverishment is accordingly greater.

Soil science was undeveloped in the early days of settlement, and soil analysis involving total analysis in terms of chemical elements and particle sizes was the principal method of soil examination. The first chemist for the Department of Agriculture, appointed in 1873, carried out the analysis of soils from different geological formations, and demonstrated that there were low reserves of nitrogen and phosphorus. Later, field trials showed that phosphorus and nitrogen were indeed important soil deficiencies for cultivated crops. It was also realised that soil analysis was insufficient for making fertiliser recommendations, and in 1887 widespread fertiliser trials with cereals, sugar beet, and other cultivated crops were initiated.

### *Soil surveys and land use*

Modern soil science was not developed in Victoria until the late 1920s. The Council for Scientific and Industrial Research established its Division of Soils, and in 1928 a soil survey was made of the vine settlement of Woorinen

in the Mallee. In the same year the Department of Agriculture began co-operative soil surveys with the C.S.I.R. and initiated other soil investigations. Pedology was introduced and soil science expanded in the teaching of agricultural chemistry at the University of Melbourne.

This was the beginning of soil classification and soil surveys which have had a marked impact on land use in the State. First examined were the irrigated horticultural settlements along the Murray River where there were soil problems following the expansion of settlement after the First World War. Between 1939 and 1942 the Shepparton irrigation district was investigated ; here periodic waterlogging of the soils had caused the death of peach and apricot trees. Soil surveys have also been made of all the irrigated pasture land and associated non-irrigated land in the constituted irrigation districts of the State Rivers and Water Supply Commission. Landholders are now able to obtain more reliable advice on the suitability of different soil types for growing different crops and pastures. The surveys have also led to the better use of water which the Commission allocates on the basis of defined areas of soils classified as suitable for irrigation. Soil surveys have been used in the planning of irrigation settlements since the Second World War, notably at Robinvale and Nambrok-Denison. To avoid the mistakes of earlier settlement schemes, such as unsatisfactory irrigation, uneconomic subdivision, and the planting of unsuitable crops, the State Rivers and Water Supply Commission, the former Soldier Settlement Commission, and the Department of Agriculture all combined to integrate planning and preparation. It is now accepted that soil surveys should precede the allocation of water to any large area proposed for irrigation.

By 1972 twenty-five soil survey reports with accompanying soil maps covering irrigated, cultivated, and grazing land had been published. These cover 3,750 square miles soil-surveyed in detail and include, with only minor exceptions, all the irrigated land in the State.

#### *Soil conservation*

Before the Second World War wind erosion in the Mallee caused the loss of fertile top soil, while property was damaged by the shifting sand. Soil movement was caused mainly by an alternating system of cereals and bare fallow coupled with the burning of wheat stubble. However, research at the Mallee Research Station at Walpeup and the work of the Soil Conservation Authority have helped to prevent soil movement so that dust storms have practically disappeared, and the cost of protecting structures is now relatively small. A pasture phase, based on annual medics, has been introduced into the rotation, and there is a more stable system of land management, with less reliance on monoculture. Sheep are used to control weed growth on fallows when the soil is too dry to cultivate, and greater use is made of stubbles and other trash to protect fallowed land. The sowing of cereal rye and lucerne on light sandhills has stabilised these areas.

The Mallee Research Station was established in 1932 by the Department of Agriculture. In 1938 an inter-departmental Erosion Investigation Committee was formed, and, mainly as a result of its report, a Soil Conservation Board was established in 1940 to initiate action in appropriate departments. In 1950 the Board was replaced by the Soil Conservation Authority as the official organisation responsible for preventing soil erosion. Many landholders, individually or in group conservation projects, now accept the principles of



conservation farming, and have adopted appropriate systems of land use and management, as well as erosion control techniques such as contour cultivation, pasture improvement, soil stabilisation, and gully protection. The Authority is also concerned with the preservation of water catchment areas and exercises legal control over land use in proclaimed catchments. Hydrological experimental areas have been established to provide information about the effects of land use on the yield and the quality of water available.

The Authority has made land studies on areas covering 44 per cent of the State. These surveys have been a study of the ecology of environmental or land systems in which the relation between climate, topography, soils, and vegetation are portrayed, explained, and used as the basis for assessing the potential productivity of various kinds of land, and the hazards associated with different forms of use. Five publications describe sixty-three land systems, covering 26,600 sq miles in south-western and north-western Victoria, the Grampians area, the catchment of Lake Hume, and the Mt Buffalo National Park. In addition, a survey of a further 7,000 square miles has been carried out, but the results have yet to be published.

#### *Soil deficiencies*

Field experiments have demonstrated deficiencies of nitrogen, phosphorus, potassium, sulphur, copper, zinc, and molybdenum, and considerable information has been acquired about the soil situations in which particular deficiencies occur. By far the most widespread and agriculturally important deficiencies are those of moisture, nitrogen, and phosphorus.

#### *Soil moisture*

The introduction just prior to 1900 of bare fallowing to conserve soil moisture was a major step towards raising production in the wheatlands. It was believed then that frequent cultivation was necessary to prevent evaporation of stored moisture directly from the soil surface. Adverse effects of intensive cultivation on soil structure, leading to erosion of some soils, were disregarded in the face of the immediate benefits. However, in 1929 and 1930 it was shown that benefits accrued from the elimination of competition by weeds for moisture and available nitrogen. As a consequence, soil management of fallows now includes alternative methods of weed control using sheep and, in some cases, weedicides.

#### *Phosphorus*

Basically, the correction of phosphorus deficiency has presented no real problems since superphosphate is relatively cheap and its importance has long been recognised. Experimentation has therefore been directed towards greater efficiency in the use of phosphatic fertilisers by determining the optimum economic rates of application for the different crops and pastures in particular soil and climatic environments. Considerable success has been achieved, but outside the irrigated lands the unpredictability of rainfall complicates the studies and the application of results. Since the 1950s research has demonstrated that current applications of superphosphate to pastures and cereals may be reduced, without loss of production, where residual phosphorus in the soil is appreciable.

Before the 1930s superphosphate was not widely used on grazing land because the prevalent native grasses, adapted to low fertility soils, responded

only slightly to topdressing. However, outstanding responses by various sown and volunteer clover species led to an increasing interest in fertilising pastures, and in 1932 the Department of Agriculture commenced a series of fertiliser trials financed by the Victorian Pasture Improvement League. These trials demonstrated that there was a vast potential for increased productivity from pastures using superphosphate to maintain introduced clovers, and as a result the fertility of the soil over millions of acres has been raised materially.

### *Nitrogen*

The use of nitrogen fertiliser until recently was quite uneconomic on all but high priced crops such as vegetables, tobacco, and fruit crops. Clover leys were developed to provide nitrogen in both pastoral and wheatland soils, but with cheaper nitrogen fertiliser, research into the use of inorganic nitrogen on pastures and wheat crops is being carried out.

The early exploitive rotation systems of wheat growing in the Wimmera and north-western Victoria had led to a decline in yields and quality of wheat due to gradual depletion of the soil's already low organic matter and to deterioration of soil structure. Because of this, soil depletion and regeneration experiments involving rotations of various durations of subterranean clover-Wimmera rye grass pasture, cropping, and fallowing were initiated at the Rutherglen Research Station in the 1930s. Soil fertility and structure trends were assessed by soil analyses. The principles of clover and medic ley farming have now been determined and accepted widely, and further research concerns the most suitable rotations for the Wimmera and Mallee.

Not all soils can carry improved pastures using superphosphate alone. This is most likely because of a trace element deficiency, or inefficient nodulation of the clover resulting from the effect of soil acidity on the nodulating bacteria. Lime-coating of clover seed or the drilling of seed with agricultural ground limestone are practices developed to counteract these effects of soil acidity.

### *Potassium*

The increased production from improved pastures imposes a strain on other plant nutrients in the soil, and the drain on soil potassium, in particular, necessitates the use of potash, an expensive fertiliser, to prevent the degeneration of pastures over an area which is increasing annually. It is only the soils in southern Victoria and some in the north-east which are marginally deficient in potassium. Sandy soils in these regions are the most likely to be affected.

### *Trace elements*

Molybdenum, copper, and zinc in that order are the most important trace element deficiencies. In the early 1950s spectacular establishment and growth of clover was obtained with 2 ounces per acre of molybdenum applied with superphosphate in trials on the poor ironstone gravelly soils of the central highlands. Other soils in southern Victoria have since been shown to be molybdenum deficient. As it costs only a few cents to treat an acre with molybdenum, landholders use molybdenised superphosphate over large areas. Occasionally excessive molybdenum in the soil is responsible for ill-health in grazing stock.

The copper deficient soils occur along the coastal fringe and in far western Victoria. Most are sandy soils now supporting pastures. Extensive trace element trials during the 1950s determined the areas where pasture responded to copper, although copper is necessary over a wider area for the health of stock. Herbage analysis has assisted in defining these deficient areas. Cobalt deficiency is occasionally associated with copper deficiency. Responses to zinc have been obtained with wheat on the grey clays of the Wimmera and with some pastures on sandy soils in the Western District. However, there is enough zinc in superphosphate to correct the deficiency in most soils.

#### PASTORAL AND LIVESTOCK

##### *Early sheep breeding*

Cattle and sheep were first kept for the production of milk, butter, cheese, and meat for local consumption ; working bullocks served for local use ; and wool, hides, skins, tallow, and bones were exported.

The Western District had excellent open plains which were natural grazing land, and this was rapidly taken up. The flocks which spread over the western plains were very variable in fleece characteristics and in type, and reflected the mixed origins of the sheep originally imported to the Australian colonies. In the early days of the settlements at Sydney and in Tasmania sheep were required principally for meat, and many were brought from the nearest ports, which were in India and South Africa. Sheep from India comprised most of the sheep in 1797 when a small flock of Spanish Merinos was imported from Capetown. These Merinos were crossed with the local sheep and whilst John Macarthur and later his son William subsequently closed the Camden flock and bred for fineness of the wool, others continued to cross breed, in some cases with British breeds such as Southdown. Subsequent importations included coarse-woolled sheep from Ireland, and representatives of the English breeds, particularly the Leicester.

During the early decades of the nineteenth century meat continued to be more important than wool and by the late 1820s there was very little premium for wool quality or fineness. In these circumstances the Camden flock of fine Merinos made little impression on the flocks of the colonies as a whole. However, in the 1830s and 1840s the prices for all wool improved and fine wool became much more valuable. Saxon sheep were imported, particularly to Tasmania where a few farmers began to develop fine wool flocks. In the conditions applying during the early occupation of the western plains there were few opportunities to control the breeding of the flocks, although as early as 1839 John Aitkin, an early squatter, was noted for his experience and judgment in sheep and wool. He imported finely bred rams from Tasmania and his breeding work influenced some other early squatters such as George Russell of Golf Hill. Sheep were shepherded by day and penned by night to protect them from dingoes and the Aborigines, and all facilities for handling them had to be improvised with much labour under difficult conditions. A severe drought in the mid-1840s added to the problems of the early settlers. By 1848 the flocks were a motley of mongrels producing very little wool, most of which was of very poor quality.

In 1844 the London firm of J. T. Sims sent Thomas Shaw, a wool expert

from Yorkshire who had twenty years experience with Australian and foreign wools, to Australia. He travelled widely in the new wool growing areas, and soon became very knowledgeable in breeding sheep here to produce quality wool. In 1848 he began a campaign to improve Australian wool, and in letters to newspapers and in a treatise on the Australian Merino he described the flocks as a mongrel breed, and the stockholders as incompetent. Furthermore, he told in precise terms how to breed better sheep, and described the type of sheep he believed could be produced. Thomas Shaw became an adviser in sheep breeding to many settlers who later became renowned for their excellent flocks. His method involved inspecting the ewes and selecting a small nucleus for breeding rams on a basis of fineness and density of the fleece; he advocated weighing fleeces as an aid to this selection. He urged growers to obtain the best possible ram to join with the selected ewes, and in many cases he chose the rams on their behalf from established flocks such as those based on Saxon Merinos in Tasmania and the Camden flock of William Campbell.

Gradually these ideas became accepted, and conditions for the settlers improved so that it was possible to control the breeding of the flocks. During the 1850s fencing wire became available and fenced paddocks replaced the shepherd.

With the formation of pastoral and agricultural societies sheep breeding became a community activity, and the showing of sheep and other livestock helped to develop accepted standards of excellence for individuals to breed for. The first sheep show was held at Skipton in 1859 and during the 1860s the Skipton ram fair brought buyers from all parts of the Australian colonies, and the highest prices for rams were paid there. The success of the Skipton show depended on the support from a high proportion of the properties in the region, and it is clear that almost all properties had small stud flocks from which they bred their rams. The development of communal standards led to the formation of distinctive regional strains of sheep. Subsequently this process was repeated elsewhere in Australia, and in the Riverina the development of the Peppin strain was associated with the Jerilderie sheep show which became famous during the 1870s.

Eventually the dominant sheep shows migrated to capital cities, prices for rams reached extremely high figures, and stud breeding became a highly specialised and competitive occupation. More and more properties gave up breeding their rams, and purchased from the major studs which came to dominate Australian sheep breeding. However, before this occurred the major strains of the Australian Merino had emerged. The mean fleece weight per sheep in Victoria had increased to 5 lb per head by 1875. This was partly scoured wool and partly greasy wool, but it represented almost double the clean wool production of the sheep which originally occupied the western plains.

#### *Stock numbers*

During the gold rush of the 1850s the demand for milk and meat rose rapidly, and livestock farming prospered with fat bullock prices soaring to £10 a head when delivered to the goldfield towns. By 1860 there were 722,000 cattle and 5,780,000 sheep in Victoria.

The thirty year period from 1860 to 1890 was generally one of development and speculation, with ample labour available from the former gold-

fields. Land was cleared and the Government took steps to control and subdivide the farming land on which the large graziers had squatted. Most cattle were owned by small farmers who sold milk and home-made butter and cheese to the townsfolk, as well as beef and veal to the local butchers. The sheep were concentrated on the larger grazing properties where the Australian Merino sheep, as known today, was developed. Wool became a valuable export commodity. Generally this period was a prosperous one in which cattle numbers rose to 1,783,000 head (of which 395,000 were dairy cows), and sheep to 12,692,000. It was the period in which James Harrison of Geelong discovered the process of mechanical refrigeration during 1856 and 1857. In 1873 he exhibited a machine capable of freezing mutton, and took 25 tons of frozen beef to London. However the process which he had developed to suit mutton did not suit the larger beef carcasses and the cargo was found to be unusable.

In 1876 a group of pastoralists planned to send meat to England on the *Northam*. Owing to a defect in the refrigerating machinery the shipment was not forwarded, but a shipment of 40 tons of beef and mutton sent in the *Strathleven* arrived in satisfactory condition in February 1880.

The period from 1891 to 1921 was generally one of stagnation and hardship brought about by the end of the land boom in the early 1890s and aggravated by the droughts of 1902 and 1914, as well as by the First World War. By 1921 there were only 1,575,000 cattle and 12,171,000 sheep in Victoria, fewer than there had been 30 years earlier. The financial crises accompanying the land boom and the 1902 drought resulted in a deeper appreciation of the importance of Victoria's rural industries, and speculation gave way to sounder thinking and more stable planning. Although the First World War and the 1914 drought hindered progress, the rural community began to recognise the need for pasture improvement.

Dairy farming was developing, and 620,000 of the cattle were dairy cows. Some prime lamb had been exported and the smaller sheep owners were thinking in terms of prime lamb as well as wool, rather than wool alone. Machinery had been developed to mechanise many tasks formerly done by hand or carried out on the farm by horses and bullocks. (It is interesting to note that the highest number of horses ever recorded in Victoria was 562,000 in 1913.)

#### *Pasture improvement*

The prosperity of the 1920s reflects the technical advances made in those years when dramatic results were achieved. The use of the annual pasture legume subterranean clover (*Trifolium subterraneum*) in conjunction with superphosphate applications produced a sharp rise in pasture yields, and in some instances annual fodder production increased as much as tenfold.

The potential of this clover as a pasture plant was first recognised by A. W. Howard of Mount Barker, South Australia. In 1898 Howard noted the production of the plant in a pasture which developed after an oat crop which had been fertilised with a phosphate fertiliser. He endeavoured to draw attention to the plant in South Australia and Victoria, particularly in the period from 1906 to 1914. However, he did not associate the use of superphosphate with the successful establishment of the plant, and for this reason his efforts had less effect than expected. Later research showed that

many soils in South Australia suffered from trace element deficiencies not encountered in Victoria.

Although superphosphate had been manufactured in Melbourne since the 1870s and had been used extensively on cereal crops, its use on pastures hardly developed until well into the twentieth century. The Department of Agriculture demonstrated the superiority of superphosphate in pasture topdressing tests carried out in 1905, and the value of topdressing with superphosphate was confirmed in 1912. The practice of topdressing pastures with superphosphate at first spread slowly, and it was from about the mid-1920s onward that topdressing began to be widely adopted.

In the early 1920s farmers had begun sowing a little subterranean clover with the grain crops, and spreading the seed with the superphosphate through the spinner. Before long the demand for seed exceeded the limited supply and new methods of harvesting were sought. This was difficult as the seeds when ripe are on, or even in, the ground. In Western Australia and later at Narracoorte in South Australia sheep skin rollers were used for picking up clover burrs. Later, rotary brooms and stationary threshers were widely used in Victoria until replaced by the suction harvester in the 1960s. This early activity in the Narracoorte region was supported by the Kybybolite experimental farm where topdressing experiments on virgin land began in 1919 and on subterranean clover in 1921. Messrs Shepherd and Schinkel, neighbouring farmers, had successfully established subterranean clover on their properties. By 1925 groups of farmers from the Western District were driving to Narracoorte and Kybybolite to see the pastures; and during the 1930s the Department of Agriculture established pasture species and fertiliser trials in many locations throughout the State.

The first important scientific study of subterranean clover was undertaken in 1926 by J. E. Harrison of the Department of Agriculture. He initiated the work which resulted in the isolation of the separate strains of the species, and their classification according to flowering date and leafiness. This work helped define the suitability of different strains for areas of widely differing climates and later led to the development of a seed certification scheme.

Natural pastures and sown fodder crops for cattle and sheep gave way to permanent pastures of perennial species in the higher rainfall and irrigation districts, and to self-establishing annual species such as subterranean clover and several medics. Where the annual rainfall exceeded 17 to 18 inches subterranean clovers were grown to supply nitrogen for the soil and protein rich herbage for the livestock, but in areas where the rainfall was too low or the soils unsuitable for subterranean clovers, several medics were successfully introduced. These included lucerne (*Medicago sativa*) for a more permanent pasture, and the annuals barrel medic (*M. truncatula*), harbinger medic (*M. littoralis*) and to a lesser extent, the self-introduced burr medic (*M. denticulata*).

By 1970 Victoria's pastures supported nearly three times as many sheep and cattle as in 1924, and less than 30 per cent of the total occupied area could still be classified as native pasture. Subterranean clover seed, available in a great variety of strains, was being exported to the Mediterranean countries where it was being used for pasture improvement.

*Developments since the 1920s*

During the 1920s production was buoyant and exports of butter and fat lamb meat rose steeply. The economic depression affected the pastoral industries by about 1930; prices dropped to unexpectedly low levels, but farmers tended to improve their farming methods and increase their output. Cattle exceeded 2 million in 1935, of which 952,000 were dairy cows. Beef production was mainly from dairy bred cattle and little was available for export; since beef was cheap, local consumption was high. In fact beef was the cheapest meat and was to remain so until the end of the 1940s.

The meat exporting firms had big establishments to handle the large number of lambs which reached prime condition between October and December, the cast-for-age dairy cows which were used for canning, and the bobby calves which were boned, frozen, and exported. These firms also handled all classes of stock for the local market. The demand for meat increased greatly during the Second World War, and at its end Britain again became the main buyer of Victoria's surplus meat.

The Jersey breed became prominent in the early 1920s and largely replaced the Ayrshires and Shorthorns. New breeds of beef cattle, such as the Angus and the Poll Hereford, began to replace or add to the Herefords formerly concentrated in the highlands; Shorthorns grazed on the large wool producing properties, and the Red Polls, so popular for their dual purpose characteristics, on the smaller mixed farms. In this period many farmers supplemented their income by milking some cows and selling cream.

Changes also took place in the sheep industry which expanded rapidly, entering first the traditional cereal growing areas and later the irrigation and higher rainfall areas. By 1941 sheep numbers exceeded 20 million and rose to a peak of 20,598,000 in 1942, but the Second World War and the drought of 1944-45 reduced numbers to a low level of 14,655,000 in 1946. The sheep which spread into the cereal areas and on to the smaller farms consisted mainly of crossbred ewes for prime lamb production. During this period, research and its application played a large part in pasture improvement and in the utilisation of the improved pastures by grazing animals.

In 1932, under the auspices of the newly established Victorian Pasture Improvement League, the Victorian Department of Agriculture investigated fertiliser needs for pastures and carried out much research into pasture improvement in the higher rainfall or dairying areas of the State. It was discovered that potash fertiliser was needed in certain districts on land from which hay had been removed for several successive years. The development of ley farming in northern Victoria enabled more livestock (mostly ewes for prime lamb production) to be carried and enriched the soil for the production of higher yields of cereals.

In the late 1940s prices rose and farmers were able to implement better methods of pasture improvement to increase livestock production. In the 45 years between 1925 and 1970 Victoria's flocks increased from 12.6 to 33.2 million, and cattle numbers from 1.6 to 4.5 million. During this period there was little variation from a steady rate of increase in numbers, except for two minor checks in the 1930s and two major declines caused by the

droughts of the 1944–45 and 1967–68 seasons. Since 1946 sheep numbers have doubled ; this dramatic change from the previous period of steady stock numbers (less than 15 million) was primarily due to changes in the productivity of the pastures, although it was assisted by the clearing of additional land.

The period after 1951 was one of the most spectacular in Victoria's agricultural history, and by 1966 Victoria had over 15 million acres of improved pasture and, of this area, 11.7 million acres had been topdressed with about 800,000 tons of superphosphate annually. The following year cattle and sheep numbers had reached record levels of 3,528,000 and 31,239,000, respectively. There had been twenty-two successive good seasons, but 1967–68 was one of the driest on record, with cattle and sheep numbers receding to 3.5 and 27.9 million, respectively, by 31 March 1968. The drought broke in April 1968 leaving few permanent scars, and was followed by good winter growth.

The most remarkable change in this period was in beef production. Beef was soon to become the most, instead of the least, expensive meat to the local consumer, and at the same time there was demand from the United States of America for frozen boneless bull and calf beef, with not more than 10 per cent of visible fat. This new export outlet created an unprecedented demand for a class of meat formerly regarded as inferior. Bulls and old cows from the dairy and beef breeding herds became nearly as valuable, per pound, as prime bullocks, and prices of \$300 for bulls, \$250 for bullocks, and \$200 for cows were not uncommon. A proportion of Victoria's beef has always come from dairy cattle. Most of the cattle were dairy-bred, and beef-bred cattle were confined to a few areas, which were not suitable for dairying or grazing sheep, such as the eastern highlands, and to the larger properties where they were used to trim the pastures for sheep. Bullocks were often six years old before marketing. The demand for baby and yearling beef has changed the composition of beef herds, which are now mostly cows, replacement heifers, and calves. The calves are usually sold, at weaning, for baby beef, and the cows prove most valuable for trimming pastures for sheep. Nearly all of this high quality baby and yearling beef is consumed locally. The local demand for beef also followed world trends, cuts with plenty of lean meat and little fat being most popular. Dairy-bred cattle were recognised as good lean meat producers and were crossed with beef breeds to produce bigger, faster growing progeny. Between 1950–51 and 1970–71 beef production rose from over 132,000 tons to 290,000 tons a year.

#### POULTRY

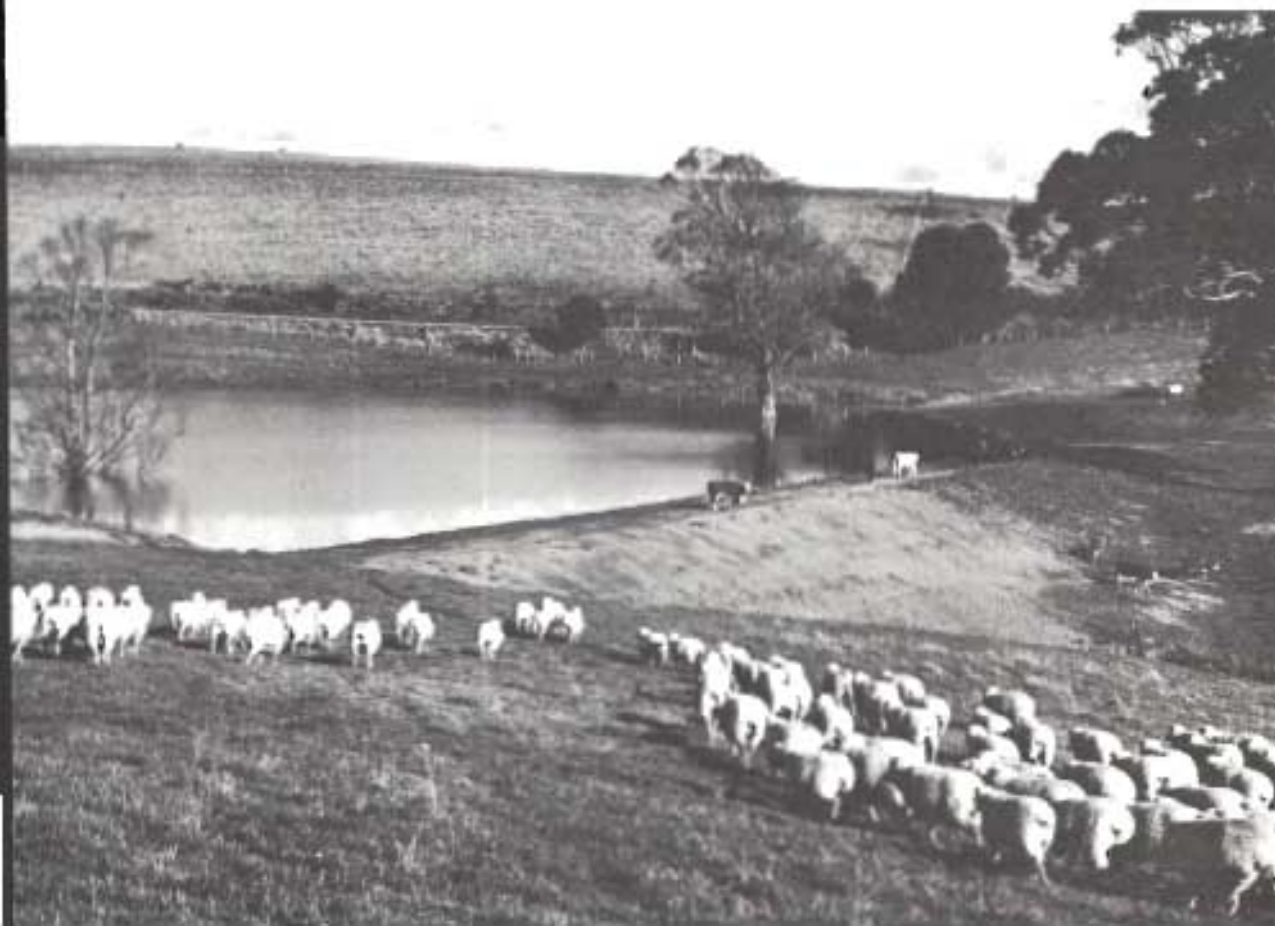
Victoria now produces over 20 per cent of Australia's eggs and poultry meat and is second only to New South Wales in the production of poultry products. Initially, poultry raising was largely a sideline industry with most birds in small flocks on farms or on the outskirts of the cities. Since the early 1940s, however, the industry has undergone fundamental changes. The application of the latest techniques in genetics, nutrition, management, and veterinary practice has improved performance. Since 1954 the average annual egg production for Victoria has increased from 144 eggs per bird to about 220 eggs in 1971. Laying stock is mainly a specially produced White





Hereford beef cattle in the Kiewa valley near Mt Beauty  
*Department of Agriculture*

A well constructed farm water storage at Murbob North,  
*State Rivers and Water Supply Commission*





Carting milk in Gippsland early this century.  
*La Trobe Collection, State Library of Victoria*

Selector's hut built of logs, slabs, and bark (but  
without nails) in east Gippsland.

*La Trobe Collection, State Library of Victoria*





Stripper and winnower, early grain harvesting machinery.

*Department of Agriculture*

Early "spinner" type fertiliser spreader mounted on a motor vehicle chassis.

*I.C.I. Australia Ltd*





Tunnelling, a type of erosion occurring where trees have been removed and the pastures overgrazed

*Soil Conservation Authority*



The hare-wallaby, one of the twelve species of marsupials from western Victoria which are now extinct in the State.

*Fisheries and Wildlife Department*

A Gippsland selection hewn from heavily timbered country

*Department of Agriculture*



Leghorn—Australorp crossbreed, the Australorp being a well-known laying breed developed in Australia.

The introduction in the early 1930s of large electric, mechanically ventilated incubators allowed the large scale hatching of chickens in specialised hatcheries. This was the key to poultry industry expansion. Before this each producer laboriously hatched small numbers of his own chickens in kerosene incubators or with broody hens. At the same time Japanese chicken sexing techniques were introduced, which allowed the recognition and disposal of unwanted day old cockerels. The use of artificial lighting in laying pens in the later 1930s removed the seasonal nature of the fowls' laying period, and permitted the development of year round egg and chicken production. Continuous production of eggs and chickens had previously been restricted by outside weather conditions.

In the 1950s fully intensive housing of layers, growing birds, and brood chickens became popular. Both egg and poultry meat production are now large specialised industries with year round factory-type production almost independent of season, climate, or soil type. Some poultry houses are totally enclosed with full environmental control (temperature, ventilation, humidity, and light), and most layers are housed in cages for greater efficiency. Laying cage houses are now fully automated with mechanised feeding, egg collection, and manure removal. In all phases of production the trend is to fewer but larger units. One man can now tend approximately 10,000 layers, compared with 2,000 in the 1950s.

Egg production areas have tended to concentrate around areas of consumption or of readily available feed ingredients, the Melbourne and Bendigo areas being the main production centres. The rapid expansion of the egg industry soon brought marketing problems. A system of State Egg Marketing Boards was established under the *Marketing of Primary Products Act 1937* to bring orderly marketing to the industry. These Boards developed the profitable export of surplus eggs and egg products in cold storage to Britain, and Australia, therefore, became a major world exporter of eggs. Government advisory and research services, including official egg laying tests, were also established in the early years of this century.

Large scale broiler raising emerged only after the mid-1950s, since when broiler chicken has become a staple item of the Australian diet. In 1959 it took twelve weeks to produce a 3 lb broiler chicken, with a feed conversion of 3½ lb of feed to produce 1 lb of broiler chicken liveweight. A 4 lb broiler is now produced in only 9½ weeks at a conversion of 2.3 : 1. Broiler production is centralised almost exclusively around poultry processing factories which are situated close to the metropolitan area. Chickens are hatched throughout the year in hatcheries which are large and use modern automatic incubators each holding 50,000 to 75,000 eggs. The organisation of the industry is now a continuous, factory-like operation, and this has been a key factor in the production of eggs and poultry meat for consumers.

#### AGRICULTURAL CROPS

##### *Wheat*

Although grazing was the main objective of the founders of settlement in the Port Phillip area in 1834, an early activity was the growing of wheat for food. Acreage and production increased slowly. In 1851 nearly  
C.2784/69.—6

30,000 acres was grown, but over 100,000 acres was grown by 1859, and eleven years later the area sown was 284,000 acres. During this period wheat growing was mainly confined to the southern parts of the Colony where European varieties and methods were generally used. The first recorded yield was 9.7 bushels per acre in 1839. However, from the 1840s to the early 1860s average yields exceeded 18 bushels an acre, with a maximum of 28.1 bushels in 1841. In the northern part of the Colony the first wheat crops were sown in 1855, and subsequently the shift in wheat growing to this area and to the Wimmera increased. The first wheat in the Mallee was grown in 1871. In the Colony one million acres was sown in 1883 and 2 million acres in 1898, although by then yields averaged only about 9 bushels an acre.

The introduction of improved varieties and more advanced technology in the early years of this century resulted in improved yields which stabilised during the 1920s. Acreages increased during this period to a peak in 1930. During the 1930s and 1940s wheat acreages declined because of low prices and the effects of the Second World War. After a temporary increase following the end of the war, acreages fell in the early 1950s, largely because of buoyant wool and meat prices. A minimum of 1,565,000 acres was recorded in 1956. There was then a steady increase until 1968, when 4 million acres was sown. Following this, large crop acreages were again reduced under a quota scheme designed to limit wheat deliveries to match market requirements. In the early post-war period, State yields averaged about 16 bushels an acre, but increased to an average of 21 bushels an acre during the 1950s and 1960s, with a record of 25.3 bushels an acre in 1960.

The first wheat varieties were of the English Lammas type, together with Red Straw, Velvet, and Tuscan types. Purple Straw, a South Australian farmer's preference, was first cultivated during the 1860s. Purposeful wheat breeding in Victoria began with Hugh Pye's work at Dookie Agricultural College in the late 1880s. The Farrer wheats from New South Wales became available in the late 1890s, and Federation, named in 1901, became the main variety grown during the 1910s and 1920s.

The Department of Agriculture has bred wheats at the State Research Farm, Werribee, since 1912. During the 1930s varieties bred by the Department were mostly used, and during the last 30 years about 90 per cent of the wheat acreage has been sown to Departmental varieties. Varietal resistance to the flag smut disease was obtained in the variety Ghurka in 1932. Control of the disease has been maintained by the incorporation of this resistance in subsequent varieties produced. Wheat breeding also resulted in a steady increase in quality. By 1970 soft wheats for biscuit and general purpose flours and hard wheat for breadmaking were being segregated.

The English practice of using farmyard manure was not practicable in Victoria, and continuous cropping seriously depleted the low phosphate reserves of the soils. Following the successful use of superphosphate in South Australia, the Department of Agriculture as early as 1877 had recommended its use in Victoria, but it was hardly used during the ensuing 20 years. Eventually it did gain acceptance, and by 1905 was being used on 56 per cent of Victoria's crop acreage; currently it is used on almost 100 per cent of the Victorian wheat crop. The only other fertilisers used on wheat land are compounds of nitrogen, which under current conditions have limited

application, and of zinc, which is used as a trace element, particularly on the grey soils of the Wimmera.

Bare fallowing was one of the technological advances which made possible the development of the drier areas of the wheat belt. The drought of 1902 gave impetus to the practice which in many areas doubled crop yields. About 85 per cent of the wheat crop is now grown on fallowed land, although the practice is not now necessary for areas with an annual rainfall exceeding about 21 inches.

In 1901 the Wimmera-Mallee Domestic and Stock Water Supply System began to operate, and its ability to carry water to farms through more than 6,000 miles of open channels has had far-reaching effects on the agriculture in these districts. Initially, wheat growing and flour milling tended to concentrate near the centres of population, and it was the development of rail transport after about 1870 which made possible the growing of wheat for export. The provision of rail facilities always preceded the expansion of wheat growing into new areas. The mechanisation of the various farming operations also assisted the development.

The maintenance of soil fertility has long been a problem, and suitable legumes were not initially available, although peas were tried from time to time from as early as 1874. Clover and medic ley farming, derived from experimental work in the 1930s, has solved the problem. Harbinger medic, a product of the Mallee Research Station at Walpeup, has extended medic ley farming into the sandier and drier parts of the Mallee.

#### *Oats*

Until 1947 oats were grown primarily for feed purposes, and were particularly important when horse transport was pre-eminent. For over fifty years before the Second World War, about 60 per cent of the oat acreage was cut for hay and a little over 30 per cent was stripped for grain, while less than 10 per cent was grazed out completely. With the decline in the number of horses, use has moved from hay to grain. Less than 15 per cent of the crop is now used for hay and a similar acreage is grazed out, while about 71 per cent is used for grain, over half of which is sold for milling or for export.

Varieties grown before 1900 were of English or European origin. Algerian was introduced from South Africa in 1901 and quickly became the most widely grown, occupying 90 per cent of the acreage during the 1930s. Early maturing varieties, mainly from New South Wales, proved more suitable in the early districts. Orient, released from the Mallee Research Station, Walpeup, in 1947, proved an adaptable grazing and grain variety, and became most popular during the early 1960s. Avon, an excellent yielding variety from Western Australia, has occupied the main position since the mid-1960s.

#### *Barley*

In Victoria two-row barley of suitable quality has been used locally for malting and brewing and is the preferred type; lower grade grain has been sold as feed. The six-row variety has been used primarily for feed. Until 1918 Victoria was the largest producer of barley in Australia, but with the rapid growth in barley production since 1900, South Australia consis-

tently increased production and since then has been the largest producer.

When transport facilities were limited and technological control in breweries was difficult to achieve, malting and brewing were undertaken near the centres of consumption and beer was produced in small units. For instance, in 1883 Victoria had seventy-eight breweries and production was 13.5 million gallons.

The varieties first grown were of English origin and best suited to southern Victoria. Prior, which spread from South Australia where it was first grown about 1900, was the dominant variety in the northern Wimmera and the Mallee until after the introduction of Weeah after 1968. Research type varieties were almost exclusively grown in southern Victoria for 30 years before a changeover to Lara occurred after 1970. The six-row variety Cape has been grown on a limited scale for over a century. Production of two-row barley in the late 1960s averaged nearly 5 million bushels, but increased in the early 1970s. About 40 per cent is maltable quality. Local maltsters require about 8 million bushels, and when local supplies of suitable quality grain are inadequate the balance is obtained from South Australia and the Riverina.

#### *Tobacco*

Tobacco was reported as first grown during the gold rush by miners who produced it near the diggings for their own use. This leaf, air-cured in crude bark sheds, was dark and strong and used mainly for pipe smoking. Commercial production of tobacco began in the 1850s, and the area increased from about 90 acres in 1860 to just over 2,000 acres in 1887. There was a decline to only 73 acres in 1917. The industry has mainly been identified with the alluvial soils in the Ovens and King valleys.

Bright leaf, for which there developed a major demand, can only be produced by the flue-curing process. This was first seriously attempted in Victoria in 1917, and was adopted fairly generally by 1920. Under the inducement of a bonus for bright leaf, plantings exceeded 2,500 acres in 1930. Revision of tariff policies resulted in a record 13,500 acres in 1932, but another decline followed, and the area fell to less than 1,000 acres by 1950. A statutory percentage-concessional duty scheme was introduced at a modest level in 1936, and its later application to ensure complete crop clearances gave renewed stimulus to tobacco production after about 1950. The area planted approached 10,000 acres by 1960. The Tobacco Stabilisation Plan of 1964-65 provided for a guaranteed sale of 26 million lb (green weight) of Australian leaf annually for an initial four year period, with an average minimum price of 104 cents per lb based on the grade fallout from a normal crop and was extended in 1968 for a further 5 year period at a higher level of price and production. This scheme has given economic stability to the industry which is now technically efficient.

#### *Potatoes*

The first crop of potatoes in Victoria was planted at Portland Bay in December 1834 by Edward Henty using a home-made plough drawn by a team of bullocks. The first statistical record of the crop in 1838-39 shows that 20 acres were then under cultivation, and three years later the area had increased to 932 acres producing 3,734 tons. Growth was gradual until 1927-28, when a peak of 77,649 acres was reached, but it fell to 32,177 acres in the late 1930s, the lowest for 74 years. The Second World War increased



the demand and during the 1944-45 season 83,238 acres was planted, giving a total yield of 305,216 tons, a record not since surpassed. After the war the industry struggled to maintain stability, but has now reached a new peak of efficiency and the average yield per acre has doubled since the early 1950s. The main contributing factors are higher yielding varieties, the effect of seed certification, the use of balanced fertiliser mixtures, better cultivation methods, and most recently, the widespread use of sprinkler irrigation. For some years Victoria has been the main potato-growing State, producing some 40 per cent of Australian requirements.

#### *Oilseeds*

The successful commercial production of oilseed crops in Victoria began in 1947 when linseed was introduced following a post-war shortage of vegetable oils. Small areas of crops with an alternative use as oilseeds, e.g., rape, flax, soybeans, and sunflowers, had been grown earlier with limited success. The potential of these crops and of safflower was investigated further, but linseed proved the most suitable. Between 1959 and 1969 the average area sown was about 13,000 acres, with an average yield of about 12 bushels an acre. The growing of linseed was influenced during this period by better varieties, improved technical knowledge, and stability of prices under a contract system. There was some commercial production of safflower after the mid-1960s and a large increase in 1970 as wheat acreages were cut. Substantial areas of rapeseed have been sown for oil production since 1968 in the medium rainfall cereal districts. Small areas of sunflower are being grown under irrigation in northern Victoria.

#### *Pasture seeds*

Early statistical records of pasture seed production show that substantial quantities of ryegrass seed were harvested in the Western District during the 1880s. Historically, seed of *Phalaris tuberosa*, perennial ryegrass, and subterranean clover have been of greatest significance, but more recently the range of species from which seed is produced has increased considerably. For many years the industry was based on catch-cropping in association with other pastoral activities. As a result there was a marked seasonal variation in production and generally low yields. During the 1960s, however, there had been increasing specialisation, crops with considerably higher yields being grown specifically for seed production. The *Seeds Act* 1928 was introduced to control the quality of seed sold for sowing, and provides for certain minimum standards of purity and germination with which all seed must comply. Further protection was given to the purchaser with the introduction in 1936 of a seed certification scheme supervised by the Department of Agriculture to ensure the varietal purity of the seed.

#### *Miscellaneous agricultural crops*

Maize, field peas, blue peas, rye, hops, sugar beet, and flax have occupied a small, although at times an important, role in the agriculture of certain districts or in particular circumstances. For instance, sugar beet was an important local product of the Maffra district from 1910 to 1948, and flax for fibre was grown widely over southern Victoria during, and for some years after, the Second World War; the production of both these crops has now ceased.

## HORTICULTURAL CROPS

Horticultural cropping began in Victoria with the first settlement. By 1856 some 2,000 acres had been planted to horticultural crops, compared with about 200,000 acres planted in 1970 with fruit trees, vegetables, and vines. Factors which have stimulated expansion have been the development of irrigation, cool storage, canning, improved transport and shipping facilities, soldier settlement, and war-time vegetable production. The development of irrigation in the Goulburn and Murray valleys since the 1880s has influenced the location of the fruit industry, and most Victorian tree fruits, processing tomatoes, and some early vegetables are now grown in these areas.

*Grapes*

Over 20,000 acres of vines for wine had been grown within 50 miles of Rutherglen by 1899, with smaller plantings in the Lilydale, Geelong, and Great Western districts. Some of these dated back to the late 1830s. Phylloxera disrupted the industry, however, and the Victorian acreage fell to about 5,000 acres following the outbreak of the disease in Geelong in 1877 and in Rutherglen in 1899. The Wahgunyah nursery was established to produce vines on phylloxera-resistant stocks and still continues. Alfred Deakin, then Commissioner of Water Supply, brought the Chaffey brothers from California to develop an irrigation area in Victoria's arid north-western Mallee region using Murray River water. Plantings of fruit trees and vines began in 1887 at Mildura. Dried vine fruit became the most important grape crop, and soldier settlement after both world wars has expanded production to over 70,000 tons. As 80 per cent of the dried fruit crop is exported, the industry depends on overseas markets, and in 1964 the Commonwealth Government introduced a price stabilisation scheme designed to assist the economic control of the industry based on the average cost of production each year. Replanting with selected material, re-trellising, and mechanisation are now receiving particular attention. In the late 1960s the boom in wine sales increased interest in expanding wine grape plantings.

*Citrus*

Citrus trees were planted over wide areas of the State in the last century, but commercial production now centres on the irrigated Murray River areas from Cobram to Mildura.

*Fruit for canning*

Pears, peaches, and apricots are the most popular canning fruits, with production centred in the Goulburn valley where wide scale plantings followed the construction of the Goulburn Weir in 1888. Citrus and vines were grown initially, as well as apples, pears, peaches, and apricots. Since 1910 major developments have included the establishment of the three co-operative canneries between 1917 and 1926, and the organisation of canning fruit settlement schemes at Katunga in 1947 and Invergordon in 1958 following the completion of the Eildon Reservoir in 1955. Expanding production was checked by the wet years of 1931, 1939, and 1956, years in which two thirds of the peach plantings were lost. However, canned pear production has increased rapidly to an estimated total of 5 million bushels, for export and the home market, by the late 1960s.

*Apples, pears, and other fruits*

Doncaster and the traditional inner metropolitan fruit growing areas have largely given way to suburban development in recent years, and the Mornington Peninsula is now the major apple district, although dessert peaches, cherries, lemons, strawberries, and the soft fruits are still grown near Melbourne.

Apples were sent to Vienna and to other European exhibitions from 1873, and in 1888, 400 cases made up Victoria's first commercial consignment. Apple exports developed to nearly 1.5 million bushels by 1932, but pears are now Victoria's major fresh fruit export at 1 million bushels a year. Some 300,000 to 500,000 bushels of apples are exported overseas, while interstate markets are also an important outlet for Victorian apples and pears.

Cool storage has been vital to the development of the apple and pear industries. The first fruit cool store was built in 1900 and the first large-scale shipment of pears was made in 1911. From 1923 onwards research in fruit cool storage has played a major role, and some 4 million bushels of apples and 6 million bushels of pears are now being produced each year. Jonathan and Granny Smith apples now provide 60 per cent of the total acreage.

*Vegetables*

Significant recent developments in the vegetable industry have been an increase in production per acre because of the greater use of fertilisers, irrigation, and improved pest and disease control practices (including the use of selective chemical weedicides); the increase of direct marketing to supermarkets, with the associated development of frozen and other pre-packaging; the development of out-of-season crops in the Mallee irrigation areas; the expansion of canned and processed production for local markets; the mechanical harvesting and processing of peas to provide a tenfold increase to 25,000 acres during the 1960s; and the movement of many market gardens to the Cranbourne-Dandenong area from the traditional sand-belt district south-east of Melbourne.

*Present developments*

Important factors influencing the development of fruit and vegetable industries include the introduction of controlled atmosphere storage and the hydro-cooling of vegetables; the effect of container shipping on the export fruit trade; the developments in packaging, where cartons have largely replaced wooden cases, and in trickle irrigation using low-cost polyethylene piping; the use of growth-regulating substances to control fruit size and setting as well as plant growth; and the use of bulk handling techniques with forms of mechanical harvesting. Managerial skills are also becoming increasingly important in improving production per person and per acre, and in the economic control of properties where both production and costs are rising.

**PEST, WEED, AND DISEASE CONTROL**

In 1885 the Victorian Government established a Royal Commission on Vegetable Products to investigate the serious pest and disease problem which existed in the rural industry. In 1889 an entomologist was appointed, and a year later a vegetable pathologist, the two forming the nucleus of

what was to become the Biology Branch of the Department of Agriculture.

Developments after the Second World War marked the first real progress when less phytotoxic organic fungicides replaced the copper and sulphur compounds previously used. These fungicides made possible the control of fruit and vegetable fungal diseases such as peach brown rot, black spot of apples, pears, and grape vines, and leaf spot of tomatoes. Steam sterilisation and the use of wide spectrum chemicals are techniques which have proved successful on nursery and high value crops against soil-borne diseases caused by fungi and nematodes, while host management practices have been of value on cereal crops. The breeding of resistant cultivars has proved useful, offering a wide range of application from crops, such as wheat and lucerne, to carrots and beans. Viruses constitute a special problem as they affect so many crop types, and because crops affected do not recover naturally and cannot be cured by chemical treatment. The strategy evolved here has been to use virus tolerant varieties or virus-free seeds, to destroy weed hosts, and to control vector insects.

The first Government Entomologist, C. French, reported that many insect pests had been accidentally imported, e.g., phylloxera and codling moth, while native insects quickly adapted themselves to introduced plants. Chemicals made available early in this century, such as pyrethrum, rotenone, arsenates, cyanides, and spraying oils could only be used on high value crops, and efforts generally met with only minor success.

A significant phase of insect control began in the 1940s with the discovery of DDT, BHC, and parathion, followed by similar synthetic organic contact insecticides. With improved equipment and the advent of aerial spraying from about 1945 the economic control of nearly all pests was achieved for the first time. Through the toxicity of some insecticides, the danger exists of harm to man himself and also to his animals. To supervise this problem a Pesticides Review Committee was established in 1966.

The *Vermin and Noxious Weeds Act* 1922 marked the first concerted effort towards controlling these pests. In 1959 a destruction board of the Department of Crown Lands and Survey was set up for this purpose. Its resources are employed to combat the animal and plant pests which can seriously affect agricultural production. The rabbit, the most serious agricultural pest, has now been greatly reduced in numbers by myxomatosis, and the use of this virus disease is an example of successful biological control of a pest animal. The use of this form of biological control owes much to the pioneering work of Dame Jean Macnamara in the 1930s and in the late 1940s.

The task of eradicating animal diseases is no new one for Victorian farmers, and sheep scab was the first with which they were confronted. Acts introduced from 1851 introduced powers of inspection, branding of infected and in-contact sheep, and generally co-ordinated the programme of eradication with the result that scab had been completely removed from Victorian sheep by the mid-1870s. Lack of quarantine procedures allowed the introduction of bovine pleuropneumonia, and until its contagious nature was indicated and the C.S.I.R. developed an efficient culture vaccine in 1935, eradication was difficult. Nevertheless, this had been achieved in Victoria by 1929. About 1935 a blood test was also developed to isolate infected and carrier cattle, and, to offset the financial loss experienced by farmers

when their animals were compulsorily destroyed, the *Cattle Compensation Act* 1924 was passed. Foot and mouth disease and bovine tuberculosis were approached in a similar manner, regular inspection becoming a feature in the control of animal disease. The tubercular skin test came into wider use as a herd test until a State-wide eradication project was initiated in 1957, and by 1968–69 only 0.04 per cent of animals in a survey over the whole State gave positive reactions.

Beginning with the founding of the Melbourne Veterinary College in 1888, and after several changes in responsibility, the Department of Agriculture eventually became responsible for the control of animal disease through its Animal Health Division, while the Division of Veterinary Hygiene (Commonwealth Department of Health), concerned with animals in relation to the Quarantine Act, has powers of inspection and rejection of animals and plants coming into the country.

#### POWER AND MACHINERY

Machinery for rural use in the early days was basic farming equipment, ploughs and harrows being the most important and most numerous items. Sowing was purely a hand operation ; reaping was by hand using sickle or scythe. On grazing properties shearing was done by hand, using hand shears (blades). By 1866 there were some 15,000 ploughs and 13,000 sets of harrows in the Colony, also about 2,000 reaping machines, 200 Ridley type strippers, and 175 steam engines on farms. On grazing properties there were 30 wool presses. Sixteen establishments were engaged in making agricultural implements and a further 220 were connected with or dependent on agriculture.

#### *Broad acre cultivation and harvesting*

The shallow soils and the wide areas of the holdings called for breaking with the English tradition of deep ploughing with single or double ploughs : multi-furrow ploughs became typical with teams of up to ten horses, of which the Australian farmers became skilled operators. Against this established pattern of cultivation, a brief attempt at introducing the system of steam tackle ploughing met with little economic success, although the system was used for subsoiling as late as 1946 on the Board of Works Farm, Werribee, where thorough drainage was especially important.

Meanwhile, in the 1870s two South Australian inventions made possible the further and rapid expansion of wheat growing : the mallee roller of Mullins which anticipated the modern ball and chain methods of land clearing by seventy years, and Clarence Smith's stump-jump plough which enabled newly cleared land to be cultivated before the tree roots had been grubbed. The stump-jump principle is still in use in many modern cultivating implements, whether mouldboard, disc, or tine type.

In much the same way the large areas sown to wheat and to cereal hay for the horse teams posed a daunting task to harvesting by scythe and sickle. It was this which Ridley overcame with his stripper in South Australia in 1843. With the stripper, which took off the ears and dumped them on a tarpaulin on the headland, was associated a portable hand-turned winnower through which the strippings were shovelled for cleaning.

Concurrently with the stripper the imported and local reaper or mower was used, though this did no more than cut the crop mechanically instead

of by scythe ; it still had to be sheaved and stooked and later brought into store for fodder hay, for chaffing, or for threshing for grain. By the late 1880s McCormick's reaper had developed in the U.S.A. into the mechanical reaper-and-binder which delivered the crop already bound into sheaves.

Notwithstanding the success and popularity of the stripper and its associated winnow, by the turn of the century the reaper-and-binder was the commonest harvesting machine in Victoria because it also made the hay for the work horses. Increasing numbers of steam engines appeared, and itinerant contractors, with chaff-cutters and threshing machines worked by steam traction engines, moved from farm to farm.

Labour was continually scarce, and prizes were offered by the Governments of South Australia in 1879 and Victoria in 1883 for the invention of a complete harvester, a machine which would strip the standing crop, thresh and winnow it, and deliver it into bags on the machine. After numerous successive trials, the most successful responses to these inducements were Morrow's design of a stripper-harvester made by Nicholson and Co. of Carlton, and H. V. McKay's design, made for the early trials by McCalman and Garde. At the turn of the century both Nicholson and McKay found export markets for their stripper-harvesters in the Argentine. Thus began the era of the stripper-harvester, known generally as the "harvester", the last of which was made in Victoria in 1953.

Despite its apparent technical success, the harvester gained acceptance slowly at first, not only against the older stripper, but against the reaper-and-binder which remained popular until the 1920s. The limitations of the stripper-harvester in heavy crops and in crops flattened by wind, rain, and hail required that the crops be cut rather than stripped. The 1910s saw the development of the local variant of the American solution to this problem, the combined reaper-thresher, called in Australia the "header" because the heads were cut, not stripped, from the stalks.

Not until 1955 in the tractor age was the reaper-and-binder exceeded in numbers by the header and the harvester. Since 1953 the header has displaced the harvester ; since the 1950s the mower and pick-up baler, working mainly in hay from the greatly improved pastures, have replaced the reaper-and-binder for storing fodder, no longer for horses but for sheep and cattle.

#### *Stationary power*

Animal power was used in many places for driving stationary equipment ; the whim (horse-works) was a feature of many farms and was also used in mining. Windmills have been widely used in Victoria for pumping water, and over the thirty years preceding the general electrification of the State by the State Electricity Commission they frequently drove generators to provide electric power for rural homesteads. Steam power was used in stationary engines from the early years for threshers, chaff-cutters, and saws. The number of steam engines on farms and stations was 175 in 1866, averaging 8 hp. By 1873 the number had doubled. By 1910 there were 2,600 steam engines and 2,000 oil engines. Then came the general increase in internal combustion engines ; the numbers on farms rose to 25,000 in 1933, 36,000 in 1940, 40,000 in 1950, and 47,000 in 1955, at which point the record ceases. By this time electric power was widely spread in the rural areas and the electric motor became an increasingly important power source.

### *Tractive power*

The use of mechanical power to tow the implements and machines of agriculture took a long course : the steam traction engine of low power and great weight served mainly as a mobile power plant for itinerant threshing machines and chaff-cutters. Slow speed oil engines led in effect to a scaled down version of the steam traction engine. The historical succession from steam to the nearly modern tractor is well illustrated in the Swan Hill Folk Museum.

The basic change came with a further scaling down, using a relatively high speed engine in a lightweight vehicle which appeared at the time of the First World War. Many models of these came from the U.S.A., but the Australian farmer preferred the horses he was accustomed to. They bred their own replacements and their food did not have to be bought. This reluctance avoided some difficulties in the depression of the 1930s when ready money was scarce. But the prosperity and expanding production after the Second World War, and the return to the land of men who had become accustomed to the machinery in use during the war, brought a different attitude ; farm work, like soldiering, was to become mechanised and the number of tractors rose to 10,000 in 1940, 24,000 in 1950, 60,000 in 1960, and over 80,000 in 1970.

From 1945 to 1950 the number of farm horses declined rapidly as the consumption of power kerosene rose. Similarly, after the early 1950s kerosene gave way to diesel fuel. Pneumatic tyres had arrived tentatively in the 1930s, and on new tractors had quickly replaced the lugged or barred steel wheels.

### *Wool and milk*

Traditionally sheep were shorn by hand shears (blades). The only mechanical aid in the shearing shed was the wool press ; locally made and massive, it was successful. Only in the most recent times has it been modernised to hydraulic or electric drive.

Inventions and patents for power driven shears to replace the blades began to appear in the 1870s and 1880s ; F. Y. Wolsley successfully produced a workable machine which was first used in 1888. The shearers' strike of the 1890s and the coming of the oil engine virtually swept the blades off the board by 1900. The number of shearing plants now represents not so much the replacement of the hand shears, but rather, closer settlement and the building of more sheds.

In Victorian dairy farming, essentially a small scale subsistence family affair, the only new appliance appearing in the 1880s was the cream separator. Gillies of Terang made a significant step towards developing a mechanical method for the twice-daily milking with his invention in 1903 of the double-chambered teat-cup. The principal features of the modern milking machine were well established both locally and overseas, especially in New Zealand, by the 1930s. During the Second World War dairy families and the cheap labour of the preceding depression were depleted to the point where milk became scarce and milking machines essential ; with finance made available, they became common rather than exceptional : 4,400 plants were recorded in 1933, 9,000 in 1940, 15,000 in 1950, and 25,000 in 1964. The use of electricity on dairy farms has been

accompanied by the wide scale adoption of modern techniques such as refrigerated vats, bulk collecting by road tanker, and stainless steel hardware.

#### *Fruit and vegetables*

When the Chaffey's began to irrigate the citrus groves and vineyards of Mildura in the 1890s, at the same time as the Goulburn Weir watered the soft fruit orchards of the Goulburn valley, vines and fruits were picked by hand. Since then no local progress has been made with mechanising the picking of fruits and vines. In the early 1970s a grape picking machine was brought to Mildura, and a tree-shaker to the Goulburn valley, both imported for study from the U.S.A.

In comparison with the extensive farming on the broad acres of the wheat belt, the intensive farming of the metropolitan vegetable gardens has always required more labour. Nevertheless, many locally devised machines, transporters, and mechanical aids have been developed as the demand for produce has increased. Pea-viners, in effect threshers of the green pods, are standard in the harvesting of peas for freezing or canning. Although some hand sorting is still required, the larger plots of potatoes are now harvested by potato diggers ; in 1946 there were 818, and by 1971 the number had risen to 2,378.

#### *Manufacture and mechanisation*

The growth of power and machinery on the farms has been continually reflected in the growth of local industry to supply them : 16 agricultural implement factories were recorded in 1864, 44 in 1874, 50 in 1910, 60 in 1920, 80 in 1940, 125 in 1960, and 200 in 1967. Since 1900 Victorian manufacturing has contributed more than half the total value of the industry's output in Australia.

In the late 1960s and early 1970s the forced reduction of wheat growing through the imposition of quotas, the continued decline of wool prices, and the move to consolidate the smaller and less efficient dairy farms, had a depressing effect on the rate of growth in farming enterprise. This sharply reduced the demand for, and the local manufacture of, farm machinery, and the importation and assembly of tractors. Several of the smallest firms disappeared, while the largest reduced their efforts or diverted them to other areas of their business.

#### EARLY RURAL TRANSPORT

When Port Phillip was first settled, roads were the responsibility of the New South Wales Government, but the Public Roads Act of 1833 was not applied to the new district. Since the economy of Victoria was based on the pastoral industry, and the population was sparsely scattered, an efficient system of roads and bridges had not yet developed, and most goods were carried by bullock wagon, which was slow, costly, and damaging to freight. As a result the pastoral industry was seriously affected, especially during the winter months when roads often became impassable. In 1852, for instance, it was claimed that floods had disrupted transport so much that it took bullock wagons three months to travel 100 miles at a cost of £150 per ton. During summer it was only £10.

Some effort was made to deal with this problem, and the Parish Roads Act of 1840 authorised trusts elected by local landowners to levy rates of



up to 6d per acre and to charge tolls. Money could be raised by mortgage against rate and toll income. In 1842 a further Act established district councils with similar powers. A later Act of 1847, which was not enforced because the move for separation from New South Wales was well advanced, reverted to a system of trusts to care for "district" roads, while the central government was to undertake responsibility for arterial routes.

However, it was not until 1851 when large numbers of people and supplies moved to the gold diggings at Bendigo, Ballarat, and elsewhere that the first real effort was made by the Victorian administration to consider expenditure on the road system. In addition to highlighting the need for adequate roads, the gold discoveries attracted so many labourers to the diggings that the labour supply was greatly reduced. Also it was not unknown for carters to refuse to travel anywhere except to the goldfields; station homesteads found it very difficult to get supplies, and in 1853 on completion of the shearing some stations had two wool clips stored in their sheds. On the other hand, the discoveries so altered the financial position of the Colony that it became possible to construct roads and bridges and even railways. The Government appointed a Select Committee to report on the state of the roads and the possible use of funds, and it was found that the roads were unsuitable for carriages and that only pack horses could be used. The Committee recommended that a central road board be established with exclusive power to deal with main roads, and that district road boards should be responsible for local roads. It also recommended that government finance be provided for main roads, and subsidies on a £1 for £1 basis for local roads. In both cases tolls were to be imposed for maintenance, and an appropriation was made by the Government of £88,000 for road construction to Bendigo. The Act of 1853 established the Central Road Board with three members who were responsible to the Colonial Secretary for policy, the Treasurer for finance, and the Surveyor-General for co-ordination with other public works. Although this divided control was unsatisfactory, excellent relations were established with the District Road Boards. In 1857 the Central Road Board was abolished and its functions were absorbed in the Department of Roads and Bridges in the newly established Board of Land and Works.

Six years later the Municipal and Local Corporations Act authorised the constitution of Shires which, with the remaining Road Districts, became corporate bodies. All roads within a Shire or Road District were placed under the control of the Council of the Shire or Board of the Road District, while roads outside these administrative areas remained the responsibility of the central government, through the Commissioner for Railways and Roads. The toll system, which had been intended to place the burden of road maintenance on the user, had proved unsatisfactory as costs of collection were high and the revenue uncertain. The cessation of tolls was authorised by the Shire and Borough statutes of 1869, but as no alternative revenues were available the tolls continued until they were abolished by an Act in 1877.

The *Local Government Act 1874* provided municipalities with an endowment of £310,000 per annum for five years, but distribution was inequitable and the well established districts received much more than the new, more isolated ones. The endowment became a subsidy which reached

£450,000 in 1891 and by this time distribution had been improved. By 1894, however, the subsidy had been reduced to £100,000 and there it remained until the constitution of the Country Roads Board in 1913.

During the middle of the nineteenth century efforts were made to supplement the poor road system by means of railways. Short lines had been constructed in the early 1850s within Melbourne to provide public transport and for the movement of cargoes from the port to Melbourne, and with the discovery of gold, companies were formed to raise funds for railway construction to various parts of the State. The Melbourne, Mt Alexander, and Murray River Railway Company (known as the Mt Alexander Company) was established in June 1852 with the avowed object of constructing a line to the Castlemaine and Bendigo diggings and thence to the Murray River. This had the twofold purpose of connecting the diggings to Melbourne and of capturing the riverine pastoral trade. The railways, including the Mt Alexander Company, experienced great difficulty in raising funds, both in Victoria and overseas, largely because of certain limiting provisions in the legislation. Two other companies were formed at the same time, one with the object of constructing suburban railways around Melbourne and the other with a grandiose scheme to construct a line to Ballarat and thence to the Murray River at Castle Donnington (later Swan Hill). The suburban railway companies did not survive for long when costs of construction were ascertained and similarly the Ballarat company could not finance its schemes.

The Mt Alexander Company continued for some two or three years but experienced many financial difficulties. The Legislative Council, which had previously been opposed to State owned railways, then decided that the Government would purchase the Mt Alexander Company's property and interests, and that thereafter all Victorian railways would be constructed by the Government. The legislation was passed in March 1856, and the result was that Victoria established a state owned railway system.

In 1851 the Government of South Australia considered the possibility of using the Murray River for transport, even though unfavourable reports had been received earlier from Captain Charles Sturt about sea access at the Murray mouth. This was the beginning of a thriving and extensive shipping trade on the Murray River system. It grew so rapidly that by 1856, 10,000 bags of wheat were transported from South Australia to various ports on the Murray and 1,800 bags of flour were landed at Wahgunyah for overland transport to the Beechworth gold diggings. Despite the distance to be travelled from the place of production, it was cheaper, quicker, and more reliable than road transport.

By 1864 the railway via Bendigo to Echuca was completed. Echuca became a thriving port, second only to Melbourne in importance for the Colony. The pastoral industry of northern Victoria, most of southern and western New South Wales, and parts of South Australia now had quick and reliable access to a sea port for the dispatch of the biggest single primary product, wool. Despite the short season of about seven months during which the river steamers could operate, they were able to carry cargoes for 1,000 miles at £5 per ton, very much cheaper than by road transport.

The importance of the river trade increased until the 1870s when railway lines were constructed to other points along the Murray River. The first of these

lines was to Wodonga and was completed in 1873. Other lines were then built, to Yarrowonga in 1886, Cobram in 1888, and Swan Hill in 1890. New South Wales lines were completed to Albury in 1881, and Corowa in 1892. In New South Wales, other lines touching the Murrumbidgee and Darling completed the destruction of the river trade, but the early railway to Echuca had led to the large movement of population and to an adequate means of transport. It also led to settlement and population growth along the Murray River, and in particular to development in Echuca of the red gum milling and boat building industries. At Echuca alone some forty-eight river steamers and barges were constructed for use on the Murray system, and the settlement at Mildura in the 1890s was served for the most part by river transport, either from Echuca or from South Australian ports.

Ultimately the railways were to be seriously affected by the development of road transport and the use of the internal combustion engine. However, the early settlement of Victoria and the development of large areas and otherwise inaccessible places were made possible by the construction of railway lines throughout the State.

#### EXTENSION AND ADVISORY SERVICES

From the early days of the Colony people were conscious of the need to maintain a progressive agricultural community. In 1888 a travelling dairy demonstration promoted the establishment of butter factories and the use of advanced methods on dairy farms, and in that year David Wilson, who had made a successful shipment of butter to England from his farm at Egerton in 1881, became the Government's first dairy adviser. His lectures and demonstrations throughout the dairying districts did much to advance the efficiency of this industry, whose importance was growing with the development of refrigeration—a major factor in initiating Australia's export trade of perishable commodities. A series of demonstration cool stores in the horticultural districts was also linked with developments in refrigeration.

Early in the 1900s the first permanent head of the Department of Agriculture was appointed, and the *Journal of Agriculture* published. The Chamber of Agriculture's first convention in 1903 provided a forum for the discussion of problems between primary producers and agricultural experts. At this time, too, the use of superphosphate for wheat growing was coming into vogue. Its wide adoption during the early years of the century owed much to lectures by officers of the Department of Agriculture.

Farm competitions continued, although they lost some of their popularity in the early 1900s. However, many agricultural societies, notably that at Nhill, continued to sponsor crop and fallow and occasional farm competitions. From 1917 crop competitions again spread rapidly and led to the inauguration of the Farm Competitions Association of Victoria in 1927. District Wheat Crop Championships began in 1938; the Agricultural Society of Victoria co-operated by donating prizes.

Between 1924 and 1935 the Better Farming Train made a significant contribution to Victorian agriculture as it travelled throughout the State with its exhibits and lecturing teams. In a similar way, the Mobile Extension Unit visited a number of districts by road between 1954 and 1958. Some authorities, such as the Vermin and Noxious Weeds Destruction Board and the State Rivers and Water Supply Commission, now also have mobile displays.

One of Victoria's most important extension programmes began in 1931. This was the pasture improvement campaign which, subsidised by the Pasture Improvement League, stimulated a notable increase in the area under improved pasture. By that time the State Research Farm at Werribee and the Rutherglen Research Station, both established in 1912, were already influencing the State's extension activities. These stations, to be followed by a number of others throughout the State, had become focal points for regular field days which attracted large crowds to see the experiments and demonstrations and to hear the latest advice on topical problems. A more recent development during the past twenty years has been the establishment of farmer owned demonstration farms at Swan Hill, Kerang, and Maffra. There were, in addition, smaller field days at plot sites on a number of farmers' properties, especially in the cereal growing and pastoral areas.

During the 1940s soil conservation competitions began and have continued under the aegis of the Soil Conservation Authority. Since then field days on the properties of winners of the Hanslow Cup contests have drawn attention to the best management practices to control soil erosion. Since it was constituted in 1950, the Soil Conservation Authority has developed an effective decentralised extension service for advising landholders about suitable systems of land use and management to prevent soil erosion and achieve soil conservation. In addition to advice to individual landholders, it is now able by means of group area conservation projects to aid groups of landholders owning contiguous land with planning and implementing land improvement, soil conservation, and erosion control measures. Special field days have also been conducted by the Vermin and Noxious Weeds Destruction Board to instruct landholders on methods of controlling rabbits. The State Rivers and Water Supply Commission also conducts field days on special subjects such as automatic irrigation. Machinery field days have become more frequent, and advances in machinery design are displayed to large audiences. Commercial firms, especially those associated with agricultural chemicals, also conduct field days.

The extension method which was common in the early days of Victoria and has again become popular, is the use of a large demonstration plot or demonstration farm, as well as the farmer owned experimental farm, where research findings can be applied on an extensive practical scale. From time to time schools and seminars are held to show farmers new techniques and to help them with the application of new information. Some of these schools are residential; they are held at agricultural colleges or even in accommodation provided for shearers and in woolsheds. They are also held in local halls on a daily basis, or in a series of sessions over several days. During the 1950s and 1960s the Department of Agriculture established a great number of small discussion groups throughout Victoria, especially in the dairying and horticultural districts.

During the Second World War special crops such as flax and vegetables were promoted, and efforts were made to ensure that scarce commodities such as labour, fertilisers, and machinery were used most efficiently. The War Agricultural Committees, which included primary producers and officers of the Department of Agriculture, helped maintain production for home use and for the forces in the Pacific during this period. Since the formation of the Board of Agriculture which preceded the Department of Agriculture, regulatory officers have given some advice to farmers, especially in connection

with the administration of particular Acts. This work was particularly valuable during the early days of exports when quality standards had to be established and maintained. In 1948 the Department of Agriculture appointed several District Agricultural Officers as extension advisers in country districts, and their numbers have increased as more trained officers have become available. They have formed the nuclei for a number of extension groups throughout Victoria, and have included industry specialists on sheep and wool, beef, dairy husbandry, and agronomy, as well as agricultural economists; some regulatory officers also perform advisory work. Extension specialists in soil conservation and irrigation are stationed in appropriate districts, and the Vermin and Noxious Weeds Destruction Board also has an advisory staff.

In the late 1940s and early 1950s agricultural extension throughout Australia was stimulated by funds from the Commonwealth Government for special programmes in dairying and certain other primary industries. These funds, since augmented, have been combined to serve all primary industries. During the 1950s extension methods developed with the "whole farm" approach, which emphasised the consequences of dealing with an isolated problem without due regard to the total activities of the enterprise. Recently, as the knowledge of agricultural economics has advanced and as costs of production have increased disproportionately to returns, farm management economics has been further emphasised. Consequently there has also been a strong stress on educational extension programmes to teach the reasons as well as the methods for improved farming. In this, extension officers have been assisted by the postgraduate course for the Diploma of Agricultural Extension established at the University of Melbourne in 1966.

Mass media have played a very important part in agricultural extension, because there are rarely enough specialists to provide a widespread person-to-person service. For the first half century printed media were mostly used, especially local newspapers, rural weeklies, and the *Journal of Agriculture*. Books and pamphlets were also published by the Department of Agriculture, and a series of special industry digests began in 1953. Also, all irrigation farmers receive a quarterly publication from the State Rivers and Water Supply Commission. Radio services, which began in the 1920s, have been developed by the Australian Broadcasting Commission and country commercial stations, and television services have been available since 1961. During the Second World War, when it was impossible to advise many primary producers in person, motion pictures assisted in the special food production programmes.

A further development in agricultural extension in Victoria occurred in the late 1950s with the establishment of farm clubs and private consultants. The consultants, whether servicing a farm club or their own clients, have provided an intensive personal service for primary producers on payment of a fee. Much of the advice is in relation to farm management economics. Other commercial firms have provided advisory services to their own clients in particular, and to primary producers in general.

#### AGRICULTURAL EDUCATION

##### *University of Melbourne School of Agriculture*

The Victorian Government provided, in the *University Act* 1904, a grant of £11,000 per annum to establish facilities for training students in mining

and in agriculture. In 1905 the University passed a statute for the creation of a Faculty of Agriculture in which students would be trained, mainly in the existing science departments. The statute became operative in 1906 and the first B.Agr.Sc. degree was conferred in 1911. During the First World War, however, few students sought places, and in 1916 closure of the School was considered and a committee of review appointed. Its report led to the passing of the *Agricultural Education Act* 1920, which authorised finance for a building and equipment for the School and provided for the employment of graduates in State Government departments.

The School building was erected in 1921 and since then extensions have been considerable. Staff numbers have increased; the School has acquired the University Field Station thirteen miles away at Mount Derrimut, a controlled environment phytotron, and a new animal house; and facilities for training undergraduate and postgraduate students have been expanded.

The agriculture course trains students in the basic sciences as they are applied to agriculture. In the second year of the course the students reside at Mount Derrimut in order to ensure contact with an agricultural environment. Facilities for this had been provided in the past at the State Research Farm, Werribee, and at Dookie Agricultural College. It provides residential quarters and facilities for teaching the second year students, and is also a centre for the research activities of the School of Agriculture. Significant advances were made with the inauguration of more advanced training, in 1951 in animal husbandry, and in 1959 in agricultural economics and rural sociology. A postgraduate course in agricultural extension was established in 1966.

In 1927 the students numbered 28, but by 1956 there were 191. The number of students seeking admission to the course rose steeply after the Second World War, and it was necessary to impose a quota on entry in 1959. The intake is now limited to seventy in the first year, so that there are about 240 undergraduates. Some forty postgraduate students work at the School. The course remains one of four years duration, providing a general training in agricultural science, but with elective subjects in the fourth year, and training in specialist fields is available at postgraduate level. By the end of 1970 the School had produced more than a thousand graduates.

#### *La Trobe University School of Agriculture*

A School of Agriculture was established at La Trobe University in 1967. First year enrolments have increased from 22 in 1968 to 58 in 1972. The course as a whole is directed towards an integrated biological approach to agriculture, with a substantial additional emphasis on economics. The core subjects of the course emphasise the relation between plants and animals and their nutritional and physical environments. Honours may be awarded at the end of the four year course on the basis of performance throughout the course.

#### *Department of Agriculture Colleges*

The Agricultural Colleges, Dookie and Longerenong, were established under the *Agricultural Colleges Act* 1884, which reserved 122,570 acres of Crown land as an endowment to finance the construction and maintenance of agricultural colleges in Victoria. Dookie Agricultural College was built on

6,048 acres and opened in 1886, and Longerenong Agricultural College was established on 2,386 acres in 1888. These Colleges were administered by a Council of Agricultural Education which was abolished in 1944, when the Colleges were transferred to the Division of Agricultural Education within the Department of Agriculture.

In 1957 the Victorian Government began a major building programme at the Colleges, reinforced by funds provided by the Commonwealth Government under various grants between 1965 and 1968. This programme increased the residential students at Dookie to 240 and at Longerenong to 131, and, in addition, provided new science laboratories, lecture theatres, and technical facilities for instruction to tertiary level.

The entrance standard for the course given at the Colleges was raised in 1949 and again in 1966, when the course reached a standard of matriculation plus two years leading to a Diploma of Agricultural Science, and the Colleges became recognised by the Commonwealth Government as colleges of advanced education. Dookie and Longerenong have awarded 2,092 Diplomas of Agriculture up to and including those awarded in the 1967 academic year. The first Diplomas of Agricultural Science were awarded in the 1968 year, and by the end of 1971 over 250 had been awarded.

From 1946 to 1949 special courses were given at Dookie to more than 2,000 ex-servicemen under the Commonwealth Reconstruction Training Scheme. Many of them received Diplomas of Agriculture, and some obtained properties under the Soldier Settlement Scheme. After 1949 short intensive courses for farmers were provided at Dookie and over 3,500 have attended.

A college with accommodation for 120 male and female students was established in 1971 at Glenormiston, where a two year course is given in farm production, management, and economics. This course has been designed to meet the needs of all types of primary producers and farm managers.

#### *Marcus Oldham Farm Agricultural College*

Founded privately near Geelong in 1961, the College specialises in farm management education for the sheep, cattle, and cropping industries. Students with previous practical experience attend the College for two years during which they complete a "sandwich" course of an eight month academic period, an eight month practical period on an approved farm, and then a second eight month academic period. In this way, 105 students complete the course every two years, although only 70 are in residence at any one time.

The College farm is used as a teaching laboratory rather than a training area for manual work. It covers 420 acres in a 21 inch rainfall area, and is commercially self-supporting from the income received from Merino sheep and Hereford cattle. Course work consists of lectures, demonstrations, and field trips, which provide the subject of extensive written reports on the farm, its management, financing, and budgeting. There are four broad subject groups in the lecture programme: plant and environmental sciences, animal science, farm management and economics, and agricultural engineering.

The entry requirements are a minimum age of 19 years, at least one year of practical experience since leaving school, and the completion of a full secondary course; a matriculation pass is not necessary. Preference is usually given to older students with more practical experience.

### *Gilbert Chandler Institute of Dairy Technology*

The Gilbert Chandler Institute of Dairy Technology was established under the name School of Dairy Technology and Dairy Research Laboratories on the State Research Farm of the Department of Agriculture at Werribee in 1939. Except for the period 1943 to 1947 when war-time problems necessitated a suspension of training, a two year residential course for the Certificate in Dairy Manufacture was provided from 1939 to 1966.

In 1966 and 1967 major extensions were made to buildings and the Institute received its present name. The new buildings provided modern lecture rooms and science laboratories for teaching and research. A new pilot scale dairy factory was also provided, with manufacturing facilities for butter, cheese, condensed and dried milk, and casein, and facilities for milk pasteurising and bottling. Since 1968 the Institute has provided an additional year of training which leads to the Diploma of Dairy Technology.

The Certificate course trains students in the basic technical and scientific principles underlying dairy manufacturing and dairy science. In the Diploma year, students receive co-ordinated training on a project basis in chemistry, microbiology, engineering, and processing, in addition to instruction in industry organisation, management, and marketing. All students are required to work in dairy factories during the vacations.

Most Victorian dairy factories contribute to a fund which provides scholarships for students at the Institute. The courses provide the dairy manufacturing industry with suitable training for skilled plant operatives, foremen, field officers, laboratory technologists, and production and general managers.

### *Burnley Horticultural College*

Burnley Horticultural College, also controlled by the Department of Agriculture, was established in 1891 on 34 acres of land allocated to the Horticultural Society of Victoria in 1857. In 1911 a two year certificate course was instituted, and in 1958 this was raised to a three year diploma course in horticulture. Since 1966 the College has provided a three year diploma course in horticultural science; it also conducts short courses and practical demonstrations of fruit tree and rose tree pruning. These are attended annually by many home gardeners.

### *Courses at State schools*

Between April 1907 and September 1912 ten district agricultural high schools were opened as dual purpose secondary schools giving special instruction in agriculture to some students and the normal high school curriculum to the remainder. The schools had small farms attached, but these became unprofitable during the depression of the early 1930s. Gradually they became normal district high schools.

Specialist training courses are given in some technical schools; in most instances the courses are concerned with sheep production and wool handling, but other subjects of rural interest have been commenced recently.

### *Other agricultural education*

The *Royal Agricultural Society* was the successor of the Pastoral and Agricultural Society of Australia Felix (1840 to 1842) and the Port



Phillip Farmers' Society (1848 to 1867). In 1870 the National Agricultural Society was created, taking over the land and funds of the Port Phillip Farmers' Society. In 1883 the Society moved to the present Flemington site and in 1890 the Queen granted the prefix "Royal".

The *Victorian Agricultural Societies' Association* succeeded, in 1965, the Chamber of Agriculture, a body concerned with the rural affairs of the State and formed in 1900. The Association now has 115 affiliated societies. These societies have assisted in local rural education and promoted interest in agricultural affairs among the non-rural population.

The *Victorian Young Farmers Movement*, sponsored by the Royal Agricultural Society and the Department of Agriculture, now comprises 164 clubs with 4,500 members. The movement began officially in 1947 as a senior section of the Victorian Young Farmers' Clubs Association which was disbanded in 1952. It seeks to increase knowledge of rural life by means of cultural, social, and agricultural activities. Since 1963 the Movement has published a monthly magazine called *The Victorian Young Farmer*.

#### LIFE ON THE LAND

About a third of Victoria's population lives in the country, either in provincial centres or "on the land". The economic factors which have shaped their lives have had significant social implications. In the years before the discovery of gold, life on the land was rugged and primitive. There were few women; the men often looked after their own domestic needs. Their days were spent supervising their flocks on the "runs" they leased; this could be a hard job involving the uncertainties of Aborigines as well as of ill-defined boundaries, and the supervision of the shepherds who were responsible for the flocks grazing on the "outstations" of the run. The home was usually a simple type of rectangular hut which provided little more than the basic necessities of life; such leisure as they were able to enjoy in the evenings was usually derived from reading and perhaps some music. These "squatters", as they came to be called, were comparatively young, as one would expect from the rigorous demands of this kind of life, and many had no other aim than to become rich quickly and return to their homeland.

When gold was discovered in various places after 1851 the miners lived in tents or makeshift buildings on the "diggings", while the merchants and squatters supplied them with food and clothing, a profitable occupation, especially when supplemented by proceeds from wool. These profits eventually came to pay for the permanent homesteads which the squatters erected on their properties after they had ensured the freehold of their titles. The merchants built shops, hotels, and houses in the provincial cities, which were geographically well placed in relation to the diggings, and later became rural regional centres.

Many of those who came in search of gold soon realised that their hopes would be unfulfilled and so sought to obtain land, thereby coming into conflict with the interests of the squatters. When land was finally made available in the 1860s and 1870s in various parts of the State, the era of the small family holding began. A significant economic and social gulf developed between these smaller farmers and the older squatters whose tenure was now legally established and some of whose properties ran into thousands of acres. Life on the smaller, as on the larger, holdings was isolated (the roads, where

they existed, were poor for the most part) and the economic rewards fluctuated and did not allow for many luxuries. The chief leisure activities, when time allowed, were local sports meetings, picnic races, the annual agricultural shows, the mechanics institutes, visiting friends, family gatherings, reading local newspapers, and informal entertainments based on the home, which was usually a comfortable, if modest, building. All the family was likely to share in some work on the property. On Sundays attendance at church was common and was one activity shared by all classes of society.

Life in the homesteads, however, could be very different—in fact, leisurely and luxurious. Builders and decorators were frequently engaged from Europe to build substantial homes of classic proportions and treatment; imported furnishings could be sumptuous and enhanced by valuable *objets d'art*; and the tenor of life made smooth by domestic servants. The sons were educated at boarding schools established for this purpose from the 1850s on, and later often sent to one of the old universities in Britain, before returning to take their turn at managing the property and perhaps rendering public service on a shire council or in Parliament. The daughters would likewise go to boarding school after having had their tutors at home for their earlier education, and they later tended to marry men of a similar social background. The wealth of these families originally came from the land and was later strengthened by association with pastoral investment in other States (e.g., Queensland), mining investment (e.g., Broken Hill), and manufacturing investment in many other places.

There were, of course, countless variations between the types of social life outlined above, although they do describe the basic patterns of life on the land in the nineteenth and for a large part of the twentieth centuries. In contrast to Europe, Victoria never witnessed a yeoman class of farmer and although some large land owners did have tenants, their existence was of a less significant and more transitory nature than it was in Europe.

Drought always affected the small landowner more than the squatter. The pastoral finance companies and banks had to “carry” them through years of natural disaster and capricious overseas markets. As the original concept of the small holding (frequently of 640 acres) became popular in the western, central, and northern parts of the State in the 1860s, it did not take into account the severity of drought which first became apparent in the 1870s and was eventually to act as a spur to developing irrigation. At such times many owners were bought out by their more affluent neighbours, and the small family holding has had a less stable history because of drought, falling markets, and later, over-capitalisation than that of the squatter, the size of whose holding (in itself a substantial security to borrow against) enabled him to weather adversity.

The Government had sponsored closer settlement at various stages from the end of the last century by acquiring land from the large holdings in the Western District or opening Crown land for the purpose in other parts of the State. Most of these schemes were designed to settle ex-servicemen from the two world wars on the land, but some of the earlier ones failed because of inadequate economic planning and those begun in the 1950s were careful to heed the lessons of the past. This gave the more recent schemes a social stability lacking earlier.

The social changes so apparent in the cities were slower to appear in

the country. Here there was no boom growth to match Melbourne's at any time; prosperity in the provincial cities and towns was more closely related to that of the farmers, and the merchants who served on municipal councils were only too well aware of the connection. The general isolation of life on the land, which originally was only reduced by horse transport, became less noticeable as better roads, the motor car, the radio and the kerosene refrigerator, regional transport to school, regional services for libraries, hospitals, and ambulances, and perhaps more than any other single factor, television from 1956 onwards, were changing the social patterns of life. New domestic amenities added more comfort. The gradual electrification of the State provided the country housewife with the same domestic appliances as were available in the city, and bottled gas, available since the 1950s, extended this range of appliances. From the 1930s onwards the Council of Adult Education and the Young Farmers Movement provided more social and general educational opportunities than had been available in previous years.

However, for all this, the trend of population has been away from the country to the city. For two decades after 1945 land prices rose and the use of sophisticated farming machinery lessened the demand for manual labour, while at the same time greatly increasing rural productivity per person employed. However, the financing of this equipment in spite of special taxation concessions has been costly and eventually had to be matched by a commensurate return from the land's produce. During the 1950s and 1960s various government subsidies were one answer to this "cost-price" problem, but by the late 1960s the state of international markets, especially for wool, wheat, and dairy produce, brought this solution into question. Many smaller farmers (including small wool growers) were then faced with the possibility that the economic return on their capital was insufficient to allow them to continue on the land. One suggested solution was the restructuring of small family farms into larger units. But this would not only force farmers into the cities but also deny their children the possibility of living on the land. Quite apart from augmenting the problems of urban planning, the rural uncertainties apparent in the early 1970s questioned the economic and social assumptions behind the family holding which had been taken for granted for over one hundred years.

## MINING

## GEOLOGICAL SURVEY OF VICTORIA, 1852-1970

The Geological Survey of Victoria was born out of a need for expert geological advice following the discovery of gold in 1851. Governor La Trobe recognised that the discoveries promised a rich potential source of income, and he appealed to the Colonial Office in London to select and appoint a mineral surveyor for the Colony.

Mr Alfred R. C. Selwyn, of the Geological Survey of Great Britain, arrived in Melbourne in 1852 to start a geological survey of Victoria. With one assistant he travelled the Colony and surveyed the Loddon and Campaspe valleys, other areas between Melbourne and Cape Paterson, and part of the Yarra River basin. In 1855 he discovered the Caledonian goldfields at Warrandyte; in 1856 the Geological Survey proper was inaugurated under his charge. There were no reliable topographical maps available so the Geological Survey's work included map-making as well as geological investigation. In the mapping programme maps were prepared of rectangular blocks measuring 6 by 9 miles. Known as quarter sheets, these were the basis of early geological surveying in Victoria.

Conflict arose because of the overlapping activities of mining surveyors under the Board of Science and geologists under the Commissioner of Lands. In 1863 a Board of Enquiry decided that mining surveyors should be put under the control of the head of the Geological Survey. Later in the same year the first geological sketch map of Victoria was issued, and a laboratory was established for analysis of minerals and rocks. The Minister of Mines took over control of the Geological Survey in 1867. Once again the problem of overlap between the functions of geologists and mining surveyors arose. A co-operative scheme was suggested whereby mining surveyors were to help with the preparation of topographical maps. The plan was approved by the Minister, but before it could be implemented the Geological Survey was disbanded in 1869. Selwyn, founder of the Survey, resigned and took up an appointment in Canada.

The Survey was revived in 1870. In three years the Ballarat, Bendigo, Ararat, and Creswick goldfields were surveyed; the Beechworth area, the Cape Otway district, and the Grampians were mapped; and a new geological map of Victoria was compiled on a scale of 16 miles to 1 inch. After 1873, reports on the progress of the Survey were published and in the same year the survey of south-west Gippsland was commenced. It covered 3,500 sq miles, included the Walhalla goldfield, and took four years to complete. A

survey of the Stawell goldfield commenced in 1874. With the decline of alluvial mining and the introduction of deeper reef mining, underground surveys were needed; the Bendigo mines were selected for this type of survey in 1876. General geological investigations continued for the next ten years, and surveys were made of the Gippsland goldfields, the Clunes district, and the deep leads of the Loddon valley. The survey of the Rheola goldfields and the reconnaissance of the Mitchell River district in Gippsland were completed in 1889.

After Selwyn left the Geological Survey a number of important goldfields were surveyed under contract, but little attention was paid to stratigraphic and structural geology. In 1890 the Geological Survey was reorganised on more scientific lines, and in the early 1890s it investigated the black coal discoveries at Outtrim, Jumbunna, and Korumburra; made surveys of the Heathcote goldfields and the Mount Wills tin deposits and goldfields; and surveyed the Rutherglen and Chiltern deep lead goldfields. In 1896 the first palaeontologists were employed by the Survey for the study of fossils; this had previously been carried out by the University of Melbourne.

In the late 1890s the border area of Victoria and New South Wales in the far east of the State was surveyed, and detailed surveys of the Stawell and Walhalla goldfields were made. In this period the Survey carried out general research into the stratigraphy and structural relationships of Victoria's geological formations. A study of the Tertiary strata of part of the Mornington Peninsula was completed, and in 1900 the Buchan Caves were examined and the first catalogue of Tertiary fossils was prepared. By this time the Geological Survey had obtained a broad outline of the geological structure of the Colony and contributed greatly to the knowledge of Victoria's mineral resources.

In 1901 a new mapping programme was started based on the parish plan as a unit at a scale of 40 chains to 1 inch. Palaeontological research covered graptolites, Tertiary fauna, and Mesozoic flora. Petrological work was revived, but during the decade 1901-1910 the goldfields still received priority, the main areas being the Harrierville area, the Bendigo district, the Steiglitz area, the Bethanga area, and the Granya area. At the same time the Survey investigated both black and brown coal resources; investigations in the Powlett River area resulted in the State Coal Mine opening at Wonthaggi. A survey of the Mount Buffalo area published in 1908 influenced the development of Mount Buffalo National Park as one of Victoria's most favoured tourist resorts.

The Geological Museum to house the large collection of accumulated geological specimens was completed in 1910. Between 1910 and 1920 surveys of the La Trobe valley brown coal and the Wonthaggi black coal resources advanced; work on the Ballarat and Bendigo goldfields continued; and a survey of the Jamieson and Macalister River areas was made. To combat the coal shortage a State Parliamentary Committee recommended close examination of brown coal deposits in the La Trobe valley, and the Mines Department re-opened the former Great Morwell brown coal open cut at Yallourn North to supply the needs of the State. Steady progress was made in all fields of activity between 1920 and 1930. The main interest was centred on the search for oil in the Lakes Entrance district and in the extension of the brown coal investigations in the La Trobe valley

where the control of brown coal mining passed to the State Electricity Commission in 1924.

The depression of the 1930s brought geological work almost to a standstill, but as conditions improved the Survey worked in the Heathcote, Castlemaine, and Bendigo districts. In 1936 investigations were made in the Kiewa valley to provide information for the State Electricity Commission's hydro-electric power scheme. The Second World War disrupted the Survey; in the immediate post-war period detailed investigations were made to find further brown coal deposits, moulding sands, concrete aggregates, limestones, clay, gold, tungsten, antimony, tin, and oil. New regional surveys supplied detailed information of the geology of most parts of Victoria including information on such individual projects as the Big Eildon Dam. A revival of interest in petroleum exploration led to a demand for current geological mapping, and to an increase in staff in the late 1940s.

A major function of the Survey is the preparation of basic geological maps of Victoria. Maps at a scale of 1 : 250,000 are being prepared to cover the whole of the State, with selected areas being mapped at scales of 1 : 63,360 (1 mile to an inch) and other suitable scales. Geologists now use modern scientific aids; aerial photographs provide accurate basic information for maps, and field parties no longer work from remote field camps but use motor vehicles to move quickly along tracks into country which was previously difficult to reach.

A large amount of drilling was required to complement the surface surveys. By the end of 1952 all the old rigs, which were slow to operate and expensive to maintain, had been replaced by new mobile drills. The increase in geological staff continued throughout the 1950s and a section of geologists was appointed to intensify groundwater exploration of the State, including the Murray, Otway, and Gippsland sedimentary basins; this is now a major function of the Geological Survey. In liaison with the Drilling Branch of the Mines Department much data has been accumulated, and from the mid-1960s this information has been progressively programmed into the Department's computer system. Since then the section has carried out hydrological and hydrochemical investigations of surface water and groundwater in existing bores. It has supervised work of drilling teams putting down many new exploration bores. Legislation providing for the exploration, conservation, and better use of Victoria's groundwater resources was passed in 1969 and is administered jointly by the Mines Department and the State Rivers and Water Supply Commission.

Gold mining, the original and for many years the mainstay of Victoria's mineral industry, has declined rapidly since the 1930s. Mining at Bendigo ended in 1953, gold dredging in central Victoria in 1957, and in 1968 the then last publicly listed mining companies, the Wattle Gully Gold Mines NL (Chewton) and the A1 Consolidated Gold (A1 Mine Settlement) finished operations, but these two mines have, since then, re-commenced working. The Victorian Mines Department continues to encourage mineral exploration throughout the State, and in the 1960s most of the mineralised areas were covered by exploration licences. The Geological Survey maintains an active interest in exploration, supplying up-to-date maps and geological

literature and advice to the limit of the present resources. In 1965 new legislation was introduced to enable large areas of private and Crown lands to be explored. Gold, tin, lead, copper, and phosphate were sought under licence provided by the legislation, and the legislation has now been extended to provide exploration licences for zinc, nickel, antimony, silver, molybdenum, zirconium, and titanium.

Industrial expansion in Victoria relies heavily on large supplies of sand, gravel, clay, and stone; the Geological Survey has intensified the search for deposits of these materials and prepares reports on areas with economic deposits to be reserved for future extraction. Mining of black coal in Victoria virtually ended with the closing of the State Coal Mine at Wonthaggi in 1968, but the Survey has continued to explore brown coal reserves in the Lal Lal, Won Wron, Gelliondale, and Anglesea areas; the Anglesea brown coal field found by private enterprise under geological direction from the Survey now supplies coal to generate electricity for the needs of the aluminium smelter at Geelong, in the same way as brown coal has been mined at Bacchus Marsh since 1944 for local and metropolitan needs.

Since 1954, when the first petroleum tenement was taken up offshore, the Geological Survey has provided the petroleum industry with detailed geological maps and stratigraphic and palaeontological services; this has assisted the search in the Gippsland Basin where commercial fields of natural gas and oil are now operating.

The staff of the Survey helps with engineering geological investigations on sites for large construction projects. The Commonwealth Centre site, the proposed route of the underground railway, the Lower Yarra Crossing, and the Portland harbour works have been among the many geological investigations covered by the Survey. The basic sequence of rocks in Victoria was established early in the history of the Survey, but continued detailed mapping and biostratigraphic studies over the recent years have improved and extended the knowledge of the geology of the State.

## GOLD

### *Discovery*

The discovery of gold in Victoria was officially credited to James Esmond at Clunes, and to Louis Michel and his party at Andersons Creek, near Warrandyte, in July 1851; these discoveries were recorded only a few days after Victoria had been established as a separate colony. Prior to this, and following Hargraves' discovery at Ophir near Bathurst on 12 February 1851, the exodus of gold seekers to New South Wales so alarmed the business men of Melbourne that they offered a reward for the discovery of a goldfield within 200 miles of Melbourne.

The existence of gold in Victoria had been known for some time. Strzelecki had found it in his wanderings through Gippsland during 1839 and 1840, but the facts surrounding his findings were suppressed at the insistence of Governor Gipps. However, rumor was rife and in spite of official restrictions the illegal digging and selling of gold was an established fact by 1841. After the officially recognised discoveries in July 1851 the gold

fever which the authorities had feared set in. July and August marked the beginnings of a gold rush without parallel, the results of which completely altered the economy of the Colony; instead of being a purely agricultural community, the Colony developed an economy based on mining and its ancillary industries.

In August 1851 Hiscock found gold at Buninyong, and this soon brought about the opening of the rich Ballarat diggings where gold was gathered by the pound weight from small claims, and fortunes were made by some in a few hours. In September 1851 gold was discovered near Trentham, and in October workings commenced at Spring Hill near Creswick, then at Daylesford, and at Specimen Gully near Mt Alexander. About the same time Worley discovered gold at Forest Creek, several miles south of Mt Alexander, and the Castlemaine field was opened up. The finding of these new localities prompted a rush from the Ballarat diggings where, although the field was amazingly rich, not every digger had been successful; this constituted the pattern which was to characterise the search for gold throughout the country. In mid-October 1851 digging commenced on Bendigo Creek, and this was the start of what was to become the richest goldfield in the Colony, and at one time, in the world. By the end of the year further discoveries were made at Smythes Creek on the Broken River, on the Delatite, Mitta Mitta, Mitchell, and Tambo Rivers, at Omeo, Bendoc, and Shady Creek in Gippsland, and in the Pyrenees in the west of the State.

Men left their work; farms lay idle; and ships were deserted in port. In some towns not an able bodied man remained; men streamed out over the tracks in a frantic rush for the early diggings where all believed that easy fortunes awaited them. Some men did grow rich, while others struggled in poverty; mining was hard work and men needed good food to sustain them, but good food was scarce and dear, and only the lucky ones could keep a full larder. Flour was £20 a 200 lb bag, sugar one shilling a pound, bread five shillings a 4 lb loaf, butter six shillings a pound, and eggs one shilling each. Liquid refreshment in the form of water was free, but ale cost five shillings a bottle.

The true yields of gold from the thousands of shafts put down in the shallow alluvial goldfields will never be known, but some of the recorded yields were amazing. From one claim at Ballarat where the depth of sinking was 6 ft, Esmond and Cavanagh washed out 50 pounds weight of gold in two days, and when Lieutenant-Governor La Trobe was inspecting the diggings in October 1851 they washed out 8 lb of gold from two dishes. At Beechworth, from a 10 ft by 10 ft claim just at the rear of where the present Empire Hotel stands, a lucky digger won £15,000 worth of gold. Victoria became famous as news of this type spread, and hard on the heels of the diggers came the undesirables, and crime and vice began to spread. During 1852 new fields came to reveal their secrets. The remote mountain country of the north-east was explored, and the Ovens valley was found to be a prospector's paradise. Thousands of men moved up the valley to places such as Myrtleford, Bright, and Harrierville, and then penetrated over the Alps to the dense forest of the Omeo district; machinery and plant were hauled and carried and set up in almost inaccessible places; amazing



surveying and engineering feats were accomplished to construct races and tracks and to generate power to operate the puddlers and the stamp mills.

In 1853 new fields such as Stawell, McIvor (Heathcote), the Upper Goulburn valley, Buckland, Moliagul, and Rushworth were opened, and during 1854 and 1855 further large scale rushes occurred at Fiery Creek (Beaufort) and Creswick, where approximately 40,000 people gathered. During the same period other fields were opened at Ararat, Maryborough, Blackwood, Maldon, and Tarnagulla. It was much later before a close examination was made of the rugged Gippsland country which hid the fabulously rich Walhalla, and of the mountainous country to the north where more rich reefs were to be exploited at Woods Point and Gaffneys Creek.

The first full year of gold mining yielded the recorded amount of 2,286,535 oz valued then at £9,146,140, but on 1971 prices at over \$70m. Population estimates showed that the two main fields were Bendigo and Forest Creek (Castlemaine) with 40,000 and 30,000 miners, respectively. Scarcity of water was a great problem, and it often caused migratory movements from one field to another. The gold output from the various fields was sold to a local bank, and transferred to Melbourne or Geelong every fortnight, sometimes, according to the quantity, by packhorse and sometimes in a carriage. All consignments went under escort, the guards being heavily armed and constantly on the alert for the bushrangers who frequently harassed them. It was customary for them to travel only by day, and to spend the nights at solid stone block-houses.

In the early days of mining the diggers had plenty of grievances, the worst being the licence fee of 30s a month. This was a heavy burden if diggings were poor, and the ruthless way in which the fees were collected did nothing to improve conditions. The "digger hunt" became common and the miner who could not produce a licence was treated as a criminal. Other grievances were the shortage of saleable land, which prevented a miner from establishing a farm, and the denial of certain political rights to the miners.

Relationships between the miners and police became very strained towards the end of 1854, and a riot occurred on 17 October ending in the burning down of the Eureka Hotel. A protest meeting against licences was held on 29 November and licences were burned. Police and soldiers were then ordered to arrest the unlicensed miners, who defiantly barricaded themselves in a stockade at Eureka under the leadership of Peter Lalor. On 3 December 1854 the militia attacked, and, after a short battle in which some men were killed and others injured, the rebels were overwhelmed. Sir Robert Nickle assumed command on behalf of the Government, restraining the police and the soldiers, and negotiating with the miners. The prisoners were later acquitted, and mining legislation and administration was reformed in favour of the miners. The Miner's Right, which replaced the Gold Licence, gave the holder the right to vote as well as the right to dig; Peter Lalor, their leader at Eureka, was elected as a Member of Parliament in 1855. As a symbol of liberty and democratic rights for every citizen, the stars of the Southern Cross (originally shown on the miner's flag at Eureka) were later incorporated in the Australian flag.

*Early mining methods*

During the gold rush period the gold was won almost exclusively from alluvial deposits on or quite near the surface ; a shaft would be put down through the alluvial gravels, which would then be removed and washed for their gold content. Gold washing appliances were based on gravity principles ; gold would sink to the bottom of a dish or box when the material containing it was broken down with water. Panning (washing in a dish) was the simplest method when the gold bearing wash was free. Clayey material was puddled in a large tub with water by continuously stirring to remove the clay. Eventually the gold was concentrated on the bottom of the tub where it awaited final separation. Puddling machines worked on the same principle except that they were on a larger scale and were often operated by horse power. The cradle, a refinement of the gold dish, was a box mounted on rockers with a hopper on top and inclined trays and riffles underneath. The rocking motion given to the cradle caused the water-mixed material to break down and pass over the riffles where most of the gold was caught. Larger quantities of alluvial gravel were treated by sluicing, using a long box fitted with a perforated plate as a false bottom, with cross bars or riffles to catch the gold as the gravel was washed through.

*Mining techniques*

The diggers soon realised that the shallow shafts did not represent the deepest level at which gold could be found. They deepened their shafts to reveal gold-bearing gravel beds of old streams and watercourses which had been buried in past ages, either by the eruption of basalt or lava or by the deposition of new layers of sand and gravel ; these became known as "deep leads". It was impossible to determine the trend of these from surface indications, as the drainage system of the land had been altered. Typical examples were the Loddon, Daylesford, Avoca, Maryborough, Durham, Rokewood, Pitfield, Langi Logan, and the Chiltern and Rutherglen systems. They provided large quantities of gold, but were the most dangerous type of mining operation known in the State because of the instability of the ground and consequent sudden inrushes of sand and water. The handling of the large volumes of water in these buried underground watercourses was the largest single problem ; because of this the very heavy loose gravels had to be supported to sustain passage-ways to the limits of the lead or the lease area. Machinery was not as sophisticated as it is now, and the Cornish miner (or the "Cousin Jack" as he was known) introduced many simple but novel ideas, some of which were widely used. This related particularly to the method of timbering the drives in the heavy wash.

The central Victorian method of deep lead mining was to sink a shaft through the basalt down to the bottom of the lead. When the lowest level of the lead was reached, wash drives were put out at right angles to the shaft, and the whole block was cut up into sections. When the entire area of wash within the lease had been blocked out, the wash was totally removed, starting at the boundaries and working back towards the shaft, the ground being temporarily supported either by pillars of solid ground or by timber balks or "pig sties" as they were known.

The Chiltern valley method was developed by the doyen of alluvial mine managers, John Cock, whose son later became an Inspector of Mines. His method was to determine the width of the lead by boring (this also determined the values of the ground) and then to sink the main haulage shaft away to the side of the lead, and well below the deepest level, always having a sump hole of large capacity at the bottom of the shaft. The bottom level was then put out under the centre of the lead, and the wash tapped so that as much of the water as possible in the lead was drained off into the sump and pumped to the surface. When the lead had sufficiently drained, the wash drive was put out from the shaft at the lowest level of the wash and the whole area blocked out as previously.

Nearly all machinery and plant in those days was steam operated, and the old Cornish plunger pumps, with barrels up to 18 inches in diameter, successfully pumped millions of gallons from these mines. Later they were used in the much deeper quartz reef mines with similar success. The miner had to work in wet unpleasant conditions and had to use timber continuously to protect himself. The face man was a highly skilled person, and his ability to quickly place his sets, and side and back laths and face boards, earned him a reputation as one of the world's most capable miners. Unfortunately there were disasters, the one at Creswick in 1882 when thirteen lives were lost being the worst.

When shallow alluvial gold became scarce, some miners turned to the many outcrops of gold-bearing quartz, and the reefs were followed below ground either by shaft sinking or by tunnelling. Thus was born the exploitation of quartz reefs. Bendigo, which was to become world famous and which led the world in gold production and techniques for many years, saw the erection of the first "battery" in 1854. When the quartz was mined it was crushed to a very fine size to release the gold, some of which was in lumps and some of which was very fine.

The fine sand which emerged from the battery box was passed over a copper plate table where the fine particles of gold amalgamated with the mercury or quicksilver with which the plates were dressed. Some of the early crushings were amazingly rich (100 oz to the ton was not uncommon) and losses were inevitable. It was discovered, too, that as the reefs went deeper the associated minerals in the quartz, such as pyrites, pyrrhotite, and arseno-pyrite, contained gold in fine quantities. This led to the addition of gravity concentrating tables over which the sands were passed and the mineral concentrate, usually to the order of 1 to 2 per cent, was retained. It was ground until broken up finely enough to allow the gold to be amalgamated with mercury. Some of the concentrates, heavy in sulphur and arsenic, were burned in huge burners; the gold remaining in the matrix was retorted and smelted to obtain pure gold. Where the gold in the concentrates was very fine, cyanidation was used. The chlorination (Cassell's) process, an electrolytic method of recovery, was generally used to treat the final residues from the roasting of iron pyrites. Further developments were the addition of amalgam traps at the end of the plate tables, and amalgamating barrels through which concentrates in small quantities were fed. The ball mill, introduced at a later date, proved most effective in finely grinding and separating gold from ore, and greatly increased the percentage of recovery.

*Legislation*

The first goldfields law of Victoria was contained in a proclamation of 15 August 1851. This introduced the gold licence, which on the payment of a monthly fee authorised the digger to stake a claim over a small area of Crown land, and to dig thereon for gold, but which did not give any protection against the trespasser who jumped or encroached on his claim. In January 1852 the first Mining Act authorised the appointment of Gold Commissioners who were empowered to inquire into disputes between miners and determine the outcome in a summary way. Their powers were extended in the following year by an Act passed "for the better management of the goldfields of the Colony of Victoria", which also authorised two justices of the peace to award compensation for encroachment and trespass to an amount not exceeding £200, and also to hear and settle disputes between mates or partners. This method of dealing out justice was of the roughest fashion. The Gold Commissioner, whose office was subsequently filled by the chairman of the local court and later by the Warden, held his rough court where he pleased. He usually settled any disputes by visiting the claims and giving his decision on the spot, and that decision was final.

The Goldfields Act which came into operation on 1 June 1855 effected a still further reform in the mining law. This Act created the office of Wardens of the Goldfields, giving them jurisdiction to decide cases of title to claims, encroachment and trespass, forfeiture, and abandonment; right of appeal existed from their decisions to the District Courts of Mines, also first created by this Act; and from these a right of appeal lay to the Supreme Court. With the further development of mining, particularly reef mining, this Act fell short of the requirements of the goldfields, and as a result of a Royal Commission into the mining industry, the Mining Statute of 1865 came into operation on 1 January 1866. The general principles of the Goldfields Act were adhered to in this new Act but were greatly enlarged and extended. The jurisdiction of the Warden and of the Court of Mines was more clearly defined, and a new court of appeal, called the Court of the Chief Judge of Courts of Mines, to which court appeal might be had from the Court of Mines, was established. This new appellate court was abolished by the Judicature Act of 1883, and the jurisdiction given by the Mining Statute of 1865 to the Chief Judge is now vested in the Supreme Court. The many decisions and opinions of the Chief Judge of this new court and the judgments on the equity side of the Supreme Court reduced the mining law of Victoria to a firm basis, forming a solid foundation for the superstructure of mining law which has been built up on them. This applied not only to Victoria but to the other States of Australia. Sir Samuel Griffith, when Chief Justice of Queensland, said "It is a well known fact that the mining law of Australia was practically made by the decisions of Mr Justice Molesworth and the Supreme Court of Victoria". The Mining Statute of 1865 is the foundation of all the mining laws of Australasia, and still remains embodied practically in its original form. In 1969 new legislation was introduced which abolished the Courts of Mines and transferred their jurisdiction to the County Court, and abolished Wardens Courts and transferred their jurisdiction to the Courts of Petty Sessions.



Marlin gas production platform, 33 miles offshore from the Gippsland coast.

*Val Foreman*



Crowded conditions on an early alluvial goldfield.  
*La Trobe Collection, State Library of Victoria*

Forest Creek alluvial diggings, 1858.  
*La Trobe Collection, State Library of Victoria*



**GOLD**



**LICENSE.**

187

May 2 1853

*J. F. Bamford*

The Director

being paid to me the sum of Five Pounds Ten Shillings in advance of the Provincial License, I hereby license the

*Loddon Digg*

to be worked by and under the name of the above digger for the term of *May* 1853

as I shall assign to him the right of prospecting the ground for *May* 1853 within the bounds of my Digg Patent.

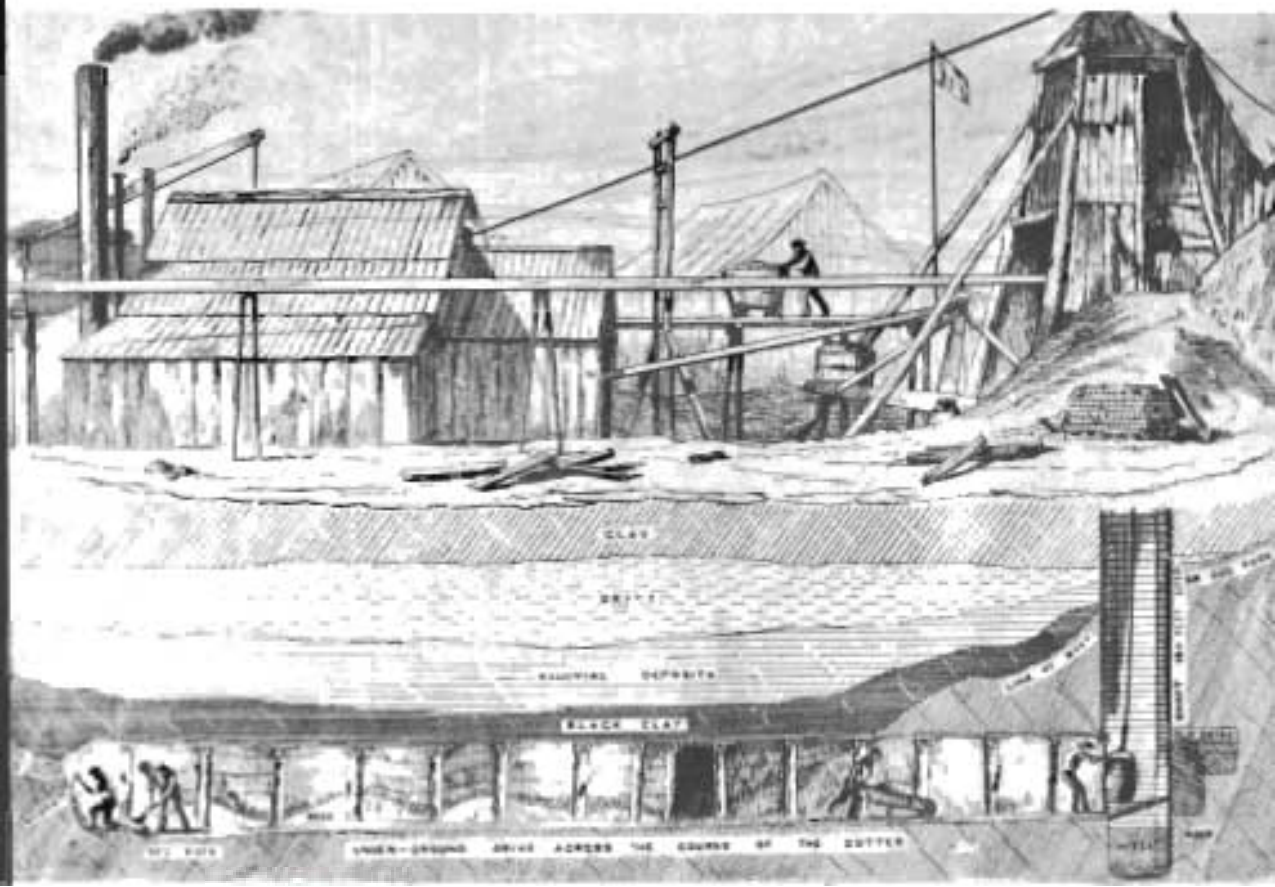
This License is not transferrable, and is to be null and void if the Licensee is not at any other period being within the boundaries of the Digg Patent, and is to be renewed when another License is issued.

*W. G. Bell*  
Commissioner

REGULATIONS TO BE OBSERVED BY THE LICENSEE IN WORKING THE GOLD DIGGER'S LICENSE OF THE GOLD FIELDS  
 1. Every Licensee must always carry on his person the License, and produce it to any Magistrate or Justice of the Peace on demand.  
 2. Every Licensee must always carry on his person a sufficient quantity of gold.  
 3. Every Licensee must always carry on his person a sufficient quantity of tools.  
 4. Every Licensee must always carry on his person a sufficient quantity of provisions.  
 5. Every Licensee must always carry on his person a sufficient quantity of clothing.  
 6. Every Licensee must always carry on his person a sufficient quantity of fuel.  
 7. Every Licensee must always carry on his person a sufficient quantity of water.

Gold licence issued for one month in the 1850s  
 La Trobe Collection, State Library of Victoria

Diagram of workings of a mine at Ballarat  
 Royal Historical Society of Victoria





Pack horses carrying mining supplies at Walhalla.

*La Trobe Collection, State Library of Victoria*

The "monster meeting" of miners at Mt Alexander in December 1851 to protest about a proposed increase in gold licence fees.

*La Trobe Collection, State Library of Victoria*







Poppet head and tailings of the Talbot alluvial mine, c. 1930s.

*Mines Department*

Ovens valley, scene of alluvial gold mining in the 1850s and later of dredging operations.

*J. J. Neeson*





Bucket-chain dredge at the Morwell brown coal open cut  
*State Electricity Commission*

Cape Grant quarry near Portland in the late 1930s.  
*Australian News and Information Bureau*





The *Glozier Conception*, a drilling vessel operating in Bass Strait in 1972.

*Vat Foreman*

Pipeline to McKay Creek power station in the Kirwa hydro-electric scheme in north-east Victoria.

*State Electricity Commission*





Crude oil pipeline under construction near Longford in Gippsland.  
*Esso (Australia) Ltd*

Hazelwood power station in the La Tröbe valley.  
*State Electricity Commission*



In spite of the importance of the goldfields in the early history of Victoria, there was no Minister for Mines until 1863. The Chief Secretary carried out the administration, first through the gold commissioners and later through wardens. John Humffray, who was appointed Commissioner of Mines in November 1860, was the first member of a Government responsible for mines, and his appointment was followed a month later by that of R. Brough Smyth as the first Secretary for Mines. In 1863 John Forrester Sullivan was appointed the first Minister of Mines, taking over the existing organisations based on wardens with elected Mining Boards on the respective fields. The duties and scope of the Department as defined by the Mining Statute of 1863 included the administration of miners' rights, leases of reservoirs, business licences, mining leases, licences to search for metals and minerals other than gold, and licences to cut water races. Later Acts extended and modified the provisions according to developments in mining, prescribing conditions for mine safety, ventilation, drainage, use of machinery, labour conditions, tribute agreements, dredging, and other matters as they arose. The Department gradually acquired staff and the Geological Surveyor was transferred to it from Lands and Surveys. The Mining Boards were reconstituted in 1904 to consist of representatives of the Department and of various mining interests. They were finally abolished in 1914 when their duties devolved on the Minister.

During the life of the Department a number of related issues have brought it responsibilities for matters often only indirectly connected with mining. Under the *Residence Areas Act* 1881, the Minister of Mines in the early 1890s was responsible for the sale of land held under residence area or mining lease. Through its responsibility for the use of water on the goldfields, it undertook a number of water supply schemes other than those which were under municipal control. They were designed specifically to supply water for mining purposes, but were used for town supply and even irrigation. Forestry was another marginal interest, the Department being the responsible authority when efforts were first made during the late 1860s to foster timber production by the reservation of State forests. It again had charge of forestry from 1891 until 1907. Sludge and similar waste products of mining were a source of constant worry, and at first were dealt with by normal departmental methods. In 1904 the Sludge Abatement Board was set up to deal with the problem, and the organisation was expanded by setting up sludge abatement trusts in 1907.

Inspection of boilers, which began as part of the normal precautions for the safe working of mines, expanded gradually until all industrial boilers were under the jurisdiction of the Department. With the decline of mining and the introduction of electric power, the number of boilers in mines decreased, and eventually in 1962 the responsibility for boilers was transferred to the Department of Labour and Industry. In 1965 the Explosives Branch, until then a part of the Chief Secretary's Department, was transferred to the Mines Department. Gold buying was administered by the Treasury until 1928 when the responsibility was transferred to the Mines Department. In 1938 an Act was passed consolidating all previous enactments, defining who might buy gold in various forms, and under what conditions.

### *Safety and accidents*

Practically all types of accidents which occur on the surface have also been encountered in underground workings, but there are hazards which are peculiar to underground mining, especially because of heavy and unstable ground, broken rock, and inflows of water and material. Dangers from noxious fumes, bad air, electricity in wet places, working in confined spaces with poor conditions underfoot, poor lighting, and exposure to falling materials are ever present. In the early years when one third of the population was directly engaged in the mining industry there was no statutory control in relation to safe working or health of the worker in the mines. A government commission reported on the need for inspectors of mines in June 1863 as it was considered that the work of the wardens and the mining registrars was fully taken up by other matters relating to claims, leases, and mining statistics. In 1866 the sum of £3,000 was voted for the payment of six inspectors, but no appointments were made. The same amount for payment again appeared in the 1867 estimates, but after the vote was brought forward it was struck off the list. Eventually the Regulations of Mines Statutes of 1873 was passed and took effect from 1 January 1874. The Mining Districts were arranged in twenty-eight divisions, and an inspector was appointed to each. Instructions issued to all inspectors differed very little from those which apply today. It was not until some years later that a Board of Examiners for mine managers was constituted, and mine manager's certificates were issued. A prerequisite for examination as a mine manager was at least five years practical experience, and a good knowledge of the regulations applying to safe working in every section of the mine, whether on the surface, underground, or in the mill.

In the six years 1863 to 1868 inclusive a total of 670 workmen were killed in the mining industry, and it is significant that three years after the appointment of the first inspectors, the accident rate had declined by one third.

### *Conclusion*

Although New South Wales was the first Australian Colony to produce gold, Victoria soon surpassed it in importance. During the first ten years (1851 to 1861) the two colonies together produced 40 per cent of the world's gold output. Twenty and one half million ounces were exported from Victoria, of which the Bendigo field yielded more than four and one half million ounces, whilst three million ounces came from New South Wales. In the peak year, 1856, Victoria's recorded production was 3,053,744 oz of gold.

Since 1965 gold mining in Victoria has played a less prominent role, but by 1972 there was evidence of renewed activity as a result of recent movements in the price of gold.

## NATURAL GAS AND CRUDE OIL

### *Exploration*

#### *Onshore exploration, 1921-1971*

In a 1916 report published in the Records of the Geological Survey of Victoria in 1921, reference is made to the sinking of a bore "some 30 years ago to a depth of 175 ft . . . the object being to strike oil." The date of this bore would therefore be about 1886, but its precise position is not

known. The drilling of Boola Boola No. 1 oil exploration well in the Toongabbie area was commenced in October 1921 and completed in August 1925.

The first oil exploration well in the Lakes Entrance area, the Lakes Entrance Development (Lake Bunga) No. 1 well, was drilled in January 1924 and had traces of oil. This was followed within four years by the Lakes Entrance Development No. 2 well which also showed traces of oil. The government well (Colquhoun No. 1), drilled in 1928 near the bridge over the North Arm, Lakes Entrance, also found traces of oil.

Since the first crude oil was discovered at Lakes Entrance in 1924 petroleum exploration in Victoria has gone through stages of activity, largely influenced by developments in other parts of Australia. The early well sites of Lakes Entrance, selected under the guidance of the Director of the Victorian Geological Survey, were aimed primarily at establishing the stratigraphy, structure, and extent of the Lakes Entrance field. Numerous small shows of oil and dry gas were found in the basal Tertiary greensands and sands, but significant production could not be established.

Oil exploration companies grew because of indications of petroleum, but at this early stage most lacked the knowledge necessary for scientific selection of well sites or for carrying out deep drilling operations. A large number of wells was drilled throughout the State during the ensuing years. An area roughly within a three mile radius of Lakes Entrance was found to yield small quantities of oil with water. Capital raising difficulties led to an arbitrary concentration of effort in the Lakes Entrance area and this resulted in the neglect of other areas. Activity at Lakes Entrance waned in the late 1930s, but was temporarily revived during the Second World War in an attempt to obtain worthwhile production by drilling horizontal holes radially into the oil reservoir from a shaft sunk for this purpose; this project was economically unsuccessful. Production of heavy asphaltic base crude oil from wells at Lakes Entrance totalled a little over 3,000 barrels for the period 1930 to 1941. A small additional production was obtained from the Lakes Entrance Shaft from 1945 to 1950. Throughout this period small flows of gas were discharged continuously to the atmosphere.

From 1924 to 1946 a number of wells drilled by the Mines Department yielded much essential new stratigraphic data, mostly in Gippsland, providing a basis for subsequent exploration and geophysical interpretation. Immediately before and shortly after the Second World War several major oil companies carried out geological reconnaissance with a view to selecting areas for further search. These investigations failed to attract the companies concerned, but led to a revival of local interest.

By 1950 much of the Gippsland Basin had been taken up under petroleum permits and licences. Following the discovery of oil at Rough Range, Western Australia, in December 1953, activity stepped up considerably. Integrated geological and geophysical investigations were undertaken, a number of deep wells were drilled, and investigations were extended to the pre-Tertiary sedimentary section. Minor oil shows were encountered in the lower Tertiary and Mesozoic strata in wells drilled at Woodside in 1955. After 1950 the Bureau of Mineral Resources carried out regional gravity and aeromagnetic surveys which provided basic data for exploration in Gippsland, Port Phillip Bay, and south-western Victoria. Considerable stratigraphic data was also obtained

from deep water wells drilled by the Mines Department in western Victoria after November 1957. Apart from a minor lull in activity in 1958 and 1959, the tempo of company exploration has increased since 1953.

With the stimulus of a strong, but non-commercial, flow of wet gas in the Port Campbell No. 1 well late in 1959, and a show of petroliferous gas in North Seaspray No. 1 in November 1962, surface and sub-surface geological and geophysical data have been steadily built up to the stage where parts of the basins are known in reasonable detail. In keeping with overseas practice, the trend throughout the post-war period had been to increase the proportion of preliminary geological and geophysical work carried out before selecting new sites for drilling. Some difficulty was experienced in obtaining satisfactory seismic records in parts of western Victoria and Gippsland, and the extensive basalts of western Victoria caused difficulty in the interpretation of aeromagnetic records.

Onshore exploration activity involving both geophysical surveys and drilling operations continued intermittently from 1964 to 1971, but still without any commercial discovery of crude oil or natural gas being made. During these years thirty-one wells were drilled in Victoria's three onshore sedimentary basins by a number of operators including Arco, Planet, Frome-Broken Hill, Woodside, Alliance, Interstate, Pursuit, Shell, Ashburton, A.A.O., and Halliday. The total number of wells drilled from 1921 to 1971 was 173.

An important development during 1961-62 was the extension of oil search to the offshore area, with most Victorian waters to the edge of the continental shelf being covered by aeromagnetic and seismic surveys.

#### *Offshore exploration 1960-1971 and the discovery of natural gas and crude oil*

The bulk of Australia's confirmed reserves of natural gas and crude oil is located in the offshore part of the Gippsland Basin in eastern Victoria. Exploration permits covering most of the offshore area administered by Victoria have been granted to various companies by the Minister of Mines, originally under the provisions of the *Petroleum Act 1958*, and since April 1968 under the *Petroleum (Submerged Lands) Act 1967*.

In 1960 two offshore Gippsland Basin permits and an offshore Otway Basin permit were granted to The Broken Hill Proprietary Co. Ltd. In 1961 these permits were transferred to a wholly owned subsidiary of B.H.P. now known as Hematite Petroleum Proprietary Ltd. A further Otway Basin permit was taken up by Hematite in 1964. Geophysical surveys were carried out in these areas and farmout agreements were concluded with Esso Exploration and Production Australia Inc., over the Gippsland Basin in May 1964 and the Otway Basin in April 1967. These provided for carrying out further geophysical work and a drilling programme in a number of promising structures.

Using the *Glomar III*, a mobile ship-type drilling rig, the first well was spudded-in 15 miles offshore in 148 ft of water on 27 December 1964. Natural gas was discovered in February 1965 and the subsequent drilling of a step-out well confirmed that this reservoir—now known as the Barracouta field—was a commercial discovery. Another field, Marlin, about twice as large, was discovered by the Esso/B.H.P. partnership in 1966,



thus proving that adequate reserves were available to supply the Victorian market for at least thirty years.

Still using the *Glomar III* drilling ship, Esso/B.H.P. moved out into deeper waters 40 to 50 miles offshore. In April 1967 the Kingfish wildcat well was drilled and in July the rig moved about 10 miles north to explore the Halibut structure. Subsequent testing and evaluation, and in the case of Kingfish the drilling of two confirmatory step-out wells, proved the existence of two oilfields of high commercial significance. On 25 January 1968 Esso/B.H.P. announced that as a result of production tests "Kingfish field may be classified as potentially a major oilfield". In May 1968 drilling of Tuna and Snapper structures commenced. In both instances two confirmatory step-out wells were drilled. In 1970 the Snapper reservoir was declared to be a large commercial gas field, and in April 1971 Esso/B.H.P. announced that the Tuna field contained reserves of oil and gas.

Two other companies have also drilled for petroleum offshore in the Gippsland Basin. The first, Woodside Oil N.L. and its partners, with B.O.C. Australia Ltd as the operator, discovered the small Golden Beach gas reservoir in 1967. The second, Endeavour Oil N.L., drilled two holes in July 1970, but both proved to be dry. Offshore exploration in the Otway Basin by the Shell-Frome-Broken Hill group and the Esso/B.H.P. partnership between 1967 and 1970 proved unsuccessful.

All offshore exploration drilling in the two basins was suspended in July 1970. To that time forty-seven wells had been drilled in Victorian waters. Of these, sixteen were in commercial or potentially commercial reservoirs, six in reservoirs not presently commercial, nine had shows of oil or gas, and eight had no shows. A total of five mobile drilling rigs were used between 1964 and 1970, of which the *Glomar III* was by far the most successful, discovering five of the six commercial fields, all of which are located in the Gippsland Basin from 15 to 48 miles offshore in waters ranging from 148 to 255 ft in depth.

VICTORIA—INITIAL RESERVES OF GAS AND OIL  
IN GIPPSLAND FIELDS, 21 MAY 1971

Field	Natural gas	Crude oil	Years when field discovered and proved		
	trillion cu ft (a)	million barrels			
Barracouta	1.8	7	{ 1965 (gas) 1968 (oil)		
Marlin	3.5	..	1966		
Halibut	0.3	440	1967		
Kingfish	} dissolved gas in crude {	1,060	1967 and 1968		
Snapper			3.2	..	1968 to 1970
Tuna (b)			0.5	84	1968 to 1970
Golden Beach			0.2	..	1967
Total			9.5	1,591	..

Sources : 1. The Broken Hill Proprietary Co. Ltd, December 1970, for all fields except Golden Beach.

2. Woodside Oil N.L., for Golden Beach.

(a) Million million cubic feet.

(b) Announced by Esso/B.H.P., 21 May 1971.

The initial recoverable reserves of natural gas and crude oil in the six commercial fields discovered by Esso/B.H.P. in the Gippsland Basin between 1965 and 1968, and as announced by the companies, are set out in the preceding table. In addition, there are reserves of natural gas in the Golden Beach reservoir discovered by B.O.C. Australia Ltd in 1967 in an offshore tenement shared with Woodside Oil N.L. and a number of other companies.

#### *Exploration and development legislation*

When it became evident in 1965 that substantial petroleum reserves were likely to be found off the Victorian coast, the Victorian Government sent two senior officers from the Mines Department to Canada and the United States of America to investigate petroleum legislation and administration in those countries. Following that visit the Government retained a Canadian consultant, Dr Charles Hetherington, to make a report on the newly discovered petroleum resources. His submission entitled "Report on the Orderly Development of Petroleum in Victoria, Australia" was submitted to the Premier of Victoria in March 1966.

At the time when the first discoveries of oil and gas were made in Victoria's offshore waters, petroleum exploration and production were governed by the *Petroleum Act* 1958, the application of which had been extended offshore by the *Underseas Minerals Resources Act* 1963. After several years of discussion to determine their respective rights, the Commonwealth Government and all the State Governments agreed in 1967 to introduce a system of "mirror" legislation. This resulted in the passing by the Victorian Parliament in October 1967 of the *Petroleum (Submerged Lands) Act* 1967. The legislation passed by all Parliaments was practically identical and incorporates a common mining code for all offshore operations.

Under the legislation a graticule system of titles provides for all new permits and licences to consist of block areas the size of which is approximately 25 sq miles each. Exploration permits are subject to relinquishment provisions after six years and each succeeding five year period. When petroleum has been discovered a location of nine blocks is declared, the permit holder having the right to take a licence over five blocks at the standard royalty of 10 per cent of the value of petroleum at the well-head. This is shared on the basis of 4 per cent to the Commonwealth and 6 per cent to the State Government. In addition, the permit holder may elect to take a licence over the four remaining blocks by paying a negotiated royalty of between 1 and 2½ per cent on both licences, all of which is retained by the State. The new legislation also provides for the laying of undersea pipelines.

Pending finalisation of the joint Commonwealth-State offshore legislation, the Victorian Parliament early in 1967 passed interim legislation to enable the granting of production licences for the development of the Barracouta and Marlin gas fields and to lay undersea pipelines. This legislation was later repealed when the *Petroleum (Submerged Lands) Act* 1967 came into operation on 1 April 1968.

Between 1965 and 1967 other new and important legislation resulting from the discovery of natural gas was introduced by the Victorian Parliament.

First, late in 1965 the Government, reviving an earlier proposal, passed the *Fuel and Power Act 1965* which empowered the formation of a Ministry of Fuel and Power. Under this legislation the Minister is responsible for the co-ordinated development and utilisation of all present and future sources of energy in Victoria. Second, late in 1966 the *Victorian Pipelines Commission Act 1966* was passed enabling the formation of a Pipelines Commission to construct gaseous hydrocarbon pipelines in the State. The Commission commenced operating on 1 March 1967, and during the next four years laid the 108 mile Longford to Dandenong, 30 inch trunk line to supply natural gas to Melbourne and the 33 mile, 14 inch transmission line from Brooklyn to Corio to supply natural gas to Geelong. On 1 July 1971 the Commission ceased to operate and its functions and responsibilities were absorbed into those of the Gas and Fuel Corporation of Victoria, the State's largest gas utility. The third important item of legislation was the *Pipelines Act 1967*, which came into operation on 1 September 1967. This Act regulates the granting by the Minister for Fuel and Power of permits to own and use hydrocarbon pipelines and the issuing by the Minister of Mines of licences to construct and operate such lines. To the end of 1971, 76 permits and licences have been issued in respect to pipelines conveying natural gas, crude oil, finished petroleum products, ethane gas, and liquefied petroleum gas.

#### *Development of the Gippsland gas and oil fields*

##### *Natural gas*

Anticipating that adequate markets for natural gas would be secured, the Esso/B.H.P. partnership commenced, early in 1967, the development of the Barracouta and Marlin gasfields in accordance with the terms of tentative agreement reached between the producers and the gas utilities of providing a dual system of platforms and pipelines to ensure security of supply. At Barry Beach, in Corner Inlet about 120 miles south-east of Melbourne, a large marine terminal was established to fabricate the offshore platforms, to coat and store pipe for the necessary undersea and onshore pipelines, and to service the exploration rigs currently operating and the production platforms after they had been built. Made from Australian steel, the first of the jackets for the offshore platforms was set in position in 150 ft of water over the Barracouta field in December 1967. Within 12 months the planned ten development wells had been drilled, the undersea and onshore pipelines laid, and on 7 March 1969 natural gas commenced flowing to the treatment plant then in the course of erection at Longford, a few miles south of Sale. The second gas platform, Marlin, was erected during 1969 in 198 ft of water about 30 miles offshore, and on 21 January 1970 gas commenced flowing ashore through a 67 mile, 20 inch pipeline from the four development wells completed on this platform after the serious blow-out in December 1968.

Between 1968 and 1970 Esso/B.H.P. erected a combined gas treatment and crude oil stabilisation plant at Longford at a cost of about \$51m. At this plant the heavier hydrocarbons—ethane, propane, butane, and light oils—are removed from the raw field gas to yield a dry, pipeline quality gas suitable for marketing to homes and industry. The plant also treats the crude oil from the oil fields by removing the dissolved gases and passing them to

the gas treatment facilities. The dry gas is piped to Dandenong through the trunkline built by the Victorian Pipelines Commission in 1968 at a cost of about \$20m, and now operated by the Gas and Fuel Corporation.

The heavier hydrocarbons—ethane, propane, and butane extracted from gas and crude vapours—are conveyed through a 118 mile, 10 inch pipeline built by Esso/B.H.P. in 1968 and 1969 to a fractionation plant at Long Island Point near Hastings, about 40 miles south-east of Melbourne. This plant, the erection of which commenced in 1968, will have the capacity to produce one million tons a year of marketable propane and butane (L.P.G.). The initial stage of the plant was commissioned in April 1970 and was later expanded to double both output and storage capacity ; the construction of a further butane storage tank is in progress.

#### *Crude oil*

Following the discovery in 1967 of commercial quantities of crude oil in the Halibut and Kingfish fields, Esso/B.H.P. expanded the Barry Beach marine terminal and commenced the fabrication of three additional platforms from which the development wells could be drilled. The first of these, Halibut, was erected in 241 ft of water early in 1969. Development drilling of 21 wells from the twin jacket platform was completed in 1970 and on 17 March 1970 crude oil commenced flowing ashore through an 82 mile, 24/26 inch pipeline, 47 miles of which was laid offshore. Earlier, in October 1969, crude oil had commenced flowing to Longford from the Barracouta field where it had been discovered during gas development drilling in 1968. The production rate of crude from Halibut increased towards the end of 1970 to over 200,000 barrels a day with an additional 5,500 barrels a day coming from the small Barracouta field.

The two 21 well Kingfish platforms were erected during 1969 and early 1970 ; development drilling from the Kingfish A platform commenced on 31 March 1970, and from the sister Kingfish B platform on 22 October. By the end of April 1971 development drilling on the Kingfish A platform had been completed and the two pipelines linking the two Kingfish platforms to the Halibut crude oil line had been laid. On 22 April 1971 the large Kingfish field came on stream and four days later the overall production of crude from the Gippsland fields passed 300,000 barrels a day. This comprised about 60 per cent of Australia's total refinery requirements of 500,000 barrels a day.

After treatment in the stabilisation facilities at the Gippsland Gas Processing and Crude Oil Stabilisation Plant at Longford to remove the dissolved gases and produce a suitable refinery feedstock, the crude oil is conveyed through a 117 mile, 28 inch pipeline built by Esso/B.H.P. in 1969 to the eight 268,000 barrel capacity storage tanks and the shipping terminal located at Long Island Point. From there it is conveyed by tankers to refineries in Victoria, New South Wales, South Australia, Queensland, and overseas, and by pipeline to the nearby BP refinery at Crib Point.

#### *Purchase and distribution of natural gas by Victorian utilities*

The Esso/B.H.P. partnership, realising the need to establish local markets for the natural gas discovered in the Barracouta field (and later in the Marlin field), and the Gas and Fuel Corporation of Victoria, aware of the value of the discovery, commenced negotiations on 19 October 1965 for

the supply of the gas. The Corporation also represented the then three other gas utilities in Victoria—The Colonial Gas Association Ltd, The Geelong Gas Company, and The Gas Supply Co. Ltd. Since then the Corporation has purchased all the Victorian assets of The Gas Supply Co. Ltd and The Geelong Gas Co. has become a subsidiary of the Corporation.

The Gas and Fuel Corporation also engaged consultants, H. J. Gruy and Associates of the U.S.A., to make a report on the gas reserves and associated matters relating to the discoveries off the east Gippsland coast. The study confirmed the estimates made by Esso/B.H.P. Negotiations continued until 16 March 1967, when the four gas companies and Esso/B.H.P. signed a "Letter of Intent" to purchase natural gas from the latter company over a 20 year contract period, at prices to remain firm over that period ranging between a maximum of 3.2 cents a therm and a minimum of 2.58 cents a therm, depending on quantities taken. This "Letter of Intent" has since been confirmed by contracts between the buyers and the sellers.

Natural gas commenced flowing from the Esso/B.H.P. treatment plant at Longford on 16 March 1969, and was turned in from the Victorian Pipelines Commission's station at Dandenong to the Gas and Fuel Corporation's Melbourne distribution system on 31 March 1969. On 14 April 1969 Victoria's first consumer was connected at Carrum. The Corporation and The Colonial Gas Association Ltd had commenced planning in 1966 for the introduction of natural gas; old pipelines were checked and up-graded and a number of new ones installed to form a fully integrated network. The principal distribution pipelines laid were the Corporation's 51 mile, 18 inch diameter transmission main around the eastern and northern suburbs from Dandenong to West Melbourne between 1966 and the end of 1969, and the 22 mile, 30 inch diameter transmission line from Dandenong to West Melbourne in 1969 and early 1970, thus ringing the city with a new 73 mile long pipeline. Costing about \$11m, this line became fully operational in May 1970.

The combustion characteristics of natural gas vary considerably from those of manufactured gas and it was necessary to modify all gas burning appliances and equipment to burn the new fuel. Both companies embarked on a programme to convert all appliances at no cost to the consumer. The Colonial Gas Association completed converting the 170,400 appliances owned by its 78,653 customers in March 1970 at a cost of about \$5.3m. On 23 December 1970 the Gas and Fuel Corporation completed its project at a cost of about \$27m, having converted the 1.1 million appliances owned by its 446,000 customers. Melbourne thus became the first capital city in Australia to be wholly converted to natural gas.

Natural gas has been supplied to the Gippsland towns of Warragul, Trafalgar, Morwell, Traralgon, and Sale since November and December 1969, and the Corporation's Lurgi gas-making plant at Morwell ceased production on 26 November 1969. The West Melbourne gas works ceased production on 6 December 1970, thus ending the manufacture of gas in Melbourne. The City of Geelong, 45 miles south-west of Melbourne, commenced receiving natural gas on 15 March 1971 through the Victorian Pipelines Commission's \$4m pipeline laid late in 1970 and early 1971. By the end of 1971 when

The Geelong Gas Company's 23,000 customers had their appliances converted, about 95 per cent of Victoria's 576,000 gas users were burning the new fuel. The remaining 30,000 customers will be using reformed liquefied petroleum (manufactured) gas. These will be further reduced when natural gas is supplied by the Corporation to Ballarat and Bendigo and other country centres in 1973.

To 30 June 1971, 47,101 million cu ft of natural gas had been recovered from the Barracouta and Marlin gas fields. Of this 30,905 million cu ft was distributed to Victoria's gas utilities, the balance being produced as ethane, propane, and butane, or burnt as a fuel at the treatment plants.

#### *Distribution of crude oil and L.P.G.*

The first load of Gippsland crude, comprising 105,000 barrels of Barracouta crude, left the Long Island Point liquids jetty on 24 March 1970 in the tanker *Hemiglypta* for the Petroleum Refineries (Australia) Pty Ltd refinery at Port Stanvac, South Australia. The liquids jetty built by Esso for the Victorian Public Works Department during 1968 and 1969 at a cost of \$6m is 2,200 ft long, has a 356 ft berthing head, and the capacity to load both crude oil into tankers up to 100,000 tons d.w. and liquefied petroleum gas into large refrigerated carriers. In Victoria, the first deliveries of Gippsland crude to the P.R.A. refinery at Altona were made on 27 March 1970, to the BP refinery at Crib Point on 3 April 1970, and to the Shell refinery at Corio on 7 April 1970. To 30 June 1971, a total of 300 tankers had been loaded at Western Port, conveying 76,536,343 barrels of crude. In addition, 11,600,442 barrels of crude have been conveyed to the BP refinery at Crib Point through Esso/B.H.P.'s 7.2 mile, 42 inch distribution pipeline laid in early 1970, connecting the Long Island Point tank farm and the Crib Point liquids jetty to increase tanker loading capacity and to provide alternative shipping facilities. Government approval was given to W.A.G. Pipeline Pty Ltd to lay a crude oil distribution line 84.4 miles long from Long Island Point to Altona and Geelong to supply the P.R.A. and Shell refineries, respectively. This line was built during 1971 and 1972.

The first load of propane and butane, for which markets in Japan had been arranged independently by Esso/B.H.P., left Long Island Point in the *Bridgestone Maru 1* on 4th July 1970. The L.P.G. shipped from Long Island Point to various markets, principally Japan, is becoming a significant earner of foreign exchange.

#### *Refining and marketing*

The refining of crude oil to produce finished petroleum products commenced in Victoria in 1924 when Commonwealth Oil Refineries built a refinery at Laverton; this was closed in 1955. The Vacuum Oil Company, later to become Mobil Oil Australia Ltd, brought Victoria's first large refinery on stream at Altona in 1949 and extensively enlarged it in 1954 at a cost of \$40m to refine 2.1 million tons of crude oil a year. In the same year Shell commenced production at its new refinery at Corio near Geelong and built Victoria's first long distance petroleum products pipeline to Melbourne. The refinery cost \$60m and has a capacity of 2.4 million tons a

year. Further expansion of the automobile industry in the 1960s, coupled with the demand for oil in other industries and for the manufacture of petrochemicals, resulted in the establishment by BP Australia Ltd of a refinery at Crib Point, costing \$40m and having 2.2 million tons a year capacity, and in the expansion of the two established refineries.

Until 1969 the output of all Australian refineries had been designed for crude oil imported from the Middle East and Indonesia, and blended with small amounts of light indigenous Australian crudes from Moonie and Barrow Island. The market for refined and residual products had therefore been established to consume the percentage of petrol, kerosene, aviation fuel, distillate, fuel and furnace oils, lubrication oil, and bitumen produced from the base stock obtained from these sources. The Gippsland fields, however, produce light crudes with a high wax and low sulphur content, containing mainly fractions suitable for the production of petrol, jet fuel, and diesel oils. Therefore, some modifications to Australian refineries were required to process these different types of crude. The approximate average yield of Gippsland crudes is naphtha 35 per cent, kerosene 10 per cent, diesel oil 22 per cent, light ends 5 per cent, and residuals 28 per cent.

Between 1967 and 1970 the three refineries in Victoria undertook an expansion programme to cope with increasing market demands and at the same time convert existing equipment and install new plant to enable Gippsland crude to be processed. First, the Shell refinery undertook in 1967 and 1968 a \$10m expansion programme and followed this with the installation in 1970 of a new \$5m gasoline alkylation plant. The P.R.A. refinery at Altona completed late in 1970 a \$26m construction programme comprising a new crude processing unit, a new naphtha reformer, a new naphtha treater, and various other work, upgrading existing refinery facilities. When the work had been completed, the Shell refinery had increased its processing capacity to 118,000 barrels a stream day (BSD) and P.R.A. to 85,000 to 95,000 BSD, while the BP refinery at Crib Point remained unchanged at 50,000 BSD. The total cost of the various expansion and conversion programmes amounted to about \$50m and increased Victoria's refinery capacity to about 263,000 BSD or 38 per cent of the Australian total.

Petroleum products are distributed throughout Victoria by nine major companies through more than 5,200 retail outlets. The principal products marketed in Victoria during 1969-70 were 658,685,000 gallons of petrol, 144,086,000 gallons of light fuel oils, 100,125,000 gallons of industrial diesel fuel oils, 377,652,000 gallons of furnace oil, and 50,844,000 gallons of aviation turbine fuel and gasoline, out of a total of 1,413,989,000 gallons of products of all types or 25.5 per cent of the Australian total.

## URBAN AND SUBURBAN DEVELOPMENT

---

### SITING OF CITIES AND TOWNS

The possibilities for pastoral development of the hinterland of the Victorian coast were first realised largely through the activity of whalers and sealers at such places as Portland and Port Fairy, closely following the discoveries of the early navigators, Grant, Baudin, and Flinders.

Whaling, and to a lesser extent sealing, was established at Portland Bay from 1828, and by 1832 Captain William Dutton, one of the whalers, had erected a cabin there and cultivated a garden. On giving up whaling he later farmed land at Narrawong. Similarly, two men, Raby and Penny, who had a whaling station at Port Fairy in 1834 were apparently the first to reside there. In the same year Edward Henty established at Portland the first permanent homestead in Victoria, following his visits during the two previous years when he had been greatly impressed by the appearance of the country. Shortly afterwards he sowed his first cereal crop and over the next few years, while he and his three brothers consolidated their holding, settlement began. By 1840 Portland comprised one large house, six cottages, and several huts, also sheds, storerooms, stables, a dairy, a smithy, and a carpenter's shop. In that year it was surveyed by Charles James Tyers and Thomas Scott Townsend, proclaimed a township by Governor Sir George Gipps in Sydney, and held its first land sale.

Meanwhile settlement took place at Melbourne and Geelong. Stimulated by reports from Lieutenant John Murray and Captain Matthew Flinders, and particularly by the explorers Hume and Hovell, pastoralists in Van Diemen's Land (later Tasmania) and Sydney resolved to test the settlement potential of the territory around "Jillong", the name given by the Aborigines to the Corio Bay locality. In May 1835 John Batman, acting for the Port Phillip Association, landed at Indented Head and explored the country around the western arm of Port Phillip Bay, before moving northward to the mouth of the Yarra River, where he made his historic land deal with the tribal chiefs of the district. On 8 June he found good water six miles up the river and recorded his celebrated statement, "This will be the place for a village". He thus confirmed an opinion recorded in February 1803 by James Flemming, a member of the Grimes expedition to Port Phillip Bay, that "the most eligible place for a settlement that I have seen is on the Freshwater River [Yarra]". In August 1835 J. H. Lancey visited Batman's party at Indented Head in the schooner *Enterprise*, which belonged to John Pascoe Fawkner. The vessel then sailed to the Yarra and unloaded passengers and cargo.



On 21 October 1836 Captain William Lonsdale, first Police Magistrate at Port Phillip, informed Sir Richard Bourke, the Governor of New South Wales, that he had decided to locate the official township where the greatest number of persons was living. He had preferred a site at Gellibrand's Point (now Williamstown) because of its proximity to the ship anchorage, but as there was no fresh water at the Point he selected the established settlement. In March 1837 the Governor visited and commended the site of the township which he named after Viscount Melbourne, then Prime Minister of England, and approved a plan of survey prepared by Robert Hoddle, Government Surveyor.

The first settlers in the locality of Geelong were Dr Alexander Thomson, who occupied a small station near Buckleys Falls on the Barwon River, and James Anthony Cowie, David Stead, and Robert William Steiglitz, who took up land near Bell Post Hill in 1836. Other settlers soon followed. In 1837 David Fisher pitched a tent at South Geelong on the north side of the Barwon and there (to quote his own words) "built the first house in Geelong worthy of the name". Governor Bourke after inspecting the locality in March of that year expressed the view that "If a town must be established for Geelong, it should be placed on the Barwin [*sic*] not far from Fisher's Station". Both the Governor and Fisher were impressed by the natural beauty of the locality. In March 1838 Robert Hoddle instructed Assistant Surveyor H. W. H. Smythe to survey a township between the river and the beach "the front street to commence one hundred yards from high water mark at Corio. The main street to extend towards Mr. Fisher's house on the Burwon [*sic*] . . .". On 26 October the township received official recognition. In the following year the first land sale was held and Captain Foster Fyans was appointed first Police Magistrate.

The founding of most of the other centres established in the first years of settlement may be attributed to five main factors. The first of these was the need of pastoralists around Melbourne and Geelong to seek fresh territory as more graziers arrived with their flocks. This, allied to the second factor, namely, that the country was ideally suited to sheep and cattle raising, was responsible for the very rapid occupation by late 1838 or early 1839 of most of the Western District and the country around Ballarat. For example, the Wedge brothers, who had been associated with Batman and Fawkner, were induced to move their stock from the Werribee River and occupy the future site of Hamilton on the Grange Burn. The third factor was the report made by Major Thomas Mitchell, Surveyor-General of New South Wales, on "Australia Felix", the name he gave to the country which extended over a large section of western and central Victoria, and which he had explored towards the end of 1836. Mitchell's visit to the Henty brothers at Portland in the course of his journey through the Port Phillip District was directly responsible for their establishing sheep runs over several large tracts of land, both along the coast from, and to the north of, Portland. The fourth reason was linked to the third. Settlers in New South Wales, particularly in the Riverina, had experienced a long drought, and on hearing about refreshing pastures at Port Phillip, many graziers drove their stock southward. Major Mitchell's expedition had left a well defined track known as the "Major's Line" which many followed. The first were John Gardiner and his party who, in the first week of 1837, arrived at the Yarra

settlement with 300 head of cattle from the Murrumbidgee River. They then travelled east, where Gardiner erected a dwelling on the future site of Scotch College in Hawthorn, and formed a run on the creek which now bears his name. The fifth factor was the necessity to provide facilities for travellers and their stock to cross rivers and streams, which were a major hazard. Enterprising persons, therefore, erected bush inns and often operated punts at difficult or important crossing places such as on the Goulburn River at Shepparton, and so provided the nuclei of numerous townships.

These factors were, indeed, largely responsible for the foundation of Camperdown, Colac, Echuca, Hamilton, Horsham, Sale, Shepparton, Wangaratta, and Warrnambool, and have also contributed towards the development of Bairnsdale, Morwell, Swan Hill, and Traralgon. Although Ararat, Ballarat, Bendigo, Castlemaine, Maryborough, St Arnaud, and Stawell are also associated with early pastoral settlement, they owe their first permanent positions to the discovery of large deposits of alluvial gold during the early 1850s. Their survival as centres when the alluvial gold gave out may mainly be attributed to the successful transition to deep-lead and quartz mining, and to their becoming centres for the surrounding districts when the Government authorised the large scale subdivision and selection of land during the 1860s. In some cases the development of industry, especially to service mining operations, also helped. In addition to these, Victoria, excluding the suburbs of Melbourne and those of Geelong, Ballarat, and Bendigo, has a large number of other smaller centres whose foundation can usually be ascribed to one or more of the causes mentioned.

More recently brown coal mining has created the town of Yallourn, and this activity, together with the development of rich agricultural and dairying areas, has caused Moe and Traralgon, once small towns on the Melbourne-Gippsland railway, to develop into cities, and Morwell to become an urban area of a similar size. Except for Yallourn, a State Electricity Commission township, and the Morwell "urban area", which is not separately incorporated, all population centres mentioned are municipalities constituted under the Local Government Act or allied legislation.

A provincial city, also so constituted, which does not directly owe its origin to any of the factors mentioned is Mildura, situated on the Murray River near its confluence with the Darling. Settlement began through an irrigation scheme for fruit growing and agriculture originally introduced in 1887 by the brothers George and William Chaffey, and actively supported by Alfred Deakin, then Commissioner of Water Supply. After many difficulties the scheme was successfully effected, and the future of the settlement assured.

While the pioneer settlers and traders were responsible for the physical origins of most of the cities and towns, it was the early surveyors who determined their bounds, shape, and position; set out the streets and building allotments; and provided sites for public services and amenities. Foremost among the surveyors was Robert Hoddle, who personally carried out or else supervised the survey of many towns. The broad thoroughfares set out as part of the original road pattern of Melbourne, Geelong, Warrnambool, and other cities are one indication of the skill and foresight with which these surveyors did their work.

## MELBOURNE

In November 1872 Anthony Trollope, after spending a year visiting the Australian colonies, wrote "Melbourne . . . is the undoubted capital, not only of Victoria, but of all Australia. It contains, together with suburbs, 206,000 souls, and of these so-called suburbs, the most populous are as much a part of Melbourne . . . as Marylebone is of London . . . There are very many cities in the world with larger populations . . . but I believe that no city has ever attained so great a size with such rapidity."

Melbourne had been both his point of arrival, direct from London, and the natural centre of his travels. Twenty years earlier, he would have found it equally convenient for intercolonial journeys, but much less significant as a town. The city which impressed him by its size and its institutions had been created by gold and immigration in barely two decades. But its location and the directions of its residential and commercial growth had all been determined earlier when merchants and tradesmen first established themselves on the lower Yarra to serve the original pastoral community of Port Phillip.

John Batman had led the way from Launceston in 1835, and within a year a government representative sent from Sydney had found some huts on the northern bank of the river, some six miles from where it entered Port Phillip Bay, and more than 25,000 sheep grazing within a radius of some thirty miles. A few months later Major Thomas Mitchell, exploring from the settled districts of New South Wales, had reached the coast many miles further west, to reveal both the extent of the grazing country south of the Murray, and a practicable land route by which to reach it. Within months would-be pastoralists were moving southwards through the Riverina, to meet those who had moved northwards across Bass Strait. The effective occupation of the Port Phillip District had begun, and on 4 March 1837 Governor Bourke arrived by ship from Sydney to regularise it and to establish its administration.

The huts and tents stood on the slopes of two ridges which ran down to the northern bank of the Yarra and offered the first firm landing beyond several miles of estuary swamps. A reef of rock across the river in line with the western ridge checked the incoming tides. Immediately below the reef, tidal swells had widened the river into a natural pool or basin where boats and smaller schooners could be berthed and turned. Permanent drinking water was available above the reef, either from the river or from nearby wells. The site met all the immediate requirements for a settlement. Robert Hoddle, the Assistant Surveyor-General, who arrived from Sydney a little ahead of Governor Bourke, had completed work on a township plan begun by his own assistant, Robert Russell, and Bourke approved it on the day of his own arrival.

The one obvious disadvantage was that larger ocean going vessels could not use the river. Feeling that the estuary anchorage might yet become the more important site, once a fresh water supply had been found for it, Bourke named it William, in honour of King William IV. The township site upstream was named Melbourne, in honour of the then Prime Minister, and the first land sales were held there on 1 June 1837. Hoddle's plan had provided four long streets each 99 ft wide, running

parallel with the river immediately alongside the pool and the reef. These streets ran from the brow of the western ridge, across a shallow gully and on to the brow of the wider eastern ridge beyond it; each was divided at 10 chain intervals into eight main blocks by shorter cross streets, running almost north and south. Half acre allotments, with various frontages, faced each east-west thoroughfare, with provision for narrow service lanes between the backs. The street immediately adjoining the river basin was named after Matthew Flinders, its focal point being the Customs House reserve; and most of the first land sales were in this vicinity. Lot prices rose spectacularly as private subdivisions and new frontages changed an intended service lane into Little Flinders Street, and merchants and importers quickly established it as the township's wholesale trading centre. By 1839 small central properties, bought two years before for £150, were changing hands at more than sixty times their original price.

Bankers and investors operated in Collins Street, one main block behind the waterfront; larger retailers were located beyond them in and between Bourke Street and Lonsdale Street, the thoroughfare which completed Hoddle's initial east-west design. Near the central gully, however, and beyond it, these streets were still little more than clearings. By far the busiest thoroughfares were those which ran north-westwards from the river, where flocks and immigrants began the long trek to the inland pastures, and drays lumbered in with bales of wool and back with stores.

William Street, so named (like Williamstown) in honour of the King, as the intended administrative centre, climbed directly along the western ridge. Because many of the allotments adjoining both it and King Street (to the west) had been reserved for government requirements, either immediate or future, its eastern neighbour, Queen Street, had immediately become the main commercial-business thoroughfare. As shipping agents established themselves around the Queen Street-Collins Street intersection, the lawyers and bankers joined them. Both William and King Streets led directly towards the highest point on the western ridge, where shipping movements observed within the bay were announced to the Melbourne community by flags and signals. A time-ball erected on the same hill served both town and shipping in place of a public clock.

The stock routes and wagon tracks which veered east around the Flagstaff Hill continued along the western ridge to where the eastern ridge converged with it, to run on and form a main route towards the northern pastures and the Murray—known then and now as the Sydney Road. The stock route to the central and western pastures ran north-westwards from the same junction. Here, where the main town and country tracks converged, flocks and stock were bought and sold; it was to remain a major saleyard area for a century, until the Royal Melbourne Hospital complex occupied the site.

Immigrants, stock, and capital came rapidly as the pastoral lands were occupied, and Melbourne's merchants, speculators, and building tradesmen shared the rough and ready prosperity of an early boom. Soaring rents encouraged professional men to move across to the so-called Eastern Hill, and in the gully which divided the Eastern Hill from the commercial centre retailers and tradesmen were soon establishing frontages along Elizabeth and Swanston Streets. Those who really prospered and sought more secluded residence, and the wage earners harassed by the fantastic climb in central township rents, looked much further east. Their houses and huts marked

the beginnings of the future suburbs of Fitzroy, Collingwood, and Richmond. But a disastrous fall in wool prices and a corresponding collapse in stock and station values had already shattered Port Phillip's initial boom. Although the Port Phillip Savings Bank had opened on 1 January 1842, a commissioner of insolvent estates had been appointed little more than a month later, and three years of hardship and depression were to be endured before wool prices rose again.

In 1842 Melbourne had been declared a municipality. Its official boundary ran three miles from east to west, the mid-point exactly one mile from the river basin and the Customs House. The eastern and western boundaries now ran directly to the river, to be extended southwards to the Bay in December 1844. Three years later both surveys and land sales had been renewed, and Melbourne had attained the status of a city. Subdivisions had filled in the main western township area to its extended northern boundary, and houses were appearing beyond Victoria Street by 1849, following land sales in North Melbourne. Albert Street, Grey Street, and Gipps Street, among others, marked the official recognition of East Melbourne. Bricks from the clayfields around the northern and eastern limits of the settlement, often brought down by a roundabout journey by dray and river boat, were beginning to replace the weatherboards; slates, brought in as ballast in returning wool ships, were beginning to appear amid the thatch and shingle.

Churches which stood out against the skyline already reflected Melbourne's early eastward growth. The foundation stone of St James', just above the north-west corner of William Street and Collins Street, was laid late in 1839. January 1841 saw the official opening of the Independent Church on the north-east corner of the Collins Street-Russell Street intersection; and between 1841 and 1845, while Scots Church rose on the north-west corner opposite, immediately above Collins Street's first steep eastern climb, the Baptists were building halfway down the same slope. St Peter's, completed in 1847, looked across Melbourne from the Eastern Hill, its tower a much more conspicuous landmark there than that of St James' in the west, and visible for many miles beyond the township.

A road from Melbourne to the beach, opposite the estuary anchorage, had been cleared and levelled as a "relief" work during the depression of the early 1840s. Here the mails and most ships' passengers were landed, and the inn established by Wilbraham Liardet, mail contractor and ferryman, was to form the nucleus of Sandridge (later Port Melbourne). A little further down the bay, the tiny village of St Kilda was attracting those who preferred seaside residence or recreation, although it was in the vicinity of the quarantine station on what is now Point Ormond. By 1845, when a wooden bridge replaced the river punt at the foot of Swanston Street, lands behind and beyond St Kilda were supplying most of Melbourne's fresh vegetables and much of its firewood. Thanks to good soil, attractive beaches, and its proximity to Melbourne, Brighton had overtaken Portland by 1846 to become the third largest township of Port Phillip, exceeded only by Melbourne and Geelong.

In November 1850, when Melbourne celebrated the announcement of the forthcoming separation of the Port Phillip District from the Colony of New South Wales, it was inconceivable that within months many would maintain that the new Colony had sought independence far too soon. In May 1851,

however, the *Sydney Morning Herald* had announced Hargraves' discovery of gold, and the first rush began to Ophir, beyond Bathurst in New South Wales; a few weeks later more than a thousand diggers were camped there along a single creek, and in Melbourne would-be diggers were crowding coastal vessels bound for Sydney. But the unwelcome migration to the New South Wales goldfields was short-lived. Rumours of gold within Victoria itself were too persistent to be discounted, and shepherds everywhere were soon neglecting flocks to turn prospector. By September, Clunes, Buninyong, and Ballarat had all been "rushed", to be followed by Mount Alexander and Bendigo. "The whole structure of society, and the whole machinery of government is dislocated", Lieutenant-Governor La Trobe was lamenting in December; Melbourne's work force had become greatly depleted; police had deserted *en masse*; and shipping in the bay was paralysed as crews absconded for the diggings.

In the summer of 1851-52, as would-be diggers arrived in increasing numbers from overseas, much of the city was little more than a sprawling, makeshift camp, and it was to remain so until unsuccessful miners returned to follow their regular callings and immigrant tradesmen arrived to join them. South of the Yarra a tent town, known as Canvas Town, sprang up. Tents were arranged in streets which were named, and refreshment booths bore the names of overseas hotels; this tent town lasted until about 1864. There were almost as many tents as other dwellings, and within a few months much more corrugated iron than weatherboard. While a tiny group of surveyors strove to cope with the demands for sites, the few remaining building tradesmen had been overwhelmed.

Imported iron houses solved many immediate problems, despite their obvious discomfort in the heat. Erected from sheet iron and corrugated iron panels bolted together on iron supports and beams, they played no small part in the first swift spread of settlement beyond the far slopes of the Eastern Hill and across the ill-drained flats. By 1855 there was an iron theatre, George Coppin's so-called "Iron Pot", in Lonsdale Street, and there had even been plans for an iron Wesleyan Church nearby.

While perforce competing with the new goldfields townships for the bricklayers, Melbourne was to attract most of the immigrant masons, stonecutters, and architects. Iron provided the sheds, storehouses, and workshops, but the new Wesley Church was eventually built in stone. During 1858 its spire rose high above the two and three storey hotels already occupying many of the city's corner sites, and by May 1860 *The Argus* could note, with obvious pride, that "the real building of the metropolis is advancing with rapid strides".

Amid the turmoil of traffic between the river wharves and the roads to the goldfields, sites on the western hill had soon proved inadequate to meet the administrative needs of a fast growing, self-governing colony. Victoria's government centre was to be established on the wide brow of the Eastern Hill, where the foundations of a Parliament House had been laid in 1856 and of a new Treasury nearby in 1858. In the central area, the Public Library had been started in 1853 (its foundation stone and that of the University were laid on the same day) and the new Elizabeth Street Post Office in 1859. The Treasury was a magnificent design from the recently established Public Works Office; the Public Library, Parliament House,

and the Post Office were the outcome of architectural competitions, the latter the winner out of sixty-five entries.

The new city skyline, to be portrayed with all its incongruities and contrasts in Charles Troedel's *Melbourne album* lithographs, was probably seen most clearly from the tower of Toorak House, the vice-regal residence which had established the ridge on which it stood as Melbourne's most exclusive residential area. But the seclusion sought by the well-to-do along the carriage tracks of Toorak Road was not to remain unchallenged. As a new Prince's Bridge and improvements to St Kilda Road offered readier access from the city, speculators bought up both vacant lots and market gardens beyond the ridge and promptly subdivided them. When the first Prahran Council met early in 1856, fringe subdivisions were beginning to reduce many of the larger Toorak estates; the market gardeners were moving out along Gardiners Creek to establish the beginnings of Malvern.

Only prompt action by La Trobe had saved the areas of open land immediately around the town which survive today as Melbourne's extensive parks and public gardens. Settlement was to spread swiftly beyond them all, across undulating country already cleared by the ever growing demand for firewood. By 1856 the municipalities of Collingwood, Richmond, Prahran, and St Kilda had been proclaimed, and part of Melbourne known as Emerald Hill (later South Melbourne), between the river and the bay, had chosen to break away and establish municipal institutions of its own. By 1861 parts of North Melbourne had followed the lead of Emerald Hill to form the municipalities of Hotham and Fitzroy. Sandridge, Footscray, Flemington, Brunswick, Kew, Hawthorn, and Brighton made up an outer ring.

Footscray and Flemington had emerged as dairying and market gardening communities along streams running down to the lower Yarra; Brunswick's clay and rock had provided bricks and building stone; south and east, beyond the Yarra, ridges running eastwards from the river provided firm access roads and also facilitated swift rectangular subdivisions. Replacement of punts by bridges had carried settlement beyond the river throughout the 1850s; and it was the demand for attention to local roads generally instead of concentration on the main produce and timber tracks to Melbourne which played a significant part in the establishment of most of the separate municipalities.

In the heart of the city the inadequacies of the river wharves had become apparent almost as quickly as had those of the administrative centre on the western hill. Coastal shipping crowded the available berths; the larger passenger vessels, competing for the immigrant trade and anxious for a quick turn-round, made no effort to navigate the lower Yarra. Sandridge built its piers to accommodate them, and as early as 1854 the Melbourne and Hobson's Bay Railway Co. was conveying passengers, mails, and cargo over the last few miles to central Flinders Street. Repair and maintenance facilities for shipping were quickly developing at Williamstown. The railway between Melbourne and the goldfields was a government line, and made its way into Spencer Street between the river swamps and the city's western hill. No less than a quarter of a century was to elapse before the two lines were connected, even for the transfer of goods wagons. Melbourne needed not only more extensive and much more sheltered and accessible wharves than Sandridge could provide, but also an effective link between its shipping

and the country railways. The ultimate answer was to be a triumph of civil engineering—the draining of the West Melbourne swamp, the excavation of extensive docks in the angle of swamp between Spencer Street and the river, the construction of the Coode Canal, and the systematic dredging and widening of the lower Yarra. Henceforward Melbourne was to enjoy the advantages of an all-weather harbour for overseas merchant shipping situated alongside its main country railway terminal and the adjoining commercial and banking district. The new Melbourne Harbor Trust included members elected by the municipalities of Melbourne, Footscray, Emerald Hill, Sandridge, and Williamstown. Effective co-operation between municipalities within the metropolitan area had been achieved.

A conference of municipal delegates had recommended a board of works in 1874, but it was not until a Royal Commission had revealed the serious lack of sanitary services in 1888 that effective planning actually began. The outcome was the Melbourne and Metropolitan Board of Works; its initial tasks of sewerage were financed by a special London loan, and it played no small part in halving the mortality from typhoid fever and similar infections by the end of the century.

On the western hill, the Royal Mint buildings had been completed as early as 1870; the first portion of the Titles Office and the foundations of the Law Courts were both in evidence by 1875, and the dome of the Supreme Court Library rose above the city only two years later. The plans for the unfinished Parliament House had called for a similar dome high on the Eastern Hill; but while argument raged concerning suitable stone for first completing the main western front, the commissioners organising a building for the Melbourne International Exhibition of 1880–1881 moved swiftly and decisively. The dome of the Exhibition Building, claimed to rise higher above the city than did that of St Paul's over London, became Melbourne's dominant landmark, visible for miles across the spreading eastern suburbs.\*

The exhibition of 1880 had symbolised Melbourne's coming of age as a commercial and industrial community. A second exhibition held in 1888 reflected a decade of growth and a degree of self-confidence which few cities or colonies had ever known. Within the city freehold values were rising as business expanded. Between 1881 and 1891 the population of metropolitan Melbourne rose from 283,000 to 491,000; and as the hotels, business premises, terraces, and villas proudly recorded the date of their erection in stucco or stone, city and suburban building became a major industry in itself. Much of it catered for the first generation of native-born Victorians. The ornate Princess Theatre of 1886, and the Grand Hotel (Hotel Windsor), completed some seven years later, survive to portray the flamboyance and culmination of the boom.

Thanks to the introduction of the hydraulic passenger lift, an experimental six storey building in Queen Street had been successful, and nine storey buildings were immediately built nearby. The Australian Building, at the corner of Flinders Lane and Elizabeth Street, was planned for twelve storeys. By 1892 the Melbourne Hydraulic Power Co. had erected a central pumping

\* Fergus Hume's well known novel, *The mystery of a hansom cab*, was to make these features of the Melbourne skyline known throughout the world. As Madge Fretlby and her companion sailed down the bay they "watched Melbourne gradually fade from view. . . . They could see the great domes of the Exhibition and the Law Courts, and also [the new] Government House, with its tall tower rising from the midst of green trees".



station, and its specially laid high pressure mains served some three hundred passenger and goods lifts throughout the city. The city skyline was changing swiftly once again.

The laying of hydraulic power mains was not the only upheaval in the streets. Three lines of tramway, operated by underground cables, had been laid from Spencer Street in the west to the eastern boundaries of Richmond and Collingwood; others ran north from Flinders Street to Brunswick and Clifton Hill; the longest crossed Princes Bridge and ran beyond Prahran to Windsor and Balaclava. After the suburban railway lines had reached Box Hill to the east and Frankston to the south, there were suburban building booms along the tramway and railway routes, and booms in subdividing in areas immediately beyond them.

South Melbourne had seen the most spectacular changes of all. Factories needed larger workshops than city rentals would permit, with readier access to the wharves and railways. Their needs, and those of many who worked in them, were partly met by the reclamation of the swampy, open land between the lower Yarra and Emerald Hill. Subdivision and occupation followed swiftly. *Victoria and its metropolis* could describe this area as "a region of hammering and din", and the Census of 1891 revealed South Melbourne as the city's most populous suburb.

The 1891 Census had also revealed surprising numbers of empty dwellings. Contractors and mortgage companies had almost completely supplanted the smaller master tradesmen, and building, especially housing, had outstripped the genuine demand. By 1892 a swift recession in the building industries was obvious to all. Suburban subdivision values weakened to the acute embarrassment of the many finance companies; the embarrassment of the latter in turn meant added strain for banks already harassed by sharp falls in Victorian wool prices. Substantial withdrawals of overseas capital followed, and a five day "bank holiday" paralysed business and administration alike in May 1893. By 1894 more than 20,000 dwellings stood vacant in the Melbourne metropolitan area. Many younger men had left for the Western Australian goldfields; many families were seeking a bare livelihood on the farmlands of Gippsland or the Mallee. Others were moving from the outer to the inner suburbs to escape rates and assessments for new streets and footpaths hitherto impatiently demanded. For the insolvent and the growing numbers of unemployed, public or voluntary charity was the only immediate relief.

Had the establishment of the Board of Works, or the negotiation of its first loans, been delayed another year, Melbourne's sewerage might have been postponed indefinitely. The main outfall sewer, begun in May 1892, was the outstanding venture of the day, and when the central city area was linked to it in February 1898 the men in the continuous employment of the Board and of its various contractors were contributing significantly to Melbourne's gradual recovery.

Melbourne had retrieved its loss of population by the end of the decade, and was to be the temporary capital of the newly established Commonwealth. The occupation of the Spring Street buildings by the Commonwealth Parliament, the establishment of the new Commonwealth Public Service, and a major share of earlier Commonwealth contracts, all contributed to the reviving economy. Preparations for the inauguration of the new Parliament by the

Duke and Duchess of York in May 1901 had stimulated prompt rebuilding after fire had ravaged buildings on the eastern corner of Flinders and Elizabeth Streets in 1898 ; effective co-operation between municipal councils had ensured the transformation of St Kilda Road into the beginnings of the subsequent spacious boulevard ; and the opening of Alexandra Avenue added dignity and charm to the city's central river frontage.

Melbourne's revival was confirmed in record sales by the Hydraulic Power Co. in 1902, and by the installation of the earliest electric lifts in 1903. But external changes were few until the steel-framed building eventually appeared in the Centreway in 1911 and the Commercial Travellers' Club in 1912. The new Public Library buildings were completed in 1913, with a large reading room spanned by a concrete roof.

Meanwhile, a Royal Commission on transport had noted in 1911 that no other city of comparable population had provided so few additional facilities for public transport during the previous twenty years. The same cable tramways served the inner suburbs ; the same railway lines ran to outer areas. Building had been resumed either in areas between the various suburban railway lines or, especially in the inner suburbs, on subdivisions of former private estates. Brick, with terracotta and then tile, had displaced stone and slate ; and the various styles along many a suburban street still reveal the successive encroachments on once extensive and secluded residential retreats.

Within the city, the railway viaduct which now brought trains from the north-western suburbs into Flinders Street had helped to make Melbourne's central station even more widely abused for the increasing discomfort and delays on its overcrowded trains. A completely new station had been built between 1905 and 1910, but it brought all too little immediate relief. Faster or more frequent suburban services were impossible until both the viaduct and the Yarra bridges could be duplicated, and longer, heavier trains were not possible until electrification had been completed in 1923. By then the Melbourne and Metropolitan Tramways Board was in operation and had prepared its plans to link all tram lines together and to begin electrification of the entire network.

Melbourne, in 1923 a metropolis of over 850,000 people, was again expanding. Caulfield was now the most populous suburb. With Sandringham, Mordialloc, Oakleigh, and Box Hill, another ring of outer suburban municipalities was developing to the south and east. The State Government had set up a Metropolitan Planning Commission in 1923, but its report was not available until 1929 on the eve of an economic depression during which more than a quarter of the work force was unemployed at one stage. And before the effects of the depression of the early 1930s could be fully overcome, Australia was at war. Six years of war saw a virtual cessation of building, the curtailment of road transport by petrol rationing, and industry transformed by defence production needs. When housing construction was eventually renewed, post-war immigration had begun to usher in Melbourne's swiftest rate of growth, and, with the family car now available to the entire community, its biggest range of problems.

Between 1947 and 1954 Melbourne's population rose from almost 1.25 million to over 1.5 million; its motor registrations almost trebled; and its industrial output had risen to more than a quarter of the Australian total. The problem of overall planning for the metropolitan area could no longer

be ignored, and the Board of Works undertook the task. The preservation of a green belt, the development of suburban business centres, and the provision of adequate highways were major objectives.

Throughout the 1960s there was no diminution in house building; it took place mostly in the outer areas, and particularly in the eastern municipalities of Waverley, Doncaster and Templestowe, Knox, and Nunawading. Partly because of the increasing time and expense involved in commuting, however, annual flat building more than trebled during the same decade, especially in the inner eastern and south-eastern suburbs of Caulfield, Malvern, Camberwell, Hawthorn, Prahran, and St Kilda. In South Melbourne, Collingwood, Fitzroy, and Carlton, the Housing Commission erected many multi-storey flat blocks as part of a slum reclamation programme.

Changes in the nature and tempo of Melbourne's continuing growth have threatened to outstrip envisaged planning. Its eastward growth, originally encouraged by good soils and pleasing undulations, is now accelerating through the attraction of the power and industrial complex of western and central Gippsland, and of the oil and natural gas potential of Bass Strait.

In 1956 height restrictions on buildings, in force for seventy years, were finally eased. Height now depends upon the proportion of a given area actually occupied. The steel frame, reinforced concrete, and glass and metal panels have swept away ornament and decoration and established the rectangular silhouette. In central Melbourne, buildings of twenty storeys or so have been rising at the rate of about one a year. Seen from a distance, such buildings soon lose their identity; the same is true of the freeways and overpasses, without which the city would be choked.

Whatever the nature, rate, or direction of Melbourne's ultimate growth may be, the former Customs House will continue to remind the observant of where and why it all began. From the eastern parapet of Kings Way it can be seen standing immediately beyond the railway viaduct which deprives the passer-by in Flinders Street of all immediate view or indication of the river. From the same vantage point the low, level reclaimed land on either side of the Yarra still reveals the outline of the former river pool. The reef has long since been removed, but underlying rock was found when foundations were sought for carrying both the Queen Street and railway bridges across the river.

The skyline cannot completely hide the slopes of the ridge adjoining the northern bank; and from Kings Way's western parapet, the masts and funnels are seen rising only a hundred yards or more downstream, immediately below the Spencer Street bridge.

A natural river anchorage above the estuary swamps, offering both dry landing and fresh water, established the site of a settlement which has become a metropolis of over two million people in a matter of five generations.

#### PROVINCIAL URBAN AREAS

Although groups of whale and seal fishermen had settled at various points along the Victorian coast even before 1800, there was no permanent settlement until 1834. As the number of settlements increased, their subsequent development depended upon their economic potential; the discovery of gold played an important part in the development of Ballarat

and Bendigo, while Geelong and Portland developed as ports; inland centres such as Mildura, Shepparton, Wangaratta, and Horsham became agricultural centres and the La Trobe valley region is the centre of brown coal mining.

Portland, the only deep sea port between Port Phillip Bay and Adelaide, is located less than one hour's steaming time from the main interstate and overseas shipping lanes. It serves an area of 40,000 sq miles of pasture land which supports a population of 300,000. It is the site of the original settlement in Victoria and for many years was an important port, but with the development of Melbourne and Geelong port facilities and the coming of the railway it gradually lost importance. Due to its natural advantages and its position on the shipping route, local opinion after the Second World War urged its redevelopment as a deep water port to serve western Victoria and south-eastern South Australia. This was sanctioned by Parliament in 1949. In recent years its harbour facilities have been extended and modernised and sites have been set aside for industrial development. A bulk grain terminal, a modern wool storage and selling centre, and bulk oil storage and distribution facilities have been provided; road and rail facilities are being improved, and a modern airport links the town with Melbourne.

Geelong, situated on Corio Bay, is now Victoria's largest provincial city. It was one of the first areas to be settled, and is also one of the oldest municipalities, dating back to 1849. Established early as a deep sea port, facilities developed with increasing trade. The number of wharves, for instance, rose from four in 1880 to eighteen in 1966. Silos for bulk-handling wheat and barley handle over two thirds of Victorian wheat each year. Their capacity is 4 million bushels, but this is being expanded. Industrial expansion has also assisted development. The first woollen mill in Victoria was established at Geelong, and others followed. The Ford Motor Company's Australian operations were located there and other large companies include the International Harvester Company, Alcoa, and Shell Refining. Geelong is also an important centre in the production of cement, and has many other factories producing a wide range of goods. Expansion to the north and east created new suburbs and was controlled by the first development order made under the Town and Country Planning Act. Green belts and parks were planned, and the city developed its water resources to provide for 140,000 persons. The town planners designed a scheme covering 100 sq miles, including the Cities of Geelong, Geelong West, and Newtown, and those parts of the Shires of Corio, Bellarine, Bannockburn, Barrabool, and South Barwon which border on the greater Geelong area.

Ballarat, situated 73 miles to the north-west of Melbourne, is one of Victoria's leading provincial cities. When gold was discovered in 1851, Ballarat was a small hamlet surrounded by scattered holdings. The goldfields covered more than 800 sq miles, but after alluvial mining declined Ballarat remained as a centre of a rich agricultural and pastoral area and a quartz mining industry. It is one of the finest wool growing and stock breeding districts in Australia, and wheat, oats, vegetables, and fruit are grown. Secondary industries range over metal works, engineering, food, textiles, and other consumer goods.

Bendigo, which has been known as both Castleton and Sandhurst, was one of the earliest Victorian inland towns. There is some evidence that the Bendigo valley was penetrated as early as 1838, but it was not until 1851 when gold was first discovered that the district began to develop. The gold rush continued through 1852 and 1853, and by 1870 there were 200 mines employing 5,000 men. However, the agricultural potential of the area was recognised early. The plains to the north were well suited to wheat and oats, and the climate and alluvial soils were ideal for fruit culture and grape growing. The farming community gradually expanded and diversified its activities, and extensive areas of cropping are now found to the north and west. From the pastures of the Riverina and the valleys of the Loddon and Campaspe Rivers, stock trains and road transports bring sheep and cattle to the saleyards where more than a million sheep and 50,000 cattle are handled annually. Bendigo is well situated in Victoria's network of highways and railways, and is the recognised industrial and trading centre for an extensive area. A variety of manufactured goods is produced, the production of food and textiles being the principal industries. An ordnance factory which still operates was established during the Second World War.

The site of Mildura was originally part of a pastoral run of 150,000 acres grazing 10,000 sheep. Development began in 1887, and by 1894, despite Victoria's financial problems, about 8,000 acres of horticultural and urban land had been occupied, pumping plants had been constructed along the Murray, water channels cut, business organisations established, and the population was 3,500. Its development continued in spite of economic and other difficulties. The Merbein and Red Cliffs areas were added to the original irrigation settlement in 1909-10 and 1921, respectively, and there are now approximately 35,000 acres under irrigation. There are two locks and a weir on the Murray, and a bridge, erected jointly by the Victorian and New South Wales Governments, links Mildura with Gol Gol across the river.

Shepparton is located on the Goulburn River in the rich Goulburn valley at the junction of the Midland and Goulburn Valley highways, 113 miles from Melbourne. Settlement in the Shepparton district began in 1841; the discovery of the rich Ovens goldfield in 1852 had caused a rush of miners from the central Victorian goldfields, and many settled on the river opposite the west end of the present High Street. By 1853 the Government had established a pound, several huts had been erected, and Shepparton village covered about 20 acres. The first municipal government in the district was established in 1876 when Shepparton was included in the Shire of Echuca. In 1927 the township area was severed from the Shire and constituted the Borough of Shepparton, which was proclaimed a city in 1960. The population in 1971 was about 19,000, and the city, 6,600 acres in extent, is the centre of an irrigation district. Milk and dairy products are the main industry, but fruit growing is perhaps the best known. Large quantities of various fresh fruits are grown for local and export markets, including most of Victoria's apricots, and a large fruit cannery handles most of Victoria's canned peaches and pears. The city is the focal point of a large road transport network with services at least daily to Bendigo, Benalla, Echuca, and other centres.

The pioneer settler in the vicinity of the Ovens and King Rivers was George Faithfull in 1837. Subsequently Rattray established himself as a storekeeper in a primitive slab and bark structure. He was bought out by William Henry Clarke, a young Englishman from Yass, who reached the Ovens crossing in June 1839 and is regarded as the founder of Wangaratta. Wangaratta was proclaimed a township in 1845, created a municipal district in June 1863, and proclaimed a city on 15 April 1959. By 1863 the population had grown to 1,300, and there were 187 ratepayers and 230 dwellings. The railway linking Melbourne and Wodonga was opened in 1873, and water was first supplied in 1873 by arrangement with the Railway Department, mains being laid in some streets a year later. Situated on the Hume Highway, the city is now the commercial and marketing centre for a district covering a radius of over 30 miles. Wheat, oats, maize, tobacco, broom millet, hops, and potatoes are all grown; the cattle, sheep, fat lamb, and pig industries have been developed; and within a few miles of the city there are a number of milk processing factories. A local woollen mill produces yarn for the Australian market, and rayon fabrics are also manufactured in a factory originally intended during the Second World War for aluminium fabrication.

Horsham was named after an English town by John Monckton Darlot who first settled in the area in 1841. It is situated on the Wimmera River at the junction of the three highways traversing the area. It serves an extensive wheat growing area, being the regional centre for the Wimmera region, and has some secondary industry.

Gippsland was perhaps the most difficult area to settle and develop, as the early explorers found thick forests and rapidly flowing rivers. Communication came only through Port Albert on the coast, or across the Great Dividing Range to the north. Efforts were later made to reach Gippsland by road from Melbourne, but difficulties were caused by the great Moe swamp, which took drainage from the mountains to the north and extended for some ten miles westward to Trafalgar. Moe was the branching point for the northern goldfields of Walhalla and Tanjil in the 1860s; it grew in importance following the opening of a railway to Thorpdale in the south in 1888 and to Walhalla in 1910. Nevertheless, at the end of the last century Moe was little more than a clearing in the forest in low, marshy surroundings, and comprised a number of buildings spread along two streets. Its surrounding scenery, however, was notable with the Great Dividing Range to the north, and the Narracan Hills and Strzelecki Ranges to the south. Since 1945 it has shared in the industrial expansion caused mainly by the development of the brown coal mining industry in the valley of the La Trobe River, and this, together with the fact that it is the centre of a rich dairying and agricultural district, has been responsible for its recent growth. The population increased from 1,200 in 1947 to 16,544 in 1966. The Moe area was severed from the Narracan shire and was constituted a borough in 1955 and was proclaimed a city in 1963.

#### TOWN PLANNING

The first formal resolution on town planning in Victoria came from the Melbourne City Council in July 1920, and a conference was held

in the Melbourne Town Hall in October of that year with twenty-one municipalities represented. A committee was set up and in January 1921 its report recommended the appointment of a planning commission, consisting of nine members, five to be appointed from the municipalities and the remainder as technical members. In December 1922 an Act was passed to set up the advisory and honorary Metropolitan Town Planning Commission to be financed partly by all metropolitan municipalities and partly by fixed contributions from the Railways Department, Tramways Board, Harbor Trust, and the Melbourne and Metropolitan Board of Works. The Commissioners were appointed on 27 March 1923, and Alderman Stapley as the representative of the Melbourne City Council became chairman. In December 1925 the term of the Commission was extended and a tenth member to represent the Railways Commissioners was added.

The Government also called for several other reports, the most important containing proposals for removing the livestock saleyards and abattoirs from within the City of Melbourne to a new location. Another important report covered planning for the area to be served by the authorised Darling to Glen Waverley railway. These added tasks delayed the main report, and the Commission's term was extended further. Its comprehensive report completed in December 1929 outlined proposals for zoning, transportation, recreation facilities, harbour and river improvements, building regulations, conservation, etc., and also suggested legislation for implementing the metropolitan schemes.

The Commission also prevented many developments which would have conflicted with the subsequent plan, and was able to influence the adoption of many of the improvements recommended, thus saving the municipalities much expense. Legislation was postponed because of the depression of the 1930s and the Second World War, but nevertheless, individual councils and public authorities frequently acted upon the Commission's proposals, so that some effect was given to zoning and other works. Various professional bodies, especially the Town and Country Planning Association, the Royal Victorian Institute of Architects, and the Municipal Association continued to press for legislation; this was eventually enacted in December 1944. In February 1946 the Town and Country Planning Board was appointed with a full-time chairman and two part-time members. It was given administrative authority over all municipal town planning schemes, and was to report independently on planning matters to the Minister or undertake tasks allotted by him.

It soon became apparent that a major problem existed in the Melbourne metropolitan area, which comprised about forty separate municipalities, only some of which had begun to prepare planning schemes. The necessity for co-ordination between one municipality and another was evident, and the Government in 1949 introduced a major amendment to the Act, authorising the Melbourne and Metropolitan Board of Works to prepare a comprehensive plan for the metropolitan area. The metropolitan area, as then defined, comprised an area with a radius of approximately 15 miles from the General Post Office, but extended to include Ringwood, Dandenong, and Frankston. In 1950 the Board of Works, which comprised representatives from all municipalities within that area, began a series of detailed surveys to provide additional information. The Melbourne Metropolitan Planning Scheme report, together with the surveys and analysis, was published in 1954,

and in the same year the Board of Works was made responsible for implementing the scheme. Finance was provided by levying a Metropolitan Improvement Rate on properties throughout the metropolitan area.

In 1955 the first of a series of interim development orders was approved, giving the Board of Works control of land use in accordance with the proposals in the scheme while the statutory procedure towards its approval was being carried out. This involved the public exhibition of the scheme and the consideration of some four thousand objections, as a result of which a number of amendments was made. It was finally submitted to the Minister for the approval of the Governor in Council in 1959.

The Board of Works, which had been responsible for water supply, sewerage, and drainage through most of the metropolitan area for many years, was given additional responsibilities in 1956 for the design and construction of metropolitan highways, the protection and improvement of foreshores, and the establishment of metropolitan parks. These were also to be financed from the Metropolitan Improvement Rate.

The Melbourne Metropolitan Planning Scheme was under consideration by the Government between 1959 and 1965, and the Board of Works submitted two reports, in 1959 and 1961, drawing attention to changes in the rate of growth of population from that originally predicted, and indicating that increased provision for residential and industrial areas would need to be made. It also recommended substantial extensions to the metropolitan planning area as defined. As required by legislation, the Town and Country Planning Board submitted a comprehensive report on the Melbourne and Metropolitan Planning Scheme to the Minister in February 1964.

The rapid increase in registered motor vehicles in the metropolitan area was also causing concern. The Board of Works had been able to carry out a few urgently needed metropolitan highway works, such as the reconstruction of Kings Way, and the first section of the South Eastern Freeway from Batman Avenue to Burnley, but it was becoming clear that finance was insufficient and that some of the transport proposals in the scheme could prove inadequate. In 1962, therefore, the Board of Works recommended a major review of transportation requirements, and in 1963 the Government set up the Metropolitan Transportation Committee, comprising all major government and other authorities concerned, to carry out this task. Two years later the Roads (Special Projects) Act was passed to increase motor registration fees and provide finance, principally for metropolitan highways. In the same year the Melbourne Metropolitan Planning Scheme was placed on public exhibition again by the Minister for Local Government. It incorporated a number of amendments which had been made since the original exhibition, and, after consideration of the further objections, was finally approved by the Governor in Council in April 1968.

In response to a Ministerial request, both the Town and Country Planning Board and the Board of Works submitted comprehensive reports in 1967 with recommendations for the planning and administration of metropolitan Melbourne to the year 2000, when a population of 5 million persons was envisaged. In the year following the consideration of these reports the Government adopted in principle a number of the recommendations for the future growth of Melbourne, including the major principle that it should be encouraged to grow in a corridor pattern based



on the main lines of communication with green wedges of open country between. It also authorised the examination of the feasibility of establishing one or more satellite towns beyond the metropolitan area. In the same year the Town and Country Planning Act was amended giving effect to a number of changes proposed in the two reports, the main features of which were to :

1. increase the Town and Country Planning Board's membership to four by providing for a full-time deputy chairman ;
2. charge the Board with the responsibilities of promoting and co-ordinating planning throughout the State, and of preparing statements of planning policy for any area ;
3. establish the State Planning Council of twelve persons, comprising the heads of various government departments and authorities, with the Chairman of the Town and Country Planning Board as Chairman of the Council, as well as to define the functions of the Council, which were to co-ordinate planning by State instrumentalities and semi-government authorities of future works and developments, and to act as consultant and adviser to the Town and Country Planning Board on any statement of planning policy prepared by the Board ;
4. expand the Metropolitan Planning Area administered by the Board of Works to approximately three times its previous size ;
5. provide for the establishment of regional planning authorities throughout the State ; and
6. establish tribunals to hear and determine planning appeals.

The amending legislation introduced a new approach to the planning process. Directives are now sent from the State Government level to regional planning authorities as guidelines for the preparation of statutory planning schemes.

In December 1971, as a result of the decisions made by the Government in 1968, the Board of Works submitted a new report "Planning Policies for the Melbourne Metropolitan Region" which defined the proposed future urban corridors and green wedges of open country and outlined long-term policies proposed to be followed. This was accompanied by placing on exhibition planning schemes amending the metropolitan scheme and giving effect to these policies over part of the long-term period. Some of the policies were quite radical and for the first time proposed that large non-urban areas be retained permanently.

By 1971 the Town and Country Planning Board had reported to the Minister on 569 principal and amending planning schemes submitted for approval. It had also, at the direction of the Minister, prepared and completed nineteen planning schemes and had twenty in the course of preparation. These latter schemes have been for areas of national or State significance. By 1969, 93 per cent of the State's population was living within areas under planning control.

### REGIONAL PLANNING

Regional planning in Australia originated during the Second World War when plans were being made for post-war development, and it was found that many tasks were specifically regional with each area presenting its

own problems. It was expected that after the war the desire for direct participation in local planning would increase, and the voluntary organisation of such bodies as the Murray Valley Development League was indicative of this. In 1944, therefore, the Commonwealth and State Governments agreed to plan development and decentralisation on a regional basis. This involved the delineation of regions and a survey of their resources, mainly through the assembly of existing data; the development of each region according to State and national economic policies; and the organisation of administrative machinery, using functional departments, local government councils, and local bodies in planning schemes.

Regional planning has two main aspects which must be considered to ensure that each receives correct emphasis. First, comprehensive studies are made of existing resources, which include land with its mineral, forest, and crop products, and climate, as well as of economic and social structures. Second, the interests, knowledge, and experience of the residents must be considered, so that the relevant government organisations will act on the basis that each region's problems are rightly understood.

Each State has found it necessary to adopt its own approach based largely on geographical conditions and economic development. In April 1944 the Government of Victoria appointed a State Regional Boundaries Committee, consisting of senior executive officers of State departments and instrumentalities, to inquire into physical, economic, and human resources, and to make a broad survey of the whole State. The regions recommended were: Central Highlands, Corangamite, East Gippsland, West Gippsland, Glenelg, Goulburn, Loddon, Mallee, Upper Goulburn, Upper Murray, and the Wimmera, for which Resource Surveys have been published, and Barwon and Port Phillip, for which Surveys are not yet available.

The Victorian Government established the Central Planning Authority in 1946 to arrange conventions of municipal councils within each region for the purpose of constituting regional committees; to advise and assist these committees in making surveys and investigations into regional resources; to co-ordinate their work; to disseminate information about planning; and to consider and report to the Government on recommendations made by these committees as well as by the Decentralisation of Industries Committee, the Town and Country Planning Board, and the State Development Committee. The secretariat for the Authority was originally established in the Premier's Department, but is now incorporated in the Department of State Development. In August 1972 the Department of State Development and Decentralization was established.

Regional committees were set up for all regions except Port Phillip, and the Central Planning Authority defined their functions. These were to advise on potential development of resources; to provide a common ground for discussion between local administrators and interested parties on problems and the methods of co-ordinating public services; and to advise on outstanding problems such as soil deficiencies, transport difficulties, housing shortages, etc., which required attention from executive authorities.

The regional committees, having completed initial surveys, re-examined developmental problems, and reported upon such matters as land use and primary production, water resources, the potential development of the tourist industry, and on opportunities for industrial development. As a result the

Government has accepted various proposals. These have included the necessity for water storage works on Fyans Creek to serve the Wimmera-Mallee area; the partial reorganisation of educational facilities throughout the State; the development of Wyperfeld National Park as a tourist resort; the development of pastoral and agricultural areas within the Big Desert; the improvement of wildlife preservation methods; the increase in primary production areas in eastern Gippsland; the establishment of the Latrobe Valley Development Advisory Committee to co-ordinate government programmes for the development of its brown coal resources; and the improvement of road and rail communications for handling stores and materials from Victoria to the Snowy Mountains Scheme via Corryong.

## HOUSING, BUILDING, AND SERVICES

---

### STYLE AND ARCHITECTURE

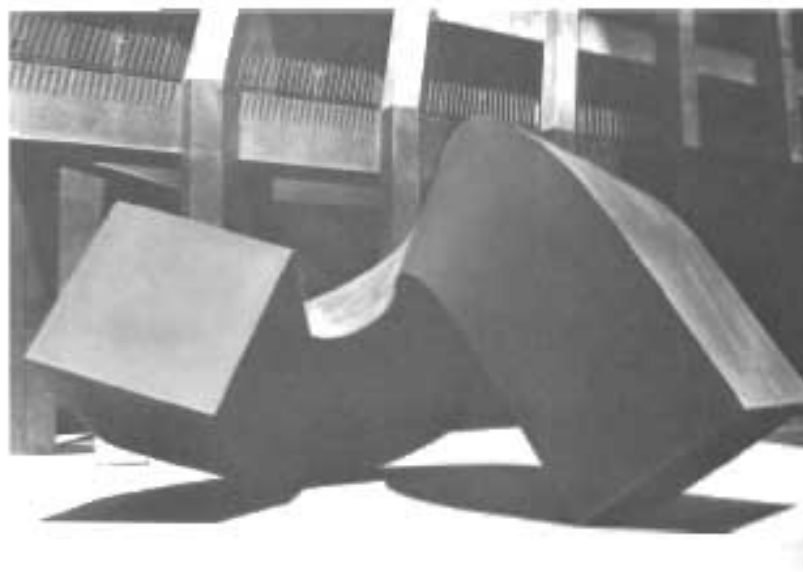
The years between 1837 and 1840 were the early years of settlement and consequently the amount of substantial building was slight. These were times of uncertainty and improvisation. Materials were not readily available and houses were imported, in a number of cases in prefabricated form. For example, Captain Lonsdale on his appointment in 1836 brought a pre-cut timber house with him from Sydney. This notable house is now stored in parts by the National Trust in Melbourne and is an early example of the weatherboard building which was later to become one of the most common building types. La Trobe, the first Lieutenant Governor, also imported a house which had been prefabricated in panel form in England. This house has now been moved from its original site in Jolimont and re-assembled in the Domain, close to Government House. Many buildings were constructed from iron parts imported in packages for the gold rush immigrants, and even one of the first Melbourne theatres, George Coppin's celebrated Olympic, was a prefabricated iron structure imported from England and known as the Iron Pot.

The construction of permanent buildings had started and St James' Cathedral was begun by 1839. Designed by Robert Russell, it was considered important enough to be built in stone, and it stands as one of the very few brown sandstone structures among the very much more common bluestone buildings. The plan is most straightforward, rectangular and of simple regency classical design, easily executed by the semi-skilled labour then available. It was built at first on a site near the corner of William and Collins Streets, but was moved in 1914 to its present site in King Street, opposite the Flagstaff Gardens. Other churches built at this time were frequently of simple gothic design, with pointed arches to doors and windowheads, and the knowledge of craftsmanship needed was usually of a fairly elementary nature. In Melbourne, although there have been additions to the St Francis' Church of 1841, much of the original fabric of Samuel Jackson's design still remains. St Peter's, Eastern Hill, begun in 1846 by the architect Charles Laing, survives in excellent condition. Of special note, however, is Christ Church, Geelong, designed by the Sydney architect Edmund Blacket and begun in 1845. This church is built of local sandstone, easily worked and pleasant in colour, but very frequently most unreliable in weathering with the result that the front face of the tower has recently been rendered in cement. Many old buildings today are experiencing problems with this stone.



Three views of the A.M.P. Tower and St James Building, one of Melbourne's newest multi-story structures, showing the elevation, shopping arcade, and *Awakening* a steel sculpture by Clement Meadmore.

*Australian Mutual Provident Society*





The Cathedral Church of St James (now known as St James Old Cathedral) on its original site at the corner of William and Little Collins Streets, c. 1880.

*La Trobe Collection. State Library of Victoria*

The Royal Arcade façade, Bourke Street, c. 1869.

*La Trobe Collection. State Library of Victoria*





The General Post Office, Melbourne, which is also shown in the photograph below.

*Postmaster-General's Department*

The central city area of Melbourne, c. 1870, looking to the north-west.

*Lu Trobe Collection, State Library of Victoria*





Collins Street, showing the Baptist, Scots, and Independent Churches, in 1971.

*Commonwealth Bureau of Census and Statistics*

The Long Room of the old Customs House, redecorated in 1970.

*Department of Works*







An interior view of the eastern end of  
St. Patrick's Cathedral, Melbourne.

*John Kelly*



The former Royal Mint, now used for  
performing civil marriages.

*Postmaster-General's Department*



Part of Collins Street in 1957, looking east past Swanston Street, prior to modern building developments.

*Bank of New South Wales*

351 Collins Street (the old Union Bank building), demolished in 1966 to make way for the multi-storey Stock Exchange and A.N.Z. Bank building.

*Australia & New Zealand Banking Group Ltd*

Collins House, 360 Collins Street, which has housed the headquarters of many leading Australian mining, manufacturing, and finance companies.

*Allan Studor*





The old Eastern Market building, the site of the present Southern Cross Hotel.

*La Trobe Collection, State Library of Victoria*

Menzies Hotel, c. 1870, of which Anthony Trollope was "bound to say that I never put myself up at a better inn in any part of the world."

*La Trobe Collection, State Library of Victoria*





BP House at the corner of Albert and St Kilda Roads, a development south of the central city area.

*BP Australia Ltd*

State offices in Macarthur Street. The fountain in the foreground was the work of William Stanford, a prisoner in the 1860s.

*Social Welfare Department*



Climatic conditions exert a strong influence on building forms and the early settlers usually preferred the southerly aspect, sheltered from the sun. Windows were few and deep, set in facades of good, simple lines ; and shady gardens, noted for the variety of trees and plants, were an essential part of the early house. The spreading verandah ensured adequate shade to the northern aspect and frequently encircled the house completely—very much a special characteristic of the early buildings of Victoria. The early verandahs had wooden posts, often with fretted decorative brackets, but later, largely as the result of the establishment of a substantial iron casting industry, cast iron posts and decorative components replaced the older wooden ones. Balustrade panels, gates, lamps, finials, weather vanes, and on the heavy structural side, components for bridgeworks, were the products of the iron foundries. The early houses of the city were often two storey terraces, sometimes extending for considerable lengths—one might say the Victorian version of the terraces of Bath, Brighton, and Cheltenham. Sweeps of terraces, making a total architectural environment of townscapes rather than the medley of totally unrelated buildings side by side, were the supreme legacy of the regency town style, soon to be lost in the Victorian liking for variety, a taste encouraged by the cheapness and diversity of the new machine made components. Varied and elaborate pediments and parapets decorated with urns and statuettes in all manner of shapes and attitudes became the preferred Victorian skyline. Stucco was the favourite wall finish, sometimes with incised decorations, until a later phase introduced multicoloured brickwork in a variety of patterns—a much less effective background for the cast iron decoration.

Population increased during the gold rushes, particularly inland, and although the mining settlements were, in the beginning, canvas with the most primitive facilities, the Victorian towns were noteworthy for the number of substantial buildings constructed. For example, before 1860 timber buildings were gradually being replaced by stone and brick structures, and Ballarat in particular is an example of a new settlement which became a city of notable public buildings in a generation. The government buildings were designed by the official architect in Melbourne and were often of brick, stuccoed and painted, although there are, of course, many outstanding examples of those buildings constructed in stone. Many of the gold towns were built or re-adjusted to a government plan which provided wide roads on the gridiron pattern, although in some cases the crooked, unplanned roads of the first settlements proved too costly to straighten. In Ballarat, for instance, the wide road from Melbourne is separated from the equally wide main street of the city by a length of narrow, curving road which existed before the plan came into being. Other towns which increased in importance during the gold rush days included Geelong, a port for the Ballarat fields, as well as Bendigo, the great gold city, and Castlemaine and Maldon. Splendid bluestone homesteads were replacing the early dwellings on the now increasingly prosperous station runs of the Western District, and many fine buildings were being built in Melbourne, among these being the Customs House, the Treasury, Parliament House, the Royal Mint, and the Exhibition, that vast domed building complex to house the Melbourne International Exhibition of 1880–1881.

Between 1860 and 1890 Victorian prosperity attracted architects from England and from the other States. It is interesting to observe here that frequently rigid symmetry was forsaken for the occult balance which led to the much favoured asymmetrical Victorian villa with the drawing room extended beyond the line of the front verandah in the form of a three sided "bow". Many large mansions, the homes of the merchants of the boom period, sprang up throughout Melbourne and the fast developing ring of outer suburbs. A representative example of the late 1890s style is Illawarra in Toorak, a lavish house now the property of the National Trust of Australia (Victoria).

Melbourne is renowned for her fine Victorian churches. St Patrick's Cathedral, the principal church of the Catholic archdiocese, was designed by the celebrated architect, William Wardell. The church was begun in 1860 and was built in two stages, first the nave, then the transepts and sanctuary with all the superb geometry of the traditional French form of radiating chapels, the whole one harmonious design in bluestone with freestone detail. The three beautiful spires, of world distinction, were added very much later and completed in 1939. St Paul's Anglican Cathedral was begun later than St Patrick's, to the designs of the popular English church architect of the day, William Butterfield. This man had a predilection for the cathedrals of the Rhine, and Sienese banded ornaments with multi-coloured materials used in prolific combination. St Paul's stands as one of the greatest examples of Butterfield's work. However, the Rhenish octagonal central tower and spire of his design was never built. This cathedral was completed in 1891 except for the spires which were added during the 1930s to the competition designs of John Barr of Sydney. Joseph Reed, who supervised the construction of St Paul's, was the architect of many of Melbourne's greatest buildings. He designed Wesley Church, the brick Independent Church, the fine Collins Street Baptist Church with its noble classic portico, and the Gothic Scots Church.

The general situation of affluence, buoyancy, and confidence produced many commercial buildings in the city. Joseph Reed designed the Public Library, the Town Hall, the Exhibition Building, the Trades Hall, and many others, all in the high Renaissance style with Victorian detail. Three storey buildings had been built before the gold rush, but by 1890 buildings of twelve storeys were to be found in Melbourne, such as the Australian Building in Elizabeth Street. The hydraulic lift made this building feasible, but as it required a shaft below ground reaching to a depth about equal to the height of the building an upper limit was set. Higher buildings came with the advent of the framed structure, either in concrete or steel, and with electrical traction for lifts.

During the early 1890s the boom showed signs of collapse and by 1893 a severe depression plunged many into ruin or serious financial loss. The population of the city dropped sharply. Whole streets of new houses were never occupied and many were later demolished for the value of their materials; few new houses were built in the wake of this depression. Those which were built showed an unusual style known unaccountably as "Queen Anne". Its origins are uncertain, but the typical house had a roof form of greatly varied shape and broken outline in terracotta tiles of bright orange, with little spires, attics, and ornaments in the form of scrolls, and in the more lavish cases, fearsome basilisks and dragons. Much of the wooden decoration

and many of the beaten copper fireplace hoods showed *art nouveau* influence. Cast iron decoration had by now generally given way to wavy wooden fret-work, with internal screens and curvaceous aspidistra stands.

During this period two notable architects dominated the Melbourne scene. Harold Desbrowe Annear produced very original work. In his planning, the normal central passage was forsaken and instead the rooms were grouped compactly. Materials were used in their simplest forms, and window details much simplified; window openings were carefully related to plain white stucco walls, with token decoration occasionally applied. Walter Burley Griffin came to Australia from Chicago and from a partnership with the celebrated Frank Lloyd Wright. His win in the Canberra Competition brought Griffin here, and he was to become a leader in the Australian architectural world. His splendid Newman College in the University of Melbourne is both geometrically ingenious and romantic, and his superb ceiling of repeating facets of plaster cubes in the Capitol Theatre gives a startling and beautiful effect when lit. Although the theatre has been remodelled out of all recognition the ceiling has been retained.

A slight revival of building took place after the end of the First World War and small suburban houses said to have had their origins in a popular Californian style were the norm for the fast spreading suburbs. Each had a tiled roof and a small front verandah with stocky roughcast brick piers. This type was challenged in supremacy only by the so-called Spanish Mission style, with white stucco walls, rounded window and door openings, pantile or cordoba tile roofs, grilles, and roofed chimneys. Just before the start of the Second World War a few houses influenced by Annear appeared among the more stereotyped suburban type with its curved windows, cream bricks, and jazz age chimneys. In Melbourne, designers of commercial buildings were faced with the strange dilemma of the requirement for a full blown classical front, replete with tall columns which never reached the ground and apparently became supported by a sweep of glass necessary to display the goods of the shop tenants.

At the conclusion of the Second World War an acute shortage of building materials brought on a wave of austerity building, particularly in the housing field. The houses of the post-war suburbs were frequently constructed of timber and for the most part displayed a remarkable insensitivity in design and grossness in detailing. However, the tide began to turn, and during the 1950s and 1960s spectacular progress was made in structural techniques and building product design. The Myer Music Bowl in Melbourne, for example, consists of a web work of steel cables so arranged to cross that a roof of thin plywood panels sheeted in aluminium could be laid upon the web. This suspended roof covers a deep escarpment containing tiered seats, and a sound amplification system serves the audience seated on the lawns of the Domain beyond. The Olympic Swimming Pool displays structural innovations also, as does the new National Gallery, the first completed part of the Arts Centre, which was opened in 1968. This building, surrounded by a moat, extends in one large flank of bluestone, uninterrupted except for the central entrance archway. Wide galleries and the Great Hall, with its rich stained glass ceiling, enclose three courtyards. At the city end of the site a group of underground theatres will be constructed, and the design of the centre incorporates a slender spire over 400 ft high.

Recent housing developments have taken place in a wide sweep of suburbs particularly to the north and east. The preferred form of dwelling has been one house to one parcel of land, the usual impact of this development being softened by individual gardens. Modified terraces of linked houses forming landscaped group layouts are now becoming popular and indeed these are being marketed as complete units for sale, the better ones and individual houses being designed by architects retained by the merchant building firms.

The usual form of modern city buildings at first consisted of a high simple block, designed to be seen on all sides, not merely on the street front. Curtain wall construction, that is, a light wall of glass, plain or coloured, literally hung like a curtain on the frame of the building, was popular here for a short period only. This form was soon to prove unsatisfactory in the Melbourne climate, mainly because of the very heavy demands it made on the heating and air-conditioning plant. The present scheme reveals the skyline of a city of towers as height limits are relaxed. Buildings of 500 ft high and over can be expected in greater numbers, the forms often with much less glass displaying a greater appreciation of the climatic conditions than was shown in the first towers. Retail trading has expanded greatly and vast shopping centre complexes with pedestrian malls are replacing the older shopping streets and arcades of the city and becoming the large community centres of the suburbs.

The rapid growth of industry has been reflected in considerable building investments. Heavy industrial undertakings have constructed large plants mainly to the west of Melbourne and at Western Port. Generating stations in the La Trobe valley are meeting the increased power demands, and the natural gas network is likely to assume a large share of the power market. The container shipping system has substantially re-oriented freight handling methods, and a large and impressive container terminal has been established at Swanson Dock in the port of Melbourne.

The development of freeways and direct traffic routes has been carried out progressively as funds have become available. A systematic upgrading of country road standards has taken place, and in Melbourne the South Eastern and Tullamarine Freeways are noteworthy both in the way they handle large volumes of traffic and in their strong simple flowing forms which relate favourably to the landscape. The design of the Lower Yarra Crossing provides for a fast route to the west which should accelerate development in the western suburbs. The new Eastern Freeway will handle the growing volume of traffic from the expanding area of suburbs reaching to the north-east. Pressing needs for the expansion of railway services, particularly on the electrical suburban lines around Melbourne, have required additional track-work along established lines, which in turn has called for the widening of cuttings, the renewal of overbridges and the provision of new bridges. Among these, those at Heyington over the Yarra River and at Mordialloc over the Nepean Highway are examples of the clean, simple lines of modern straightforward functional steel structures. A firm policy for the progressive elimination of level crossings has led to the construction of road overpasses, particularly where State highways cross the trunk railways.

In the early years, the large hospitals were either in the heart of the city or close to it, although the Alfred Hospital in Commercial Road,



Prahran, was considered to be bordering almost on the bush. This hospital, designed by Webb as the result of a competition, afforded a fine example of the early pavilion type. Laid out in a series of blocks connected by lengthy wings its design recalled in some ways the layout of a vast palace. It was built in the Tudor style very much the vogue for institutional buildings of the day, and the last sections of the old building were only demolished fairly recently to make way for the new structures, a renewal programme which commenced in earnest during the 1930s. As in the case of the Alfred and Prince Henry's, some of the major hospitals have been rebuilt on their original sites, or as in the case of the Royal Melbourne, rebuilt on new sites close to the city. When finished in 1940, the Royal Melbourne was one of the foremost hospital designs in the world and enjoyed wide acclaim. Several large, well equipped suburban hospitals have also been constructed, and country areas are served by a planned system of base and ancillary hospitals, together with a comprehensive ambulance system.

The increased demand for professional and technical skills is reflected in the building of new universities and colleges and in the rapid expansion of existing ones. La Trobe University illustrates the way in which careful overall planning and rigid control of forms and materials combined with imaginative landscaping can achieve a harmony rare in building layouts of this type. A heavy programme of school building has been undertaken by both State and private institutions to provide the teaching facilities required by the many and varied disciplines, particularly at the higher levels. Experimental layouts and investigations into new school building forms, with deliberate attention to landscape and the selection of appropriate sites within the town planning requirements, promise to yield some fresh and stimulating designs for school buildings.

#### BUILDING AND CONSTRUCTION

##### *Early settlement, 1834 to 1851*

The period 1834 to 1843 extends from the first permanent settlement in the Port Phillip District until the pastoral recession, and was the time during which all but the most barren and impenetrable land was taken up by squatters. Labour was short, but as there was, relatively, considerable capital, the importation of whole timber buildings was an economic proposition for settlers near the ports. In fact, Superintendent La Trobe imported his own residence for erection at Jolimont.

At the same time a local building industry developed, stimulated by one condition on which the first land was sold, namely, that a permanent building worth at least £50 be erected on each allotment within twelve months. Between 1837 and 1838 the number of houses in the Melbourne area rose from 36 to about 300. Bricks were made by government employees in 1836, and commercially in 1837; bluestone and freestone were both quarried in 1839, the first used mainly for foundations; local lime was burnt in 1839; two sawmills operated by 1840 and another was built in 1841; and in 1842 Robert Langlands and Thomas Fulton, who later had separate firms, opened their foundry.

The inland settler had to be content with the primitive hut, the building which was to become characteristic of the period. The early examples at Melbourne, and subsequently near Warrnambool and Port Fairy, were of

turf sods cut straight from the ground; further inland, bark or tarpaulins were often used over a crude framework of saplings, but the methods which were to gain general acceptance were the vertical and horizontal slab construction, both of which had been widely used in the Sydney area. Slabs were planks of some 10 inches by 2 inches in cross-section split with wedges from logs of stringybark or ironbark and held by varying means in a timber frame—vertically in the cruder, and horizontally in the more sophisticated buildings. If the roof was of reed thatch, obtainable in some of the coastal areas, or of bark tied down with greenhide, then the whole building could be erected without the use of expensive nails, but for the split stringybark shingles, or the similar but longer palings, hand wrought or patent nails were required.

When economic conditions improved after the recession of the early 1840s, building developed on a sounder basis. Many bush huts were replaced by more substantial but still unpretentious dwellings, and more noteworthy developments occurred in the city. Materials did not change substantially, but it became increasingly apparent that the local freestone was irregular in quality and unable to resist weathering. Bluestone came into use wherever its sombre colour was acceptable, and elsewhere stucco was used in a belated importation of the regency style. However, brick and weather-board remained the more common materials; roofs were almost exclusively made of shingles.

The combined effect of new immigrants and the economic recession resulted in many jerrybuilt shanties on minutely subdivided allotments in the Newtown (Fitzroy) area, but during the period of economic recovery many more substantial dwellings were erected and there were some developments which were to be significant in the gold and post-gold periods. Many building workers became self-employed, or employer and employee according to the work they obtained; many owned small cottages which they let for profit; and by 1850 the larger scale speculation which had been apparent in Sydney ten years earlier had reached Port Phillip and caused a minor boom in more elaborate one and two storey terrace housing.

Following legislation in New South Wales in 1847 five building societies had been formed in Melbourne before 1850, thus enabling many artisans to build substantial houses. After becoming a municipality in 1842 Melbourne experienced financial difficulties, but the Melbourne Building Act in 1849 imposed, on both the city and Fitzroy, controls aimed mainly at minimising the risk of fire. The importation of prefabricated buildings which had ceased during the recession rose rapidly to £28,777 in value in 1852 before the dramatic expansion during the gold rushes. Sawn timber, too, was increasingly imported from Van Diemen's Land at less than the local prices; their low earnings caused sawyers and splitters to strike in 1850.

Galvanised iron was first used in Melbourne in 1850, and in the form of roofs, verandahs, and rainwater tanks it was to become particularly characteristic of the Australian colonies. In 1852 four local businessmen went to America and purchased a new type of steam-powered brickmaking machine which, though not in full operation until 1856, was the first in Australia and produced bricks of a high standard.

#### *Discovery of gold, 1851 to 1860*

This period can be regarded in two parts: the first, after separation from

New South Wales when the early alluvial rushes took place and before the minor recession of 1854; the second, when deep alluvial sinking and quartz mining increased and speculation continued until the severe but temporary collapse in this industry in 1860. During the first period almost all major building contracts and industries such as sawmilling were suspended as workers left for the goldfields; the provisions of the Melbourne Building Act were set aside in July 1852 and land was sold in North, South, and East Melbourne for building wooden houses for the immigrants, many of whom were occupying tents in South Melbourne's "Canvas Town".

Jerrybuilding again occurred at this time and there were to be many subsequent complaints of the uninhabitable cottages erected in these years and of bricks which washed away. England, Singapore, the United States, and even the neighbouring Australian colonies had established an active prefabrication industry for the Californian gold rush, and by 1853 were able to send to Victoria £111,380 worth of iron and £246,371 of timber houses. The building industry, along with other industries, began to recover late in 1853; by the time of the modest exhibition of 1854 there were said to be 192 factories in the Colony, though some comprised no more than a single sausage machine. Imports of prefabricated houses virtually ceased, not only because local conditions returned to normal but also because British efforts were diverted to the Crimean War and because, shortly afterwards, the price of iron doubled.

The successful agitation for the eight hour day in 1856 was mainly confined in its origins and its immediate effects to the building trades, for these were almost the only ones working near capacity. Wages fell steadily until about 1859; many artisans were not prepared to accept the rates offered and preferred to live by piece work which was in fact much less remunerative. Prices for joinery, in particular, were undercut by imports from America of doors, windows, mouldings, and sawn and plain boards; many other trades were similarly placed. However, the gold period established many manufacturing establishments which have survived to the present day.

#### *Expansion from 1860 to 1890*

The prosperity of the succeeding decades was due largely to the recovery in quartz mining, protective tariffs, and the expansion of agriculture under the Land Acts of the 1860s and early 1870s. During the 1860s the number of brickyards increased from 53 to 328, sawmills from 51 to 141, and limeworks from 7 to 36.

Many of the selectors of the 1860s erected primitive dwellings resembling those built by the squatter thirty years previously, consisting of bark or slabs, and, more commonly than in the early years, of stone, pisé, cob, or adobe. The governing factor now was lack of capital rather than the insecurity of tenure and the shortage of labour and materials which had affected the squatters. For all this increase in hut building, the total proportion of temporary dwellings fell from 28 per cent to 6 per cent. This was mainly attributable to the disappearance of tents from the goldfields, which frequently had been timber framed structures and were now converted to cottages by the addition of weatherboards. In the gold towns particularly, and in Victoria generally, owner building, with direct control of those who would normally be sub-contractors, was common in the 1860s;

it gave way gradually to contract work and then in the 1880s to speculative building on a large scale. Prosperity was reflected in the growth of the Melbourne suburbs. The most distinctive local characteristic was the ubiquity of cast iron ornament, locally made from about 1860 and distinguished from its English equivalent by its greater density of pattern, its ornateness, its modelling, and occasionally by the representation of native flora and fauna.

The position occupied by stucco was undermined by the arrival of the polychrome brick movement only fifteen years after its appearance in England in about 1850. However, it was not until the 1880s that it became normal in suburban housing. Good bricks were more generally available, and could be burnt more cheaply after the introduction in 1870 of the Hoffman Kiln (invented twelve years previously), though not at first without some loss of quality. Roofing materials were generally slate and corrugated iron, according to the importance of the building, though shingles remained popular in country areas; attempts in 1860 to market terracotta roofing tiles were unsuccessful.

By 1881 huts and tents had virtually disappeared and the average number of persons per room had dropped from 1.5 in 1857 to 1.08, the lowest figure for any Australian colony at the time. Building societies had been housing workers in substantial dwellings while providing a sound use of capital for investors; they financed two thirds of new residential development between 1874 and 1890. Prosperity turned to boom from 1887 to 1889. By 1891 there were 0.9 persons per room but 80,000 of these rooms were vacant, due largely to high rents at a time when the boom began to show signs of uncertainty.

The expansion of the railway system, which earlier came to be almost wholly under government control, and the introduction of cable trams in 1885 imparted new value to land along the routes and contributed to irresponsible speculation in suburban lots, although much of the building on the outermost subdivisions had to be postponed until the more restrained decades which followed. In the higher income group many large houses were built, so that by the 1890s there were 1,200 with more than twenty rooms. The most significant innovation in construction was the first appearance of the cavity wall. From 1886 the more advanced buildings were adopting imported Marseilles tiles, and the outward characteristics were the floridity and lavishness of ornament in cast iron and stucco, and the extremes of polychrome brickwork. A great increase in height was made possible in office blocks by the use of iron frame construction and the introduction of the hydraulic passenger lift in 1885.

In 1888–1889, when it was the scene of the Centennial International Exhibition, Melbourne was at a high peak indeed.

#### *Depression and recovery, 1891 to 1918*

In the early 1890s Victoria experienced a depression which removed many of the building societies, especially those of dubious financial stability; many home buyers lost their savings, and the number of dwellings which were owned or were being purchased by their occupiers decreased sharply. During the decade the increase in brick and stone houses was only one sixth, and in weatherboard houses one tenth, of that of the 1880s, and much

of this increase was probably confined to the mining towns which expanded as a result of the increase in the relative value of gold. Speculative building ceased, and building of terrace houses virtually ceased. In the recovery, when it came, the cavity wall became widely accepted. It had been developed in England in the early nineteenth century and had become quite well-known in America before it reached Australia. The two leaves of brick were united across a two inch cavity by crimped wire or cast iron ties which strengthened the wall without allowing the passage of water. The most characteristic change in style was the extensive use of red face brickwork. This was relieved by austere bands of stucco and sinuous strips of mild steel (replacing the former cast iron) as building tended towards the crude local version of *art nouveau*. Alternatively, buildings tending towards the picturesque local interpretation of the "Queen Anne" revival were relieved by turned, carved, and fretted woodwork in the verandahs and gables, ornamental castings in terracotta, and dominating everything, a hipped, gabled, turretted, and generally irregular roof of bright orange Marseilles tiles.

Internally, the most notable features were the Wunderlich pressed metal ornamental ceiling, and electric lighting. Though it was restricted to major centres until the establishment of the State Electricity Commission in 1919, electric lighting effectively began with the opening of the first power house in the 1890s.

#### *Between 1919 and 1939*

Changes in building materials between the wars were influenced by fashion as well as by technical developments, availability of materials, or even the extreme variations in the economic situation. The rustic influence of the Englishman C. F. A. Voysey had already begun to show itself before the First World War in the appearance of roughcast and pebbledash surfaces and diamond patterned leaded light windows. When in the 1920s the Californian bungalow, an essentially timber style, succeeded the "Queen Anne", these features continued to be seen; moreover, local preference often converted the style to brickwork, sometimes softening the effect by using overburnt clinkers. Essentially the bungalow style demanded massive stained beams and boarding externally, the occasional real or imitation shingle-hung wall, and a much lower roof pitch than was used in the "Queen Anne"; internally, beams were also favoured, together with a wall lining of stained timber or, as a compromise, wide timber cover straps over plasterboard. Spanish Mission, the less important style which followed, demanded heavily textured stucco or render together with cordoba tiles and barley-sugar columns, but by the time of the Second World War plain face brickwork had again become popular.

Some significant technical developments did occur; fibrous plaster sheets had been developed in their present form in New Zealand in 1910 (after prior use for a long time in France and Britain) and came into common use after the First World War; concrete roofing tiles on the Marseilles pattern were locally made in 1920; and the kiln drying of timber was perfected in the late 1920s by the local discovery of a reconditioning process. Melbourne's waterborne sewerage system was begun in 1892, and the first stage of the scheme was completed in 1920.

During the period of prosperity after the First World War the gold towns had declined once more, and many timber buildings were removed for use elsewhere. The cost of the average brick house had almost doubled to £1,800 compared with £1,000 in 1914; moreover, some municipal councils began to stipulate areas in which only brick houses could be built. The depression of the 1930s was a severe check; the cost of the average brick house fell to £1,000 in this period; semi-detached houses became common; and before 1939 corrugated asbestos-cement sheets became frequent for roofing—a tendency later checked by the post-war shortage of asbestos. In the late 1930s large-scale residential development also took place for the first time. The Victorian Housing Commission was established as a slum reclamation authority in March 1938; its operations commenced with an estate of 412 dwellings at Fishermens Bend but were suspended by the Second World War.

*Post-war period, 1945 to 1951*

The war was followed by an acute shortage of materials and skilled labour and a great demand for housing, for which the arrears in 1943 were about 18,500 dwellings; a number of schemes was advanced for prefabricating dwellings, in many cases using steel. The Beaufort Division of the Department of Munitions in Melbourne developed a house using pressed steel sections as floor joists and roof trusses, and framed wall panels clad in spot welded galvanised sheets, but the scheme did not proceed. While such schemes did not become significant the pressed steel components of certain firms have now come into general use.

The Victorian Housing Commission had erected its first concrete house at Fishermens Bend in 1939, and in about 1943 it took over the Fowler construction plant to develop, in its concrete house project, one of the most enduring of such schemes; 2,000 houses for rental had been built by 1945. Timber houses for use in the country were made in two halves to be joined on the site; some prefabricated dwellings were imported; and some hundreds of suburban dwellings were built for the Commission. The Commonwealth Munitions Plant at Holmesglen was taken over in 1946 for the production of concrete houses, and from 1945 to 1956 about 26,000 houses were built under a financial arrangement with the Commonwealth Government, almost entirely on a rental basis.

Because of the shortage of building materials, the Government set a maximum area of 1,250 sq ft for new houses, raised in 1949 to 1,400 sq ft, while the average height of ceilings fell to below 9 ft. The cost of the average five roomed brick house nevertheless rose from £1,200 in 1939 to £1,700 in 1945, £2,500 in 1950, and £3,000 in 1951. The uncertainty of supplies and labour favoured cost-plus rather than lump sum contracts, and in the domestic field one third of new houses were being owner built by 1951. The time taken to construct a house had increased from four months in 1939 to between eight months and two years in 1951.

Unlike other States, Victoria turned overwhelmingly to brick veneer construction, a method which had been used before the war, and in fact known in America in the late nineteenth century; by 1951 brick veneer was twice as common as brick construction, and timber was twice as common as both together. Concrete blocks, cement tiles, various substitute

boardings, and steel windows all came into common use ; built-in cupboards became the norm ; briquettes and gas came to augment electricity in hot water services; separate shower compartments became common; and the size of windows increased.

#### *Developments from 1952 to 1971*

By 1952 materials were more plentiful, and from 1952 to 1962 between 18,000 and 23,000 new houses were commenced each year, with a slight decline in 1956 and a more severe one during 1961 resulting from governmental restrictions on credit. After 1961 there was a similar reduction in flat construction until 1964 when the numbers completed rose very rapidly until 1969-70 when 13,992 flats were completed. In the following year there was another reduction in flat construction.

The cost of suburban sites now became higher in relation to that of dwellings, often being one third or more of the total cost in the inner areas. Speculative building increased and several developers marketed large subdivisions, one unsuccessful attempt aspiring to the status of a satellite town ; these activities were partially damped by the credit restrictions of 1961. A change of policy by the Victorian Housing Commission in 1956 favoured the sale rather than letting of its dwellings, and by the early 1960s it began to erect multi-storey blocks of flats in the inner suburbs, constructed, in the main, by the efficient precasting technique which achieved tolerances of one sixteenth of an inch. Later in the decade private builders marketed one storey villa units which were able to use valuable land for a better financial return. These units were usually built in well regarded suburbs not too far from the city.

Multi-storey office blocks were again built in the 1950s, and Gilbert Court in Collins Street, and subsequently ICI House, were among the best known pioneers of the revolutionary "curtain wall", a lightweight non-structural skin of metal and glass. Galvanised sheet steel in long lengths became available, and a variety of new decking and cladding profiles began to supersede corrugated iron, while pressed steel purlins and girts, and standardised open web trusses became widely used in industrial building.

In the 1960s several developments in concrete took place with an increasing use of reinforced concrete rather than steel frames in multi-storey work. These included flat plate construction, lift slab, precast flooring units, pre-tensioning of floor units, slabs, and beams, post-tensioning of major beams and even some slabs, and slip form construction. This latter was used in flats at South Melbourne by the Housing Commission, in the service cores of some private blocks, and in a major motel off St Kilda Road. Fireproofing of steelwork was achieved in various lightweight and other concrete and plaster products, and in latter years precast concrete cladding and load-bearing units have become more widely used.

Sheet glass, formerly imported from New South Wales and elsewhere, has been locally manufactured since 1962 ; the lightweight gang-nailed roof truss at close centres began to compete with the traditional rafter construction in housing ; critical path programming by computer was used in some major projects ; and the more economical "universal sections" began to

replace the traditional rolled steel joists in 1968. The average speed of construction of buildings increased, and the tower crane came into wide use.

By the 1960s the "package dealer", who avoids competitive tendering by offering his own design and price to the client, became common, first in industrial work and then, with increasing architectural sophistication, in private housing. Some major companies were able to use similar methods for residential housing without sacrificing quality; they employed architects, and yet could erect their buildings, with variations to suit the purchaser, at a considerably lower cost than would have been possible otherwise. In the field of flat construction the availability of stratum titles in later years has encouraged an increasing proportion of "own-your-own" units, and in these, higher standards of space allocation and finish have generally applied.

One development of importance in this period was the introduction of tertiary education for builders for the first time in Victoria. The University of Melbourne instituted a four year course covering many aspects of building construction and construction management, and in 1971 established a chair in building.

#### HOUSING COMMISSION

The Housing Commission was established in March 1938, under the *Housing Act* 1937, after the presentation to Parliament of the report of a Board of Inquiry appointed in 1936 to investigate housing conditions in the State. It was constituted to improve existing housing conditions and to provide adequate and suitable housing accommodation for persons of limited means. At that stage it did not have authority to embark on housing schemes. Authority to carry out the objectives for which the Commission was constituted was contained in the *Slum Reclamation and Housing Act* 1938 which established the Commission as a slum reclamation authority.

Although clearance of the slum areas was urgent, it was first necessary to acquire land and build dwellings to house the occupants of houses in these areas. The first area acquired for this purpose was at Fishermens Bend, Port Melbourne, where 412 homes were built on about 57 acres. Funds were obtained from loans made available by the Treasury and from the sale of debentures. In November 1940 the Commission recommended declaration of its first reclamation area. In line with the building industry in general, the activities of the Commission were restricted by the demands made upon resources by the Second World War, and from the commencement of building in 1939 until June 1945 only 2,022 dwellings were constructed. At the end of the war came new and more pressing problems—the housing of ex-servicemen returning to civilian life, and overcoming the arrears in house construction. Temporarily slum reclamation had to be deferred, and it was not until 1952 that the Commission recommended declaration of its second reclamation area.

From time to time the objectives of the Commission have been amended, and at present they are to let or sell houses to eligible persons, to improve housing conditions and reclaim slums, to give advice to the public with respect to finance for the purchase or construction of homes, and to prepare



and implement urban renewal proposals. In 1944 the number of part-time members of the Commission was increased from three to four. In 1955, and again in 1970, it was reconstituted, and since 1970 has comprised five full-time members.

#### *Commonwealth-State Housing Agreements*

In 1945 the Commonwealth combined with the State in a Housing Agreement whereby the Commonwealth provided loan funds which enabled the Commission to build about 26,000 rental houses over a period of ten years. This was essentially a scheme to provide rental houses, although towards the end of this ten year period provision was made for the sale of houses to tenants. The dwellings, built in spite of serious labour and material shortages, were mostly in the form of single unit houses on country estates and on large suburban estates at Jordanville, Heidelberg, and Maidstone. Early in 1946 the Commission acquired the Commonwealth Munitions plant at Holmesglen and began the mass production of components for concrete houses. Prefabricated timber houses produced by Victorian suppliers and prefabricated units imported from overseas were erected in some Melbourne suburbs and in country areas, notably Geelong and the La Trobe valley.

With the ratification of the 1956 Commonwealth and State Housing Agreement, which had been extended for successive periods of five years and was current to June 1971, the emphasis shifted from Commission owned rental housing to home ownership by the individual occupier. For two years, 20 per cent of funds available under the Agreement was allocated to co-operative societies for providing finance for home builders, and for subsequent years the allocation was fixed at 30 per cent. For houses built with the funds remaining to the Commission, it was decided that 50 per cent was to be available for purchase by eligible persons and 50 per cent for rental. There was also a campaign to sell houses to tenants. As a result of adopting this policy of home ownership by individuals, of 69,688 units erected by the Commission to June 1971, a total of 31,451 had been sold. Most were sold on terms with deposits of \$200 and with payments spread over periods up to a maximum of 45 years.

The Commission allocates about 45 per cent of each year's construction to provincial estates.

#### *High density housing*

The 1956 Agreement contained a provision that dwellings built with Housing Agreement funds could comprise flats in areas of high density population, thus enabling the Commission to return to its original task of clearing and re-developing slum areas. The State Treasury provided funds for acquiring such areas and the cost of re-development was met from Agreement funds. Additional funds to finance the cost of acquisitions have been provided in latter years from Commission funds, from donations by municipalities, and from the sales of reclaimed areas.

Originally only walk-up flats in blocks comprising two, three, or four floors were constructed, but in 1962 the first high-rise (16 storey) block was completed at South Melbourne. This block and a further 20 storey block at North Melbourne erected in 1963 were constructed by contractors to the Commission. The Commission, with the experience gained in

constructing flats with components manufactured at the Concrete House Factory at Holmesglen, was convinced that it was physically and economically feasible to erect high-rise blocks of flats on the same principle, and the first of these, constructed by a contractor with components from the Concrete House Factory, was completed at Flemington in 1964. With one exception, all high-rise blocks of 12 and 20 storeys built in concrete since 1964 have been erected by the concrete house project's own work force with the assistance of specialist sub-contractors. The emphasis on building in the metropolitan area has been largely upon the redevelopment of reclaimed areas with high-rise blocks. In 1969 a 30 storey block containing 299 flats was built. The production by the factory of components for concrete houses ceased in 1965-66, since when only those components required for the erection of flats have been produced.

#### *Other developments*

The provision of adequate housing for elderly persons at a rental within their economic capacity has always presented a problem. In 1955-56 the Commission began to produce at the Concrete House Factory one and two room flatettes designed to be erected in groups and later adapted to be erected in two or three storey walk-up blocks. In May 1966 the first 12 storey block providing accommodation for 200 lone persons was completed. This block is centrally heated and serviced with high-speed elevators and each flatette is provided with reticulated hot water. Five further blocks each of 12 storeys and providing similar accommodation have been completed since May 1966. Municipal councils which maintain surrounding garden areas and return to the Commission one half of the rates paid on the units have co-operated with the Commission and donated the land on which most of the elderly person units have been erected. Since 1956 a total of 3,162 lone person units and 1,310 pensioner couple units have been erected.

#### *Conclusion*

From a modest beginning in 1938-39 when only forty-four units were available for tenancy, the Commission had grown by June 1971 to be the biggest landlord in the State, having 38,295 units let with rentals for 1970-71 at \$21m. Loan liability of the Commission at that date was \$457m, and assets were \$557m.

A major task of the Commission in the years ahead appears to be centred upon the acquisition, clearance, and re-development of known areas of decadent housing and areas which will require to be re-developed if the inner area of metropolitan Melbourne is to be capable of absorbing the anticipated future growth in population. In 1970 the role of the Housing Commission as a slum reclamation authority was widened by its establishment as an urban renewal authority. The legislation empowers the Commission to deal with all aspects of renewal—conservation, rehabilitation, and redevelopment—in collaboration with planning authorities, local councils, and the public generally.

#### LOCAL GOVERNMENT SERVICES

After the establishment of the first settlement in Australia in 1788, Governor Phillip had attempted to lay out townships which could be self-

supporting to some degree, and to divide the country into counties and parishes as it was surveyed. By a New South Wales Act of 1840 local landholders could elect "trustees" to take charge of "parish" roads and raise revenue by tolls and rates. District councils were incorporated in 1842 with wide responsibilities for roads, streets, public buildings, education, and some administration of police and justice. They were not very effective as they lacked sources of revenue, and an attempt to introduce them to the Port Phillip District failed. Melbourne and Geelong, incorporated as towns in 1842 and 1849, respectively, were the only places capable of effective local government. After Victoria had been separated from New South Wales in 1851 and had gained greatly increased population from the gold rushes, local government became more practicable. By an Act of 1853 district road boards could be established on petition from inhabitants. They worked in conjunction with the Central Road Board which attended to main roads, but were hampered by lack of funds as they had no borrowing powers and had to rely on revenue from tolls and rates only.

Melbourne and Geelong Councils were the first to be granted borrowing powers, when Acts of 1854 authorised them to borrow £500,000 and £200,000, respectively. In the same year the incorporation of municipal institutions was authorised for areas of up to 9 sq miles with a certain number of inhabitants. Some municipalities were established under this Act on petitions from local inhabitants, and councils were elected by ratepayers. Authority and responsibility for education, police, local administration of justice, and the provision of cemeteries had been assumed by the State, but the councils had wide, if somewhat ill-defined, powers in local affairs. Municipalities were granted borrowing powers and were able to carry out work of local importance.

By 1863 population in many rural areas was sufficiently large to justify the establishment of further municipal institutions; a new Act provided that road districts could be granted the status of shires if their revenue exceeded £1,000 a year, and that new shires could be established on petition from local inhabitants. Among other matters they had power to issue liquor and slaughtering licences, and they were given some administrative responsibilities previously exercised by the Clerks of Petty Sessions. The law relating to local government was amended from time to time as the population of Victoria increased. Municipalities as they are known today were introduced by the Shire Statute of 1869 and the *Local Government Act* 1874.

One of the principal functions of municipalities has always been the making and maintenance of roads and bridges. Main roads have been the responsibility successively of the Central Road Board, the Public Works Department, and the Country Roads Board, which have usually done all the work necessary, but at times have made grants to municipalities for this purpose. Financing the construction and maintenance of local roads was left entirely to local authorities, who also constructed private streets, laid out on privately owned land, at the expense of abutting owners. In new subdivisions, however, the subdividers must construct roads, footpaths, and drainage facilities.

Other main responsibilities have been to provide drainage, sewers, water supply, and health services, and to set up and administer building and health standards. With certain exceptions every council has had vested in it responsibility for all public sewers and drains within its municipal district.

The exceptions to this rule are sewers and drains vested in any other municipality, in the Melbourne and Metropolitan Board of Works, or in sewerage authorities operating in extra-metropolitan areas. In addition, councils are responsible for the collection and disposal of garbage. Municipalities on the sea coast were given the additional responsibility for care and management of wharves, piers, and jetties. As technical developments occurred local authorities acquired the power to build tramways, to issue licences for traction engines, and to make regulations relating to their use.

Over the years many of these responsibilities have been assumed by other bodies, some under the direct control of the central government, and others still retained by various local authorities. Harbour boards were introduced when municipalities combined to develop some of the smaller ports ; as ports became busier they tended to be placed under the control of separate harbour trusts. The passing of the Water Act of 1890 relieved most municipalities of their original responsibilities for water supply and only thirty still retain this function. Waterworks trusts, local organisations operating under the general supervision of the State Rivers and Water Supply Commission (until 1905 the Water Supply Department), cater for the needs of about 150 country local government areas, while about one quarter of the country population is served directly by the Commission. Usually central authorities have carried out the main work of building dams and reservoirs, and local organisations that of the actual reticulation to the consumer. In a similar manner local authorities have been formed to provide sewerage facilities in country areas. In the Melbourne area special problems relating to water supply, sewerage, and drainage led to the establishment of the Melbourne and Metropolitan Board of Works in the 1890s. The members of the Board are municipal councillors nominated by councils in the metropolitan area. In recent years its responsibilities have been extended to include town planning and the construction of main metropolitan traffic routes.

Tramways in Melbourne and suburbs were first built during the 1880s, but municipalities, being unable to undertake this work, authorised private companies to build and operate them. Borrowing powers for the building of such tramways were also delegated to the private companies. Melbourne tramway companies failed successively, leaving tramway services to be operated by municipalities operating through tramways trusts, which were taken over successively in about 1920 by the Melbourne and Metropolitan Tramways Board.

For some time after 1880 local government authorities provided gas and electricity supplies in various districts, and private companies supplied these services in other places. Municipal gas plants were sold one by one and during the last two decades most privately owned gas works have been taken over by the Gas and Fuel Corporation, a public authority formed in 1950 by the merger of the Metropolitan and Brighton Gas Companies. Similarly, most municipally owned and operated electric supply undertakings have been acquired by the State Electricity Commission, although a number of municipalities still buy power in bulk and distribute it to users.

Local authorities were chiefly responsible for maintaining pure food, sanitary, and health standards until the establishment of the Board of Health. Although the Board, now the Health Department, has the main responsibility,

it frequently acts through the municipalities which are its local agents. This work is often co-ordinated with the introduction and administration of building standards, including construction, ventilation, drainage and sewerage, and the collection and disposal of rubbish.

Early this century the licensing of public houses was made the responsibility of the Licences Reduction Board, which finally became the Liquor Control Commission, and licensing of motor vehicles became the responsibility of the police. Many present-day problems were not foreseen in earlier years. This is particularly so with traffic difficulties. For example, in many parts of Melbourne and in some provincial cities of Victoria, there are well laid out and spacious roads leading into much smaller streets which are the main arteries of the cities ; this situation is one which is being avoided in newer areas by means of planning schemes. The increasing use of motor vehicles, and the expansion of local shopping areas with supermarkets and multiple shopping centres, have caused parking problems in many municipalities. Some councils have assisted businesses by installing meters and providing off-street parking facilities, while regulations now require planners to provide parking facilities when development plans are being considered.

Some of the powers available to municipalities have rarely been used or are falling into disuse. The power to prepare housing schemes for persons of small means has rarely been exercised, and this function is now considered to be one of the principal responsibilities of the Housing Commission which was established in 1938 and which works closely with municipalities. Since 1944 councils have had the power to prepare plans to regulate the use of land in their municipal districts, and may join with other councils in a combined scheme. When a plan is to be prepared, a council may make an interim development order to control the use of land in the planning area until the scheme is in force. The Town and Country Planning Board makes reports and recommendations to the Minister for Local Government on planning schemes and planning matters generally. In 1949 the Melbourne and Metropolitan Board of Works, at the request of the Government, began to prepare a planning scheme for the whole metropolitan area. In 1955 the Board was made the permanent metropolitan planning authority and in 1968 its planning scheme was completed, received approval, and became operative. Subsequently, the Board delegated to councils in the planning area certain of its powers and responsibilities in relation to the scheme.

The provision and maintenance of parks, gardens, recreation reserves, libraries, and museums has been another aspect of local government services. Most local authorities have provided good sporting facilities, and Melbourne and its suburbs have been well served with ovals, tennis courts, and other arenas, while many councils outside the Melbourne metropolitan area have also established parks and gardens. Swimming pools are also being provided by an increasing number of councils. Municipal libraries have been expanded; the present method adopted by many councils is the use of a main central library, in conjunction with a mobile unit which tours the municipality on a regular schedule. In some instances where a council is unable to finance a mobile service on its own, two or more municipalities operate it jointly. Some municipalities have museums and art galleries.

Infant welfare centres have been an important part of local government services for many years. Pre-school centres are also provided in many

municipalities, and some have established home help services to look after children, prepare meals, and do household work when a domestic emergency arises. Immunisation against sickness is regularly arranged and advice is available from qualified personnel who have suitable facilities and equipment ; these services are run in co-operation with the Department of Health. Older people are being provided for by special centres or club rooms, where meals and other amenities are provided, as well as by the "meals-on-wheels" schemes which bring hot meals to the sick and elderly in their own homes. In most cases these operate with the help of voluntary organisations. Some places have now appointed full-time social workers to advise and assist in relieving distress or solving personal problems.

#### MELBOURNE AND METROPOLITAN BOARD OF WORKS

##### *Water*

For 22 years after its foundation, Melbourne drew its domestic water supply directly from the Yarra River in the precincts of the town. Very soon the spread of settlement and the growth of population made this procedure hazardous to public health. In 1853 work began on Yan Yean Reservoir, which, with a capacity of 6,649 million gallons, provided Melbourne's first piped water supply. It is still in service. The Commissioners of Sewers and Water Supply were responsible for the Yan Yean supply until 1860, when the Government took direct control to ensure safe and reliable supplies. As Melbourne developed and more water became necessary, catchments were set aside in the mountains east of the city.

When the Melbourne and Metropolitan Board of Works assumed control on 1 July 1891 the established supplies comprised the storage reservoir at Yan Yean with headworks in the Plenty Ranges, a diversion weir on the Watts River as the first stage of the Maroondah scheme, the Toorourrong and six metropolitan service reservoirs, and 1,130 miles of aqueducts, supply mains, and reticulation pipes. The total cost had been £3.4m and a population of 490,896 was consuming about 50 gallons a head per day from 104 sq miles of forested catchments. At that time the water supply was also being extended. Supply to the high and expanding eastern suburbs had already become inadequate, and the Government, therefore, began the construction of a direct main of 20.5 miles between Yan Yean and Surrey Hills. It was, however, regarded as only a temporary measure, and development within the next twenty years made a new source of supply necessary.

In 1911 work began on the O'Shannassy scheme, the first large water supply work to be undertaken by the Board. In the first stage a weir was constructed on the O'Shannassy River with an aqueduct linking it to Surrey Hills. It was completed in 1914, just in time to avert a serious water shortage after the drought which made further water storages essential. Preliminary construction began on the Maroondah Reservoir, the Board's first storage reservoir, in 1917, and work was completed in 1927.

The O'Shannassy Reservoir was completed a year later. Owing to the steep fall of the O'Shannassy valley, a large storage extending back into the mountains was impracticable, but the reservoir was necessary as a regulating device for holding back "flashettes", the torrents which follow heavy rain, and releasing them in a steady, controlled flow. The main storage for

O'Shannassy water is the Silvan Reservoir, built in the Dandenong Ranges between 1926 and 1932.

By far the largest of the Board's reservoirs is the Upper Yarra, which had been envisaged as a source as early as 1888. A preliminary survey for possible reservoir sites in its catchment had been made in 1908, and in 1919 eight possible dam sites were investigated. However, in 1929 the Board proposed a single large dam downstream from McVeigh's, rather than the series of small ones previously proposed. Before the construction of the large dam, upper Yarra water had been utilised by tapping the river about two miles upstream from McVeigh's, and diverting some of its flow via the O'Shannassy aqueduct to Silvan.

The site of the proposed Upper Yarra Dam was tentatively determined in 1940, and immediately after the war the site was confirmed. Work began on the conduit to convey water from the new dam to Silvan and was still under way when construction of the dam itself began. The completion of the dam in 1957 brought the total capacity of Melbourne's storages to 65,452 million gallons, about ten times that existing in 1891.

Since 1891 Melbourne's population has more than quadrupled, the total annual consumption of water has increased more than eightfold, and the present daily per capita consumption is almost twice as high as in 1891. Thus the Board has had to pursue a continuous, and at times urgent, pipe laying programme, which has necessitated the building of forty-seven service reservoirs and fifteen elevated tanks throughout the metropolitan area to ensure an equitable supply pressure in all districts. Since 1956 a record mileage of large mains with diameters ranging from 84 inches down to 46 inches has been laid; a large pipeline has been constructed between Silvan and Preston to permit the vast resources of the Upper Yarra scheme to augment the low level supply from Yan Yean and Maroondah; and the Yarra-Silvan 68 inch diameter conduit has been duplicated. As pipe laying is very expensive, methods of extending pipe life are being studied. Particular attention has been given to mild steel pipes, now used exclusively for large mains. The Board adopted these in 1910 as they were much lighter and cheaper than cast iron pipes of comparable size, but unfortunately they have also been more susceptible to electrolytic and soil corrosion. Research to overcome this weakness has largely been successful.

The Upper Yarra Dam was completed in 1957, and although the dam tripled the amount of water impounded for Melbourne's supply, the Board's engineers were already planning new sources. The Yarra and its tributaries had virtually been exhausted as a source of unpolluted water, but the population was increasing, and supplies would have to precede expected demand. In 1962 the Board adopted a report recommending water supply augmentation works for a population of 5 million, which was a reasonable expectation by the year 2000; the Parliamentary Public Works Committee submitted its final report on this scheme in August 1967. The unprecedented drought in 1967-68, which resulted in the imposition of the most severe water restrictions Melbourne had yet experienced, emphasised the necessity of extending the available catchment areas and of providing more storages to regulate the flow.

Major works were being undertaken by 1969 to secure an adequate high quality water supply for the future; the storage capacity of major reservoirs

will be doubled on the completion of the Greenvale Reservoir and Cardinia Creek Reservoir; work was begun on the 12 mile long Yarra-Thomson tunnel, as the first stage of the diversion of the upper Thomson River to the Melbourne system; and four tributaries of the Yarra River above Warburton had been diverted to existing supply aqueducts. Emergency works constructed during 1967-68 permitted further catchment diversion, and the additional trunk mains became necessary to ensure that the extra water collected was available to consumers. These included an 84 inch main from Upper Yarra to Silvan and an 84 inch-68 inch from Silvan to Cardinia Reservoir (including a 1½ mile tunnel through the ridge at Emerald) to prevent waste of water from the catchments when the occasional high flows occur during a dry period, and two new large capacity feeder mains to improve supply to the north-west and south-east portions of the system. Further service reservoirs and reticulation works will be provided as required for newly developed areas.

Water sources and purity must be protected, and the Board prevents contamination in catchment areas by prohibiting public access. Action also has to be taken against bushfires which may pollute supplies and affect their constancy. The fires of 1939 indicated the urgent need for maximum fire prevention and control, and since then the Board has built up an efficient radio-controlled fire fighting organisation. Steel lookout towers have been erected at strategic points in all watersheds, while several hundreds of miles of access roads have been built to facilitate fire fighting. To replace the forest cover in areas denuded by past fires, the Board has carried out reforestation with indigenous trees for many years.

Hydrology, the study of water in its various states as found above, on, or below the earth's surface, is of great interest to the Board of Works, whose main interests are concerned with the rainfall or input to catchments and the resulting streamflow or run-off. Knowledge of both aspects enables the Board's engineers to design storage dams, flood control structures, river and creek improvements, and adequate bridge waterway requirements to meet the expanding demand for them. Long-term records of rainfall and run-off for many catchments ensure that the extremes of the climate are adequately sampled. To effect this the Board has installed and equipped, and now operates, some eighty-five rainfall stations and fifty stream gauging stations. Others are operated by the State Rivers and Water Supply Commission and the Commonwealth Bureau of Meteorology. The Board also has specific hydrological experiments in progress, at Coranderrk for forest hydrology, and on experimental catchments for urban drainage.

#### *Sewerage*

A Royal Commission appointed in 1889 to inquire into sanitation recommended that an organisation be established to provide a sewerage system and to operate the existing government controlled water supply. It also suggested that the English sanitation engineer, James Mansergh, be brought to Victoria, and in 1890 he recommended that sewerage farms be established at Mordialloc and Werribee, on either side of Port Phillip Bay.

The Melbourne and Metropolitan Board of Works was constituted on 1 July 1891, but by this time Melbourne was on the threshold of an economic depression. Although its population was almost half a million, it appeared



that future development would be slower than previously expected, and the scheme which had originally been formulated during a boom period was therefore amended. The new plan provided for a system of gravity sewers converging at Spotswood, where a pumping station would raise the sewage and transfer it into an outfall sewer along which it would gravitate to a treatment farm at Werribee, 16 miles away. Work began on 19 May 1892, and five years later the first tenement was connected. Various improvements have since been made. Many automatic pumping stations now serve low lying areas which could not be connected gravitationally with the main system, and biological treatment plants have been established at Braeside, Altona, Heatherton, and Lower Plenty. At first the Werribee Farm comprised 8,847 acres of barren, windswept plain, but by 1950 it covered about 26,000 acres of land brought under production; originally, sewerage purification was by land filtration, but this has been supplemented by grass filtration during the winter, and oxidation ponds have recently been used. However, the scheme was approaching the limit of its capacity, and the Board, therefore, launched its amplification scheme in 1958, the first stage of which provided for a new pumping station at Brooklyn of about twice the capacity of the original at Spotswood. It was opened in 1964. The main outfall sewer was also enlarged, and sewerage facilities now reach St Albans in the west, Campbellfield in the north, Ringwood in the east, and Waverley in the south-east. The second stage of the scheme was the South-Eastern Sewerage System on which construction began in 1964. It includes a large modern plant employing the activated sludge purification process to produce a colourless, odourless reconditioned water of high standard for discharge into Bass Strait near Boag Rocks through a 35 mile long outfall. The purification plant, with a capacity of 64 million gallons per day (mgd) mean dry weather flow, is a major part of the \$170m South-Eastern Sewerage System and will begin operating in 1973. It will treat an average of 20 mgd of sewage by 1973 and 51 mgd by 1974. The plant, landscaped into the surrounding countryside, will be set in a 1,400 acre site, will use electric power generated on the site from by-product gas, and initially will be able to serve a population of about 900,000.

The South-Eastern Sewerage System will substantially relieve the Werribee Farm System, which deals with 97 per cent of Melbourne's wastewater, and when completed will provide a main sewer collecting system for the rapidly developing eastern and south-eastern suburbs as well as relieving a number of the existing main sewers. The purification plant is capable of progressive enlargement as these suburban areas develop.

#### *Highways, foreshores, parks, and drainage*

The Melbourne and Metropolitan Board of Works Act, as amended in 1956, extended the Board's authority to permit the construction and maintenance of metropolitan highways and bridges, the improvement and protection of foreshores, and the establishment of major parks. A Metropolitan Improvement Rate of up to 4d in the £ (in 1970 it was 1.4c in the \$) was authorised to finance these functions and commitments under the Town and Country Planning Act. The Board is only responsible for highways and bridges approved and declared by the Governor in Council. A comprehensive roadworks programme providing largely for the construction of new facilities

was formulated, and although the lack of financial resources restricted plans, several important works were carried out. These included an eight-lane highway, Kings Way, and the construction of the first stage of the South Eastern Freeway at a cost of \$4m, as part of a system linking city and suburbs.

In 1965 additional finances came from an increase in vehicle registration fees under the Roads (Special Projects) Act, and were matched with those from the Metropolitan Improvement Rate on a three for one basis, and in 1970-71 further funds became available to the Board under the provisions of the *Commonwealth Aid Roads Act* 1969. By 1972 the annual budget from all sources had risen to approximately \$22m. Among the major projects included in the expanded programme were the Flemington to Coburg section of the Tullamarine Freeway linking the city to Melbourne Airport, the second section of the South Eastern Freeway, the St Kilda Road Underpass south of the city, and the Eastern Freeway from Collingwood to Bulleen which allowed for a future railway along its median.

In 1956 the Board took over responsibility for foreshore protection from the Public Works Department. There were then 49 miles of bay coastline within the metropolitan area, but the extension of the Metropolitan Planning Area in 1968 increased this to 60 miles within eleven municipalities. Financial limitations in the Metropolitan Improvement Rate have restricted the Board's operations to protective measures, but more than \$1.6m had been spent by June 1971. Most works have been conventional seawalls of cemented stone, but more recently a new type of sloping wall of packed rock has been used successfully. In 1958 a rock mole was begun at Elwood, and was used later by the St Kilda City Council to establish a marina, 40 acres being reclaimed for recreation. The Board investigates new methods for the protection of foreshores and the preservation or restoration of beaches, and is represented on the Consultative Committee for the Port Phillip Authority which was established in 1966.

The 1954 Metropolitan Planning Scheme reserved public open space on the basis of 7.5 acres per 1,000 persons in the metropolitan area. It set aside areas for sports grounds, parks, and playgrounds, and planned for a series of major metropolitan parks to be established, mainly along rivers and streams or on the periphery of the urban area. In 1956 the Board was given powers to develop these parks but activities have mainly been concerned with preventing private development in the various areas. By April 1971 a total of some 2,450 acres had been acquired at a cost of about \$10.3m.

When the Board was created in 1891 it was given control of the Yarra River and other public watercourses in the metropolis with regard only to commerce and recreation. The responsibility for stormwater drainage was left with the local councils which were often unable to carry out the necessary flood control works. Disputes concerning drains crossing municipal boundaries had often resulted in no works being carried out, standards of flood protection where provided had varied widely, and construction had often been poor. In 1923 legislation constituted the Board a drainage authority in addition to its other functions; it became responsible for all metropolitan rivers and watercourses and major drains, in all about 720 miles in length. Until the end of the Second World War

the Board had constructed 73 miles of stormwater drains, but post-war development demanded facilities which strained the Board's resources. Besides providing drains in newly developed areas, the Board had to maintain miles of drains built by councils before 1923 and since transferred to it. In addition to making substantial improvement works on the larger rivers and watercourses, it has constructed about 275 miles of stormwater drains. In recent years the Board has also built nineteen flood control dams (retarding basins) of up to about 1,600 acre ft capacity on several watercourses to restrict the rate of flow along their lower reaches. Expenditure on drainage and river improvement has increased greatly since the Second World War. In the 22 years between 1923 and 1945 total expenditure was \$3.6m ; it rose steeply over the next 25 years to \$37.6m.

In recent years industrial expansion, the mounting population, and the increase in unsewered housing have caused much pollution of rivers and drains. The Board is endeavouring to control this pollution by increased enforcement of its by-laws and by requiring the provision of sewerage facilities at the time of sub-division ; this enables it to provide outlet mains in these areas and to provide facilities in previously developed areas.

#### COUNTRY TOWN WATER SUPPLIES

Outside the metropolitan area, domestic and industrial supplies are available in all but very small country townships. In June 1971 417 towns had reticulated supplies serving a population of over 980,000, that is, 80 per cent of the population outside Melbourne. Supplies to 150 of these towns, serving a population of about 295,000, are managed directly by the State Rivers and Water Supply Commission. The remaining 267 town supplies are managed by local water authorities especially constituted for the purpose.

During the gold rush of the 1850s many people migrated to areas without adequate water supply ; there were then no specially constituted water supply authorities and as the mining population was too unsettled to accept responsibility, the Government constructed reservoirs where needs were most pressing. By 1865 twenty-four reservoirs had been constructed by the Mines Department, the predecessor of the Water Supply Department which was succeeded in 1905 by the State Rivers and Water Supply Commission. The earliest reticulated supply was probably a reservoir and 12 miles of mains initiated in 1859 by the Bendigo Waterworks Company. The *Bendigo Waterworks Act* 1871 provided for these works to be transferred to the City of Sandhurst (Bendigo). The Coliban Scheme, initiated in 1862, augmented the supply to Bendigo and supplied the mining centre at Castlemaine, and later a number of other townships in the area. This system is now administered by the Commission.

In 1860 two private Acts of Parliament authorised the construction of waterworks for mining and other purposes at Beechworth and in the Ovens River area. Funds for works under these Acts were borrowed privately and without any government assistance. The Beechworth supply is still operated by a local governing body under the Water Act, but the other works have since been abandoned or absorbed into other supply systems. Ballarat was first supplied in 1862

from Kirk's Reservoir which was constructed originally for mining purposes. The original local committee controlling this system was replaced in 1872 by the Ballarat and Ballarat East Water Commissioners, reconstituted as the Ballarat Water Commissioners in 1880. Geelong was first supplied in 1865 by the Government from two reservoirs on Stony Creek ; these works were transferred in 1908 to the Geelong Waterworks and Sewerage Trust.

Legislation as early as 1872 provided municipal corporations with government loans, and many waterworks of permanent value were constructed. The first comprehensive legislation for the supply of water to country districts, the *Water Conservation Act* 1881, provided for waterworks trusts to construct and manage supply works throughout the State. More detailed provisions to control supplies in urban areas were added in 1884. The *Water Act* 1905 constituted the State Rivers and Water Supply Commission which became the principal rural water supply authority in the State and was responsible for the construction and management of many town water supplies. This and subsequent Water Acts have retained provision for the constitution of local water authorities to supply specific towns or areas.

#### *State Rivers and Water Supply Commission*

The supplies for the 150 towns managed directly by the Commission fall into two main categories : those forming part of the large main urban supply systems, and those located in irrigation or waterworks districts and operated as independent urban systems.

The main urban supply systems are the Mornington Peninsula System, the Bellarine Peninsula System, the Otway System, and the Coliban System. All these were principally constructed for the supply of towns only, although the Coliban System also provides substantial irrigation supplies in the Bendigo-Castlemaine area. Town supplies in association with the Commission's irrigation and rural water supply activities are those within the Goulburn-Campaspe-Loddon Irrigation System, the Wimmera-Mallee Domestic and Stock Supply System, and towns supplied direct from the Murray River. Three towns, Eildon, Heyfield, and Wonthaggi, are supplied independently of the Commission's larger water supply systems. The total capital expenditure up to June 1971 on town water supplies administered by the Commission amounted to \$59.8m.

#### *Mornington Peninsula System*

The Mornington Peninsula Water Supply System was initiated at Commonwealth request to supply the naval base on Western Port. The scheme, begun in 1917, provided for the diversion of the headwaters of the Bunyip River through about 35 miles of channel to a reservoir at Beaconsfield from where the water was to be conveyed by pipeline to the various parts of the Peninsula. However, war-time difficulties in obtaining materials made progress slow. A supply was initially obtained from Toomuc Creek, and the channel to the Bunyip River headworks was not completed until 1925. The naval base received a supply in October 1919, but it was not until 1921, following completion of the Frankston and Mornington Reservoirs, that supplies were available to Mornington, Frankston, Seaford, Carrum, Chelsea, and Edithvale. Lysterfield Reservoir, which has its own catchment, was constructed in 1929, and the

system as originally designed was completed in 1942. Since then the system has been greatly expanded to serve the growing residential and industrial requirements of the Mornington Peninsula. Devilbend Reservoir (3,212 million gallons) was constructed in 1964 to hold in reserve the surplus winter flows of the Tarago and Bunyip Rivers, and in 1968 the security of supply was further increased by the construction of Tarago Reservoir with a capacity of 5,600 million gallons. Supplies to Dandenong, Springvale, Noble Park, and Chelsea were originally part of the Mornington Peninsula System, but these areas have now been transferred to the Melbourne and Metropolitan Board of Works supply system.

The system now has eight main reservoirs with a combined capacity of 10,700 million gallons, and fifty-two service basins and tanks with a combined capacity of 140 million gallons. In June 1971 it supplied 54,000 services and a permanent population of about 125,000 persons; this is greatly increased by holiday makers during the summer.

### *Bellarine Peninsula System*

A scheme to supply seaside towns on the Bellarine Peninsula from the headwaters of the Barwon River in the Otway Ranges was begun in 1927. This scheme, also needed to meet a major part of the water requirements for the urban area of Geelong, was completed in 1934. During 1954-55 the control and development of the system's headworks were transferred to the Geelong Waterworks and Sewerage Trust, which has since supplied the Commission in bulk for distribution to the other towns of the Peninsula. By June 1971 the Commission supplied some 10,800 services requiring 700 million gallons annually in towns, other than Geelong, of the Bellarine Peninsula, which then had a permanent population of about 15,000, supplemented in summer by holiday makers. In addition, Geelong's population has grown to 119,000, with a normal demand on the system of approximately 5,500 million gallons per annum.

### *Otway System*

Through the Otway System the Commission provides reticulated water supplies to Terang, Cobden, Allansford, and Simpson; it also supplies water in bulk to Warrnambool and Camperdown. This system was begun in 1935 and completed in 1938. The headworks comprise three diversion weirs on Arkins Creek and tributaries near the top of the Otway Ranges. From here water is conveyed through 70 miles of pipeline to Warrnambool, and on the way fills storages at Camperdown, Ewen Hill, and Tank Hill (total capacity 285 million gallons). Services supplied by the Commission in Terang, Cobden, Allansford, and Simpson number about 3,000, for a population of about 9,000. In addition, the annual bulk supply to Warrnambool and Camperdown (combined population 22,000) is nearly 600 million gallons.

Since 1958 the supply capacity of the system has been almost doubled by means of pumping water from the Gellibrand River and by the installation of booster pumps along the main pipeline. The South Otway pipeline at present being constructed from the Gellibrand River to Allansford will increase supplies still further.

*Coliban System*

As mentioned above, this system was initiated by the Victorian Water Supply Department in 1862 to bring water from the central highlands at Malmsbury to Sandhurst (now Bendigo) and other gold mining towns. The system now includes 384 miles of channels and 424 miles of pipelines supplying water to Bendigo, Eaglehawk, Castlemaine, Maldon, and eighteen smaller townships. The main storages of this system are the Upper Coliban, Lauriston, and Malmsbury reservoirs with a total capacity of 15,200 million gallons ; all are located on the Coliban River. Supplies are augmented by pumping from Lake Eppalock on the Campaspe River, 16 miles east of Bendigo.

*Other towns*

The Wimmera-Mallee Domestic and Stock Water Supply System, with headworks in the Grampians and a channel system extending northwards to Ouyen and Manangatang, primarily supplies 19,500 farm storages over 11,000 sq miles of good agricultural and grazing land. The headworks comprise twelve storages, the earliest having been built at Wartook in 1887 ; the most recent, Bellfield Reservoir on Fyans Creek, was completed in 1966. Rocklands Reservoir on the Glenelg River was completed in 1953 and has a capacity of 272,000 acre ft. This reservoir has the largest storage capacity in the system. The distribution works involve 6,600 miles of Commission channels and 4,000 miles of farmers' channels, the longest distance over which water is delivered exceeding 300 channel miles. As well as rural farm supplies the system provides water for fifty-two towns with reticulated supplies, and serves a population of about 16,000. The Commission manages the reticulation in thirty-eight of these towns, and local storages at sixty railway stations are also supplied. The major towns supplied are Horsham, Warracknabeal, and Charlton (local authorities), and Birchip, Hopetoun, Rainbow, Sea Lake, and Ouyen.

The widespread Goulburn-Campaspe-Loddon Irrigation System in the northern part of the State provides supplies for a number of towns. Distribution in the larger towns is usually managed by local authorities, but the Commission directly controls the reticulation in twelve of these, supplying over 3,000 persons. Another ten urban centres with a population of about 8,000 persons obtain water direct from the Murray River, and have their water supplies managed by the Commission. In larger towns such as Mildura and Swan Hill, which are supplied direct from the river, the works are managed by local water authorities.

Three townships, Eildon, Heyfield, and Wonthaggi, are supplied directly by the Commission. The total population of these towns is about 8,000.

*Local authorities*

In June 1970 there were 267 country towns throughout Victoria supplied by local water authorities, nearly all of which were constituted under the provisions of the Water Act. The total population supplied by these authorities is approximately 686,000. Local water authorities are independent responsible bodies, but as the Government usually provides a substantial degree of financial assistance, all their operations and proposals are subject to general review by the State Rivers and Water Supply Commission. Local water authorities, under the direction of their honorary commissioners, have

built town water supply works costing \$96m (up to June 1970), of which some \$14.6m is borne directly or indirectly by the Government. Of the total cost, \$86m has been spent since 1945, and during 1969–70 expenditure on new works was \$6.8m.

Where an existing town supply has been installed and operated by the Water Commission, it is always prepared to transfer the works and management to a local authority, if practicable. This has occurred in Bacchus Marsh, Werribee, Cohuna, and Camperdown.

#### *Special authorities*

Several local water authorities operate under special Acts. The area served by the Mildura Urban Water Trust, constituted under the Mildura Irrigation and Water Trust Act, was originally part of the Chaffey irrigation settlement, dating back to 1887. The town area was proclaimed an Urban District of the First Mildura Irrigation District in 1909. The present Trust was created in 1921 by an amendment to the Act.

The Geelong Waterworks and Sewerage Trust was constituted as the Geelong Municipal Waterworks Trust in 1908 by the *Geelong Municipal Water Act* 1907 to take over that town's water supply works, the initial stages of which had been constructed by the Water Supply Department in 1865. This Trust has never received any financial assistance from the Government and bears the full cost of the works serving the population of over 110,000 in the Geelong urban area. In 1968 the West Moorabool Water Board was constituted by statute to construct and manage a dam of 13,100 million gallons capacity at Bungal on the West Moorabool River. The purpose of this dam is to augment supplies to Ballarat and Geelong; the estimated cost was \$4.75m.

The Latrobe Valley Water and Sewerage Board was constituted in 1954 under the Latrobe Valley Act to construct and manage the supply of water in bulk to towns and industries; it is not the function of this Board, however, to manage reticulation works to the town's consumers.

#### ELECTRICITY, BROWN COAL, AND GAS

During the early years of settlement in Victoria firewood was the principal fuel used, supplemented by black coal imported from Scotland and New South Wales; whale and seal oil were used for lighting. During the 1850s the gas industry was established, followed by the erection of some small electricity generating plants in the 1870s. Gradually coal, gas, and electricity replaced firewood which, however, remained an important form of energy until the end of the century. Kerosene for lighting and power was first imported into the Colony in 1861 and the first of the modern oil companies set up an office in Melbourne in 1895. Brown coal had been discovered in the 1850s but technology had not advanced sufficiently to utilise this source of energy until the 1920s.

In common with world trends, the patterns of energy underwent vast changes during the present century until today petroleum products, electricity, and brown coal constitute Victoria's principal forms of energy. Black coal and firewood are now rarely used, manufactured gas plays only a minor role, and the lack of suitable catchments restricts the development of hydro power stations. The development of the vast brown coal deposits in the La Trobe

valley to generate electricity played a very significant part in the development of Victoria between the two world wars, and this activity has been greatly expanded since 1945 until today the generation of electricity is a major industry with power lines stretching to every part of the State. The discovery of indigenous crude oil and natural gas in the late 1960s is setting the pattern for the future development of energy, and these combined with the utilisation of the State's vast deposits of brown coal for electricity generation will ensure that Victoria's energy requirements can be adequately catered for until the end of the century.

### *Electricity and brown coal*

#### *Early history*

The first application of electricity in Victoria was the telegraph installed between Melbourne and Williamstown in 1854, mainly to transmit information of shipping movements. It was another fifteen years before electric light became available to Victoria. Then, to celebrate the visit of the Duke of Edinburgh in 1869, "revolving electric lights" were displayed on a number of Melbourne buildings and vantage points. In the 1870s small generating plants were built in the central areas of Melbourne, supplying very small areas in their immediate neighbourhoods. A football match was played under lights on the Melbourne Cricket Ground in 1879, and the theatres used the new light. In 1880 the first electric lighting company in Victoria was formed; others soon followed. To celebrate Queen Victoria's Jubilee in 1887 the General Post Office in Elizabeth Street had a display of 350 lamps; a year later, to mark the centenary of the settlement of Australia, the Exhibition Building was lit by the then enormous number of 4,040 lamps.

Electricity, which at that time could not yet be transmitted for long distances, was still limited to the vicinity of the place of generation. However, in 1891 electricity was transmitted for more than a hundred miles in Germany. The problem had been solved, and in Victoria electricity now began to compete seriously with gas which had been lighting Melbourne streets and houses since the late 1850s. Electric light companies moved out of their city premises into the suburbs, especially along the riverside where there was room to expand as well as an ample water supply. In 1894 the Melbourne City Council began to operate a new power house in Spencer Street and lit most of the main city streets with electricity. The use of electricity for purposes other than lighting developed; there were electric kettles, electric ventilating fans in hotels, and motors driven by electric power.

In Victoria there were few restrictions during the early years of electricity. Anyone could set up a generating plant to supply others; with permission from the local municipal authorities to erect power poles he could transmit energy to any customers he could find, in competition with any existing undertaking. This state of affairs was wasteful, costly, and inefficient, and could be dangerous, and in 1896 the Victorian Parliament passed an Electric Light and Power Act, which ensured that no one could set up an undertaking to supply others without permission granted by an Order in Council, no new Order could be issued without the consent of the municipality in whose territory an undertaking would operate, and municipalities were also given the right to buy out existing undertakings at valuation after thirty years. This meant that suppliers, having survived the expensive and often unprofitable years of establishing an electricity supply, faced the risk that municipali-



ties would acquire their businesses when they had reached their fruitful periods. This prospect led to rationalisation, mergers, and takeovers until, in the first decade of the twentieth century, only one municipal undertaking (Melbourne City Council) and two private ones (Melbourne Electric Supply Co. and North Melbourne Electric Tramways and Lighting Co.) remained in the metropolitan area.

The use of electricity grew rapidly. The engines which turned the dynamos used black coal from New South Wales as fuel, but its price rose constantly and its supply was subject to frequent interruptions caused by stoppages in the mining and maritime industries. It had been known since 1857 that Victoria possessed brown coal, and by 1876 it had been found in thirty-two places, the most impressive fields being in the La Trobe valley. In 1887 a company began to win brown coal at what is now known as Yallourn North. In 1888 the Victorian Government offered a fixed minimum price for Victorian brown coal, and a new company took over the open cut at Yallourn North.

The great maritime strike of 1890 restricted black coal supplies and revived interest in Victoria's own fuel. Brown coal was tested for steam-raising and gas making; some was sent to Germany where it was made into briquettes of satisfactory quality. The Government offered £5,000 for the first 100,000 briquettes produced in the Colony, and the Morwell mining company set up a primitive plant. Nevertheless, despite the uncertainty of supply, black coal was so efficient by comparison with brown coal that its use continued. The Morwell company ceased operations in 1899, after a bushfire had destroyed its plant.

After 1900 the demand for electricity rose rapidly in Victoria. Between 1905 and 1915 the number of electric motors increased from 1,050 (3,250 hp) to 5,800 (40,000 hp). Difficulties with black coal supply continued, and in 1909 the Government opened its own black coal mine at Wonthaggi. The field, however, was not extensive, and the quality was not as good as that of New South Wales coal. The Victorian Government in 1907 brought out Charles Hesterman Merz, an English expert, to investigate and report on the electrification of the Melbourne suburban railways. Merz was the first to propose seriously that a power house be established in the La Trobe valley, using brown coal for fuel, and that the power be transmitted to Melbourne. This would also reduce the State's dependence on New South Wales black coal. In 1912 the Government decided to electrify the suburban rail system, but war delayed the project. The war also increased the general demand for power, but made more difficult the task of establishing the means to satisfy that demand. However, it did not prevent strikes, and because of these Victoria again suffered from lack of coal supplies in 1916. The abandoned open cut at Yallourn North was re-opened and some brown coal won for both factory and home use, but industrialists and householders did not greet this fuel with much enthusiasm. Until 1917 sporadic efforts in various places had won 120,000 tons from Victoria's known resources of thousands of millions of tons of brown coal. By 1977 the State Electricity Commission of Victoria expects to be winning about 90,000 tons a day.

#### *Establishment of the State Electricity Commission*

War-time strikes and shortages of fuel again raised demands that Victoria's vast deposits of brown coal be used to generate electricity. In

1917 the State Government took the first step towards making Victoria independent of imported coal. It appointed a Brown Coal Advisory Committee, comprising experts on electricity generation and supply under the chairmanship of the State Director of the Geological Survey, Dr Hyman Herman, who had been engaged since 1913 on a government programme of boring to prove deposits. This committee reported within fifteen weeks, recommending that a brown coal mining and electricity complex be established at what is now called Yallourn, in the La Trobe valley, and that the power generated be transmitted to the city. The coal was believed to contain 45 to 50 per cent moisture. Nowhere except in central Europe had high-moisture-content brown coal been the successful basis of an electricity undertaking. The committee recommended that a body of electricity commissioners be appointed to control the scheme. Nothing was done for a year, but the Government passed legislation at the end of 1918, and on 7 March 1919 three commissioners began work. They obtained information and material from occupied Germany, and in November 1919 endorsed the recommendation of the Brown Coal Advisory Committee.

In 1920 Sir John Monash, a distinguished civil engineer and soldier, was appointed general manager; at the beginning of 1921 he became full-time chairman of a body with extended powers and a new name—the State Electricity Commission of Victoria (S.E.C.)

On 5 February 1921 work commenced on the power house site. Work had already begun on a new open cut, for the quantity of coal available in the old open cut was insufficient for an undertaking of this magnitude. Winning the coal was the first and major concern, and, although the machinery available was necessarily makeshift until specially adapted machinery could be obtained, there were no great technical difficulties. Overburden averaged only 33 ft over a seam which averaged 174 ft in depth. The nature of the coal, however, was to cause considerable trouble; bores had not disclosed any appreciable difference between coal in the old and new cuts, but it was discovered and confirmed beyond doubt during 1921 that the new-cut coal averaged 65 per cent moisture. Contracts had already been let for steam-raising plant based on a much lower moisture content; to call new tenders would have delayed power generation, which might have been unwise and economically disastrous. S.E.C. engineers successfully adapted the plant to burn the high moisture content coal efficiently, and so avoided a delay in production.

Meanwhile, until Yallourn came into operation, it was necessary to ease the power position in Melbourne, where existing private and municipal undertakings were reaching the limits of their capacity. The S.E.C. had proceeded with a power house known as Newport B, with a 30 megawatt (MW) capacity, and this began operation in 1923. Its production was supplemented by excess energy available from the railways power house, Newport A, and the Commission was able to supply 250 million kilowatt hours (kWh) in 1923 and 367 million in 1924.

By the middle of 1922 the open cut area at the coal face was only one acre (the area of La Trobe valley open cuts exceeded 2,000 acres in 1970). By 30 June 1924 more than one million cubic yards of overburden had been removed and 130,000 tons of coal won. Just before the end of June 1924 the first power flowed over the 132,000 volt lines which had been erected to link

the power house to Melbourne. By the end of 1924 four 12.5 MW units were in production at Yallourn, and another was in operation by the end of 1925. Parallel with this operation the S.E.C. had established a briquetting factory and this was producing by the end of 1924. In the next five years S.E.C. generation jumped to 625 million kWh per year as the Yallourn units, supplemented by a modest contribution from the Commission's new hydro station based on the mountain streams of the Rubicon-Royston area, brought power to Melbourne over lines extending over 110 miles. By 1929 the system was serving almost the whole of the Melbourne metropolitan area, 141 country centres, and hundreds of farms, through 1,500 miles of high-voltage transmission lines; Yallourn had become a self-contained town of 400 houses. In 1930 the S.E.C. acquired the Melbourne Electric Supply Company, the only surviving private undertaking in Melbourne; it had acquired the North Melbourne Electric Tramways and Lighting Co. in 1922. The number of customers served by the S.E.C., which had been only fifty in 1922 and 7,000 in 1923, rose to 179,000. When Sir John Monash died in October 1931, the S.E.C. had won more than nine million tons of coal and was producing 643 million kWh a year.

Yallourn B power station, which was to add 100 MW to Yallourn's capacity, was completed in 1938; the next steps included a large hydro-electric scheme at Kiewa in the north-east of the State, which would provide another 92.5 MW (this was increased twenty years later to 183.6 MW). The Second World War interfered with the course of this project, and also with a planned doubling of the 30 MW output at Newport B.

War-time fuel shortages caused the Victorian Government in 1943 to adopt a policy of brown coal development designed to make the State more independent of outside supplies. This envisaged expanding briquette production to two million tons a year, or nearly five times that of 1943. The war caused a very large increase in demand for electricity, but war-time shortages made it impossible to install new plant to meet the demand; by working plant to the limit with no reserves for emergencies, wartime needs were met without rationing. In 1937 the S.E.C. generated 1,000 million kWh; this increased by 75 per cent during the war.

The scarcity of labour, materials, and fuel continued after the war; demand, instead of tapering off, continued to increase; and rationing had to be introduced. With the aid of rationing, the S.E.C. was able to surmount difficulties in the post-war years when financial problems were added to material and labour shortages. Rationing remained until 1952 although restrictions on connecting hot water off-peak systems continued until 1961. In 1949, its thirtieth year, the Commission had an installed generating capacity of 577 MW and coal production exceeded 6 million tons a year. The Commission planned to increase its generating capacity to 956 MW within ten years, to set up a large briquetting project, and to expand Kiewa; it also considered large extensions to Yallourn. The 1951 recession delayed many of its expansion plans; nevertheless, by 1952 the S.E.C. had installed a further capacity of 165 MW since the war, and electricity generated had risen from 1,747 million to 2,902 million kWh a year. In the next three years demand rose so rapidly that the annual production exceeded 4,250 million kWh. The number of consumers supplied by the S.E.C., which was 311,000 when the war ended, rose to 532,000 in 1955, while average consumption per

domestic consumer more than doubled and consumption per commercial consumer increased by over 50 per cent.

In 1955 the S.E.C. entered upon its most remarkable period of expansion. Between 1955 and 1971 energy generated (including that from the Snowy scheme which first supplied power in 1959) more than trebled, the number of consumers almost doubled, and the average consumption per consumer rose sharply. Rural connections, fewer than 5,000 in 1931, rose to more than 73,000. The S.E.C. not only met these swiftly increasing demands but built up a reserve capacity; this had not existed in the post-war decade. Installed capacity, including the Snowy allocation, passed 3,500 MW, more than three times that of 1955. Generating capacity at the Yallourn stations was doubled. The Hazelwood project was completed in 1971 and at full capacity of 1,600 MW became, for a time, Australia's largest power station. The generating plant attached to the Morwell briquetting project was completed with a capacity of 170 MW. Hydro stations at Kiewa, Eildon, Rubicon, and Cairn Curran have been expanded to bring their total capacity to some 320 MW. Power became available from the Snowy scheme in 1959 and rose to 628 MW in 1971. In 1955 the total generating capacity available to the S.E.C. was 939 MW. This had risen by 1971 to 3,531 MW, and was well ahead of maximum demand. Work had begun on Yallourn "W", which will have two units each of 350 MW. In June 1971 an announcement was made that a new peak load power station using natural gas as a fuel would be erected at Newport. Expected to cost about \$145m, the station will have two 500 MW generators, the largest so far in the State. The first unit is expected to come into service in 1976 and the second in 1978.

Annual brown coal production, mainly for electricity generation, rose from over 8.7 million tons in 1955 to 21.5 million tons in 1971 and the briquetting industry, unique in Australia, achieved very great growth in its early years. From a first year production at Yallourn of only 36,000 tons, plant capacity was progressively raised until it reached 655,000 tons in 1960, when the Morwell project, with a capacity more than double that of Yallourn, came into operation. The combined annual production of briquettes from the S.E.C.'s factories in 1971 exceeded 1.36 million tons. The impact of natural gas and competition from fuel oil, however, make it likely that present installed production capacity will be sufficient to meet future demand. The Yallourn briquette works closed late in 1971, and all future briquetting operations will be carried out at Morwell.

During the late 1960s Alcoa Australia Ltd erected a 150 MW generating station at Anglesea, about 80 miles south-west of Melbourne, to produce electricity for use at its aluminium smelting and semi-fabrication plant at Point Henry, Geelong. Opened in 1969 the power station uses about one million tons of brown coal a year mined by open cut methods from its 115 million ton Anglesea field.

### *History*

#### *Gas industry*

Gas first appeared in Melbourne on 23 July 1849 when William Overton illuminated his two shops in Collins Street with gas produced by carbonisation of coal in a retort constructed by George South, a blacksmith of Fitzroy. The reception given to Overton's venture led him to take steps towards the establishment of a gas company. In this enterprise he gained support and



Ornamental ironwork on verandahs was a feature of many buildings from about 1860.  
*Dr E. Graeme Robertson*

An ornate cast iron gateway belonging to a large St Kilda house built in 1870.  
*Dr E. Graeme Robertson*





The roughly constructed slab shed has been a feature of many farms.

*M. B. Lewis*

A basic rural dwelling in a planned settlement area

*La Trobe Collection, State Library of Victoria*





The factory in Bristol, England, which prefabricated many houses for erection in Victoria in the 1850s.

*La Trobe Collection, State Library of Victoria*

Canvas Town, south of Princes Bridge, in the 1850s—temporary abode for many gold seekers.

*La Trobe Collection, State Library of Victoria*





The Mansion, Barwon Park, near Winchelsea, was built in 1869 and is an example of the many substantial homesteads erected about that time in western Victoria.

*Melbourne Harbor Trust*

The sitting room of the Lindsay home at Creswick, as reconstructed by the Ballarat Fine Arts Society.

*Ballarat Art Gallery*





# The Sandringham Estate

PICNIC POINT BRIGHTON  
 THE MANLY BEACH OF MELBOURNE  
 70 Large Sized Residence Sites 70 THE REAL BRIGHTON OF VICTORIA

Saturday 27<sup>th</sup> November 1886  
 AT 3 O'CLOCK ON THE GROUND



FRASER & CO. in conjunction with WALSTAB & SON.

**FRASER & CO.**  
 WALSTAB & SON  
 By Order of H. SMITH, Esq.  
**Sandringham**  
 New Victoria Railway Station  
 TO SANDRINGHAM WICK  
 10 per Cent  
 DEPOSIT  
 THE CONDITIONS  
 H. S. S.

Advertisement of the Abbott estate subdivision at Sandringham in 1886  
*La Trobe Collection, State Library of Victoria*

Illawarra, Toorak, an extravagant boom period home built in 1890-1891.  
*Dr E. Gramie Robertson*





Glenfern, St Kilda, an example of the Gothic revival style.

*Commonwealth Bureau of  
Census and Statistics*



The Queen Anne style villa, developed after the depression of the 1890s.

*The Age*



The Californian bungalow, very popular in the 1920s.

*Commonwealth Bureau of  
Census and Statistics*



The Spanish Mission style house was also popular between the wars.

*Commonwealth Bureau of  
Census and Statistics*



Langs, Toorak, a block of flats designed by Walter Burley Griffin, c. 1920.

*Commonwealth Bureau of  
Census and Statistics*



A triple fronted brick veneer house, typical of many built in the 1950s and 1960s.

*Commonwealth Bureau of  
Census and Statistics*



A block of flats in Carlton erected in the late 1960s.

*Commonwealth Bureau of  
Census and Statistics*



Newly built houses on a recently subdivided estate in the developing Doncaster-Templestowe area.

*Commonwealth Bureau of  
Census and Statistics*



Belgrave Terrace, a well preserved row of houses in South Melbourne.  
*Gordon De Lisle*

A high-rise block of low rental flats under construction, using pre-cast components.

*Housing Commission*



a public meeting was called in 1850 to consider the establishment of a company for the purpose of supplying the city with gas. An Act of Incorporation was sought from the first Legislative Council of Victoria, but it was not until later that the City of Melbourne Gas and Coke Company Act was passed. The first gas works was erected on a marshy flat between Collins Street and Little Flinders Street West, and from this site gas was first supplied to a portion of the town. The site for another works was subsequently secured on the Yarra Bank at West Melbourne, and in September 1854 the foundation stone of the Melbourne Gas Works was laid. The works, using hand stoked horizontal retorts and coal imported from Scotland, was opened on 3 January 1856.

In the succeeding four years legislation was passed to establish gas supply companies in Ballarat, Geelong, Castlemaine, and Bendigo. In Ballarat gas became available from July 1858, and ten years later was being supplied to some 1,200 consumers. The company was purchased by The Gas Supply Company Limited in 1956. Geelong first acquired a gas supply in May 1860; from that date The Geelong Gas Company provided for the gas requirements of the 23,000 consumers in the Geelong area until natural gas was introduced by the Gas and Fuel Corporation in 1971. Castlemaine received its gas supply from a company incorporated in 1859; the Gas and Fuel Corporation purchased the company in 1956, as it did The Bendigo Gas Company, which had been the supplier for Bendigo since March 1860. Between 1860 and 1890 several gas undertakings were constructed by local municipal authorities in other large towns in the State.

The second gas undertaking in the Melbourne area, the Collingwood, Fitzroy and District Gas and Coke Company was formed in 1860 and an Act of incorporation was passed. A third undertaking, the South Melbourne Gas Company, was incorporated by Act of Parliament in 1872. No limits to the area of supply had been set by Parliament for the City of Melbourne Gas and Coke Company, but the subsequent Acts relating to the Collingwood, Fitzroy and District Gas and Coke Company, and the South Melbourne Gas Company, were specific on this point. However, Parliament did not grant monopoly rights and the areas of the three companies overlapped. This led to the directors of the three companies negotiating for an amalgamation; in 1877 an agreement merging the three companies was ratified, and in 1878 the *Metropolitan Gas Company's Act 1878* came into operation. This Act authorised the Metropolitan Gas Company to supply gas within a circle of radius of 8 miles from the Melbourne General Post Office, but excluded the municipal districts of Brighton, Footscray, and Williamstown where other gas works were operating. The Metropolitan Gas Company continued to function as a separate entity until the end of 1950 when it was incorporated into the newly formed Gas and Fuel Corporation of Victoria.

The first Brighton Gas Company Limited was formed in 1877 and before the end of the year it had commenced supplying the first gas lights in the district. In 1887 the Company merged with the Central Brighton and Moorabbin Gas Company Limited, which had been established in 1885, to form the second Brighton Gas Company Limited. The Company continued to function as a separate entity supplying gas in the Brighton-Moorabbin-Chelsea area until the end of 1950, when it was acquired by the Gas and Fuel Corporation of Victoria.

The Colonial Gas Association Limited was incorporated in England in 1888. The first works acquired or established by the Association were at Benalla, Maldon, Seymour, Shepparton, Wangaratta, and Warragul. At the time, Maldon was a prosperous mining town of some 3,000 people and the Maldon undertaking was the most important of the first six undertakings in which the Association acquired an interest. The Association's Box Hill Works was erected in 1890 when Box Hill was still separated from Hawthorn, Kew, and Camberwell by a large expanse of open country.

The Association subsequently acquired a number of undertakings in the eastern and western suburbs of Melbourne, progressively consolidating its position as a significant contributor to the Melbourne metropolitan gas supply system. The Oakleigh Gas Company Limited and the Footscray Gas and Coke Company Limited were both acquired in 1914, the Frankston District Gas and Electric Company Limited in 1923, and the Williamstown Gas Company's undertaking in 1924. During 1926 the small undertaking of the Dandenong Shire Gas and Coke Company Limited was purchased.

At the same time as the Association was consolidating its position in the Melbourne metropolitan area, it continued to expand in the country areas of the State. The Bairnsdale Gas Company Limited was acquired during 1901 and the Horsham United Gas Company Limited in 1913. The Colonial Gas Association now operates gas undertakings in Victoria whilst its holding company (Colonial Gas Holdings Limited) owns and operates undertakings in New South Wales and South Australia.

The Gas Supply Company Limited was incorporated in Victoria in 1926 and at that time operated gas works at Warracknabeal, Ararat, Stawell, and Bacchus Marsh. Between 1926 and 1958 The Gas Supply Company Limited acquired, either from local government or from private ownership, other country undertakings at Ballarat, Colac, Hamilton, Portland, Queenscliff, Sale, and Warrnambool. In 1946 the Company supplied gas to Wodonga by high pressure gas pipeline from Albury, N.S.W. This was discontinued in 1964 when tempered liquid petroleum facilities were installed at Wodonga. In 1953 high pressure gas was supplied to Point Lonsdale from Queenscliff. In 1963 Bitumen and Oil Refineries (Australia) Limited (Boral) acquired the share capital of The Gas Supply Company. In 1970 this company sold its assets in Victoria to the Gas and Fuel Corporation.

The Gas and Fuel Corporation of Victoria is a public authority of the State. It came into being by Act of Parliament in 1950, its formation being a merger of interests of the The Metropolitan Gas Company, The Brighton Gas Company, and the State Government. The Corporation is the largest gas undertaking in the Commonwealth and its duties include encouraging and promoting the use of gas, and advising the Government of means to secure a safe, economical, and effective supply of gas in Victoria. The Corporation has acquired the gas undertakings in Bendigo, Castlemaine, Dandenong, Frankston, Kyneton, Maryborough, Mordialloc, Traralgon, Warragul, and Sale, and has extended its system to supply gas to Maffra, Morwell, and Trafalgar.

The present gas industry in Victoria provides a reticulated gas service for the Melbourne metropolitan area and to some twenty-six communities in country areas throughout the State. Gas undertakings are operated by three companies, the Gas and Fuel Corporation of Victoria, the Colonial

Gas Association Limited, and The Geelong Gas Company. The Gas and Fuel Corporation supplies 84 per cent of all gas sold in the State, The Colonial Gas Association 13 per cent, and The Geelong Gas Company 3 per cent. Eighty per cent of all gas sold is consumed in the Melbourne metropolitan area.

### *Manufacture*

For over seventy years the technical development of the gas industry in Victoria was modelled on English practice with some modifications to suit local conditions. Gas was produced by the carbonisation of bituminous coal in a process similar to that originally developed by Murdoch, and developments were primarily associated with the improvement of retort design and the introduction of mechanical handling. In the early years of the industry the hand-stoked horizontal retort with direct fired furnace was used in all works. As output increased, the larger works introduced stoking machinery. Inclined retorts first made their appearance early in this century and these were followed by vertical retorts of the intermittent type. The introduction of continuous vertical retorts between 1916 and 1922 was a major development which set the pattern of gas making in the State for many years. In 1929 automatic water gas plants were introduced to balance coke production and increase the yield of gaseous products per ton of coal. These processes continued to provide the bulk of the gas produced in Victoria until the 1950s.

Victoria has no reserves of coking coal suitable for gas making. In the early 1930s investigation of the possible use of large reserves of brown coal in the La Trobe valley for town gas production began in the laboratories of the Metropolitan Gas Company. This work led in 1956 to the commissioning of the Gas and Fuel Corporation's Lurgi Pressure Gasification Plant at Morwell, the first plant of its type constructed outside eastern Europe for town gas production from brown coal briquettes. In the post-war years changes in the policies of the petroleum industry led to large quantities of relatively low cost liquid petroleum products and refinery tail gases becoming available to the industry as raw materials. The Gas and Fuel Corporation purchased large quantities of these gases of variable quality, and production methods were varied to enable these to be mixed with coal gas and water gas from existing equipment to produce a blended town gas with constant combustion characteristics. In 1961 The Geelong Gas Company installed an Onia-Gegi catalytic reforming plant specifically designed to produce town gas from refinery tail gases and in the following year a similar plant was commissioned by the Gas and Fuel Corporation. In the same year the Corporation commissioned its refrigerated liquefied petroleum gas storage plant at Derrimut. In country areas, the availability of liquefied petroleum gas led to the progressive closing down of coal-gas plants and the introduction of tempered liquefied petroleum gas plants in their stead.

Between 1945 and 1968 the gas industry in Victoria expanded considerably. The number of customers (represented by meters) increased from 349,698 to 553,106, but more importantly, gas manufacture rose from 53,613,000 therms to 141,144,000. During these years feedstock patterns changed. In 1945, 607,233 tons of black coal were used in the manufacture of town gas. By 1955 this had increased to 676,045 tons but by 1968 had

decreased to 183,756 tons. The use of brown coal and briquettes by the Gas and Fuel Corporation commenced in 1955, reached a peak of 207,114 tons in 1968, and following the introduction of natural gas had ceased completely by the end of 1969. Gas-making oil and refinery gases were used by the Gas and Fuel Corporation, commencing in the early 1950s, and had assumed significant proportions by 1968, comprising over one third of all feedstocks used. By 1971 only liquefied petroleum gas and a small quantity of black coal were being used as feedstocks in gas-making plants in country areas. Various gas-making plants closed down between 1969 and 1971. The Lurgi plant at Morwell closed in November 1969, Highett in August 1969, Box Hill in October 1969, Footscray in March 1970, and West Melbourne in December 1970. The last of Victoria's large plants, the one at Geelong, closed in August 1971.

#### *Distribution and utilisation*

In the early years of the industry gas was generally distributed at pressures of the order of 4 to 8 inches water gauge. Medium pressure distribution (5–20 psig) was first introduced by the Brighton Gas Company in 1913, but its use was not widespread until the 1920s. The first high pressure gas distribution system (20–65 psig) was introduced by The Gas Supply Company at Wodonga in 1946. Since this time there has been a considerable expansion in high pressure direct distribution, enabling the industry to provide gas where supply would otherwise have been uneconomic.

Major production changes necessitated major changes in gas distribution techniques. In 1956 Australia's first high pressure gas transmission pipeline, the 80 mile, 18 inch diameter pipeline from Morwell to Dandenong, was completed by the Gas and Fuel Corporation. This pipeline was designed for pressures up to 500 psig. At the same time high pressure gas distribution trunk mains, operating at pressures of 100–150 psig, were laid in the metropolitan area. With the advent of natural gas, transmission pipelines designed to operate at pressures up to 1,000 psig and distribution trunk mains designed to operate at pressures up to 400 psig have been constructed. Initial distribution systems had been constructed using cast or wrought iron mains. From the 1920s increasing use was made of steel mains and services, and initial test areas using plastic distribution pipework have been installed in several locations in recent years.

Distribution of dry gas was first carried out by the Metropolitan Gas Company, which commissioned the State's first gas dehydration plant at its West Melbourne works in 1933. Due to the construction of further gas dehydration plants, associated with the use of new gas making processes and finally the introduction of natural gas, dry gas constitutes the major proportion of gas now distributed in Victoria.

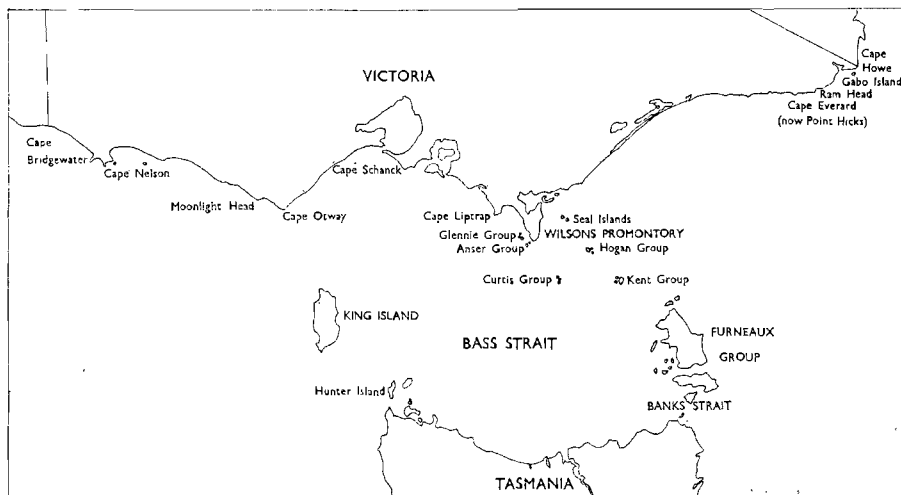
In the early days of the industry the gas produced was used almost exclusively for lighting. Gas cooking began to develop in the 1880s, and gas radiators, the forerunners of modern gas heating systems, were first sold in Melbourne in the 1870s. Modern automatic gas appliances are now available to meet the needs of the domestic and commercial cooking, water heating, and spaceheating markets, and a wide range of specialised gas fired equipment is also used in industry. The introduction in 1969, and the distribution of natural gas, which now comprises about 95 per cent of the gas reticulated in Victoria, is described on pages 164 to 170.



## TRANSPORT AND COMMUNICATIONS

### NAVIGATION ON THE VICTORIAN COAST

When permanent settlements were founded in the Port Phillip District in 1834 and 1835, charts of the adjacent waters, based on information recorded by naval ships during the preceding forty years, were available. In 1836 H.M.S. *Rattlesnake* examined the channels inside Port Phillip, buoying the West Channel and completing three charts, and on several occasions from 1837 to 1843 H.M.S. *Beagle* was surveying in Bass Strait. During 1839, of the 195 ships which arrived in the District, nine ocean going craft with an average tonnage of 436 came from Great Britain. The masters of such ships made a practice of verifying their calculated position by steering for and identifying some salient feature on the coast. In Bass Strait such features, though few, are



Salient navigational features of Bass Strait.

J. K. Crone

well placed, but lighthouses were desirable for identification. In 1840 a primitive lighthouse was erected on Point Gellibrand at Williamstown; two years later another was established on Shortlands Bluff at Queenscliff, to lead ships between Port Phillip Heads. In 1845 a committee appointed by the Legislative Council recommended that lights should be placed on King Island, Cape Otway, the Kent Group, and Cape Howe; in 1848 lights were established on Cape Otway and on Deal Island; and in 1853 a temporary

light was set up on Gabo Island. In the same year R. L. J. Ellery, stationed at Williamstown, commenced determining accurate local mean time. A time ball dropped daily from a flagstaff on Point Gellibrand enabled ships' chronometers to be checked. Subsequently the time ball was erected on a disused lighthouse tower and continued to operate for more than sixty years. In 1857 a second observatory was opened on Flagstaff Hill in Melbourne, to analyse weather reports from land stations and data of ocean currents and winds extracted from ships' logbooks, and to determine the components of the earth's magnetic field. Magnetic data for Melbourne were published in 1860, meteorological and nautical data in 1864, and the results of a magnetic survey of the Colony followed in 1869. In 1863 the two observatories were closed and their work transferred to the new Domain Observatory in Melbourne. Meanwhile, the survey of Bass Strait had been continued by H.M.S. *Herald* in 1853 and 1857.

The discovery of gold in 1851 caused a remarkable increase in the number of ships entering Victoria from overseas; in particular those from Great Britain increased sixfold between 1851 and 1853. In 1855 arrivals declined sharply, though the population continued to increase. The development of the Western District, initially through Portland, was extended by the proclamation of ports of entry and clearance at Port Fairy in 1850 and Warrnambool in 1854. In 1860, besides numerous schooners and brigs, two auxiliary steamships were maintaining a twice weekly service to and from Melbourne; in 1870 two steamers of 300 tons were in that trade, and in 1871 S.S. *Dandenong*, 1,000 tons, initiated a weekly service. Similarly, Port Albert, founded in 1841 and proclaimed a port of entry and clearance in 1850, was the outlet for the whole of Gippsland, and later became the port supplying the gold miners at Walhalla. More steamers were traversing Bass Strait, and their masters were ceasing to maintain a cautious distance off shore and were setting courses as direct as possible from point to point. Closer navigation demanded additional lighthouses and more detailed charts. In 1862 New South Wales established a permanent light on Gabo Island. Following recommendations by intercolonial committees in 1853 and 1873, additional seaward lights were established by Victoria on Wilsons Promontory and Cape Schanck in 1859, Point Lonsdale in 1863, Cape Nelson and Clifty Island in 1884, Cape Everard\* in 1890, and Split Point in 1891, and by Tasmania on King Island at Cape Wickham in 1861 and Currie in 1880, as well as two on the Tasmanian coast. Meanwhile, a survey of the coast and inshore waters was begun in 1865 by the *Victoria* and *Pharos* and continued annually until 1872 when the entire Victorian coast had been surveyed. Thereafter *Victoria* surveyed the offshore waters in Bass Strait, the coast of King Island, and Banks Strait until 1878 when the survey of Victorian waters was terminated. During 1886 and 1887 H.M.S. *Myrmidon* surveyed the waters from Cape Liptrap to the Hogan Isles; thereafter no major survey was made in Victorian waters until the 1950s.

When the Colony of Victoria was proclaimed in 1851 the need for marine legislation was urgent. The *Steam Navigation Act* 1853 created the Steam Navigation Board, instituted the survey of ships, the examination of officers,

\* Renamed Point Hicks in April 1970 on the occasion of the bi-centenary of the landfall of Captain Cook.



Bass Strait coastal lights, 1892 (showing date of establishment).  
J. K. Crone

the granting of certificates, and the enforcement of steering and sailing rules; the *Ports, Harbors, and Shipping Act* 1854 created the Pilot Board; the *Passengers, Harbors, and Navigation Act* 1865 consolidated these two Acts and introduced many provisions agreed to at the 1863 Intercolonial Conference; and by the *Marine Act* 1890 the Steam Navigation Board and Pilot Board were abolished and their functions transferred to the Marine Board of Victoria. With the proclamation of the *Commonwealth Navigation Act* 1912, much of the jurisdiction conferred by the Marine Act, particularly that relating to overseas and interstate ships, passed to the Commonwealth.

Following an investigation of the adequacy of all seaward lights throughout the Commonwealth, unattended acetylene-operated lights were established in 1913 on Citadel Island in the Glennie Group and on Cape Liptrap. In 1915 the Commonwealth assumed responsibility for all seaward lights; conversion to unattended acetylene lighting was effected at Cape Wickham (King Island) in 1918, and at Split Point in 1919; electric illumination was provided at Cape Nelson in 1933, Gabo Island in 1935, Deal Island in 1937, Cape Schanck in 1940, Cape Wickham in 1946, and Cape Everard in 1964; and in 1965 an unattended electrically operated light was established on Hogan Island.

The use of wireless telegraphy for ship to shore communication in Bass Strait began in 1912 when the first coast radio station was opened in Melbourne. By the end of 1916 additional stations had been opened at Mount Gambier, Flinders Island, and King Island. In 1921 all ships over 1,600 tons and all passenger ships, registered in Australia and engaged in the foreign and interstate trade, were required to carry a radio and an operator; in addition to receiving and transmitting distress messages such ships were thereby able to receive weather forecasts, danger messages, and time signals. In 1923 the establishment of radio telephone broadcasting stations and the issue of licences for broadcast receivers enabled small ships not carrying radio operators to receive similar messages. The radio time signals proved

more accurate and convenient than the Williamstown time ball signals, and the latter were discontinued some years later.

Between 1920 and 1946 the development of the gyro-compass and gyro-pilot, electric log, direction-finding apparatus (D/F), echo sounder, and radar made possible greater precision in navigation. From 1938 to 1941 radio beacons were established at Cape Otway, Cape Wickham, and Cape Schanck to enable ships fitted with D/F to plot their positions when in the north-western part of Bass Strait in fog or out of sight of land. In 1964 a radio beacon was established on Gabo Island. But the existing charts lacked the detail needed to take advantage of the precision of the new equipment. In the winter of 1948 H.M.A.S. *Warrego* surveyed Western Port and its approaches. During the summers from 1953 to 1955 H.M.A.S. *Warrego* and H.M.A.S. *Barcoo* surveyed the waters from Moonlight Head to Wilsons Promontory and from Cape Everard to Cape Howe, and studied the tidal streams and currents. In the summer of 1961 H.M.A.S. *Bass* surveyed the waters from Cape Bridgewater to Warrnambool and the approaches to Portland. During the spring of 1970 H.M.A.S. *Moresby* was surveying off Wilsons Promontory. In the period 1956 to 1969 the R.A.N. Hydrographic Branch published four new charts based on the surveys, and two provisional charts of the waters west of Moonlight Head which had not been adequately surveyed.

#### COASTAL SHIPPING

Following the arrival of Henty in the schooner *Thistle* at Portland in 1834 and Batman and Fawcner in the schooners *Rebecca* and *Enterprise* at Melbourne in 1835, settlers quickly reached these areas and, in the absence of roads, sea transport was essential in and between the settlements. Steamships were few, and coastal transport consisted of increasing numbers of small sailing vessels—schooners, ketches, and cutters. In Port Phillip Bay the schooner *Lapwing* in 1838 left Melbourne every tenth day for Geelong, and two years later eight more small sailing craft were in the Melbourne–Geelong service.

Despite the rapid growth and spread of speedier land transport in the next hundred years, the size of Port Phillip Bay for many decades encouraged the regular use of ships more than along other coastal areas of the State; this may also have been partly because of the relative cheapness of water transport. Several shipping companies carried on passenger and general cargo traffic with Geelong until 1938 when the *Edina*, built in 1854 and first used for transport duty in the Crimean War, retired because of economic conditions. In 1883 the *Edina* provided the cheapest trip in the Melbourne–Geelong trade, with the fare at 1s saloon and 6d steerage each way. Its best known captain, W. C. Forbes, commanded it for 40 years from 1880 to 1920 and claimed to have made 12,000 trips in it to Geelong. Other well-known steamers in this trade were the *Aphrasia*, *Vesta*, *Express*, *Despatch*, *Alert*, *Excelsior* and the larger excursion steamers, *Courier* and *Coogee*, both of which were withdrawn from service in 1927 when the Geelong bay trade began to decline.

Other Port Phillip seaside resorts (Queenscliff, Portsea, Sorrento, Dromana, and Mornington) were served first by small tugs and later by screw and paddle steamers. Amongst these in early days were the *Mystery*, *Williams*, *Golden Crown*, and *Lonsdale*. In 1886 came the first of the three

larger paddle steamers specially built for the excursion trade, the *Ozone*, followed by the *Hygeia* in 1890 and in 1910 by the largest, the *Weeroona* of 1,412 tons, which carried hundreds of passengers. These three popular steamers catered for "trips down the Bay" until 1939; during the Second World War the *Weeroona* was used as a convalescent ship in New Guinea, and after the war was broken up in Sydney. A "mosquito fleet" of dozens of picturesque light draught schooners and ketches plied around the Bay during the second half of the nineteenth century, and even until the 1920s. Later equipped with crude oil engines, they brought she-oak and tea-tree firewood from Mornington, Dromana, and Rye, lime from Sorrento and Portsea, and shell grit from Portarlington and around Corio Bay for the glass bottle works at Newport. One such small craft was the topsail schooner *Aquila*, which freighted wool from Geelong to Williamstown.

Along the western coast of Victoria small sailing ships and steamers carrying general cargo and passengers traded regularly from early years to Warrnambool, Belfast (Port Fairy), and Portland. Stephen Henty had the *Edina* and Howard Smith and Co. had the *Derwent* on this run for some years, but most of this fleet was owned by the Belfast and Koroit Steam Navigation Co. which carried Western District produce for the Melbourne market. From 1849 onwards many schooners and ketches had called at other smaller ports, particularly at Lorne from where timber splitters in the Otway forest shipped some wood to Melbourne and Geelong for the building industry. Much other minor coastal trading was carried on in different settlements at varying times; for example, a schooner traded in ochre at Point Addis near Anglesea during the First World War. Ships whose names became well known along this coast were *Western* (which mainly carried dairy produce), *Cape Otway*, *Julia Percy*, *Nelson*, and *Dawn* (which carried dairy produce, pigs, and sheep). The best-known of this fleet was the *Casino* of 425 tons which called at Port Campbell when weather and tides permitted, and also called regularly at Apollo Bay, where it was at times the only link with the outside world, carrying wool, meat, butter, and other essential items; it was in this bay in 1932 (on the fiftieth year of its running on the Victorian coast) that it foundered in a gale with the loss of more than half its crew. At this time railway and motor vehicle competition was becoming too much for the coastal trade, and within two years the remaining steamers on this run were withdrawn.

Coastal shipping to the east of Melbourne centred mainly on the Gippsland lakes, particularly after the new entrance to the lakes had been opened in 1890 enabling steamers to enter these inland waterways. Before that time schooners and ketches had been the principal means of transport, transferring their cargoes from Melbourne to the small steamers which plied inside the lakes and on the Mitchell and Tambo Rivers. The last five of the twelve passenger steamers which traded on the lakes survived from 1880 until the 1930s, when motor transport forced the end of the lake and river traffic; gradually these steamers were broken up or used as barges. Two of the five, the *Omeo* and the *Dargo*, ran from Sale to Lakes Entrance; two others, the *J.C.D.* and the *Gippsland*, plied between Bairnsdale and Lakes Entrance. These four steamers carried large cargoes of fish for railfaring from Bairnsdale and Sale to the Melbourne fish market. The fifth steamer, *Tanjil 2*, ran from Bairnsdale to Bruthen on the Tambo River, carrying Melbourne cargoes

transferred from the *Despatch* for the gold mines in the Tambo valley, and returning to the *Despatch* with quartz from the mines, maize, wool, hops, and other produce to Melbourne. The *Tanjil 2* also ran a small seasonal trade to Marlo, carrying maize from the rich Snowy River flats. The *Despatch* was the best-known east Victorian coaster from the 1870s until 1911 when it sank without loss of life after striking the pier at Lakes Entrance. Other ports of call on this coast were Waratah Bay where ships picked up lime, and Port Albert where goods and materials were landed for the gold mines at Walhalla.

Western Port trade was small, operated in the early years by schooners and ketches such as the *Swan*, *Vision*, and *John and Elizabeth* carrying general cargo and local produce to and from Phillip and French Islands. Most of the trade eventually went to the owners of steamers which began a regular ferry service from Hastings and Stony Point via Corinella and San Remo to Cowes on Phillip Island. From the *Eva* in 1858 more than a dozen steamers have ferried cargo and passengers in Western Port until the present day. The most famous of these was probably the *Genista* which brought into being the Phillip Island and Westernport Shipping Co.; others have been the *Alvina*, *Narrabeen*, *Killara*, *Reliance*, and at the present day, the *Eagle Star*.

#### MELBOURNE HARBOR TRUST

Although ships brought passengers and cargo to Melbourne when the first settlement was established on the Yarra River in 1835, the Port of Melbourne was not established until 1876 when the Melbourne Harbor Trust Commissioners were constituted as the port authority under the Melbourne Harbor Trust Act. The Act came into force on 1 January 1877.

A demand for improved facilities for ships had been made as early as 1843, when the Melbourne Town Council called for a survey of the Yarra, as sand bars obstructed the passage of heavily laden ships which brought supplies to the growing population, then already numbering 24,000. In 1852 the Melbourne City Council and the Chamber of Commerce attempted to establish a harbour trust but their plans were unsuccessful, and in 1859 a Select Committee of Parliament appointed to consider the institution of a river and harbour authority reported that a harbour trust or some similar body was required to carry out the necessary harbour works adequately. In 1860 a Royal Commission was appointed to make an exhaustive inquiry into the question of accommodation in Hobsons Bay and along the river, and its comprehensive report favoured the establishment of a harbour trust: a second Royal Commission made a similar recommendation in 1872. In 1875 a joint committee of the Chamber of Commerce and the Underwriters Association submitted a report to the Commissioner of Trade and Customs, accompanied by a draft Bill to constitute a Board for the "Management and Improvement of the Port of Melbourne and for the Conservancy of Rivers". A year later an Act establishing the Melbourne Harbor Trust was passed. Under this Act fifteen commissioners were to comprise the corporate body established and named the Melbourne Harbor Trust. Twelve commissioners were to be appointed by the municipalities, owners of ships, and merchants and traders in the municipalities, and three by the Governor in Council. The number of commissioners was increased to seventeen in 1883.

An English engineer, Sir John Coode, was engaged to prepare a

comprehensive scheme of harbour improvement ; his report was presented in 1879 and was adopted with modifications. The existing course of the Yarra was to be largely maintained, although a cutting was planned to avoid Fishermens Bend, so providing an access route which was shorter by one mile to berths near the city ; a dock system was to be constructed on the West Melbourne swamp behind the gas works, with a complete system of railway connection ; and parts of the river were to be deepened. Work started on the cutting in 1884 and the channel, known as Coode Canal, was officially opened in 1887. It was 2,000 ft long, 300 ft wide, and 25 ft deep. Work on Coode's plans for Victoria Dock on the West Melbourne swamp was begun in 1887, and in 1892 water was let into the 96 acre basin. In 1893 the first ship entered the dock, which was to become Melbourne's principal import and export terminal. Despite Sir John Coode's opinion that masonry and concrete construction should be used for the Victoria Dock wharves, timber piling was adopted at the suggestion of Joseph Brady, engineer to the Commission, because of the speed with which wharves could be constructed, the nature of the ground, the large supply of fine hardwoods, and the comparative economy. These original timber foundations were used nearly eighty years later when Victoria Dock was deepened and berths were reconstructed to suit modern cargo handling requirements calling for heavy load carrying wharf aprons.

When the new Harbor Trust was established a number of wharves and jetties which the Government had built were handed over to the commissioners, and the value of these facilities was then estimated at £250,000. Much of the revenue of wharfage and tonnage rates received by the Government had been spent in dredging the river, which had had a depth of 10½ ft in 1856 and 14½ ft in 1876. The Act of Incorporation provided that the new Trust should pay the Government one fifth of its revenue every year as repayment for the property, and this charge, varied and amended from time to time, is now calculated at 20 per cent of the revenue gained from import wharfage and tonnage. Apart from this statutory payment to the Government the commissioners have always been financially independent and are responsible for their own revenue and the raising of loans for capital works. The commissioners' loan liability determined by the State Parliament varies, and in 1971 their maximum loan liability stood at \$50m.

To meet increased trade and the demand of shipping, port facilities developed gradually along both sides of the river and in Hobsons Bay. The port has developed much as envisaged by the commissioners as early as 1884, with the exception of Webb Dock at the river entrance, and the cutting of Swanson Dock in the land cut off by Coode Canal. The Appleton Dock system was first proposed in 1914, and although some work started in 1926, it was not completed until 1956.

In 1913 the Act was amended to reduce the number of commissioners from seventeen to five. These comprised a permanent chairman and four part-time commissioners who, under the terms of the Act, were required to have special and separate qualifications : one was to be a shipowner, one an exporter, one an importer, and one was to be associated with primary producers. All five commissioners were to be appointed and not elected members. In 1954 a sixth commissioner, associated with the interests of

labour, was appointed. Until 1972 there had only been four chairmen of the Melbourne Harbor Trust since 1913, the year in which all wharves, piers, and jetties within the Port finally came under the authority of the Melbourne Harbor Trust Commissioners. Until then, the commissioners had not been responsible for the railway piers at either Port Melbourne or Williamstown.

During the 1960s a major reconstruction and modernisation of port facilities took place, the river was widened and deepened, and many projects were finally completed. With the introduction of major changes in shipping and cargo handling techniques (especially container and roll-on, roll-off facilities), berth utilisation and the handling of cargo reached new peaks. The port now handles annual cargo tonnages of about 16 million tons.

#### GEELONG HARBOR TRUST

Although port facilities have existed in Geelong's inner harbour since the early 1840s, the "bar" at the entrance prevented the larger commercial vessels entering to load wheat or wool unless they were towed into the inner harbour. It was not until 1893 when the Hopetoun Channel, with a low water depth of 23 ft and a navigable width of 130 ft, was opened that development became possible. Progress continued to be slow due mainly to the Colony's economic depression, but also to the fact that Melbourne far outranked Geelong as a port. Geelong was granted an autonomous Harbor Trust in 1905.

Despite the lack of finance until the late 1930s the commissioners pursued a continuing policy of port development, and in 1939 the Hopetoun Channel with a width of 300 ft had a dredged depth of 29 ft at low water. Trade development was assisted by the establishment of the Ford Motor Company near the port in 1925 and the International Harvester Company in 1938; two major superphosphate works were also set up nearby. After reorganisation of the Trust in 1933 large revenue deficits were written off and extraneous non-shipping activities were gradually reduced. The Grain Elevators Board built its Geelong terminal in 1936 on land vested in the Trust. The terminal, through which most of Victoria's export wheat passes, has a storage capacity of 30 million bushels.

After the Second World War the commissioners implemented a port development plan. Development was assisted by large capital grants from the Victorian Government, and an assured wharfage revenue on oil refinery imports which began in 1953. Although amended according to shipping trends, this plan is now complete and since 1971 the port has had twenty-one modern berths and a low water depth of 36 ft in its 17 miles of approach channels and at berths requiring deep water. To keep pace with the ever increasing need for deeper water, it was necessary to engage a contractor almost continuously from 1952 to 1968 to dredge approach channels from 29 to 36 ft and to widen them from 300 to 400 ft. Berths were also deepened as required.

The Port of Geelong now handles annual cargo tonnages of about 8.5 million tons with a fleet of modern tugs and mechanical equipment.

#### PORTLAND HARBOR TRUST

Portland is situated on the south-western coast of Victoria and is within a few miles of the main overseas and interstate shipping lanes. Natural deep



water approaches provide access to the entrance of the 250 acre harbour basin which offers depths of 36 ft at low water. With the inception of the Portland Harbor Trust in 1950 three local commissioners were appointed to take over the control and management of the port. The Board of Commissioners is a corporate body appointed on a part-time basis, and represents those concerned with port activities. Since 1950, when about 58,000 tons of cargo were handled, there has been a considerable increase in the volume of Portland's shipping; in 1970-71 over 842,000 tons of cargo were handled.

Nearly \$12m was spent between 1950 and 1960 on the construction of the first stage of harbour development. Since this was completed in November 1960, expenditure on construction works has almost doubled to serve the requirements of shipping, cargo handling, and trade. These works include a modern tanker berth, the erection of a 2 million bushel bulk grain terminal, a 4 million bushel horizontal wheat store, two additional transit sheds and cold storage facilities, the construction of a new bulk cargo berth as the first stage of development of a second quay, and the reclamation of a substantial acreage of industrial land adjacent to the main shipping berths to meet the demands of secondary industry. Work to provide a minimum depth of 40 ft of water for bulk grain vessels alongside No. 1 berth is planned to be completed by the end of 1973. The Trust's tug fleet of one small and one medium sized vessel was enlarged in 1969 by the addition of a new 1,600 hp seagoing tug fitted with the latest fire-fighting equipment.

#### WESTERN PORT

In 1839, four years after the establishment of the Port Phillip settlement by John Batman, Lieutenant-Colonel John McHaffie was granted a pre-emptive right over what was known as the Phillip Island "run". Development continued with the acquisition of land. Sheep farming was the principal industry, supplemented by agriculture, timber milling, oyster harvesting, fishing, and the coal trade from San Remo. The island was also a tourist resort. To service this area many small schooners and ketches traded between Melbourne and several places on the foreshore of Western Port, while a regular ferry service began between Phillip Island and Stony Point in 1868.

The Royal Australian Navy first became associated with the port in 1911 after the tabling of the Henderson Report, and on 12 February 1912 the construction of new naval buildings at Western Port began. Additional buildings were constructed in succeeding years, and in September 1920 the naval base was officially opened as H.M.A.S. *Cerberus*. In 1921 the base became the main training establishment for the Royal Australian Navy.

The first attempt to establish Western Port as a worthwhile commercial shipping terminal was made in 1932, when the *Vincas*, an oil tanker of 4,653 tons loaded with a cargo of motor spirit, anchored off Stony Point. The *Vincas* remained at anchor for three years while unloading its cargo, which was floated ashore in 66 gallon drums whenever markets became available. No further development took place until 1963. In that year the Victorian Government enacted the *Westernport (Oil Refinery) Act 1963* to permit the establishment of the BP refinery on the bay's western shore. The Act also authorised the construction at a cost of \$7m of State-owned port facilities

and harbour services for use by the company. These facilities comprised a two berth marine terminal of steel and reinforced concrete construction at Crib Point, with the main and secondary berths designed for tankers up to 100,000 and 40,000 tons d.w., respectively. The terminal is served by a 13 mile long buoyed channel with minimum widths of 1,300 ft in the undredged and 600 ft in the dredged sections. Depths provided are 49 ft and 47 ft below chart datum in the channels and the 2,000 ft diameter swinging circle, with 52 ft and 42 ft, respectively, alongside the two berths. Harbour services provided include two fire-fighting tugs with bollard pulls of 23 tons, mooring services, and a port office and depot ; this stage was commissioned in July 1966.

The *Westernport Development Act 1967* enabled the Esso/B.H.P. fractionation plant and crude oil storage facility to be established at Long Island Point some 2 miles north of Hastings, in the second stage of development. It also authorised State expenditure of \$3.5m to build a single berth marine terminal for the export of liquid petroleum gas and crude oil from the Bass Strait fields. The steel and reinforced concrete terminal was designed for 100,000 tons d.w. tankers, but the channel depths in the 800 ft wide channel from Crib Point and the 1,900 ft diameter swinging circle were limited to 42 ft at first, for a tanker size of 40,000 tons d.w. When additional drilling by Esso/B.H.P. in Bass Strait indicated that large reserves of crude oil had been discovered and proved in addition to natural gas, the jetty design was amended and channel depths increased to 47 ft to allow 100,000 tons d.w. tankers to use the facilities immediately on completion. The *Westernport Development Act 1970* increased the financial limit to \$6.05m for the additional works, and also permitted Esso/B.H.P. to use the Crib Point terminal to enable additional loading facilities to be used with any increased rate of shipping. The Long Island Point terminal was commissioned in March 1970.

The third stage of development of this region was authorised by the *Western Port (Steel Works) Act 1970* which provided for the establishment by John Lysaght (Australia) Ltd of a fully integrated iron and steel works on some 2,000 acres of land at Tyabb ; it provided for wharf construction and ownership by the company, with dredging to be done by the State. The company in 1972 completed the wharf to serve the first stage of the works (cold reduction facilities) and the State has also completed the channel extension and swinging circle to serve this berth at a cost of approximately \$1.6m.

The existence of large energy sources in Bass Strait as well as the depths available in the port and the markets near large centres of population could indicate the further large scale development of the port and industrial complex. Several major enterprises already hold large areas in the port, foreshadowing further development. The port traffic has increased from some seventy-seven tankers carrying 1,066,000 tons of petroleum products during 1966-67 to 118 tankers handling 3,046,000 tons of petroleum products in April, May, and June 1971.

In addition to providing the port facilities the Public Works Department, pending the proclamation of all the provisions of the *Environment Protection Act 1970*, controlled the standard of industrial effluent discharge, and high standards were set requiring extensive treatment facilities by the companies.

## PORT PHILLIP PILOTS

Licensed pilots have been available at Port Phillip Heads since 1839 when merchants petitioned Governor Gipps to grant a licence to George Tobin, "a seaman and shipmaster for nearly twenty years". Tobin's licence was dated 24 June 1839, and he was allowed to charge the same rates as Sydney pilots. By 1841 six pilots were licensed and the cutter *Ranger* was sent to assist them, the Government claiming one sixth of the pilotage dues to maintain her. However, whaleboats from Shortlands Bluff were still used to board incoming ships, and in rough weather they led the ships through the Heads.

Tidal streams through the 1½ mile wide entrance into Port Phillip Bay have scoured the limestone rock into a deep chasm around Point Nepean, the eastern headland. Ships approaching too closely, without local knowledge, often foundered on the reefs bordering both shores, and it became necessary for a pilot cruising station to be established well offshore. On 9 January 1853, therefore, the brigantine *Boomerang* established the continuous offshore cruising station which has since been maintained. The cutter-yacht *Corsair* relieved the *Boomerang* soon afterwards, and the pilot schooner *Anonyma* joined the *Corsair*. Pilots were put on a salary and the service was taken over by the Government.

The gold rushes brought many more ships to Port Phillip. By 1854 fifty-six pilots were on the payroll and the schooners *Empire* and *Pacific* were assisting the three pilot ships. These extra ships resulted in a rise in pilotage rates and the Pilot Board was established to administer the service. The pilots were invited to buy the three pilot ships, form themselves into companies, and take over the service on a co-operative basis. Each pilot received his individual earnings, with proportionate deductions to pay for the establishment. Vacancies in the service were advertised in the *Government Gazette* and the best qualified shipmasters to apply were licensed by the Pilot Board under a bond of £100. While one of the ships cruised 20 miles offshore to supply pilots to incoming ships, another was stationed just outside the Heads to disembark outward bound pilots. The third ship was anchored inside and the three changed stations as the supply of pilots demanded.

In 1857, when 2,190 ships entered the Heads, there were fifty-three pilots. One was in charge of each pilot ship with an apprentice pilot as chief officer. On 2 October 1859 the *Anonyma* was wrecked westwards of Point Lonsdale without loss of life. A sister ship to the *America* of yachting fame was built for the Port Phillip Pilots at a cost of £4,000; it was named the *Rip*, and was commissioned on 2 June 1860. Thirteen years later it was dismasted off Point Nepean while beating seawards on the ebb tide against a south-westerly gale. One pilot and three seamen were drowned but the schooner proved its capabilities by struggling back to the anchorage, waterlogged and badly damaged. Soon afterwards the *Corsair* was wrecked under similar circumstances, but without loss of life. The *Rip* was repaired and recommissioned, and the yacht *Mavis* was brought out from England to replace the *Corsair*. In 1887 the Pilot Board was disbanded, and the Marine Board was formed to administer the maritime affairs of the Colony and of the pilots.

As steamers were superseding sailing ships, the 330 ton *Victoria* was built at Williamstown for the pilots in 1901. Two years later the sailing craft

were finally paid off when the steam yacht *Alvina* joined the *Victoria* and maintained a continuous steam cruising station. By 1925 the *Alvina* was due for replacement and the *Komet*, the yacht of the former German Governor of New Guinea, a First World War prize renamed H.M.A.S. *Una*, was bought and renamed *Akuna*. The diesel-electric 1,300 ton *Wyuna*, which was designed and built for the pilots and went on station in 1953, can remain outside for six months without refuelling. Only one ship was now needed, and two crews were engaged for the *Wyuna*, a change-over being effected every Monday morning. *Akuna* was paid off and *Victoria* kept as a relieving ship. It was finally scrapped in 1956 when a Second World War corvette, H.M.A.S. *Gladstone*, was converted into a relieving pilot ship and renamed *Akuna II*.

In 1971 thirty-six former Australian shipmasters were licensed by the Marine Board to perform all pilotage within Port Phillip Bay and Western Port. One is permanently in charge of the Williamstown Pilot Office as secretary-treasurer; the others, in turn, take charge of the *Wyuna* cruising off the Heads; thirty-four are rostered for the various pilotage duties. Pilots for inward ships are organised by the Pilot-in-Charge of *Wyuna*, and all others by the Pilot Office. Vacancies are filled by shipmasters holding Pilotage Exemption Certificates who have undergone the necessary medical tests. Successful applicants then spend three months accompanying other pilots on their various duties. After examination before Board members they are licensed to pilot ships under 23 ft draught for not less than one year, followed by eighteen months during which they are restricted to a 29 ft draught, before becoming qualified for an unrestricted licence. The draught limit for Port Phillip Bay is 37 ft and for Western Port 47 ft.

Each pilot purchases a share in the pilot ships and other plant, and pilotage rates are set and collected by the Marine Board. Four per cent is deducted for the Board's expenses and 6 per cent for the Pilot Sick and Superannuation Fund. Ninety per cent is paid to the secretary-treasurer for crew and staff wages, stores, etc., and for the pilots' remuneration, which is determined by the Marine Board.

#### ROADS

From 1851, when Victoria became a separate Colony, the Government sought to establish an effective road system through trusts and district road boards. Certainly, in some parts of the State, where conditions were good and settlers had prospered, the roads were of a reasonable standard for contemporary traffic, and many fine bridges still remain. However, because of shortages of manpower and money, many roads were impassable to wheeled traffic in winter, and were regularly cut by flood waters.

The first effective move towards centralised control was made in 1910 in a report by the Inspector General of Public Works, who recommended that a roads board be established to manage main roads. A subsequent report published in December 1911 by the sub-accountant of the Treasury also recommended the establishment of a central road authority. It attributed existing conditions to a lack of co-operation between municipalities in the construction and maintenance of arterial routes, the distribution of State aid without supervision or thorough investigation into actual needs, and the absence of a central authority to organise local bodies.

Meanwhile, demands for better roads were being made by Gippsland residents for whom winter conditions were very difficult because of high rainfall and lack of proper road construction. At a meeting held in Warragul on 15 August 1911 representatives of eighteen councils suggested that the Government should grant a loan of £1m at 3½ per cent, with a 1½ per cent sinking fund to establish a development trust to supervise the improvement of main roads, and to recommend proposals for railways and ports necessary for development. As a result of these demands the Country Roads Act was proclaimed on 1 January 1913 and the Country Roads Board was established. It was to carry out surveys and investigations to determine which roads should be main roads ; the nature and extent of Victorian roadmaking resources ; the most effective and economical methods of use ; the most effective methods of road construction and maintenance ; and what deviations should be made or what new roads constructed to improve traffic conditions. The Board was also to purchase all necessary land, machinery, tools, and materials, and to publish the results of its surveys and investigations.

The 1912 Act made available loans of £2m which were to be spent at the rate of £400,000 a year on permanent works, and also provided that the cost of maintenance should be shared equally by the Board and the municipalities. Municipalities were also required to repay half the expenditure incurred on permanent works. In 1924 the Highways and Vehicles Act reduced the statutory contribution from municipalities towards the maintenance of main roads to a maximum of one third. Provision was also made for a municipality's contribution to be reduced in certain circumstances, and this procedure, together with the use of Commonwealth aid without charge to the municipalities, has now fixed the Board's contribution to main road expenditure at approximately 90 per cent.

The Country Roads Board then divided the State into ten districts, and its three members visited every municipality in order of necessity, inspected the roads, and explained the Act to councillors. It was decided that the inspection of a district should be completed before determining which roads should be main roads. The following criteria were adopted : whether they were main arterial roads carrying extensive traffic, or likely to carry extensive traffic, between centres of population or from one district to another ; whether they were subject to considerable traffic from rural districts to the railway systems; and whether they were developmental in character, that is, whether their construction would be likely to lead to wider settlement or increased production.

As a result of the investigations, the Board declared about 5,000 miles of roads to be main roads, and outlined for the municipalities some considerations which were to be followed in the construction of the road system. The main problems were the variety of design standards between shires, lack of equipment, inadequate drainage, thin pavement materials, poor methods of construction, and irregular, unsystematic maintenance procedures. No construction was, therefore, to be approved until surveys and investigations had determined the most suitable location for the road, as faulty alignment had previously caused unnecessary expense. The first contract was let on 23 December 1913 ; it was for metalling on the Olinda road in the Shire of Fern Tree Gully, and the first contract to be completed

was for the construction of  $1\frac{1}{2}$  miles on the main Gippsland road between Drouin and Warragul in the Shire of Warragul.

It soon became apparent that main roads alone were insufficient to provide the farmer with access to railways and markets. Consequently, in 1918 the Government empowered the Board to declare as developmental those roads which would give access to railway stations or to main roads. Loan money was provided, and municipalities were required to contribute 2 per cent towards interest on capital expenditure for 20 years. This was extended in 1922 to  $31\frac{1}{2}$  years. The loan and balance of interest were initially paid from Consolidated Revenue, but later charged to the Board. The programme of construction of developmental roads was completed in 1937.

Another category of road which helped in rural development was the "isolated settlers roads". Short lengths of road were constructed from farm properties to main or developmental roads, and during the depression in the 1930s employment relief funds with additional grants from the Board's revenues substantially increased the rate of construction.

In 1924 the Highways and Vehicles Act was passed and the declaration of State highways authorised. This Act recognised the growing importance of the motor vehicle and removed the burden of providing for long distance "through" traffic from the municipalities. The full cost of both construction and maintenance of State highways is now borne by the Board. The State highways are the primary roads of the Board's system and provide the most important interstate links, as well as those between major provincial centres. The Princes Highway, National Route 1, runs from the South Australian border to New South Wales, passing through Warrnambool, Geelong, Melbourne, Warragul, Sale, and Bairnsdale in southern Victoria. Other State highways include the Hume Highway linking Melbourne to Sydney; the Calder Highway to Mildura from Melbourne; the Henty Highway from Portland to the Mallee through Hamilton and Horsham; the Western Highway, which provides the most direct route between Melbourne and Adelaide, passing through Ballarat, Horsham, and Nhill; the Murray Valley Highway, which runs from Corryong in north-eastern Victoria to Hattah in the north-west; and the picturesque Omeo Highway, which passes through the mountainous country from Tallangatta in the north-east to Bairnsdale in the south-east.

Freeways are roads which generally have dual carriageways and the distinguishing feature of access being controlled from adjoining properties and from side roads. They provide safe direct routes for heavy volumes of traffic, and allow through traffic to by-pass centres of population. Specially designed interchanges provide connections with other roads and streets. An example of a freeway with full access control is the Maltby Freeway on the route between Melbourne and Geelong. Other freeways declared by the Board include the Princes Freeway from Moe to Morwell, the Tullamarine Freeway from Bell Street in Coburg to the Melbourne Airport at Tullamarine, and the Lower Yarra Freeway. The latter two are examples of urban freeways.

Under the *Country Roads (Tourists' Roads) Act* 1936 the Board may construct and maintain tourists roads as proclaimed by the Governor in Council on the recommendation of the Board. Tourists roads include the Ocean Road, roads opening up places of interest such as the Grampians and Wilsons Promontory, and roads to skiing and other resorts. Forest roads are proclaimed and constructed in areas within or adjacent to any State forest

area, or in places the Board considers to be timbered, mountainous, or undeveloped. Under the *Forest Roads and Stock Routes Act 1943* municipalities are relieved of all costs of such roads.

On 1 July 1965 motor registration fees were increased, and the additional revenue has been absorbed in a special fund which has enabled the State's road construction programme to be accelerated beyond that which would have been possible from funds normally available; motor registration fees were further increased from March 1968. Two main sources of finance are available to the Board. From State sources it receives money mainly from motor registration fees, driving licence fees, the proceeds from the *Commercial Goods Vehicles Act*, and repayments from municipalities for their share of main road expenditure. From Commonwealth sources money is provided under the *Commonwealth Aid Roads Act*.

#### ROAD SAFETY AND TRAFFIC AUTHORITY

Before 1935 road traffic was administered by provisions of the *Motor Car Act*, the *Police Offences Act*, and the *Local Government Act*. In that year a *Road Traffic Act* was passed accompanied by separate regulations for country and metropolitan conditions. In 1956 the *Traffic Commission* of three full-time members was constituted, and in 1971 the *Road Safety and Traffic Authority* assumed the functions of the Commission together with the added functions of research and promotion of road safety practices.

The Authority has advised the Government about regulations for the improvement and control of traffic; made any necessary inquiries; and set down standards for traffic control items such as signals, pedestrian crossings, and certain signs, consulting with the operating authorities, which are the *Country Roads Board*, the *Melbourne and Metropolitan Board of Works*, and the municipal councils. In 1960 warrants were developed setting out the conditions for installing all major traffic control devices except speed restriction signs. The warrants are all quantitative, and assist council engineers to assess the need for control at any particular location.

The Authority has been the sole body responsible for the establishment and alteration of speed restriction zones, which range chiefly from 35 mph up to 50 mph in 5 mph intervals. However, in special circumstances it has approved limits lower than 35 mph. These supplement the State-wide 70 mph restrictions introduced in December 1971. The two engineering principles used in applying speed limits are based on either a speed study or a quantitative subjective method of evaluating contiguous development.

In 1958 new *Road Traffic Regulations* were issued. These were more easily understood, and encouraged easier, safer, and more orderly driving; they clearly stated the privileges and responsibilities of both motorist and pedestrian. An important feature was the inclusion of "sign board" legislation, which permitted traffic and parking to be controlled merely by the erection of signs; a severe penalty may be imposed for the illegal erection of a parking or traffic sign. The Regulations have been revised and re-issued regularly, usually at two year intervals, to allow for modifications in traffic control as new measures are evolved and prove satisfactory.

Since 1958 the Authority has received from the *Police Department* a comprehensive statistical report of every accident reported. Since 1960 the information in these reports has been transcribed by the *Commonwealth*

Bureau of Census and Statistics to punch cards which are used by the Traffic Authority for research and analysis purposes. Accident field data are collated by the Authority, and with the assistance of the Country Roads Board the State Traffic Accident Record was published in 1971 showing all reported accidents since 1968 by location and road user movement involved. Statistical tabulations correlating factors from 1963 to 1967 have been published together with tabulations by the Commonwealth Statistician and data supplementary to the location survey. The information forms the basis of research for use by the Government, the Parliamentary Road Safety Committee, and for promotion work in road safety practices.

In 1966 a metropolitan route numbering scheme was introduced to permit convenient identification of routes. A number was allocated to each route, odd numbers being used for north-south routes and even numbers for east-west routes. Studies on major approach routes to the city have been followed by recommendations to the municipalities concerned on such matters as the resetting of traffic lights, erection of signs, restriction of parking, and the siting of bus stops and taxi stands. Clearways have been established along more than 40 miles of street kerbsides with benefits in traffic capacity and in accident reduction.

Since 1952 finance to assist municipalities in traffic matters has been available. The purpose for which the funds could be used has varied from traffic control signs (1952), improving the standard of pedestrian crossings (1958), and improvements to existing traffic control signals (1959). The establishment in 1967 of the Traffic Commission Fund (now the Traffic Authority Fund) allowed recommendations to be made to the Minister to grant subsidies for traffic control signals, pedestrian crossings, and any works or projects calculated to improve road safety or traffic control. All subsidies recommended are on a priority basis, taking into account safety and congestion.

Since 1970 the Country Roads Board has allocated funds for Commonwealth arterial roads as assistance towards the installation of signals on the advice of the Authority, and the Commonwealth Government has subsidised research into the effects of the Victorian seat belt legislation.

#### RAILWAYS

The development of Victoria's railways has been closely tied to the State's demographic and economic development. Before the discovery of gold there was no effective demand for railway services; after 1851, however, the rapid growth of population made such services a pressing necessity. Most accounts of life in the 1840s and the following decade single out the condition of the roads as quite inadequate, and this proved to be the major spur behind railway development. The slow, cumbersome, and inefficient transport of persons and goods from the coast to the gold mining towns could only be corrected by a railway; the era of good roads lay very much further into the future.

Although the early attitude of the Government after Separation in 1851 was in favour of privately owned and controlled railways, the actual experience of these convinced Parliament soon after 1855 that the Colony's railways would eventually become a government responsibility. This became a fact when the Government purchased the early companies and in due



course began to construct as well as operate tracks and rolling stock. The financing of the Colony's railway system was made possible by the raising of successive loans in various places, interest on which in due course became a significant part of the State's debt.

#### *State system*

The earliest proposal for a railway was made in 1839 when Robert Hoddle, surveyor, planned a railway to link Melbourne with a town he had marked out and named The Beach, later to be called Sandridge, and now known as Port Melbourne. The planned line was to run virtually straight from near Queen Street to Hobsons Bay. However, the proposal never progressed beyond the drawing board as the Colony was not ready for a railway. In 1851 plans for railway proposals were considered, and during the next two years eight private railway syndicates were formed, but their appeals for financial support from residents of the Colony were not very successful and most of the projects were abandoned. However, three groups received authorisation from Parliament to build railways. These were the Melbourne and Hobson's Bay Railway Co., the Geelong and Melbourne Railway Co., and the Melbourne, Mt Alexander and Murray River Railway Co.

The first railway to become operational was the two and a quarter mile line from Flinders Street to Sandridge (Port Melbourne) which was opened for business on 13 September 1854; it was controlled by the Hobson's Bay Railway Co. On the previous day Melbourne's citizens had witnessed the ceremonial opening of the railway by the Lieutenant-Governor; large crowds had congregated at Flinders Street Station and along the line to watch not only Victoria's but also Australia's first public railway, the locomotive of which had been built in Melbourne. On the strength of its first year of operation the company built a branch line to St Kilda which was opened on 13 May 1857. The first country railway to open for traffic was the Geelong and Melbourne Company's line connecting the two main cities of the Colony. Work had commenced in 1853 and on 25 June 1857 the line was opened. An arrangement had been made with the Mt Alexander Co. for Geelong trains to travel over its Williamstown branch from Newport to Melbourne, but as this line was not ready in time the Geelong trains operated from a temporary terminus on the Yarra River near Newport; passengers and goods were conveyed by river craft to and from Melbourne. By 1859 Geelong trains were able to run to Spencer Street Station, but by this time the company was in difficulties because the railway had been built at a low cost, its equipment was poor, and competition by steamers operating between Melbourne and Geelong affected its revenue. In June of the following year the railway was purchased by the Government.

The third company authorised to construct a railway in 1853 was the Melbourne, Mt Alexander and Murray River Railway Co., which had an elaborate plan to build a main line from Melbourne to Castlemaine, Sandhurst (Bendigo), and Echuca together with a branch line to Williamstown. Construction started on the line from Williamstown to Melbourne a year later, but progress was desultory owing to a shortage of funds. Eventually, on 19 March 1856 the Government acquired the project. By this time

the Government was very conscious of the need for an adequate inland transport system; the high cost of transportation of food by road to the goldfields was a major factor in highlighting the transport deficiency.

During 1855 a number of committees investigated railway proposals, and surveys were made of 200 miles of prospective routes. Finally on 19 March of the following year the Government was advised to build simultaneously the line to Echuca and a line from Geelong to Ballarat. Staff was then appointed, action was taken to acquire railway plant and equipment from overseas, and tenders were called locally for the necessary earthworks and buildings. The time elapsing between placing of orders for material from overseas and their ultimate arrival delayed construction, and it was not until 13 January 1859 that the first government trains ran from Spencer Street Station to Williamstown and Sunbury. The Ballarat and Bendigo lines were completed during 1862, but Echuca, already a bustling river port, was not connected until 1864. The Bendigo and Ballarat lines were double-track railways built to high standards of construction with commodious stations and imposing viaducts. The Bendigo line alone cost £50,000 per mile, and Parliament was cautious and hesitant, with the limited funds at its disposal, to take on more projects. Many requests for railways were made to Parliament during the 1860s and by 1868 the clamour had become so persistent that, in an effort to provide transport to country areas, the concept of "cheap" or "light" lines was born. By restricting the railways to single track, and specifying lighter rails and more modest stations, cost could be limited to £5,000 per mile. Under the light line concept lines were authorised to Maryborough, to the west from both Ballarat and Geelong, to the north-east, and into Gippsland. By 1880 there were rail connections to Colac, Portland, Horsham, St Arnaud, Inglewood, Wodonga (extended to Albury in 1883), Beechworth, and Sale. The *Railway Construction Act 1884* (the first of the so called "Octopus Acts") authorised the construction of more than sixty lines in various districts, while under a similar Act of 1888 many more railways were built. In the eleven years between 1884 and 1895 the route mileage had increased from 1,600 to 3,120.

Lines opened during the twentieth century have been mainly extensions to the existing main line system and branch lines to more remote areas. Much of the increased mileage comprises railways opened in connection with the development of the Mallee, the Wimmera, the Murray irrigation fruit growing areas, the forests in the north-eastern and Gippsland regions, and the pastoral land in the Western District. Major centres connected include Mildura in 1903, Tocumwal (N.S.W.) in 1908, and Mt Gambier (S.A.) in 1915. During the 1920s several lines were built into the Riverina under an agreement with New South Wales.

The railway network continued to grow with extensions and branch lines. In 1930 there were 4,721 miles but since then construction has tapered off. The maximum of 4,766 miles was reached in 1942. The only parts of the State not now served by the system are the mountainous areas where railway construction is expensive and settlement sparse. In an effort to provide a service to some mountain settlements narrow gauge lines (2 ft 6 in) were built from Wangaratta to Whitfield, from Ferntree Gully to Gembrook, from Colac to Crowes (in the Otways), and from Moe to Walhalla, a total of 122 route miles. Special locomotives and rolling stock were built, but the

lines did not prosper and all have been closed apart from a section of the Gembrook line between Belgrave and Emerald ; it is now operated as a tourist attraction.

The "light line" policy was based on the assumption that as the traffic grew on each line the facilities would be upgraded, and this has been the case. Since the early days trains have become longer and heavier, hauled by more powerful locomotives running on re-laid tracks and over strengthened and rebuilt bridges. New and improved signalling and operating procedures were adopted as the volume and speed of trains increased. The most sustained upgrading of the system began in 1950 and was given the name Operation Phoenix. The rehabilitation was based on the report of an English expert, and was necessary as the replacement of rolling stock and other plant had been curtailed by the shortage of money during the economic depression of the early 1930s and the demands on labour and material during the Second World War ; during the war the railways had been called on to carry increased loads and at the same time turn their workshops into factories for military supplies. Major items in the rehabilitation were the purchase of new locomotives and rolling stock. The re-laying of hundreds of miles of track using modern mechanised methods was begun, and the main Gippsland line between Dandenong and Traralgon was converted to electric traction. Modern diesel rail cars were introduced on branch lines, replacing slow mixed train services. As the new equipment arrived and the tracks improved, train speeds were increased and running times reduced.

In recent years improvements to the system have included the building of the standard gauge line from Albury to Melbourne in 1962, allowing straight-through running between New South Wales stations and South Brisbane to Melbourne. Within a year a bogie exchange service was introduced which has enabled fully loaded wagons to be transferred from the Victorian to the standard gauge or vice versa without disturbing the contents. The most recent modernisation project has been the completion of the electronically controlled "hump" goods classification yard in Melbourne.

#### *Suburban network*

The first suburban railways in Melbourne were the Hobsons Bay original line from Flinders Street to Port Melbourne opened in 1854 and its branch line to St Kilda opened three years later. In 1859 the Government opened lines to Williamstown and Sunbury ; the St Kilda and Brighton Railway Co. opened a line between the two settlements via Windsor, using Hobson's Bay equipment ; and the Melbourne and Suburban Railway Co. opened lines to Richmond and Cremorne from its Princes Bridge terminus. The Melbourne and Essendon Railway Co. opened a line from North Melbourne to Essendon on 1 November 1860. Early the following year, the company opened the branch line to Flemington racecourse. The "Suburban" Co. extended its line to Windsor, and in 1861 reached Hawthorn. Later in the same year the Brighton line was extended from North Brighton to Brighton Beach.

When the Melbourne and Suburban Railway Co. was in financial difficulties in 1862 its assets were sold to a new group known as the Melbourne Railway Co. The Essendon company was in the same predicament and closed its line on 1 July 1864. In the following year for the same reason the Melbourne Railway Co. merged with the Hobson's Bay

company to form the Melbourne and Hobson's Bay United Railway Co. Later the St Kilda and Brighton Co. was absorbed. The "United" company now controlled all lines from the city to the southern and eastern suburbs. A subway was built under Swanston Street which allowed all trains to use Flinders Street Station, Princes Bridge Station having been closed to passenger traffic in 1866. In 1867 the Government purchased the Essendon railway and was able to re-open the Flemington racecourse line in time for the Melbourne Cup.

In 1878 the government railway linking Melbourne with Gippsland was nearing completion but lacked a route into the city. The Engineer-in-Chief recommended a line from Oakleigh to Spencer Street, then the government station, via East Malvern, Camberwell, Fairfield, and North Melbourne, the so called Outer Circle railway. But the Government decided to purchase the "United" company's system and brought their Gippsland railway from Oakleigh to join the suburban network at South Yarra. The State now controlled all the suburban railways in Melbourne, though the company's lines were operated as a separate entity until 1881. Under government control the metropolitan network expanded rapidly. By 1880 it was possible to travel to Williamstown, Sunshine, Essendon, Hawthorn, Dandenong, Brighton Beach, St Kilda, and Port Melbourne, and by 1890 trains were running as far as, and in some cases beyond, Melton, Broadmeadows, Coburg, Whittlesea, Heidelberg, Lilydale, Ferntree Gully, Frankston, and Sandringham. Although the Gippsland railway entered the city from the south, the Outer Circle line was included in the 1884 Octopus Act. A line connecting with the Outer Circle railway at Waverley Road was also authorised at the same time. This was known for some time as the Inner Circle. By 1900 the suburban system as it is today was virtually complete, but not all lines were successful. The Outer Circle railway which ran from Oakleigh to Fairfield was abandoned in stages. The only section now operating is between Riversdale and Alamein. The Rosstown railway between Elsternwick and Oakleigh, built as a private venture in 1888, was never brought into use. The line to Altona, also opened by private interests in 1888, only operated intermittently until 1924 when it was absorbed into the government system.

In the early years of this century the Government became interested in the concept of the electrification of the metropolitan network ; this had been mooted as early as 1896. After two Parliamentary inquiries, C. H. Merz, a London consulting engineer, in 1908 investigated and reported favourably on the feasibility of electrification ; no action resulted, but in 1912 following a revised report, Parliament authorised the electrification of most of the suburban system. Work began in 1913, but progress was slow because of the First World War. Electricity for railway traction was first generated in June 1918 and the first test train ran on 6 October of the same year. The inaugural electric train service began to operate between Sandringham and Essendon on 28 May 1919. Electrification of other lines followed, and on 15 April 1923 the final stage of the original scheme was completed when electric trains ran to Eltham ; there were then 150 miles of line available for electric traction. The following year electrification of outer lines commenced, this work being completed in 1930 when the new line from East Malvern to Glen Waverley was opened. Since the Second World

War short extensions to the electrical suburban network have been made to Upfield, Epping, Belgrave, and Alamein.

The first electric trains were composed of two types of rolling stock. A number of swing door carriages previously used on steam hauled suburban trains were altered for use as electric trains, and new sliding door "Tait" trains were built as part of the electrification scheme. Under the Operation Phoenix rehabilitation scheme the blue steel "Harris" trains were introduced. In 1970 new trains were ordered with many improved features, including a better load to tare weight ratio which was expected to reduce running costs appreciably. In 1971 the Government appointed the Melbourne Underground Loop Authority to finance and construct an underground city railway, on which work commenced in June of that year.

### *Management*

The Government, on acquiring the Melbourne, Mt Alexander and Murray River Railway Co., placed it in control of two trustees, the Commissioner for Public Works and the Surveyor-General. They were responsible to the Legislative Council, the only Parliamentary body at the time. A Board of Land and Works was established in 1857 with authority to build railways and other public works, and with power to supervise all railways, public and private. The President of the Board was a Member of Parliament as were some other members. However, the system proved unsatisfactory; in the 26 years of the Board's control there were thirty-two Ministers and twenty-four Presidents of the Board.

The *Victorian Railways Commissioners Act 1883* provided for the appointment of three Commissioners as a body corporate to administer all railway activities previously controlled by the Board of Land and Works. The first Chairman of Commissioners was Richard Speight, who came from the Midland Railway in England. Apart from operating the existing lines the new administration was to build new railways authorised under legislation. When deficits of more than £1.3m over four years occurred as a result of continuous construction, the Department came under heavy criticism, and in 1890 the Parliamentary Standing Committee on Railways was established with the responsibility of investigating all future railway proposals in excess of £20,000. In 1892 the actual building of new railways was restored to the Board of Land and Works. Drastic economies in railway operation were still needed and retrenchment also became necessary. When the Commissioners indicated that they could not decrease expenses and raise revenue to the extent directed by the Government, their appointments were terminated. During the next four years a succession of acting and deputy Commissioners tried to restore the financial position, but the deficits remained. In the early 1890s the *Age* had severely criticised the Commissioners, accusing them of incompetence, extravagance, waste, and condoning political influence. Commissioner Speight replied with a suit for libel but received only token damages for only two of the eleven points specified. On 1 July 1896 the management was transferred to a sole Commissioner, but in 1903 the board of three Commissioners was restored. The Board of Land and Works has now been abolished, and new construction is now vested in the Railway Construction Board.

*Passenger services*

Early journeys on country lines were slow by modern standards of travel, but appreciably better than the coach services which preceded the railway. Mixed trains comprising both goods and passenger vehicles were a common feature on the Victorian Railways for many years, particularly in country areas. As improved locomotives became available the timings improved noticeably. The carriages used on the first trains were small four and six wheel vehicles of the "dog box" compartment style. Bogie stock did not appear until 1874 when American saloon-style coaches seating up to sixty-four passengers were introduced.

The first through passenger service to Adelaide began on 19 January 1887. Included in the train were specially imported "Boudoir" carriages for sleeping passengers; sleeping services for Victorian intrastate passengers began in 1890 when a sleeping car was introduced on the Portland line. By the turn of the century major express trains were composed of predominantly bogie stock; sleeping and sitting carriages were built for the Adelaide express followed by matching sitting cars for the Sydney express service to Albury. Among the new carriages introduced for the Sydney service was a parlour observation car and a dining car, the first in the State. Dining cars later became a feature of a number of Victorian express trains. During the 1920s and 1930s train schedules were accelerated appreciably.

The first air-conditioned carriage was placed in service in 1935. Air-conditioning became standard for all new carriage building, culminating in the production at the Newport workshops of Australia's first completely all steel, air-conditioned streamlined train, the *Spirit of Progress*. This luxurious train took over the *Sydney Limited* service and ran non-stop to Albury in three hours and fifty minutes. Further air-conditioned carriages were built until construction was curtailed due to the prior needs of the Second World War. Existing sleeping cars were air-conditioned for use on the Adelaide and Mildura services.

The use of diesel electric locomotives provided the potential for further improvements, but the decrease of traffic due to increased use of motor vehicles and aircraft has led to the relegation of some express trains to the status of stopping trains. However, the new motive power made possible a day return service to Bairnsdale, and a new train, the *Gippslander*, was introduced with modern sitting carriages and a buffet car. Self-propelled rail cars were first introduced successfully in 1922 and various types have been used both on main line and branch line work. New air-conditioned rail cars capable of speeds up to seventy miles an hour were introduced on the Ararat to Portland line in 1971.

The interstate services have been maintained. The standard gauge line, opened in 1962 from Sydney to Melbourne, permits direct service without changing trains at Albury. Three services run, the sleeping car service *Southern Aurora*, the combined sitting and sleeping service which has taken the name *Spirit of Progress*, and the *Intercapital Daylight*. The *Overland* operates to Adelaide daily as an overnight service.

*Freight services*

Early goods trains were slow and comprised small locomotives hauling

unbraked, low capacity four-wheel wagons. Two types of goods trains evolved, the roadside or pickup service stopping at intermediate stations to detach or attach as required, and the express or through goods trains. This latter type consisted of wagons consigned to major centres or those to be taken beyond by a roadside train.

Over the years, particularly during the Second World War, the pattern of goods traffic changed. The roadside traffic declined, and diesel-hauled express trains of up to 50 vehicles aggregating 3,000 gross tons were introduced. These travel at near passenger train speeds. Only steel bogie-type goods wagons are now constructed, and special vehicles are built for particular uses.

Since the completion of the standard gauge line from Albury to Melbourne in 1962, the practice of bogie exchange of wagons between the Victorian and the standard gauges has been adopted. This facility, together with greater standardisation of wagon characteristics by the interstate railway systems, has enabled wagons from all mainland States except Queensland to run on Victorian tracks.

Containers are well suited to railway transportation, and train loads of containers are now a feature of the Victorian Railways, with many of the units carrying the markings of overseas shipping lines.

Interstate traffic, motor vehicles, grains, steel, bulk materials, livestock, and containers are seen as the main source of freight revenue during the 1970s.

#### *Technical developments*

The earliest operating locomotive in Victoria was the locally built engine used by the Hobson's Bay Railway Co. pending the arrival of equipment ordered from England. English manufacturers supplied all the other early locomotives, which were small, low powered, and typical of their time, but inadequate for Victorian country line work. Some had to be rebuilt at the railway workshops at Williamstown, which produced their first fully built locomotive in 1872. An interesting practice introduced at the time was the importation of designs together with one or two prototype engines, with local builders supplying the balance of the order; this practice remained in force for many years.

One of the early tasks undertaken by the first full-time railway Commissioners was the rationalisation of the traction system. During the 1860s and 1870s the types and makes of locomotives purchased had varied, and between 1872 and 1882 the number of different classes rose from seven to twenty-five; some of these had come from the absorbed companies and there was need for some sort of standardisation. New classes specified for local conditions had interchangeable components, giving more efficient operation with cheaper maintenance. Passenger engines were of the 4-4-0 type, heavy goods locomotives were 0-6-0 type, and 4-4-0 tank engines were provided for the suburban services. Phoenix Foundry, Ballarat, which between 1873 and 1904 built 352 engines for the Victorian Railways, was the major builder, using plans supplied by the United States and United Kingdom constructors. In 1902 the first of a new D<sup>p</sup> class 4-6-0 type passenger locomotives was completed at the Newport workshops; locomotives could be built considerably cheaper by the railway workshops

than by the Phoenix Foundry, so the department commenced locomotive construction at Newport, Ballarat, and Bendigo. The D<sup>p</sup> class proved very successful and continued to be built for nearly twenty years. The next major class was the A2 class, a 4-6-0 main line passenger engine which proved equally useful on goods work. The largest locomotive built at Newport Workshops was the H class 4-8-4 engine which appeared in 1941, and at the time was the largest in Australia. During the Second World War the railway workshop resources were largely diverted to manufacturing a wide range of military equipment, but some locomotives were completed and put into service. After the Second World War it was apparent that the large number of locomotives required could not be built in Victoria, or indeed in Australia, within a reasonable time, so for the first time since 1912 locomotives were ordered from overseas. Altogether seventy R class main line passenger and 110 light line mixed traffic engines were imported between 1949 and 1954.

In 1951 restrictions on the importation of certain equipment from the U.S.A. were lifted and tenders were called from Australian companies for the supply of modern diesel electric locomotives; the first order was for twenty-six 1,500 hp mixed traffic main line locomotives which were built in Australia from American components. These were not the first diesel electric locomotives to have been introduced into Victoria. In 1951 small shunting engines had been purchased from the United Kingdom, but the arrival of the main line engines saw the start of a complete dieselisation programme, and steam traction is now virtually superseded in Victoria. It is used on occasional shunting duties and to haul special chartered passenger trains organised by railway enthusiast groups.

The first Victorian railway tracks were laid with double-headed iron rails 80 lb in weight to the yard and 12 to 15 ft long, seated in cast iron chairs, the standard British practice. In 1871 the flat bottom rail became standard and a replacement programme began. During the era of the "light" or cheap railways the rails were 60 lb to the yard, but as the years advanced upgrading of tracks took place, and the minimum size of rails is now 94 lb per yard for country main lines and 110 lb in suburban areas. In the early 1930s welding of rails into long lengths began, and in 1971 lengths of 1,080 ft were in use. Present day track re-laying and maintenance is highly mechanised using modern specialised equipment. Bridges of iron and masonry construction on the Bendigo and Ballarat lines, of a high standard for their time, have been strengthened to carry the present heavier trains. On the light lines wooden trestles are being replaced by steel or concrete structures.

Signalling equipment and procedures have also improved. Major steps were the installation of interlocking gear in 1876 and the provision of power-operated three-position signalling equipment in the suburban area in 1915; this latter device will stop a train should it have failed to come to a stand at a "danger" signal. The latest system (centralised traffic control), as used on the standard gauge line from Wodonga to West Footscray, controls all signals and points from Melbourne; remotely controlled points and signals over shorter distances have been used for some years. Safe-working on most lines is supervised by controllers who plot the movement of all trains under their control, making adjustments to schedules where necessary.



## TRAMWAYS

*Melbourne*

In 1916 legislation was passed to amalgamate all Melbourne tramway systems, except two owned by the Victorian Railways, and to appoint an interim board, which was superseded in 1919 by the Melbourne and Metropolitan Tramways Board comprising a full-time chairman and six part-time members. It assumed control of the cable tram system which had first carried passengers between the city and Richmond on 11 November 1885, and by 1891 had 41 miles of cable tramways in Melbourne. Several suburban cable and electric tram systems, mostly owned and operated by local municipal trusts, were also placed under its control. During the 1920s and 1930s the Board converted all cable tramways to electric power, replacing obsolete systems with modern rolling stock and equipment; the last cable tram ran on 26 October 1940.

Apart from a decline during the depression of the early 1930s, the number of passengers carried by the tramways system increased, and with the scarcity of motor cars, as well as petrol rationing during the Second World War, the number of journeys by tram and bus passengers reached 354 million in 1945. Although for some fifteen years after the war the number was higher than before the war it has since declined year by year. This has largely been because of changing social patterns, including the increasing use of motor cars, the development of shopping centres and supermarkets in suburban areas, and the movement of population from the inner municipalities to outer suburban areas where electric trains have provided the quickest city services.

Melbourne in 1970 had 133 miles of electric tramways and 140 miles of tramway bus routes, together carrying over 130 million passengers a year. They provide a general service with concession travel for certain passengers such as pensioners and students.

*Provincial*

The Ballarat Tramways (originally a horse-drawn service) and the Bendigo Tramways (originally steam) began operations in 1905 and 1903, respectively, under the control of the Electric Supply Company of Victoria Ltd. Both systems were acquired by the State Electricity Commission of Victoria in 1934. The Ballarat system covered 13.8 route miles and the Bendigo system 8.6 route miles. In their peak years in the mid-1940s the two systems together carried about 10 million passengers annually, but the number of passengers declined steadily over the years to just over 2.6 million in 1970-71; from 1934 until 30 June 1971 losses on the two systems exceeded \$8.6m. The services have been discontinued and replaced by privately owned buses.

Tramways were operated in Geelong by the Melbourne Electric Supply Co. from 1912 to 1930, and then by the State Electricity Commission until 1956, when they were replaced by privately owned buses.

## AVIATION

Flying in Victoria can be traced back to 1858 when the balloonists Brown and Dean made several flights, but it was not until 1909 that the Aerial League of Australia was formed, and with the pioneer aviator

Lawrence Hargrave as chairman, a branch was established in Victoria. On 18 March 1910 Harry Houdini, flying a French built Voison biplane, made a short circular flight of about one minute's duration, reaching a height of 50 ft from the ground. This was the first recorded flight of a heavier-than-air machine in Victoria. During the First World War aviation developed, and many pilots who were to figure prominently in post-war civil aviation activities were trained at Point Cook.

In 1920 the Commonwealth Parliament passed the Air Navigation Act establishing national responsibility for civil aviation under the provisions of the International Convention on Air Navigation of 1919. Regulations made under the Act established rules for safety standards and provided for the registration and inspection of aircraft, the licensing of aerodromes, and the examination and licensing of personnel engaged in flying and maintaining aircraft. A Civil Aviation Branch of the Department of Defence was formed to acquire and prepare sites for aerodromes and to call tenders for regular air services.

In 1921 a site of 91 acres for an airport was acquired at North Essendon. The airport now covers about 900 acres and has two main runways. The first regular air services operated out of Essendon to Hay, passing abeam of Mt Macedon. This topographical feature provided an excellent visual marker for daylight operations, but in 1930 it became necessary to install powerful electric lights to identify aerodromes, and to provide *en route* guidance for night flying on the Sydney-Melbourne route. Green aerodrome identification lights were installed, and red lights marked hazardous structures; orange boundary lights and landing strip flares were also used.

The increase in regular public transport activities, and the introduction of larger and heavier aircraft requiring greater pavement strength and length of runway, eventually necessitated the construction of a new main airport for Melbourne. This is located at Tullamarine and its construction was begun in 1964. The cost of the project was estimated at \$45m. It was opened for international operations in 1970, with the domestic operations transferring from Essendon in the following year.

### *Operations*

Airways operations, which include air traffic and operational controls as well as flight information and search and rescue services, all had their origins in communications. Ground to air communications were introduced in Victoria in 1934 when a DH-86 aircraft was equipped with special apparatus for the service to Launceston. Initially ground communications to aircraft were supplied, serviced, and handled by Amalgamated Wireless (Australasia) Ltd. Known as Aeradio from its inception, it was taken over by the Civil Aviation Branch in the 1930s. Wood and wire aircraft were in use at this time, and the ground services available to these included meteorological observations and forecasts, and regular in-flight communications on medium and high frequencies. A rudimentary aerodrome control service based on light signals was also established, and Bellini Tosi high-frequency direction-finding apparatus was provided late in 1935 to enable Aeradio to establish bearings on radio-equipped aircraft. Assistance was also provided in less orthodox form, and it was not unknown for an Aeradio operator to assist an approaching aircraft by informing the pilot

when his engines were heard through an overcast sky. In 1936 the responsibilities of the Controller of Civil Aviation were reviewed, and a Civil Aviation Board was established to apportion these responsibilities among specialist members.

On 25 October 1938 a DC-2 aircraft, the *Kyeema*, crashed near Mount Dandenong with the loss of all on board, and the resultant inquiry had a profound effect on civil aviation services. It recommended that flight checking officers, selected for their extensive flying experience, be appointed to check each position report and to brief the pilot on weather conditions. This service is now known as operational control. New navigation aids capable of interrogation from the air were also to be installed, and the very high frequency German Lorenz beacon operating on 33 Mc/s was to be used, not only as an approach aid, but rather to provide both terminal and *en route* guidance. The introduction of radio ranges also channelled airline aircraft into closely defined aerial lanes. The Civil Aviation Board was reorganised and became the Department of Civil Aviation. Supplementing Essendon, smaller Aeradio stations were opened at Nhill and Mildura and new methods of individually lighting runways and taxiways were introduced.

During the Second World War a vast expansion in aviation activity took place. The radio range and direction finding equipment acquired immediate military significance, particularly on the initial inter-city trunk routes. In the early war years medium-frequency homer or non-directional beacons were imported from the United States of America to give greater flexibility to the route pattern available. Control tower techniques were refined, and radio communications were improved to deal with the increasing volume of air traffic and the finer standards of instrument flight. Airport fire service facilities made their first appearance. The medium-frequency direction-finding equipment was replaced with high-frequency equipment which was originally under the control of the Royal Australian Air Force, and after the war this served civil aviation requirements. At the end of the Second World War there were numerous well proven transport aircraft available, as well as competent crews to operate them; as a result there was a rapid growth in civil aviation, predominantly based on the Douglas DC-3 aircraft, but also using some DC-4, Lockheed, and Anson aircraft. Improved techniques became necessary to control aircraft at terminals and to ensure separation *en route*, and after 1946 air traffic control was divided into aerodrome control, approach control, and area control, and movement of aircraft was recorded by use of wooden replicas.

The development of civil aviation services was again affected by an accident when the DC-3 aircraft *Lutana* crashed in mountainous country near Nundle, New South Wales, in September 1948. Following an inquiry the Department reorganised air traffic control into airport control, area control, and operational control, functions which are now exercised from the operations centre at Melbourne Airport. More refined instrument approach procedures were introduced for all aerodromes equipped with radio navigation aids, and the 33 Mc/s beacons were replaced by visual aural ranges. These were very high frequency (VHF) facilities which provided increased reliability and accuracy, and were free from the atmospheric interference associated with medium frequency facilities. Another navigational aid, the

Distance Measuring Equipment (DME), was developed by the C.S.I.R.O. and installed in 1952. It enabled pilots to read accurately from instruments their distance from the beacon.

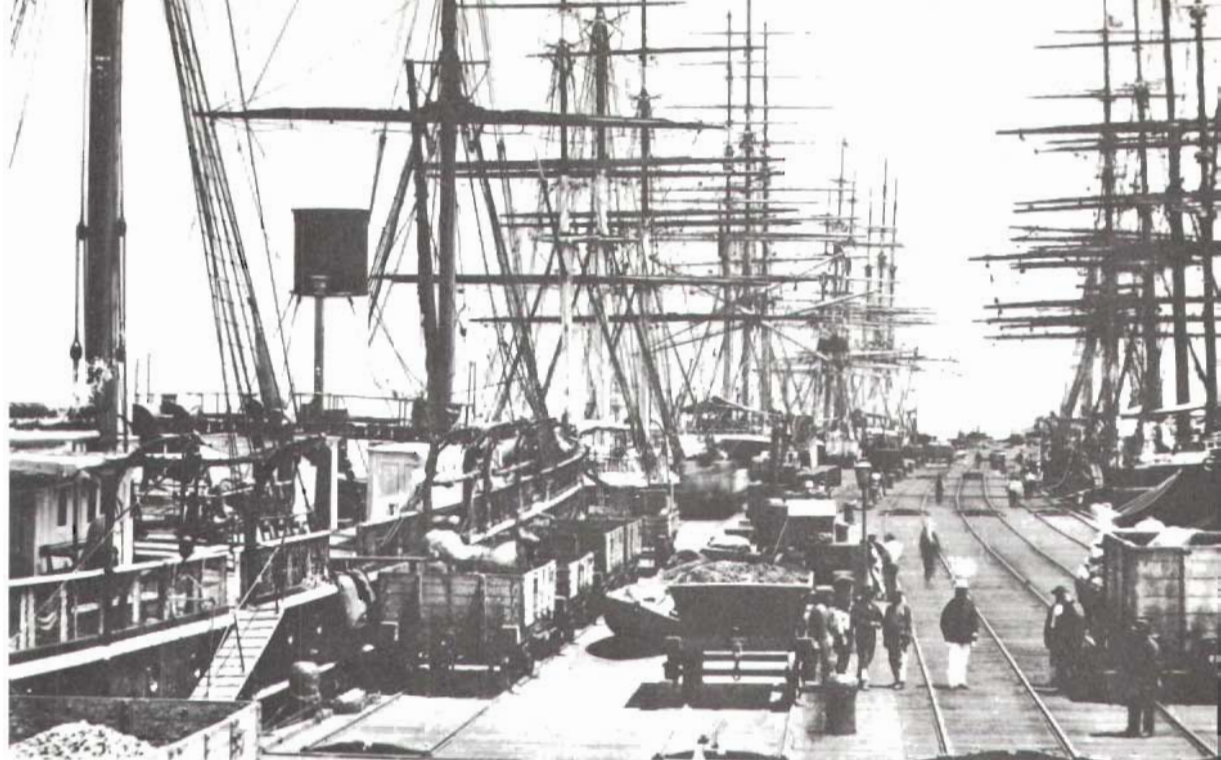
In the early 1950s airway facilities were extended. A system of high intensity approach lighting extending about one mile off the end of the runway was installed at Essendon, and this was supplemented by runway lighting capable of varying brilliance according to visibility. Taxiway and apron area lighting was also improved, and the instrument landing system was introduced. This enabled aircraft to position themselves some 10 miles from the airport. Approach control radar, which replaced the earlier radar at Essendon, enabled the controller to monitor aircraft directly on their approach to land.

In 1956 an aircraft disaster again affected the development of civil aviation services. The loss of passengers and crew on a Constellation aircraft which caught fire at Singapore resulted in the reorganisation and re-equipment of Australia's airport fire service. As there was no specific search and rescue organisation, it was decided that the Department's operational control personnel would be trained to act as such and that the operating companies would contribute search aircraft as required. This is the basis of the present search and rescue organisation.

Aeronautical communications in Victoria have undergone radical changes since 1960. Increased numbers of aircraft flying both inside and outside controlled airspace at vastly increased speeds have made it unsatisfactory to rely upon small low powered transmitters situated at or near aerodromes. An extensive network of VHF repeater stations has been established and ultra-high frequency (UHF) facilities are also being installed at these repeater stations. New high powered transmission and reception equipment was installed at Mt Macedon and Arthurs Seat to facilitate communication over a greatly increased radius. Mt Major near Shepparton was originally chosen as a communications repeater station but was changed to a VHF link repeater when the new communications repeater station was installed at Mt Mittamatite near Dederang in 1970, giving increased northern area cover overlapping into New South Wales. At Mt William in the Grampians a repeater station installed in 1967 gave a wide coverage over northern and south-western Victoria. The Gippsland area, previously neglected in VHF communications, was provided with a VHF communications repeater station at Mt Tassie, the highest point in the Strzelecki Ranges, which covered all Gippsland except the low altitudes in the far east. The entire State now has a VHF communications cover to all but the lowest altitudes, which are covered by a high frequency (HF) network. All VHF and HF communications are operated from the new control centre at Melbourne Airport, Tullamarine.

#### *Airlines*

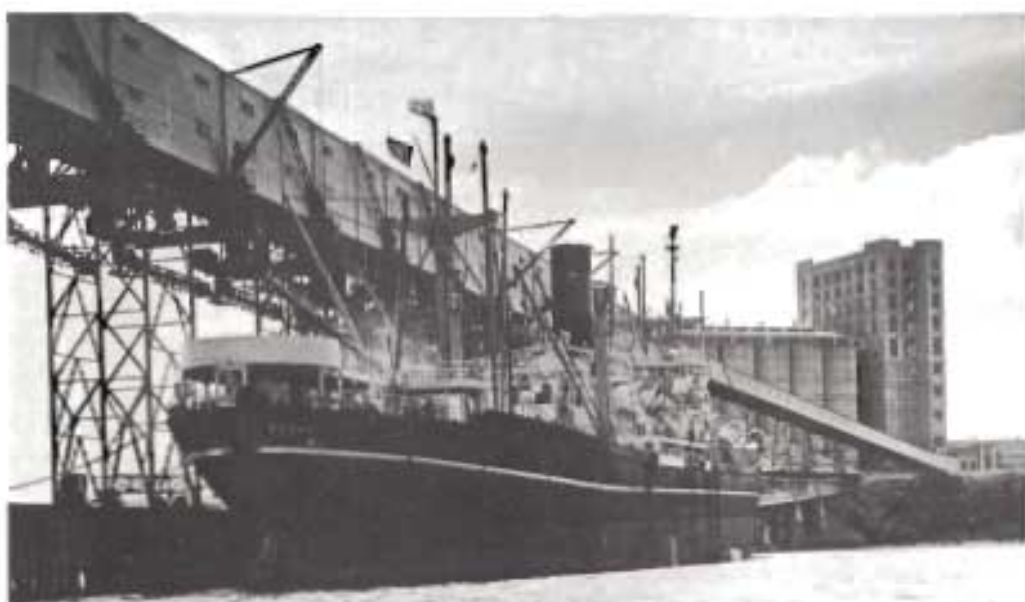
In the early 1930s Holyman Airways Pty Ltd, an associate of the shipping company of William Holyman and Sons, began operating a DH-84 between Launceston and Melbourne, and also organised a Bass Strait airmail service. In 1935 they first imported an all-metal airliner to Australia. It was a 14-passenger monoplane, the DC-2 *Bungana*. Two other shipping companies had formed Adelaide Airways to operate between Adelaide and Melbourne, and the two airlines merged in 1936 to form the Australian National Airways. Ansett Airways was formed in the same year.



Shipping at Railway Pier, Sandridge (Port Melbourne) in 1862.  
*Melbourne Harbor Trust*

Riverside docks on the Yarra, with Melbourne in the background, 1971.  
*Melbourne Harbor Trust*





Echuca wharf during the time of the Murray River shipping trade (top) and the *Hygeia*, one of the former Port Phillip Bay excursion steamers (centre).

*La Trobe Collection, State Library of Victoria*

(Bottom) Loading facilities at the Geelong bulk grain terminal permit two ships to be loaded simultaneously; the gallery loads 1,600 tons an hour.

*Australian News and Information Bureau*



(Top left) This illustration shows the poor state of the early roads.

*La Trobe Collection, State Library of Victoria*

(Top right) A group of motorists at Manyung near Mornington in 1917.

*Kodak Museum of Photography*

(Bottom) Bullock teams were important in early transport.

*The Herald and Weekly Times Ltd*



The St Kilda Road underpass, Melbourne, opened to traffic late in 1971.

*Melbourne and Metropolitan Board of Works*

The then Prime Minister of Australia, J. B. Chifley, introducing the first Holden manufactured at Fishermans Bend, in 1948.

*General Motors-Holden's Pty. Ltd.*







The *Southern Aurora*, an overnight express train between Melbourne and Sydney.

*Victorian Railways*

Princes Bridge railway station prior to the Princes Gate development in the 1960s

*Victorian Railways*





A Melbourne cable tram, the last of which ran in 1940 (left) and a present day electric tram (below).

*Melbourne and Metropolitan Tramways Board*



Trams in Geelong (above) and Bendigo (right) have now ceased operation.

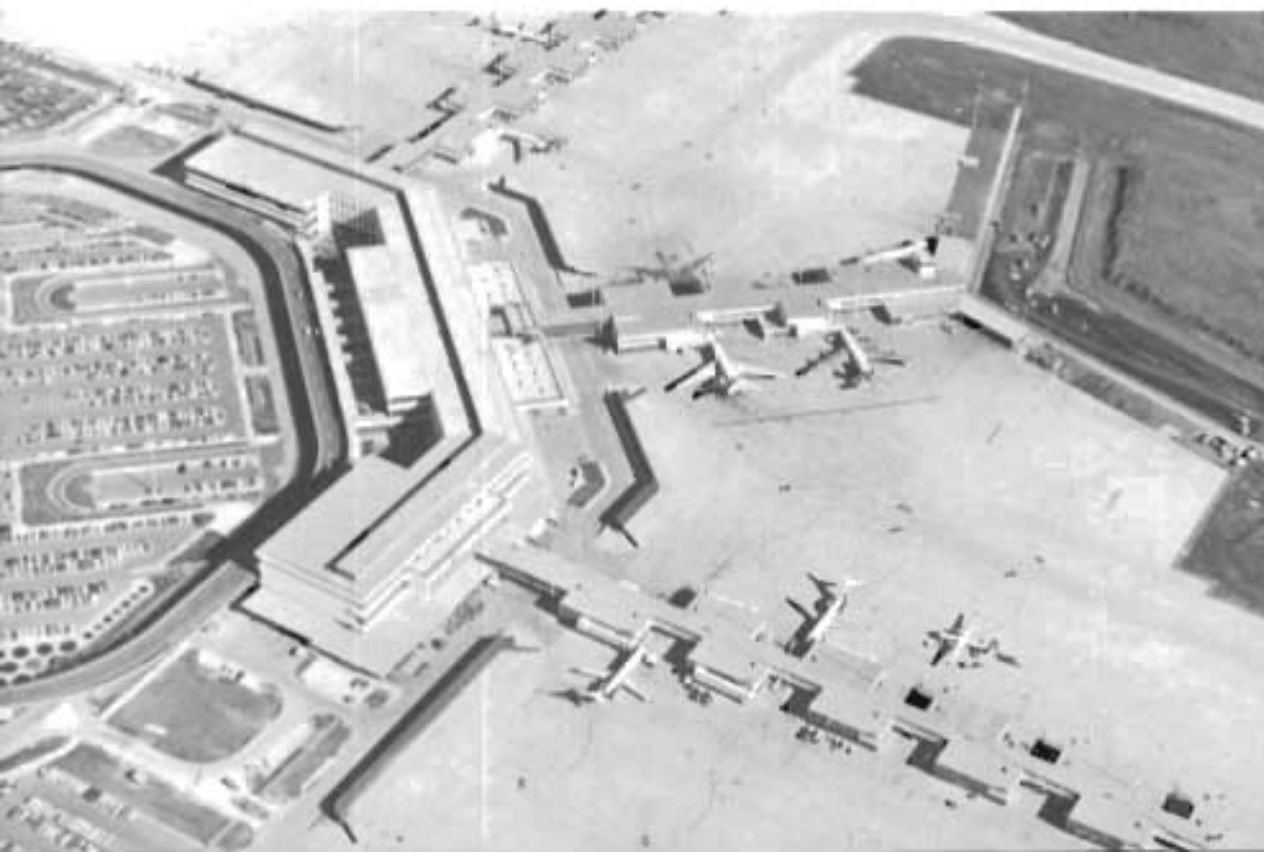
*State Electricity Commission*





Scene at Essendon Airport in the 1930s.  
*Department of Civil Aviation*

Melbourne Airport at Tullamarine in 1971.  
*Department of Civil Aviation*





Melbourne's first post office (in Flinders Street) with Batman's house in the background, c. 1838.

*La Trobe Collection, State Library of Victoria*



The Melbourne radio relay terminal Surrey Hills.

*Postmaster-General's Department*

The economics of Australian domestic airline operations changed radically when legislation provided for the establishment and operation of national airline services by the Commonwealth, and the resultant Australian National Airlines Act, which received assent on 16 August 1945, established the Australian National Airlines Commission. This legislation was challenged by the private airline operators, and in December 1945 the High Court denied the Commonwealth the authority to monopolise air services, but upheld its right to establish a Commission to operate in competition with the privately owned airlines. In February 1946 the Commission was appointed and the formation of Trans-Australia Airlines was undertaken. An application to the High Court by the private operators for leave to appeal to the Privy Council against the Court's decision was disallowed, and in September T.A.A. began operations, with an interim once-daily service between Melbourne and Sydney, using converted R.A.A.F. C-47 aircraft. In the following month A.N.A. applied direct to the Privy Council for leave to appeal against the High Court judgment, but this application was disallowed. By the end of 1946 T.A.A. was carrying passengers, mail, and freight between all States of the Commonwealth. Further litigation ensued in 1950 when A.N.A. and Ansett Airways challenged the provisions of the *Air Navigation Act 1920-1947* and regulations levying charges on airline operators. In November 1952 assent was given to the Civil Aviation Agreement Act, under which A.N.A. was given free and equal access with T.A.A. to government airline business, including mail contracts. The Government also agreed to underwrite a loan of \$6m for replacement aircraft and to accept approximately one third of the \$1.8m debited against A.N.A. for air route charges. A comparable reduction in the indebtedness of Ansett Airways was also granted, and T.A.A., which had paid the charges, received a book entry refund.

Ansett Airways Pty Ltd, though operating on a smaller scale than A.N.A. or T.A.A., became more significant after October 1947, when A.N.A. and T.A.A. increased their fares by some 15 per cent; Ansett's operations then impinged increasingly on those of the two major companies. A.N.A.'s financial position worsened, and the company accepted the offer of \$6.6m from Ansett Transport Industries Ltd for the purchase of the airline and its assets. Ansett Airlines of Australia, as it has become known, introduced special "coach" services, using high density seating DC-3 aircraft on a similar basis to those used by the company for tourist services. With the introduction of the Fokker Friendship aircraft, the DC-3 aircraft were replaced. Flights serving many of the Victorian towns were withdrawn until in 1968 only Mildura, Warrnambool, Portland, and Hamilton were included in the schedule. Ansett Airlines of Australia, the private enterprise company, and T.A.A., the national airline, now operate parallel fleets of turboprop and turbojet aircraft. Both companies are based at Melbourne, where they have set up extensive maintenance, checking, training, and administrative facilities.

#### *General aviation*

General aviation includes flying training, charter operations, agricultural operations, and private flying.

Although civilian flying training in Victoria can be traced back to 1925, it was not until the years following the Second World War that there was a large growth in activity. In 1960 the State had only four training organisa-

tions, but by 1970 a total of thirty-five flying training schools were in operation. This was reflected by the increase in the number of student pilots from 675 in 1960 to 2,586 in 1970.

Charter flying had a similar growth rate and in 1970 there were 110 operators using a variety of single engined and light twin-engined aircraft. Following the withdrawal of airline services to those centres which could not support the larger capacity F27 aircraft, a number of charter operators in October 1967 began services linking country centres with Melbourne, working to fixed schedules with light twin-engined aircraft of capacity ranging up to 12 passengers. There are a number of factors, chiefly economic, which have precluded the establishment of a firmly defined pattern, and further experiment and adjustment will be likely until the public acceptance and demand are accurately measured and economic viability achieved.

Aerial agriculture has also grown rapidly. The first spraying was carried out on a pine forest near Ballarat in 1929, but by 1966 the annual average area sprayed or dusted from the air had reached a peak of 2.2 million acres. In 1956 the Tiger Moth was used for 90 per cent of the total hours flown in agriculture operations, but it has now been replaced by more modern aircraft.

The number of light aircraft operated by private flyers in Victoria has increased threefold since 1960 and the number of pilots holding private licences has increased fourfold during the same decade. The increase in aerial activities in general aviation has made existing airport facilities inadequate. The main general aviation airport in Victoria, Moorabbin, is the busiest airport in the State and the establishment of a number of private training fields at Whittlesea, Tyabb, Lilydale, Melton, Sunbury, and Geelong has been necessary.

#### POSTAL SERVICES AND COMMUNICATIONS

The Port Phillip settlement was established in 1835, and as government approval for the settlement was not obtained until the following year, settlers had to make their own postal arrangements and mail was deposited or collected at the home of John Batman. When Captain Lonsdale was appointed Superintendent of Port Phillip in the following year the postal service came under his control. The senior Customs Officer agreed to act temporarily as postmaster until a permanent appointment could be made, and he performed the duties from about 4 February 1837 until 13 April of the same year. E. J. Foster, Clerk to the Bench, then became the first officially appointed postmaster at Melbourne.

Foster rented a small bark hut in Collins Street, and this served as both residence and post office. By 31 December 1837, after almost nine months of operation, the Melbourne Post Office had handled a total of 1,050 letters and 1,355 newspapers. The postal revenue amounted to £33.10.10. The office of the postmaster was moved frequently until 1841, when an official post office was erected on the site of the present General Post Office at a cost of £1,415. A postal clerk and a letter carrier were provided at the same time. The first bag of mail to be sent from Melbourne to London left on 15 January 1839 aboard the 300 ton barque *Thomas Laurie*.

Victoria's second post office was established at Geelong early in 1840, followed by one at Portland soon after. By 1845 there were fourteen post offices operating in the State, and in 1852 there were forty-six. During 1844 the first post boxes were installed in Melbourne. These were made of wood, and one was placed at each end of the city. Clearances were made twice a day, except on Sunday.

An Act to establish a uniform rate of postage became operative on 1 January 1850; the weight of a single letter (letter consisting of a single sheet of paper) was fixed at half an ounce; postage on inland letters was 2d, and on town letters (for local delivery within a town) 1d. Under this Act, authorisation was given to permit the placing of a contract for the printing of the Port Phillip District's first adhesive postage stamps. The contract was awarded to Thomas Ham, a local engraver, and the stamps became available to the public on 3 January 1850. With the discovery of gold during 1851 the population increased, as also did the volume of mail; in 1850 the Post Office handled a total of 381,651 letters, while in the following year there were over 1.5 million handled by a staff of twenty-two clerks and twelve postmen. Considerable additions were made to the post office building in 1853, extending it to the corner of Elizabeth Street. The main entrance, however, still faced Bourke Street. During 1853 a record 3.5 million postal items were handled. There were then fifty-four post offices in Victoria, and the total staff for the State was ninety-seven.

Telegraphy was introduced into Australia in February 1854 when a line linking Melbourne with Williamstown was brought into operation. The service became available to the public on 3 March 1854, and by 1858 interstate telegraph lines linked Melbourne with Sydney and Adelaide.

An Act to amend the law relating to the Post Office was passed in April 1854. Letters under half an ounce for local delivery within a town were 2d; for delivery to other towns in Victoria 6d; and for carriage by ship to places beyond Victoria 1s. Letters over half an ounce but not exceeding one ounce were charged double rate. Postal rates were reduced the following year. Local letters under half an ounce remained at 2d but letters for delivery to other Victorian towns were reduced to 4d and the cost of ship letters was halved to 6d. In April 1857 the control of the Post Office Department changed, and the position of Postmaster-General became a political office, while the permanent head of the Department was given the title of Deputy Postmaster-General. On 4 June 1858 an Act was passed authorising the issue of money orders in Victoria from 1 July 1858, and during the same year cast-iron letter receivers were first installed in the city and suburbs.

The old wooden G.P.O. soon became inadequate to deal with the greatly increased volume of mail, and although it occupied an ideal central location it was on low-lying ground receiving the natural drainage from the surrounding area. Accordingly, in an atmosphere of growing prosperity and optimism the Government planned a new prestige building capable of handling mail and other post office business for many years to come, and in 1857 offered cash prizes for the best design. The first prize of £300 for the exterior design was won by Messrs Crouch and Wilson, and E. Ramsay won £300 for the best interior design. Demolition work on the old G.P.O. began early in 1859, but a portion of the building was retained so that business could be continued during the rebuilding operations. The low-lying, swampy ground provided

many difficult technical problems for the builders, and elaborate measures were taken to provide adequate drainage. In its original form, the G.P.O. consisted of two floors and an attic. It had a large impressive Postal Hall and a colonnaded exterior, and was completed at a cost of £140,000. The new G.P.O., opened on 1 July 1867, is still in use today. In 1869 a clock which had been designed by R. E. J. Ellery, the Government Astronomer, and made at the Locomotive Workshops, Williamstown, was installed, and a set of five bells was added in 1871.

As Melbourne continued to grow, Australia's first telephone exchange was established there in May 1880; it was operated by the Melbourne Telephone Exchange Co. Ltd. Within two years the company had also opened exchanges at Ballarat and Bendigo, and had changed its name to the Victorian Telephone Exchange Co. The Victorian Government bought out the company in September 1887. Additions to the G.P.O. were planned, and in 1888 a third floor was added and the height of the clock tower was increased to 188 ft. A new clock (still in use today) was installed during 1890, and seven bells were added to the original set of five in 1891.

At this time postal and telephone services in the State were all controlled by the Victorian Government. Following Federation in 1901, postal, telegraphic, and telephone services throughout Australia were unified under one Commonwealth Department controlled by the Postmaster-General. However, the States continued to issue their own postage stamps, and postal rates were not standardised until 1 May 1911. The first issue of uniform postage stamps was made throughout the Commonwealth on 2 January 1913.

Interstate communications were improved in 1907 when the Melbourne to Sydney telephone trunk line service was established. An important telephone development occurred in 1912 when the first automatic telephone exchange was opened at Geelong. Other interesting developments included Australia's first airmail flight, which was made between Melbourne and Sydney in 1914, and the gradual conversion from manually operated morse code to machine operation which began on the main telegraph routes in 1923. During 1915 members of the Telephone Construction and Maintenance Union and the Postal Sorters Union formed the Postal Institute and rented a large room for recreational and instructional purposes. In October 1918 the Postmaster-General's Department took over management of the Postal Institute and provided the second floor of what is now the Melbourne Mail Exchange for Postal Institute purposes.

Melbourne's first broadcasting station was licensed in 1924. It was privately operated by the Associated Radio Company, under the call-sign of 3AR. A national network came into operation in July 1929 with the Postmaster-General's Department providing the technical facilities and the Australian Broadcasting Company the programmes. In 1932 the Australian Broadcasting Commission was constituted by Parliament to take over the broadcasting of programmes for the National network.

By the early 1930s progress in aviation led to expansion in airmail services. An airmail service introduced between Darwin and Singapore was designed to link up with the Imperial Airways London to Singapore service, the inaugural flight taking place on 10 December 1934. Internal airmail flights within Australia were also inaugurated during the same year; Flight Lieutenant C. T. P. Ulm made an experimental airmail flight from Australia



to New Zealand in the *Faith in Australia*, leaving Sydney on 11 April 1934 and arriving at New Plymouth the following day. He also made the first official airmail flight from Australia to New Guinea in the same year.

During 1935 a 161 nautical mile submarine cable was laid across Bass Strait from Apollo Bay to King Island and then on to Stanley, Tasmania, by the cable ship *Faraday*. The installation of equipment to provide telephone, telegraph, and broadcasting channels was completed early the following year, and the cable system came into service on 25 March 1936.

The outbreak of the Second World War in 1939 caused the curtailment of some civilian services and reduced the development of others. From February 1942 restrictions were introduced on the provision of telephone facilities, except where required by the Armed Services, organisations concerned actively with national defence, security, or welfare, or persons engaged in the production of vital food products. These restrictions were basically due to the diversion of materials from production not essential to the war effort; also many P.M.G. personnel had joined the Armed Forces, including many with years of specialised training. On the cessation of hostilities the Postmaster-General's Department faced many problems. With only a skeleton staff of trained personnel, suspended services had to be re-introduced; much of the existing equipment needed modernising; and new equipment was required to meet the demand for new services which had built up during the war years. There was an urgent need to recruit staff and introduce simplified training courses to provide trained personnel quickly. Measures were taken to meet the position and the three-year rehabilitation programme agreed to by the Government embraced capital works, including buildings and sites, to a value of \$84m, and a new system of financing postal works enabled the Department to recruit staff and order materials on a long-range basis.

A mobile radio-telephone service was introduced in Australia during 1950, and in 1954 the Teleprinter Exchange Service (Telex), became available to the public. Further developments followed; television transmission began in 1956, and during that year a restricted form of trunk dialling was made available to several large commercial firms operating in the Dandenong area. The service operated between Melbourne and Dandenong. In 1959 the Automatic Teleprinter Reperforator Switching System (Tress) was introduced. With this system, a telegram transmitted by teleprinter from the originating office to the switching centre is reproduced on perforated tape and re-transmitted over the appropriate circuit to the office of destination without manual handling.

Subscriber Trunk Dialling (S.T.D.) was introduced in Victoria in December 1960 when Geelong and Bendigo subscribers were given direct dialling access to the Melbourne telephone network. In 1962 the Melbourne to Sydney co-axial cable came into service, and the first automatic postal station in Australia was installed at Melbourne. Lightweight coloured telephones became available in Australia during the year.

The Department built a television relay and radio-telephone station at Surrey Hills during 1963 to act as the Melbourne terminal for the various systems serving country areas. In that year the first relay of television programmes was made over the Melbourne to Sydney co-axial cable, and

the first public demonstration of the Data Transmission Service operating between Melbourne and Sydney took place. A noteworthy technical development which came into general use from 1963 was the employment of compressed air in cables to prevent moisture from entering if a small leak occurs ; the system also assists in indicating the location of larger leaks.

In 1964 the departmental building in Spencer Street which, since its erection in 1917 had replaced the Elizabeth Street Office as the G.P.O., became the Melbourne Mail Exchange. The Elizabeth Street Office then reverted to its original title as the G.P.O. Also, early in that year, Telepost, a development of the first automatic postal station, was opened and provided a continuous service to the public for the first time. In the same year a famous Melbourne landmark, "The Old Tin Shed", formerly erected alongside the G.P.O. on the Post Office Place corner, was demolished. It had been built in 1906 as a temporary telegraph office, but had remained for nearly sixty years until it was demolished to provide the site for the new Plaza and P.M.G. Information Centre which was completed in September 1965.

The Australian currency was converted to the decimal system in February 1966, and provided a major project for the Postmaster-General's Department, since it involved not only the design and printing of new postage stamps, money orders, postal notes, etc., but also the conversion of equipment. Considerable development took place at this time in the major trunk line routes of telecommunications. These new trunk systems (some co-axial cable, others micro-wave radio) employ repeater stations throughout the country areas and a terminal station in the city. They form the broadband network. During August 1966 a broadband micro-wave system was opened between Melbourne and Adelaide. Two months later a similar system commenced operation between Melbourne and Albury, and still another opened between Melbourne and Launceston in November 1966.

Automatic Telex was introduced in all States during 1966, enabling Telex subscribers to make direct calls without the assistance of a P.M.G. operator. The following year saw the introduction of the "Postcode" system, designed to facilitate sorting the increasing quantities of mail which pass through centres such as the Melbourne Mail Exchange.

In February 1971 a new type of letter processing machine was installed at the Melbourne Mail Exchange. It rejects articles unsuitable for machine handling, then arranges the accepted mail face upwards and postmarks the stamps. The postmarked mail is then collected in a single output stacker ready for the sorting process.

By 1971, 134 years after the appointment of the first postmaster, the number of staff employed by the Victorian section of the Postmaster-General's Department had increased to 28,500. Post offices had increased from one to 1,823, of which 334 were official offices, and 1,489 had non-official status. About four million postal items were handled daily at the Melbourne Mail Exchange.

PART THREE

---

*Economic Development*

1234

1234

1234

---

# 1

## THE VICTORIAN ECONOMY

The Victorian economy may properly be regarded as a distinctive regional unit within the wider Australian economy. First, it has a pattern of employment and economic activity which differs in some important respects from those of the other Australian States. Second, it has a distinctive pattern of trade and other economic relations both with countries overseas and with other parts of the Australian Commonwealth. Finally, the State of Victoria provides the economy with a distinct political, legal, and administrative framework. There are thus three broad factors which give a distinctive and independent character to the Victorian economy, and each will be examined in turn.

### ECONOMIC ACTIVITY

The pattern of economic activity in Victoria is dictated largely by peculiarities of climate, terrain, and natural resources. Local differences do, of course, exist, but as compared with the rest of Australia the similarities are greater than the differences. This is partly because of the compactness of the State. In area it is smaller than any State except Tasmania, but in population it is larger than any except New South Wales. Density of population is higher than elsewhere, and the unoccupied areas are relatively small, being confined to parts of the mountainous north-east and the semi-arid north-west.

### AUSTRALIA—RELATIONSHIP OF THE STATES

Particulars	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Aust. (a)
Area : percentage of total	10.43	2.96	22.47	12.81	32.88	0.89	100.00
Population : 1966 Census							
Percentage of total	36.66	27.88	14.39	9.45	7.24	3.22	100.00
Density per sq mile	14.05	37.59	2.58	2.94	0.91	14.39	4.02

(a) Includes Northern Territory and the Australian Capital Territory.

A unifying and integrating influence is also exerted by the predominance of the Melbourne metropolitan area which contains two thirds of the population and provides not only the major market for consumer goods, but also the commercial, financial, and administrative services on which the rest of the State depends. Indeed, the Melbourne hinterland extends for some purposes beyond the State boundaries, e.g., into the Riverina district of

New South Wales and into the south-east of South Australia. In Victoria the predominance of the capital city reflects both a relatively low rural population, and (as compared with New South Wales, Queensland, and Tasmania) a relatively low provincial city population. The old gold mining centres of Ballarat and Bendigo developed early, but with the decline of gold mining their subsequent growth lagged. In New South Wales and Queensland, on the other hand, the provincial centres are more significant and there is even some local separatist sentiment.

AUSTRALIA—URBAN AND RURAL POPULATIONS, CENSUS 1966  
(per cent)

Particulars	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Aust. (a)
Metropolitan	57.8	<b>65.5</b>	43.2	66.7	59.8	32.2	58.1
Other urban	28.6	<b>20.0</b>	33.6	15.9	16.7	38.1	25.1
Rural	13.4	<b>14.4</b>	23.1	17.3	23.1	29.5	16.6
Migratory	0.2	<b>0.1</b>	0.1	0.1	0.4	0.2	0.2
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

(a) Includes Northern Territory and the Australian Capital Territory.

The relatively small area of Victoria and the concentration of population in Melbourne are naturally reflected in the pattern of employment. As compared with other States, the proportion of the work force employed in manufacturing in Victoria is relatively high, whereas that employed in primary industry is relatively low. More surprisingly, the proportions employed in commerce, transport, and building are also lower in Victoria than elsewhere. Presumably transport and distribution require the employment of relatively fewer workers because of the small area of the State, and building is probably tied to local needs and therefore tends to be somewhat overshadowed as industrial development progresses.

AUSTRALIA—WORK FORCE IN EACH INDUSTRY GROUP, CENSUS 1966  
(per cent)

Industry group	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Aust. (a)
Manufacturing	28.6	<b>31.8</b>	19.3	27.8	17.9	23.0	27.0
Primary	8.8	<b>8.5</b>	16.4	11.3	15.2	14.0	10.2
Commerce and finance	20.0	<b>19.4</b>	20.4	20.5	21.5	18.7	19.9
Public administration and services	15.3	<b>15.0</b>	15.2	14.6	16.5	15.6	15.6
Building and public utilities	10.7	<b>9.4</b>	11.9	11.1	12.1	12.4	11.0
Transport	7.9	<b>7.2</b>	8.6	7.5	7.1	8.7	7.9
Amusement and services	6.3	<b>5.9</b>	6.3	5.4	6.1	5.6	6.1
Other	2.4	<b>2.8</b>	1.9	1.8	3.6	2.0	2.3
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

(a) Includes Northern Territory and the Australian Capital Territory.

Primary industry has, of course, a significance greater than that indicated by the pattern of employment. It is still the major export earner and it provides some of the raw materials on which the manufacturing and processing industries are based. The handling of primary products is also a major part of the activity of those employed in transport, commerce, finance, and similar activities. It is, therefore, important to consider its special features even though it may seem relatively small in terms of employment.

The twin mainstays of Australian rural production during the present century have been wool and wheat, and Victoria has some of Australia's best sheep country in the Western District, and some of its best wheat lands in the Wimmera. However, Victorian soils are generally not very fertile and have been found to benefit from substantial applications of artificial fertilisers. Victoria uses more superphosphate than any other State except Western Australia, where its use has expanded rapidly in recent years. It was first applied in the early years of the century to counteract the fall in wheat yields resulting from continuous cropping and soil exhaustion. A generation later its use was extended to the top-dressing of pastures and the replacement of native grasses by subterranean clover, often followed by high-grade perennial grasses.

Much of the resultant increased pasture growth is used for hay-making in the spring, and fodder is thus conserved for use during the subsequent months when growth is retarded because of local climatic conditions. The area under sown grasses and clover, also the production of hay, is higher in Victoria than in any other State.

AUSTRALIA—RURAL HOLDINGS: LAND UTILISATION, SEASON 1969-70  
(’000 acres)

Particulars	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Aust.(a)
Area	198,037	<b>56,246</b>	426,880	243,245	624,589	16,885	1,899,462
Area of rural holdings	170,630	<b>39,057</b>	380,218	162,692	280,819	6,517	1,222,387
Area cropped	14,307	<b>5,668</b>	5,185	6,776	9,676	242	41,863
Area under sown grasses and clover	11,077	<b>19,877</b>	5,452	6,146	16,472	1,996	61,253
Area fertilised	16,340	<b>15,353</b>	1,793	10,245	23,944	1,693	69,517
Area irrigated	1,425	<b>1,468</b>	431	186	77	60	3,648

(a) Includes Northern Territory and the Australian Capital Territory.

Another leading feature of Victorian farming has been the widespread development of mixed wheat and sheep farming throughout a large part of the northern country. The introduction of a pasture phase into the crop rotation has enhanced the productivity of both activities and tended to stabilise farm incomes. Based originally on experiments at the Rutherglen Research Station, this practice has spread throughout many parts of southern Australia.

However, the most distinctive feature of Victorian farming is its diversification away from wool and wheat. This is perhaps even more marked in Victoria than in Queensland with its tropical produce, or in Tasmania where climate and terrain make wheat growing uneconomic. In Victoria Merino sheep account for less than 50 per cent of flocks, whereas they account for more than 90 per cent in Queensland, South Australia, and

AUSTRALIA—PRODUCTION OF PRINCIPAL RURAL INDUSTRIES,  
SEASON 1969-70  
(per cent)

Product	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Aust.(a)
Wheat	42.0	21.6	3.8	15.3	17.2	0.1	100.0
Wool	36.8	21.0	9.6	13.5	16.5	2.4	100.0
Meat	29.1	29.7	20.8	7.2	8.7	3.3	100.0
Milk	18.7	53.7	11.4	6.4	3.5	6.2	100.0
Hay	24.5	43.0	6.5	10.6	8.9	6.4	100.0
Apples	18.4	23.9	5.6	7.0	11.7	33.2	100.0
Pears	8.7	75.5	1.3	6.9	2.3	5.3	100.0
Grapes for drying	15.5	77.0	..	6.9	0.6	..	100.0

(a) Includes Northern Territory and the Australian Capital Territory.

Western Australia. With pasture improvement, breeds of larger sheep have been developed which combine fine wool with good quality meat. In the mixed sheep and wheat farming areas of the State fat lamb production tends to predominate over wool growing. In the more hilly districts sheep-raising gives way to beef cattle for which improved pastures often provide excellent fattening areas. In 1969-70 total meat production in Victoria was greater than in New South Wales or Queensland.

Dairying is another important form of diversification. Originally particularly suitable for family settlement, it developed in hilly areas and well-watered coastal areas; it has also extended to the improved pastures of the northern irrigation areas and of the river valleys. Victorian dairy herds are both more numerous and more productive than those in other States, and produce about half the total milk output of Australia. A third form of diversification and one which also favours intensive settlement is fruit and vegetable growing. This originally developed close to the metropolitan area, and the surrounding district is still a major apple producing area, second only to Tasmania. In addition, the largest centres in Australia for the production of canned and dried fruits have been developed under irrigation in the warmer northern areas of the State.

Irrigation has played a vital role in both pasture improvement and fruit growing. In Victoria land suitable for these purposes is in relatively close juxtaposition to the water catchment areas of the central highlands. Water can thus be distributed by gravitational flow down open channels and existing river systems. The total area irrigated is nearly 1.5 million acres, which is slightly more than the irrigated area in New South Wales. For many years Victoria has led the rest of Australia in irrigation, particularly in the acreage irrigated for fruit growing and pasture improvement purposes.

Turning from Victorian farming to manufacturing there are again certain special features, arising in part at least from the availability of natural resources. In all States some manufacturers such as bakeries, breweries, motor repair shops, and brick works and other building suppliers cater for basic local needs, but these tend to be overshadowed in Victoria by its well-developed industrial superstructure. Thus, the State has a relatively low proportion of workers engaged in the food, drink, and tobacco industries, and the proportion would be even lower were it not that, as a result of the

development of the dairying, meat, and fruit industries, Victoria leads other States in the manufacture of butter, cheese, and other milk products, and in fruit and meat canning. In other States the processing of primary products takes different forms, such as sugar milling in Queensland, and sawmilling and papermaking in Tasmania.

AUSTRALIA—EMPLOYMENT IN MANUFACTURING INDUSTRIES, 1966  
(per cent)

	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Aust.(a)
Cement, bricks, glass, and stone	4.37	<b>3.61</b>	3.97	3.85	6.23	3.39	4.11
Metal-working, founding, and engineering	35.55	<b>25.58</b>	21.52	35.86	26.93	21.12	30.03
Vehicles and ships (incl. repairs and accessories)	11.24	<b>13.84</b>	14.64	21.59	14.30	6.99	13.47
Textiles	3.52	<b>6.60</b>	2.00	2.61	1.81	11.69	4.43
Clothing and knitted goods	7.31	<b>10.73</b>	4.79	2.47	3.47	1.15	7.39
Food, drink, and tobacco	11.03	<b>12.05</b>	26.51	12.62	15.97	18.93	13.49
Sawmilling and wood products	2.97	<b>2.50</b>	7.20	3.95	8.82	12.04	3.83
Furniture and fittings	2.18	<b>1.96</b>	2.99	2.20	3.59	2.06	2.25
Paper, printing	8.12	<b>7.74</b>	7.50	5.66	8.22	17.72	8.02
Chemicals, dyes, and paints	5.08	<b>4.51</b>	2.46	3.23	4.02	2.95	4.34
Other	8.63	<b>10.87</b>	6.42	5.96	6.63	1.96	8.64
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>
Work force employed	520,324	<b>438,490</b>	128,603	125,053	60,893	33,959	1,312,125
Women as percentage of work force	25.0	<b>28.9</b>	18.9	19.4	17.0	20.2	24.7

(a) Includes Northern Territory and the Australian Capital Territory.

Industrial development beyond the stages of meeting localised needs or processing primary products has taken very different forms in Victoria and New South Wales, Victoria having tended to concentrate on relatively light industry, and New South Wales on heavy industry. The most obvious reason for this difference is that Victoria lacks the large black coal deposits of New South Wales. It is on this basis that the iron and steel industry and its associated metal-working activities have developed strongly in that State. The proportion of workers employed in the foundry, metal-working, and engineering group is by comparison relatively low in Victoria. Nevertheless, in actual numbers this group employs more workers than any of the others. The explanation of the apparent paradox is that Victoria has developed a number of specialised types of foundry and engineering work, some of which catered originally for the needs of the gold mining industry. The agricultural implement industry is also an old established activity in Victoria. In addition, several new basic industries have been established in Victoria in recent years,



attracted probably by such factors as the size of the market, the availability of deep water harbours, and cheap power. Examples are aluminium smelting, oil refining, and the petrochemical industries.

Although employment in the metal industry group is relatively low in Victoria, that in the textile and clothing groups is relatively high. In these industries employment in Victoria considerably exceeds that in New South Wales and is nearly half the total for Australia. Victorian predominance is particularly marked in the various branches of the wool textile industry, the dressmaking industry, the manufacture of hosiery and knitwear, and in the boot and shoe industry. The wool textile industry dates back to the 1860s and was one of the first examples of the processing of local rural products. In recent years the skills acquired have been used to develop other textile industries, notably cotton and man-made fibres. The textile and clothing industries were originally fostered behind the Victorian tariff and it is often said that they were developed to provide employment for displaced gold miners as their industry declined. It would seem, however, that such workers were mostly absorbed into farming, public works, or the building industry. The textile and clothing trades were, and still are, predominantly users of female labour, and are frequently located in country towns providing employment for women who might not otherwise have been drawn into the labour force. It is significant that the proportion of female labour employed in manufacturing is higher in Victoria than in any other State.

In view of the traditional specialisation of Victoria in the textile and clothing group of industries, it is perhaps at first sight surprising that the State should now have become the main centre of such a different industry as motor car manufacture. Employment in the vehicle group in Victoria exceeds that in New South Wales (despite the fact that this group also includes local garage services, shipbuilding, and the manufacture of railway rolling stock). The two largest motor vehicle manufacturers and also some of the smaller ones have their main manufacturing and assembly plants in Victoria. Although motor vehicle manufacturing is, of course, a large user of iron and steel, labour costs are probably a more important component in the final price. The industry makes considerable use of migrant process workers and also relies heavily on a large number of sub-contractors, many of them in the light engineering field. In addition, it makes heavy demands on the rubber and plastic industries, both of which are well established in Victoria. These factors, together with the large local market and proximity to interstate markets, would seem to have been instrumental in determining the location of such a large part of the motor vehicle manufacturing industry in Victoria.

Another feature of employment and economic activity in Victoria to which reference needs to be made is in some ways the most fundamental. A dramatic and distinctive twist was given to the early history of Victoria by the discovery of gold in 1851. For a quarter of a century thereafter gold mining remained Victoria's largest single industry, a situation not paralleled in any other Australian colony until Western Australia had a similar experience towards the end of the century. Even in its years of decline the gold mining industry continued to influence the economic and financial development of Victoria as well as its political, cultural, and even religious life. But although Victoria led the other States in gold mining, it alone proved to have no substantial deposits of other minerals such as iron ore, silver-lead, copper, or black coal.

For many years Victoria was virtually dependent on black coal shipments from New South Wales to supply its fuel and power needs, apart from local firewood supplies. In the 1920s moves were made to reduce this dependence by the use of brown coal, large deposits of which were known to exist in the La Trobe valley and elsewhere. Although readily mined by open-cut methods, brown coal is an inferior fuel to black coal and has a high moisture content. For ordinary industrial and domestic use it thus needs to be compressed into briquettes, but only two tons of briquettes are obtained from five tons of coal.

In 1919 the State Electricity Commission was established with powers to mine brown coal, manufacture briquettes, and generate and distribute electricity throughout the State. Today the Commission supplies virtually all the power used in the State, its main source of supply being the Yallourn-Morwell-Hazelwood complex, using steam generators fired by brown coal or briquettes. This is supplemented by small peak-load hydro projects in the north-east of the State, and purchases from the Snowy Mountains Authority. By way of contrast New South Wales relies for its power mainly on thermal stations fired by black coal (supplemented again by peak-load supplies from the Snowy) and Tasmania relies almost exclusively on hydro-power. South Australia is the only other State which relies heavily on sub-bituminous coal, but its deposits are neither as large nor as conveniently located as Victoria's.

In the early post-war years efforts were made to reduce still further Victoria's dependence on imported black coal by expanding the production of briquettes for industrial and domestic use and by manufacturing town gas from briquettes and piping it from Morwell to Melbourne. About 500,000 tons of briquettes are now produced annually for the local market, and until 1969 about 30 per cent of Victoria's supplies of town gas came from this source. However, neither project developed on the scale originally planned because the construction of three local oil refineries provided a new and unexpected source of fuel supplies. Fuel oil from the refineries encroached on the market for briquettes and refinery products also became the chief source of town gas, but the net result has been the further displacement of black coal.

Even greater changes appear likely to follow the exploitation of deposits of natural gas and oil in Bass Strait. The existence of gas or oil deposits on or near the Victorian coastline was recognised as a possibility as early as the 1920s and a number of wells were drilled onshore without significant results. Improved techniques for locating and exploiting offshore deposits led to the discovery of the Barracouta and Marlin gas fields in 1965-66, and the Kingfish and Halibut oil fields in 1967. A pipeline has been constructed to supply Melbourne with natural gas and the oil fields are now providing the local refineries with an indigenous supply of crude oil, making Victoria thus largely independent of an imported base for its fuel and power supplies.

#### TRADING RELATIONS

The Victorian economy is clearly not a separate entity in the sense of leading an isolated and autarkic economic existence, but even national economies are not generally separate entities in this sense. Both regional and national economies have extensive external trading relations; but a regional economy such as Victoria's also participates in interstate trade within the nation.

Prior to Federation in 1901 Victoria was in a sense a national rather than a regional economy. The Australasian colonies were not, of course, separated by language barriers, either from one another or from the mother country, nor did they have entirely separate monetary systems since the gold sovereign was legal tender in each and some banks operated branches in more than one colony. However, with the grant of responsible government they could and did pursue divergent policies with respect to tariffs and other economic matters. Barriers of distance and transport difficulties (the sailing ship for

AUSTRALIA—OVERSEAS EXPORTS BY STATE OF FINAL SHIPMENT, 1969-70

Selected commodity classifications	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Aust.(a)
VALUE (\$'000 f.o.b.)							
Meat and meat preparations	62,791	127,469	160,988	16,538	35,115	10,103	417,909
Dairy products and eggs	11,553	68,948	7,109	6,275	481	7,888	102,254
Cereals and cereal preparations	156,950	77,443	24,433	76,552	94,566	1,729	431,792
Fruit and vegetables	6,512	52,140	3,620	8,498	8,039	15,292	94,102
Sugar, sugar preparations, and honey	6,180	494	114,270	247	613	45	121,848
Textile fibres and waste (incl. wool)	210,096	244,317	89,824	81,826	128,530	14,209	768,802
Metalliferous ores and scrap	25,917	17,696	51,772	69,804	278,264	44,775	506,567
Mineral fuels (incl. coal)	125,977	14,726	54,058	1,467	3,958	2	200,329
Iron and steel	93,206	2,697	1,364	24,819	13,519	71	135,707
Non-ferrous metals	47,228	23,345	114,767	58,357	5,098	35,237	284,112
Other	412,193	283,321	151,314	72,648	106,844	14,119	1,068,121
<b>Total</b>	<b>1,158,603</b>	<b>912,596</b>	<b>773,519</b>	<b>417,031</b>	<b>675,027</b>	<b>143,470</b>	<b>4,131,543</b>
PER CENT							
Meat and meat preparations	5.4	14.0	20.8	4.0	5.2	7.0	10.1
Dairy products and eggs	1.0	7.6	0.9	1.5	0.1	5.5	2.5
Cereals and cereal preparations	13.5	8.5	3.2	18.4	14.0	1.2	10.5
Fruit and vegetables	0.6	5.7	0.5	2.0	1.2	10.7	2.3
Sugar, sugar preparations, and honey	0.5	0.1	14.8	0.1	0.1	..	2.9
Textile fibres and waste (incl. wool)	18.1	26.8	11.6	19.6	19.0	9.9	18.6
Metalliferous ores and scrap	2.2	1.9	6.7	16.7	41.2	31.2	12.3
Mineral fuels (incl. coal)	10.9	1.6	7.0	0.4	0.6	..	4.8
Iron and steel	8.0	0.3	0.2	6.0	2.0	..	3.3
Non-ferrous metals	4.1	2.6	14.8	14.0	0.6	24.6	6.9
Other	35.6	31.0	19.6	17.4	15.8	9.8	25.9
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

(a) Includes Northern Territory and the Australian Capital Territory.

long being the main means of communication between them) also hampered trade and made for separate economic development.

In the early years of settlement Victoria had to import from Britain most of its needs even of ordinary consumer goods, apart from a few items such as wheat and livestock which could be supplied from neighbouring colonies. Britain also provided the market for the Colony's exports which at first consisted principally of wool and tallow. The discovery of gold in the 1850s added a glittering new export which surpassed wool in value for many years, and also provided the means of payment for a greatly expanded range of imports. It was not until the last decade of the nineteenth century that locally produced wool again became Victoria's chief export, a position which it still retains.

AUSTRALIA—OVERSEAS IMPORTS BY IMPORTING STATE, 1969-70

Selected commodity classifications	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Aust. (a)
VALUE (\$'000 f.o.b.)							
Mineral fuels	86,443	73,780	31,472	21,294	36,126	1,575	255,239
Chemical elements and compounds	65,612	36,631	6,610	2,831	4,975	765	117,454
Textile yarns, fabrics, and made-up products	121,967	123,666	16,474	10,910	9,288	4,960	253,239
Machinery (except electric)	326,140	232,626	55,839	37,728	42,463	10,830	708,828
Electrical machinery, apparatus, and appliances	118,677	81,052	15,639	15,578	15,601	3,841	251,367
Transport equipment	174,833	212,439	75,319	34,475	48,319	1,655	567,496
Miscellaneous manufactures	88,520	49,473	9,347	7,723	6,003	634	162,218
Other	725,253	537,386	83,414	70,684	79,524	22,738	1,565,386
<b>Total</b>	<b>1,707,445</b>	<b>1,347,053</b>	<b>294,114</b>	<b>201,223</b>	<b>242,299</b>	<b>46,998</b>	<b>3,881,227</b>
PER CENT							
Mineral fuels	5.1	5.5	10.7	10.6	14.9	3.4	6.6
Chemical elements and compounds	3.8	2.7	2.2	1.4	2.1	1.6	3.0
Textile yarns, fabrics, and made-up products	7.1	9.2	5.6	5.4	3.8	10.6	6.5
Machinery (except electric)	19.1	17.3	19.0	18.7	17.5	23.0	18.3
Electrical machinery, apparatus, and appliances	7.0	6.0	5.3	7.7	6.4	8.2	6.5
Transport equipment	10.2	15.8	25.6	17.1	19.9	3.5	14.6
Miscellaneous manufactures	5.2	3.7	3.2	3.8	2.5	1.3	4.2
Other	42.5	39.9	28.4	35.1	32.8	48.4	40.3
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

(a) Includes Northern Territory and the Australian Capital Territory.

Much of the wool exported through Victorian ports has traditionally come from other States, notably the Riverina district of New South Wales. Similarly on the import side, Melbourne established itself early as an important *entrepôt* and trans-shipment centre for trade with the other colonies, including New Zealand and the Pacific islands. However, Sydney gradually came to rival and eventually surpass Melbourne as the centre for this trade, one reason being the coming of the steamship, which naturally made its turnround in Sydney where local coal was available for bunkering. In the 1860s and the early 1870s Victoria tried without avail to induce the P. & O. Co. to make Melbourne the terminal port for its mail steamers.

On balance, railway construction probably also affected the trans-shipment trade adversely. Melbourne's grip on the Riverina trade may have been strengthened by railways to or beyond the Murray River, but the overall effect of railway construction in the colonies generally was to strengthen the trading position of the capital cities, so enabling them to trade direct with overseas markets. The completion of the interstate lines to Sydney and Adelaide in the 1880s, although important for passenger traffic and light freight, hardly affected the staples of interstate trade, such as coal from New South Wales and sugar from Queensland, which have always been handled by coastal shipping.

Of the many transport improvements in the nineteenth century perhaps the most significant for Victorian trade was the refrigerated ship, which opened up overseas markets for perishable foodstuffs. The improvements in agricultural practice and the extension of irrigation referred to in the previous section enhanced the production possibilities for wheat, meat, butter, and fruit far beyond the volumes which could be absorbed by local or interstate markets. Wheat could readily be shipped overseas and the grain trade remained one of the last strongholds of the sailing ship until well into the twentieth century. Perishable foodstuffs, however, had few overseas outlets until the refrigerated steamship made its appearance in the late 1880s. Thereafter their production and export grew rapidly. They did much to stimulate recovery from the depression of the 1890s and by the time of the First World War exports of all foodstuffs taken together surpassed wool exports in value. Victoria thus achieved diversification in its exports by concentrating on foodstuffs whereas other States did so by developing their mineral deposits.

While transport improvements made for closer trading relations, public policy in Victoria tended to work in the opposite direction during the nineteenth century. In common with the other Australian colonies Victoria originally levied only low revenue tariffs with specific duties on imports such as tobacco and spirits. In 1866, however, in response to popular feeling and David Syme's advocacy in the *Age*, Victoria embarked on a policy of protection. The duties imposed were at first moderate but in the 1890s they reached 50 per cent on some items. The primary purpose was to protect local manufacturing industries, such as textiles, clothing, footwear, and carriage building, against British and other overseas competition. Victoria did in fact lead other States in the development of these industries and in the replacement of consumer goods by raw materials and capital goods as its major overseas imports. However, it is an open question whether these developments would not have occurred in any case,

since the population attracted by the gold discoveries already provided a sizeable local market and a readily available work force. Certainly by the end of the century New South Wales, which had pursued a low tariff policy, had overtaken Victoria in industrial development although along somewhat different lines. Moreover, the tariff was a rather blunt instrument in the nineteenth century, being adjusted to industrial needs only at infrequent intervals. Perhaps the most that can be said is that industrial development in Victoria was somewhat accelerated by protection. The advantages of the early start in clothing, textiles, and footwear are still evident in the industrial pattern which prevails today, and carriage building provided some of the basis for the modern car body and assembly plants.

Although the Victorian tariff was aimed primarily at overseas imports it applied equally to imports from the other colonies, including even primary products, such as wheat and flour from South Australia and livestock from New South Wales. At the same time Victoria's own exports of manufactured products were alleged to be "dumped" at cut prices in the other colonies. In these circumstances mutual friction and retaliation were not uncommon.

In 1901 Federation brought Victoria's fiscal autonomy to an end. A common external tariff was established and trade, commerce, and intercourse among the States were to be "absolutely free", words which have been found to have a wider legal connotation than "free trade". This early essay in the creation of a common market had consequences which have not yet been fully studied. On the one hand, the common external tariff may have resulted in trade diversion to Victoria at the expense of Britain and the overseas countries which had previously supplied New South Wales and the other low tariff colonies. On the other hand, the abolition of internal tariffs may have exposed Victorian industries to competition from their counterparts in the other colonies and particularly from New South Wales.

Victoria's slow recovery from the depression of the 1890s suggests that the latter effect was dominant in the short run, but the immediate increase in interstate trade was probably small relatively to Gross National Product. In the longer term interstate trade increased substantially and Victorian industry benefited from wider markets, but there is unfortunately a lack of precise data after 1909. In that year the constitutional requirement for the reallocation among the States of part of the Commonwealth's customs and excise revenue lapsed, and comprehensive interstate trade statistics were no longer compiled; such statistics are now available only for trade with Western Australia and Tasmania. The only regular information relating to trade with the other States is the volume (not value) of coastal shipping cargoes. This data, together with more fragmentary material relating to goods carried by rail or road, and interstate banking remittances, suggests that between 1909 and 1961 trade between Victoria, New South Wales, and South Australia rose from between 8 and 9 per cent of their Gross Domestic Product to about double this percentage. In other words, interstate trade grew about twice as fast as population and productivity.

This increase in interstate trade is sometimes ascribed largely to the development of road transport in the intervening years. By 1960-61 goods carried by road between Victoria and New South Wales amounted to about one million tons, which was probably less than a quarter of the combined

rail and sea tonnage. However, much of it was high-value freight diverted from the railways, and to this extent it did not represent a net addition to the facilities for interstate trade since the railways had the capacity to carry most of it anyway. New South Wales statistics show that during the 1950s railway freight traffic to and from Victoria was virtually static and failed to expand with population and Gross National Product. In the 1960s, however, it rose dramatically, particularly after the opening of the standard gauge line between Melbourne and Sydney in 1962. Some of the railway recovery has, in its turn, been at the expense of maritime trade and may eventually be lost again to competition from the new container ships and improved methods of cargo handling.

VICTORIA—RAILWAY FREIGHT  
BETWEEN VICTORIA AND  
NEW SOUTH WALES  
(Annual average tonnage)

Period	To New South Wales	From New South Wales
1946 to 1950	341,112	430,249
1951 to 1955	312,375	431,015
1956 to 1960	312,518	510,904
1961 to 1965	534,250	940,820
1966 to 1970	668,622	1,238,713

Since Federation growth of interstate trade attributable to transport improvements has probably not been as significant as the expansion caused by interruptions to supplies from abroad during the two world wars and development of major new industries integrated across State boundaries, replacing overseas imports with interstate goods. Thus Victoria's interstate imports now include iron and steel from New South Wales, paper and newsprint from Tasmania, and alumina from Western Australia. There is considerable cross-traffic in motor vehicles and components, Victoria on the one hand exporting to all States, and on the other importing from New South Wales and South Australia. Perhaps the most dynamic of the new industries has been oil refining. With the construction of refineries in all States except Tasmania, the import of crude oil from overseas largely replaced that of motor spirit. Since the development of the Bass Strait oil fields interstate traffic in fuel oil and other petroleum products has been replaced by considerable traffic in crude oil.

Of the traditional items of interstate trade, Victorian exports of textiles, clothing, and foodstuffs have probably kept pace with population growth, but Victorian imports of coal from New South Wales have fallen from 1,200,000 tons per annum in the early 1950s to less than half that amount as a result of the increasing use of brown coal and fuel oil.

Interstate trade complements Victoria's overseas trade in two important respects. In the first place, it consists largely of manufactured products and finished consumer goods, whereas overseas trade consists mainly of pastoral

and agricultural produce on the export side and of raw materials or capital goods on the import side. Second, interstate trade appears to provide some redress for Victoria's large adverse balance in respect of overseas trade. In 1969-70 Victoria's overseas imports exceeded exports by \$434m. A comparison of total exports as shown on page 272 with total imports as on page 273 indicates that New South Wales had an even larger adverse balance, but that every other State had a favourable balance in respect of its overseas trade. This suggests that goods and materials were being imported into Victoria and New South Wales for further processing or finishing and/or ultimate distribution to other States. In these circumstances Victoria and New South Wales would have favourable interstate trade balances to offset against their unfavourable overseas trade balances, whereas the reverse position would be the case with the other States. Western Australian and Tasmanian interstate trade statistics certainly show Victoria to have favourable balances with those States. Interstate bank remittances to Victoria appear to exceed remittances from Victoria and this would also be consistent with an excess of interstate exports over imports, although the situation is no doubt complicated by invisible items.

In the absence of quantitative data it is difficult to generalise about non-trade items in Victoria's balance of payments. However, the State has a long history of investment in other States and it should receive from them a net inflow of interest, profits, and payments for managerial services. In any tabulation of the State's balance of payments this investment income would be regarded as an addition to export earnings, whereas capital outflow would be an addition to import outlays. It does appear from the available statistics that Victoria has a higher income per head from interest and dividends than any other State. It also has high levels of personal savings per head and savings bank deposits. Much of the capital outflow, however, probably takes the form of reinvestment of undistributed profits by Victorian based companies operating throughout the Commonwealth.

AUSTRALIA—PERSONAL INCOME AND SAVINGS PER CAPITA, 1969-70  
(\$)

State	Personal income	Personal income from interest and dividends (a)	Excess of disposable income over personal consumption	Savings bank deposits, June 1970
New South Wales (including Australian Capital Territory)	1,927	125	148	529
<b>Victoria</b>	<b>1,937</b>	<b>144</b>	<b>214</b>	<b>694</b>
Queensland	1,631	91	191	489
South Australia (including Northern Territory)	1,661	125	214	611
Western Australia	1,719	102	85	437
Tasmania	1,604	98	165	516
<b>Australia</b>	<b>1,835</b>	<b>122</b>	<b>174</b>	<b>569</b>

(a) Also includes non-dwelling rent, as well as remittances from overseas.



Victorian investment in other States seems to have begun in the 1880s, often with the reinvestment of profits made originally on the goldfields, although not necessarily in the gold mining industry itself. The two most popular avenues of investment were pastoral properties in the Riverina, western New South Wales, and outback Queensland; and mining ventures in Tasmania, Queensland, and New South Wales.

The most famous of these ventures was the development of silver-lead mining at Broken Hill, originally by The Broken Hill Proprietary Co. Ltd and later by the Melbourne based "Collins House" group of companies. Subsequently the B.H.P. Co. Ltd transferred its activities to iron and steel manufacture at Newcastle, using coal from nearby mines and iron ore from South Australia. Similarly, following the introduction of the electrolytic refining process, the "Collins House" group established other enterprises in Tasmania and at Port Kembla in New South Wales. Two other ventures of the group were the manufacture of fine writing paper in Tasmania, and the search for gold in Western Australia, a search which was not very successful in itself but which led to its involvement in nickel and aluminium. For most of their history these various enterprises have been managed and largely financed from Melbourne although their activities have been located in almost every State except Victoria.

These companies and their associated enterprises have given Melbourne a dominant place in the financing, direction, and control of the metallurgical and other basic industries throughout Australia. Melbourne's leadership is shared to a greater extent with Sydney in other fields such as banking, insurance, and retail trade. Nevertheless, in terms of profits in 1970-71, out of the ten largest listed companies incorporated in Australia, seven were based in Melbourne. The flow of funds for investment in other States and the income received in return clearly play an important role in Victoria's external economic relationships.

#### THE PUBLIC SECTOR

The third justification for treating the Victorian economy as a distinct entity is that it operates within a separate political, legal, and administrative framework. This imparts a cohesion to its various regions which they would not possess in isolation, and also gives them a distinctive character as compared with other parts of the Australian Commonwealth. As a member of the federation, the State of Victoria, of course, differs economically from a national state in a number of respects. As noted above it cannot protect its industries by tariffs or other impediments to interstate trade. Equally important in the modern world, it does not control the monetary and fiscal instruments necessary to maintain full employment and combat inflation. Partly under the terms of the Commonwealth Constitution, and partly by subsequent interpretation and amendment, these controls have passed from the State to the Commonwealth.

As explained in the chapter on financial relations with the Commonwealth the exclusive tax powers of the Commonwealth have been extended from customs and excise duties to sales tax and income tax, the two taxes which have proved most useful for stabilisation purposes. Under the Financial Agreement of 1927 and the subsequent constitutional amendment, the Commonwealth also acquired effective control over State borrowing. It

alone can issue new securities on behalf of the States, and although borrowing programmes require approval by the Loan Council, which is formally a joint Commonwealth-State body, the Commonwealth has in practice a decisive voice in its decisions. At Federation the Commonwealth also acquired the currency and banking powers from the States and used them to issue currency notes in 1910 and to establish the Commonwealth Bank in 1911, although it was to be many years before the latter became an effective central bank.

Prior to Federation, Victoria had enjoyed fiscal autonomy and legal control over banking and currency within the Colony. However, the conventional wisdom of the day precluded any resort to anti-cyclical policies, other than relief works in periods of severe unemployment. The Government was expected to balance its budget, borrowing only for public works, and to refrain from issuing paper money or changing the gold content of the currency. The banks were prevented from acting in concert by mutual rivalry and suspicion, and there was no central bank to which they could look for assistance or leadership. The result was that monetary policy in the modern sense of the term was non-existent and fiscal policy was apt to be positively perverse.

These deficiencies were well exemplified during the boom of the 1880s and the depression of the 1890s, both of which were of greater effect in Victoria than in the other colonies. It used to be held that the severity of the depression was the inexorable result of the great public and private building boom which had preceded it. However, the view has been gaining ground in recent years that although the boom had obviously caused some distortion of the economy, and although the necessary readjustments were complicated by the unfortunate coincidence in the early 1890s of a decline in the capital inflow from Britain and a fall in the value of exports, nevertheless the worst manifestations of the depression and particularly the financial panic of 1893 might have been averted by more intelligent policies. In New South Wales the Government declared bank notes legal tender for six months, so enabling the banks in that State to pay out notes instead of gold to frightened depositors, and in Queensland the Government issued its own notes, but in Victoria neither course was followed, with the result that all but three of its banks had to close their doors. Moreover, the Colonial Government, in its obsession with balancing the budget, increased taxation when incomes were falling, and retrenched expenditure when unemployment was severe and increasing. Public works came to a virtual standstill just when they were most needed.

The transfer to the Commonwealth of the monetary and fiscal powers which Victoria had failed to use in the 1890s did not of itself materially change the situation. The instruments of monetary policy took a long time to forge, and fiscal policy showed little enlightenment even in 1930. In 1931 public works again came to a virtual standstill. Indeed it was not until after the Second World War that governments began to acquire the sophistication and expertise necessary to apply the techniques of monetary and fiscal controls to the stabilisation of economic conditions.

After Federation the State continued to provide most of the public services normally financed from taxation, except defence, which was transferred to the Commonwealth. The maintenance of law and order was the

primary function of the government at the time of separation from New South Wales, an event which happened almost to coincide with the gold rush. As conditions became more settled, the proportion of the State budget devoted to this purpose steadily declined. In 1969-70 Victoria spent less per capita on law, order, and public safety than any other State. The police force is the main item in this category of expenditure and the ratio of police to population in Victoria has been lower than in the other States. In the not too distant future, however, mounting traffic problems and the apparent increase in violence may make the problems of law enforcement greater in closely settled communities like the Melbourne metropolitan area than they have traditionally been in sparsely settled mining and other frontier areas.

The amount spent on education, which is now the largest item in the State budget, was insignificant at Separation. At that time education was neither free nor compulsory, being mostly provided by government-subsidised denominational schools which catered only for a minority of children. In 1872, however, Victoria led the other Australian colonies in legislating for education which was to be "free, secular, and compulsory". This historic slogan marked the beginning of popular education in Australia, although for many years it was virtually confined to primary education and much remained to be done in the building of schools and the training of teachers. Private and denominational schools were still able to operate provided they met certain standards, but they no longer received government subsidies. Unfortunately, the development of educational services in Victoria was retarded by the retrenchments of the 1890s, the effects of which continued to be felt until the Second World War. It is only in recent years that per capita expenditure on education in Victoria has exceeded the level of New South Wales. State secondary education in particular was relatively slow to develop, and non-government secondary schools are still more important in Victoria than in most other States. Another distinctive feature of the Victorian educational system, and one closely connected with its industrial development, has been the prominence given to technical education and the organisation of junior and senior technical schools side by side with the State high schools.

AUSTRALIA—PER CAPITA STATE EXPENDITURE ON CERTAIN SOCIAL SERVICES FROM CONSOLIDATED REVENUE AND SPECIAL FUNDS, 1969-70  
(\$)

Particulars	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Total
Education	64.34	<b>69.45</b>	53.06	65.81	70.42	73.65	65.05
Health, hospitals, and charities	34.48	<b>29.25</b>	32.78	29.35	46.01	40.66	33.40
Law, order, and public safety	12.54	<b>10.43</b>	14.15	11.48	15.15	14.61	12.36
Total	111.36	<b>109.12</b>	99.99	106.64	131.58	128.92	110.80

State health services have also come to be a major item in the State budget. At Separation a beginning had been made with public health, and a quarantine station was established in 1853. An infectious diseases hospital

followed in 1872, but other hospitals remained mostly voluntary institutions. Substantial State (and Commonwealth) funds are now channelled to them through the Hospitals and Charities Commission, but greater reliance on voluntary effort still serves to keep per capita State expenditure on health, hospitals, and charities lower in Victoria than in the other States.

In contrast with education and health expenditure, social welfare payments for the relief of poverty have come to play a relatively minor role in the State budget. Age (1909) and invalid (1910) pensions have been provided by the Commonwealth under one of the powers transferred to it at Federation. Other social welfare payments, including unemployment relief (which had been a heavy burden during the depression of the 1930s) and also sickness benefits and child endowment became the responsibility of the Commonwealth, followed by the social services referendum of 1946. This was one of the few successful amendments to the Commonwealth Constitution.

Turning from public services normally financed from taxation to public utilities and State business undertakings, which are normally expected to support themselves from fees and charges, only the Post Office was transferred to the Commonwealth at Federation. Much had been done in Victoria prior to Federation to lay the infra-structure for future development. At the outset the Government was heavily involved in the planning and erection of public buildings (including a new Parliament House, Post Office, Public Library, and University). Road construction was also undertaken, particularly in the towns. Country roads came later, but today Victoria probably has the best country road system in Australia. By the early 1860s the Government had acquired the privately built railway lines to Williamstown and Geelong and had embarked on a programme of railway construction which was to continue at a varying tempo for some thirty years, incidentally giving Victoria its distinctive broad gauge system and giving Melbourne the most extensive suburban railway system in any Australian capital city. Engineering projects were also undertaken, such as the construction of telegraph lines and the provision of the Yan Yean water supply. In the 1880s Victoria led the other colonies in the development of irrigation. The Irrigation Act of 1886 nationalised water resources and instituted a system of government loans to local irrigation trusts.

Despite the boost received by State revenues, first from the goldfields and later from relatively high import duties, a substantial proportion of the State public works had to be financed by borrowing. From the 1850s onwards the finance for many of these development works came from government loans floated in London. There was simultaneously considerable private borrowing from overseas, and both forms of borrowing increased greatly in the following thirty years. No particular difficulty was experienced in meeting the resulting debt charges so long as gold exports continued and the flow of commodity exports was maintained, but trouble was encountered once these conditions were not fulfilled, as in the 1890s and again in the 1930s. The resulting cut-backs severely retarded economic development for many years.

The aggregate State net loan expenditure on these various undertakings to June 1967 is shown in the following table. Expenditure for some purposes such as electricity and metropolitan water supply has been substantially financed by semi-governmental loans. It also appears that Victoria

has borrowed relatively more than most States for items such as public buildings, irrigation, and land settlement, and relatively smaller amounts for other purposes.

AUSTRALIA—STATE NET LOAN EXPENDITURE ON WORKS AND SERVICES:  
AGGREGATE TO 30 JUNE 1969  
(\$m)

Particulars	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.
Railways	766.5	462.4	382.3	169.6	198.5	(a) 34.3
Metropolitan transport	49.8	..	..	17.1	5.2	2.9
Electricity	419.1	262.8	(b) 48.3	151.0	57.6	312.7
Water supply, sewerage, etc.	287.3	402.5	(b) 57.9	358.0	177.4	20.8
Water conservation, irrigation, and drainage	280.3					
Harbours, rivers, etc.	175.4	29.0	15.9	56.8	55.0	(c)
Public buildings	905.8	767.0	269.6	264.9	213.6	126.8
Land settlement (d)	86.7	133.9	18.9	22.4	26.6	8.9
Roads and bridges	79.7	66.8	(b) 27.9	11.0	9.8	59.5
Housing (e)	16.4	23.9	50.9	87.6	46.8	27.6
Forestry	24.1	46.9	69.9	17.4	7.9	18.5
All other	122.1	175.2	(f) 227.4	83.7	111.7	42.6
<b>Total</b>	<b>3,213.2</b>	<b>2,370.4</b>	<b>1,258.9</b>	<b>1,280.3</b>	<b>944.9</b>	<b>654.6</b>
Net loan expenditure in 1968-69	183.5	146.6	79.0	71.2	54.9	38.4

(a) Transport Commission included in total.

(b) Includes subsidies paid to local bodies for these purposes.

(c) Included under "Roads and bridges".

(d) Excludes capital expenditure met by the Commonwealth in South Australia, Western Australia, and Tasmania under War Service Land Settlement Agreement.

(e) Additional to sums provided under Commonwealth-State Housing Agreements.

(f) Includes loans to local bodies for unspecified purposes.

Source: Commonwealth Grants Commission.

Another feature of government sponsored projects in Victoria has been a tendency to transfer their administration to boards or commissions or to devolution to local authorities as an alternative to direct departmental administration. One reason for such arrangements was that originally the necessary professional and administrative skills were not available in the embryonic public service of the day. Another reason was that an independent board or commission would be less exposed to pressure from politicians anxious to improve their standing with their local constituents. Such pressures were first felt acutely in connection with railway works, jobs, and fares, and in 1883 a three man commission was created as a public corporation to administer the Victorian Railways. This set a precedent which despite its somewhat chequered history was later followed in a number of other State undertakings, notably irrigation, housing, and electricity supply, and was also extended to certain services ordinarily provided by local authorities. In the two decades following Separation a one-tier system of some two hundred urban municipalities and local shires had evolved but their powers were restricted to a fairly limited range of functions such as roads, drainage, garbage collection, the provision of local parks, and some trading functions, e.g., electricity, abattoirs, and markets. Important functions such as police

and education which are the responsibility of local authorities in other countries have always been centralised in Victoria. The transfer of certain services to centralised boards and commissions has further narrowed the functions of local authorities. Thus main roads have become the responsibility of the Country Roads Board and local electricity undertakings have been progressively transferred to the State Electricity Commission. Unlike New South Wales, no upper tier of county or regional authorities has been introduced, even in the metropolitan area, where services such as sewerage, water supply, tramways, and fire brigades have also been transferred to boards or commissions. These arrangements have certainly resulted in a higher standard of efficiency than could have been attained by small local authorities acting independently.

It will thus be seen that despite its lack of fiscal and monetary independence since Federation, the State of Victoria still plays a vital role in the provision and quality of basic public services such as education and health; in the nature and, to some extent the timing, of public investment; and in safeguarding the standards of administration. In these various ways it provides a distinctive background for the operations of the private sector of the economy.

## FINANCIAL RELATIONS WITH THE COMMONWEALTH

---

When the Commonwealth of Australia came into being on 1 January 1901, and the Colony of Victoria was redesignated a State, Victoria entered a third phase of political development, and underwent its second major constitutional change in half a century. The impact of Federation on the finances of Victoria and some of the factors involved in the State's financial relationships with the Commonwealth may be seen more clearly when related to the development of the public sector of the Colony from its formation to the eve of Federation.

### FROM SEPARATION TO FEDERATION

On 1 July 1851 the Port Phillip District of the Colony of New South Wales was separated from its parent Colony and reconstituted as the Colony of Victoria. At almost the same time the discovery of gold changed the new Colony from a rather simple economy based on farming and grazing to a bustling centre in the grip of a gold rush. Between 1851 and 1861 the population increased from 77,000 to 540,000.

The revenues and expenditures of the Government of Victoria during the period 1852 to 1900 are set out in the following tables. The first accounts for Victoria published for a full year were for 1852. The revenue of the Government in that year was derived from the basic sources of land settlement and customs duties, and from the goldfields. The first Act of the Colony to impose its own customs duties was proclaimed in 1852, and duties were placed on five commodities only : coffee, 10s per cwt ; spirits, 7s per gallon ; tea, 3d per lb ; tobacco, 2s per lb ; and wine, 1s per gallon. All other imports were duty free. Some indication of the early settlers' consumption of these commodities can be gauged from the fact that customs duties in 1852 represented more than £4 for every man, woman, and child in the Colony.

In December 1853 an Act for the better management of the goldfields was passed. This Act repealed the 1852 Act imposing fees for a licence to dig for any ore on wastelands of the Crown, and introduced licences to mine for gold, ranging from £1 for 1 month to £8 for 12 months. Licences at rates from £15 for 3 months to £50 for 12 months were also required to carry on business on the goldfields. Since 1850 the Port Phillip District had imposed its own postage rates, and in towns letters were carried for 1d per half ounce. Auctioneer's licence fees were increased from £15 to £100 a year in 1852, and publican's licences costing £30 a year were introduced.

VICTORIA—CONSOLIDATED REVENUE FUND: REVENUE(a)  
(\$'000)

Particulars	1852	1860	1870	1879-80	1889-90	1899-1900
<b>Taxation—</b>						
Customs and excise	661	2,995	2,715	2,838	5,591	4,603
Income tax	..	..	..	..	..	430
Probate duty	..	..	..	76	800	253
Land tax	..	..	..	175	243	216
Stamp duties	..	..	..	271	(b)1,549	(b)1,335
Duty on bank notes	..	..	..	45	64	37
Other	37	167	37	44	48	63
Total taxation	698	3,162	2,752	3,449	8,295	6,937
<b>Land revenue—</b>						
Alienation of Crown lands	1,417	1,372	1,296	1,392	887	559
Other	73	513	334	265	237	92
Total land revenue	1,490	1,885	1,630	1,657	1,124	651
Recovery of debt charges	..	n.a.	n.a.	5	83	276
Fees and charges	18	168	182	198	348	443
Goldfields	972	145	76	31	31	29
Railways	..	204	1,137	2,937	6,268	6,017
Harbours	25	41	36	41	65	57
Forests and water supply undertakings	..	..	142	236	443	136
Fines	38	22	20	8	17	18
Postal and telegraph offices	25	262	316	540	(b)113	(b)156
Other sources	5	(c)276	(c)233	141	251	177
Total	3,271	6,165	6,524	9,243	17,038	14,897

(a) June year accounting was first adopted in 1871-72; prior to that date government accounting was on a calendar year basis.

(b) Revenue from postage stamps included as part of stamp duties.

(c) Because of a lack of detail in early published accounts these figures may include amounts applicable to other heads of revenue.

n.a.: Not available.

The goldfields substantially increased the need for major items of expenditure including the cost of police, courts, post offices, medical services, and military establishments. Mounted patrols for gold transport and gold offices in Melbourne and Geelong were also provided from goldfields revenue. However, so buoyant was goldfields revenue in 1852 that it exceeded expenditure by \$404,000.

Expenditure on police and prisons in the Colony other than for the goldfields was also quite large. This could be expected in a newly settled area, especially in one which was undergoing all the social effects of a gold rush, including an extremely rapid growth in population. Immigration was the other major item of expenditure in the early 1850s, as the assisted immigration scheme continued despite the large influx of unassisted migrants lured to the Colony by gold.

The expenditure of \$17,000 for education included \$6,000 in aid of the establishment and support of National schools, and \$11,000 was provided as grants to denominational schools. Not only did the Government assist church schools, but financial assistance was also given to "defray the



VICTORIA—CONSOLIDATED REVENUE FUND : EXPENDITURE(*a*)  
(\$'000)

Particulars	1852	1860	1870	1879-80	1889-90	1899-1900
Debt charges ( <i>b</i> )	..	985	1,465	1,960	3,648	3,770
Education	17	270	373	1,093	1,521	1,330
Health	26	238	388	455	553	483
Penal and gaols	62	182	198	207	237	225
Police	140	641	400	467	548	558
Works and buildings	266	1,946	514	724	1,969	354
Defence	15	131	164	149	403	515
Crown lands and survey	58	263	133	322	578	249
Legal departments and judiciary	53	347	340	336	491	325
Endowments to municipalities	32	278	424	611	900	200
Railways ( <i>b</i> )	..	268	973	1,613	5,254	3,793
Posts and telegraphs	54	322	495	838	1,420	1,043
Trade and customs and ports and harbours	91	208	276	185	267	209
Mining and country water supply	568	72	56	121	349	126
Other	582	713	658	669	1,153	1,381
Total	1,964	6,864	6,857	9,750	19,291	14,561

(*a*) June year accounting was first adopted in 1871-72; prior to that date government accounting was on a calendar year basis.

(*b*) Railway debt charges are included under the item "Debt charges."

expenses" of providing clergy. The amount provided for this purpose in 1852 was also \$11,000, which is included above in "Other" expenditure. Free, secular, and compulsory education was not introduced until the Act of 1872, which also terminated these grants.

The forty years from 1851 was a period of extremely rapid development in the Colony. The development in the public sector of the economy was no less marked than elsewhere. In the 15 years from 1855 to 1870 the Colony's population nearly doubled from 364,000 to 727,000 persons. By 1880 the population had reached 860,000; by 1890 it was 1,133,000, but by 1900 it had only increased to 1,197,000. From 1852 to 1870 the Colony's revenue had almost doubled from \$3,271,000 to \$6,524,000, the major sources of revenue being customs and excise duties, and land revenue. In the meantime, however, revenue from the goldfields had shown a marked decline, falling by 1870 to less than one twelfth of the revenue of 1852.

By the end of 1863 the Government had acquired all the railway lines in the Colony, except the 16.3 miles owned by the Melbourne and Hobson's Bay Railway Co. which were eventually purchased by the Government in 1878. Railway receipts were paid into the Consolidated Revenue Fund, and railway expenditure made from the Fund. In this way railway income appeared as a new revenue item and by 1870 it had reached \$1,137,000; the next two decades were the outstanding years of government railway development and the growth in railway revenue was most apparent. By 1890 railway revenue had increased more than fivefold over the 1870 figure to reach \$6,268,000. The dramatic growth in the government owned railway system can be seen from the growth in mileage of railway track. In 1870 there were 270 miles of track open but by 1880 the mileage had reached 1,199. Mileage more than doubled in the next decade to reach 2,471 by 1890. Another half century was to elapse before railway mileage came close to doubling again.

A peak of economic activity generally, and of the Government's revenue in particular, was reached during the period of great prosperity which accompanied the land boom of the 1880s. By 1889 government revenue had reached \$17,038,000, or more than five times that of 1852, and nearly three times that of 1870.

Following the boom of the 1880s the Colony experienced a severe economic depression, at that time the worst in its history and unequalled in severity or hardship until the 1930s. Statistics of imports into the Colony provide a striking example of the decline in the level of activity as a result of the depression. In 1889 imports into Victoria were valued at \$48.4m. Five years later in 1894 imports had fallen to \$24.5m. The Colony's revenue suffered with the rest of the economy and by 1892-93 it had fallen to \$14m. Some recovery was made in the latter years of the 1890s, but for the financial year 1899-1900 revenue was still just under \$15m.

By the end of the nineteenth century the character of the Colony's revenue had changed markedly and sources of revenue had become much more diverse. The great bulk of the Colony's revenue now came from taxation and from its railway system; revenue from the occupation of land was less than half its 1852 amount. Customs duties were still the most important form of taxation. Excise duty was the second largest form of taxation following its early beginnings as distillation licences in 1862. Of the \$3,944,000 revenue from customs duties in 1899-1900, more than half was raised from items on which duties had been imposed since the earliest days of the Colony: spirits, wine, beer, and cider, \$972,000; tobacco, snuff, and cigars, \$470,000; tea, sugar and molasses, coffee, chicory, and cocoa and chocolate, \$770,000. In addition, however, a further \$1,154,000 was collected from customs duties imposed upon a wide range of articles, mainly manufactured goods such as handbags, barbed wire, engines of all kinds, wickerware, glassware, and articles of apparel.

This diversification reflected the extension of customs duties from levies for purely revenue purposes to levies which served the dual purpose of providing revenue for the Crown and protection for developing Victorian industries. The wide variety of articles subject to duty by the end of the nineteenth century grew from the small range of some thirty-three types of goods on which duties were levied by the *Customs Duties Act* 1866. This Act, which was first introduced with the Budget of Sir James McCulloch's Government in 1865, was finally proclaimed on 18 April 1866 after a fierce debate both inside and outside the Parliament. Subsequent legislation, especially in the 1870s and early 1880s, greatly extended the scope of the 1866 Act and protection of Victorian industry from outside competition by means of a tariff barrier became established as the policy of the Colony.

The base of taxation revenue was progressively broadened, becoming increasingly like that of a modern government. Probate duties were introduced in 1870, a bank notes tax in 1875, land tax in 1877, and stamp duties in 1879. Income taxation was introduced in 1895 at rates ranging from 4d in the £1 to 8d in the £1 for income from personal exertion, and 8d in the £1 to 16d in the £1 for income from property.

The expenditure of the Colony had also become more diverse. Expenditure on education was \$1,330,000 in 1899-1900, but like expenditure on health it was still relatively small as compared with that of a modern govern-

ment. Although expenditure on police and prisons was still high, it had fallen considerably as a proportion of total expenditure since 1852.

A major item of expenditure was the interest payable on the public debt. In addition to raising revenue, the Colony had been securing loan finance, especially in London, particularly for the construction of railways and waterworks, including the Yan Yean reservoir to supply Melbourne. The relative importance of overseas borrowing in comparison with local borrowing before Federation is illustrated by the interest payable on the public debt. Of the \$3,770,000 interest payable in 1899–1900, \$3,434,000 or 91 per cent was payable in London. The public debt of the Colony of Victoria at 30 June 1900, together with the interest payable on the debt, was as follows:

VICTORIA—PUBLIC DEBT AT 30 JUNE 1900  
(\$'000)

Purpose for which debt raised	Public debt	Interest payable in 1899–1900
Railways	75,330	2,896
Country waterworks	10,720	400
Yan Yean waterworks	4,718	178
Schools	2,240	90
Public offices, courts, and Parliament House	1,534	62
Other	4,108	144
Total	98,650	3,770

Such was the state of the finances of the Colony of Victoria on the eve of Federation. From very simple beginnings, the Government's finances by 1900 had grown both in amount and complexity. Federation was to have considerable effects on the governmental financial structure.

#### AFTER FEDERATION

Under the Constitution of the Commonwealth of Australia, specific powers were transferred to the newly created Commonwealth Government and the remaining powers were left with the States. This meant that such items as defence, trade and customs, and the postal service no longer appeared among the State's expenditures. At the same time, with the collection and control of customs and excise duties passing to the Commonwealth, Victoria lost its major source of revenue. From the figures in the following tables it is obvious that if no other financial arrangements had been made the result of the new Constitution would have been to give Victoria a serious budget deficit from the beginning. On the basis of 1899–1900 figures the revenues which the State lost, i.e., customs duties, excise duties, and postal charges, exceeded \$5m while the corresponding fall in expenditure was less than \$1.8m.

It was expected that for some time the Commonwealth would not require all of the revenue available to it as the expenditure fields taken over were only minor in character. On the other hand, the States, especially Victoria, had lost large amounts of revenue but still retained most of the expenditure fields.

The imbalance in the State accounts likely to result from the unequal size of revenues and expenditures taken over by the Commonwealth had led to a proposal by Sir Edward Braddon (Premier of Tasmania, 1894 to 1899) of a clause designed to give the States a constitutional right to 75 per cent of Commonwealth customs and excise revenue. After the Convention Bill containing the Braddon clause failed to secure the statutory majority in New South Wales, both Houses of that Parliament asked for the omission of the clause. A compromise solution was reached under which the operation of the clause was limited to the ten years after Federation, and thereafter for such time as the Commonwealth Parliament provided. The Braddon clause finally appeared as section 87 of the Commonwealth Constitution in the following form :

During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, of the net revenue of the Commonwealth from duties of customs and of excise not more than one-fourth shall be applied annually by the Commonwealth towards its expenditure.

The balance shall, in accordance with this Constitution, be paid to the several States, or applied towards the payment of interest on debts of the several States taken over by the Commonwealth.

VICTORIA—CONSOLIDATED REVENUE FUND: REVENUE  
(\$'000)

Particulars	1901-02	1909-10	1919-20	1929-30	1939-40	1949-50	1959-60	1969-70
<b>Taxation—</b>								
Income tax	441	677	1,831	5,962	9,475			
Probate duty	436	716	1,763	2,267	2,914	5,222	18,826	44,423
Land tax	196	229	628	1,063	980	585	11,708	22,436
Entertainments tax	..	..	..	107	666	..	2,824	569
Motor car third party insurance surcharge	..	..	..	..	..	..	980	2,735
Totalisator	..	..	..	..	359	1,582	1,769	14,064
Lottery duty	..	..	..	..	..	..	5,932	6,504
Stamp duties	322	465	1,542	2,051	2,249	5,952	27,637	90,361
Duties on bank notes	38	35	4	3	..	..	..	..
Licensing fund payment	..	..	..	454	341	1,162	5,600	10,658
Unemployment relief tax	..	..	..	..	4,000	..	..	..
Other	62	90	224	310	486	505	783	3,312
<b>Total taxation</b>	<b>1,495</b>	<b>2,212</b>	<b>5,992</b>	<b>12,215</b>	<b>21,470</b>	<b>15,008</b>	<b>76,059</b>	<b>195,062</b>
Recovery of debt charges	320	368	1,052	6,381	5,351	5,898	21,242	47,107
Fees and charges	485	476	1,152	1,545	1,634	4,955	13,637	27,811
Land revenue	631	498	336	396	485	600	1,741	2,864
Railway revenue	6,724	8,902	16,164	24,238	19,712	40,500	78,064	105,205
Harbour revenue	140	208	243	445	425	735	1,170	3,515
Forests, water supply, and coal mining undertakings	155	361	1,776	3,146	2,039	4,791	13,026	19,247
Fines	18	26	40	42	67	145	944	5,169
Statutory corporation payments	..	..	..	..	..	..	..	7,425
Other State sources	203	175	416	811	768	1,754	2,426	15,598
<b>Total revenue from State sources</b>	<b>10,171</b>	<b>13,226</b>	<b>27,171</b>	<b>49,219</b>	<b>51,951</b>	<b>74,386</b>	<b>208,309</b>	<b>429,003</b>
<b>Commonwealth payments to the State—</b>								
Share of customs and excise revenue	3,842	3,845	..	..	..	..	..	..
Per capita payments	..	..	3,694	..	..	..	..	..
Payment under Financial Agreement	..	..	..	4,254	4,254	4,254	4,254	4,254
Financial assistance grants (formerly tax reimbursement grants)	..	..	..	..	..	28,474	121,250	280,008
Other payments	..	..	..	..	..	3,999	2,808	13,635
<b>Total Commonwealth payments</b>	<b>3,842</b>	<b>3,845</b>	<b>3,694</b>	<b>4,254</b>	<b>4,254</b>	<b>36,727</b>	<b>128,312</b>	<b>297,897</b>
<b>Total</b>	<b>14,013</b>	<b>17,071</b>	<b>30,865</b>	<b>53,473</b>	<b>56,205</b>	<b>111,113</b>	<b>336,621</b>	<b>726,900</b>

In other words, the constitutional right to 75 per cent of net customs and excise revenue would cease for the States at the end of 1910. The clause in its final form was to play a significant role in shaping the future development of Commonwealth-State financial relationships in Australia. Without the help of the Braddon clause, Victoria would have been thrown into fundamental financial imbalance at Federation. The State's dependence on the share of customs and excise revenue it received under the Constitution until 1910 can be seen from the fact that this item represented 27 per cent of the revenue resources of the State in 1901-02 and was still 22.5 per cent in 1909-10.

VICTORIA—CONSOLIDATED REVENUE FUND: EXPENDITURE  
(\$'000)

Particulars	1901-02	1909-10	1919-20	1929-30	1939-40	1949-50	1959-60	1969-70
Debt charges (a)	4,087	4,378	7,142	12,467	16,911	20,104	69,327	154,360
Education	1,457	1,776	2,988	5,937	6,421	17,280	71,543	241,478
Health	528	609	1,252	1,915	2,655	9,601	46,557	97,057
Social welfare	829	278	557	1,122	891	975	4,470	11,969
Police	587	645	973	1,731	1,945	4,715	15,943	29,927
Public works and buildings	442	868	583	968	608	2,104	5,772	7,875
Crown lands and survey	252	286	387	1,336	574	1,531	2,994	4,327
Agriculture	132	349	494	764	1,065	1,768	3,766	8,318
Law	339	316	370	553	530	1,552	4,469	9,489
Unemployment relief					4,000	30		
Railways (a)	4,293	5,871	13,127	20,606	16,808	41,175	80,095	118,712
Ports and harbours	71	67	83	148	155	293	1,019	1,760
Mining and country water supply	163	325	614	613	1,050	3,264	8,699	15,271
Forests	34	71	168	332	610	2,035	4,347	6,320
Other	1,601	1,232	1,719	3,073	1,970	7,203	16,993	35,419
Total	14,815	17,071	30,457	51,565	56,193	113,630	335,994	742,282

(a) Railway debt charges are included under the item "Debt charges".

By 1909-10 the State's Consolidated Revenue Fund receipts had regained the level of 1889-90 despite the loss of revenue sources as a result of Federation. Income taxation and probate duty had become the major sources of taxation and railway revenue had reached almost \$9m. Of the total revenue of \$17.1m, \$13.2m was provided from State sources and the remaining revenue of \$3.8m came from the State's constitutional share of customs and excise revenue under the Braddon clause. Apart from expenditure of \$5.9m on its railway system, the other major items of expenditure in 1909-10 were debt charges, \$4.4m and education, \$1.8m. Expenditure on health just exceeded \$600,000 and expenditure on police was a similar amount.

*Per capita payments*

In 1909 Commonwealth and State Ministers met in conference to try to reconcile the States' claims for greater financial independence and Commonwealth claims for a greater share of customs and excise revenue. Eventually it was decided that after 1 July 1910 the Commonwealth would pay annually to the States a sum calculated at the rate of 25s a head of population. It was proposed that the Constitution should be amended to give permanent effect to these payments as compensation to the States for the loss of their share of customs and excise revenue. The constitutional amendment was rejected at a referendum, but in 1910 the Commonwealth

Parliament passed an Act providing for payment of 25s a head per annum to the States for a period of ten years, and thereafter until Parliament otherwise provided.

Per capita payments continued until after the First World War, when pressures began to mount for some alteration to the system. The Commonwealth argued that the system required alteration because the war had completely changed the state of Commonwealth finances, and Commonwealth revenue was not sufficient to meet charges arising out of the war and per capita payments as well.

In 1919–20 the State received \$3.7m from per capita payments which was less than the share of customs and excise revenue received in 1909–10. During this time it was found necessary for the State to almost treble taxation revenue with large increases in stamp duties, income tax, and probate duties. This action was taken to meet rising costs. Debt charges alone had increased during the decade by \$2.8m while the cost of education and health services had risen by \$1.8m.

The Commonwealth, which had first imposed income taxation during 1915, suggested that it was unsatisfactory for both the Commonwealth and State Governments to collect income tax and then for the Commonwealth Government to pay part of its revenue over to the States through general purpose grants. The question of per capita payments was discussed at Premiers' Conferences in the early 1920s.

At a conference of Commonwealth and State Ministers in 1926 the Commonwealth also asserted that the system of per capita payments had introduced an unacceptable principle into public finance because under it one government, the Commonwealth, was raising revenue for other governments to spend. At the same conference the Commonwealth put forward one of its proposals to alter the system. This was that the Commonwealth and State finances were to be separated as far as possible, on the principle that indirect taxation was the proper field for the Commonwealth and direct taxation the proper field for the States. As a first step towards this objective the Commonwealth would vacate the field of taxation of income of individuals. On the other hand, the per capita payments made to the States would be discontinued. Together with other proposals to alter the then existing system this proposal was rejected by the States.

In March 1927 the matter was brought to a head when the Commonwealth passed an Act abolishing per capita payments to the States. However, provision was made for payments to the States replacing the per capita payments during 1927, if an agreement was made between the Commonwealth and the States. An agreement, the Financial Agreement, had been under discussion and the abolition of the per capita payments finally secured State acceptance of this Agreement. The conditions leading up to this and the effect of the Agreement on government borrowing are discussed below.

#### *Co-ordination of government borrowing*

In 1909 a conference of Commonwealth and State Ministers had expressed a view that the establishment of one Australian Government stock and a consolidation of State debts would ensure the better management of future loans, and would be a step in keeping with the fulfilment of the intention of the Commonwealth Constitution. The matter was discussed again

at a Premiers' Conference held in Melbourne in 1923. At this Conference "the co-ordination of borrowing by the States and the Commonwealth" was discussed. Heavy public borrowing by the States and the Commonwealth in the years since 1910 was causing concern. The sinking fund arrangements for the redemption of the rapidly growing debt varied widely and were also causing concern. In addition, there were problems in the raising of loan funds, both in Australia and overseas, with seven governments competing in the same markets for loan moneys.

The 1923 Conference attempted to overcome some of these problems. It agreed that in respect of future loans proper provisions for sinking funds would be established. Further, it also agreed that an informal loan council consisting of the Commonwealth Treasurer and the Treasurers of each of the States would be set up to try to bring order into the approaches to the public loan market within Australia, and to consider the rate of interest and other terms upon which such loans could be floated. The council was to act in an advisory capacity. All States subsequently endorsed a Commonwealth proposal that the loan council should be given legal and constitutional status in the form of the Financial Agreement between the Commonwealth and the States.

The Financial Agreement in its final form was signed by the Commonwealth and the States on 12 December 1927. The Agreement was ratified by legislation in all States and in the Commonwealth Parliament after a constitutional referendum had approved the inclusion of section 105A in the Commonwealth Constitution giving power to the Commonwealth to make the Agreement.

The reasons for the signing of the Financial Agreement were thus broadly twofold. First, it was the only way by which the States could regain revenue to replace the per capita payments which were otherwise abolished by the Commonwealth, and second, it provided a means of strengthening the existing borrowing potential of the governments and of handling the situation which had arisen concerning loan funds and debt charges.

The provisions which significantly affect Commonwealth-State relationships and State finances are those relating to the establishment of the Australian Loan Council, consisting of the Prime Minister or his nominee and the six State Premiers or their nominees, and to the future borrowings by the governments of the States and of the Commonwealth of Australia.

Under the voting rules the Commonwealth representative on the Loan Council has two ordinary votes and a casting vote, while State representatives have one vote each. Thus the Commonwealth, when assisted by the votes of two States, can carry any proposal. Commonwealth influence in Loan Council proceedings has therefore tended to be strong, and has been enhanced since 1952 when the Commonwealth first guaranteed the raising of funds for the government borrowing programme.

Under the major permanent financial provisions of the Agreement the Commonwealth took over the public debts of the States existing at 30 June 1927 and assumed some of the responsibility for interest payments and sinking fund contributions. The Commonwealth contributes \$15m annually to the States towards payment of interest on the debt existing at that date, and of this amount, Victoria receives \$4.25m a year. However, the States still

have to find the balance of the interest payments on this debt and also full interest payments on new debts incurred since 1927. At 30 June 1970 the total annual interest liability of the States' debts was about \$550m, of which Victoria's share was about \$135m.

Concerning redemption of the debt, adequate sinking fund arrangements were established for the repayment of debts existing in 1927 and for those incurred subsequently. For debt existing in 1927 the Commonwealth contributes  $\frac{1}{4}$  of one per cent and the State  $\frac{1}{4}$  of one per cent of the face value of the debt each year to form a sinking fund to eliminate the debt in 58 years. For State debts incurred after June 1927, but excluding debt incurred for the purpose of funding revenue deficits, the Agreement provides for both the Commonwealth and the States to contribute  $\frac{1}{4}$  per cent a year each of the face value of the debt to form a sinking fund which will eliminate the debt after 53 years. This combined Commonwealth-State sinking fund contribution of  $\frac{1}{2}$  per cent a year is used by the National Debt Commission in the purchase of Commonwealth securities. These securities, purchased by the National Debt Commission, are termed "cancelled" securities, and the States, under the Agreement, also pay an additional sinking fund contribution of 4.5 per cent a year on the face value of these securities for the full period during which sinking fund contributions are payable. A result of this is that the States repay 86.75 per cent of State debt and the Commonwealth contributes 13.25 per cent. On the other hand, the States no longer pay interest on the cancelled securities.

There have been some minor amendments made to the Financial Agreement since 1927. In 1931 two Debt Conversion Agreements were made between the Commonwealth and the States which did not alter the wording of the original Agreement but which ensured that the provisions of these Debt Conversion Agreements should prevail over any provisions of the Financial Agreement with which they were not in accord.

Another agreement was made between the Commonwealth and the States in 1934. Under this agreement the Commonwealth agreed to write off portion of the indebtedness of the States in respect of loans raised for soldier settlement purposes.

In 1944 a further amending Agreement was made between the Commonwealth and the States. The amendments were not significant and were principally designed to clarify aspects of sinking fund procedure. Except for re-writing the provisions of the Agreement to take account of decimal currency in 1966, no further changes have been made since 1944.

Semi- and local government authorities were not subject to the Financial Agreement insofar as their money raising powers were concerned; by a "gentlemen's agreement" between the Commonwealth and the States control is exercised over these authorities so that their borrowing operations are in accord with the principles of the Financial Agreement. Today the total amount which may be borrowed in any year by semi-government authorities is determined by the Loan Council.

Since 1945 the Commonwealth and the States have entered into agreements—the Commonwealth and States Housing Agreements—under which the Commonwealth has lent money to the States to assist in carrying out housing projects. The amounts are determined annually at the Loan



Council meeting, and the loans carry a rate of interest one per cent below the prevailing bond rates. By 30 June 1971 Victoria had received \$607m in these loans, and had repaid \$54m.

As a result of its control over all government loan operations in Australia the Loan Council influences many financial activities in Victoria. It not only determines the size of the total annual borrowing programme and its distribution between the Commonwealth and the various State Governments, but also fixes interest rates and determines other matters connected with loan raisings. It, therefore, effectively controls both the amount of borrowing by governments and the terms on which they may borrow both in Australia and overseas. The decisions of the Loan Council determine to a very large extent the level of public works activity being undertaken in any year, with its consequential influence on the general level of economic activity. As Loan Council control also extends to government borrowing overseas, its decisions are also relevant to Australia's overseas balance of payments. In addition, the Commonwealth bond rate is an important influence on the structure of interest rates, and Loan Council decisions regarding changes in the bond rate have effects on private as well as public financial operations.

Expenditure from the Loan Fund has a significant effect on the Budget apart from the interest and sinking fund contributions involved. For example, before a new school can function, funds must be made available from current revenue for adequate teaching staff, maintenance, services, etc. Such considerations require that the relationship between loan expenditure and recurring costs be kept under very close scrutiny when capital projects are being planned.

Debt charges have been a large and growing financial commitment for the State and must be met from the Consolidated Revenue. In 1969-70 interest payments and sinking fund contributions totalled \$154m out of a total Budget expenditure of \$742m. However, some items of loan expenditure provide a financial return which partly offsets debt charges. In 1969-70 recoups of debt charges totalled \$47m, leaving an amount of \$107m to be financed from Consolidated Revenue.

In recent years increasing debt charges have been largely the result of loan funds expended on schools and hospitals and in developing the resources of the State. Between 1 July 1960 and 30 June 1970 the public debt of Victoria doubled and the average rate of interest increased from 4.2 per cent to 5.2 per cent. Consequently, the total interest payable has increased by about 132 per cent and meeting these increased payments has imposed a severe strain on State Budgets.

Since 1951-52 public borrowings (except in 1962-63 and 1963-64) have fallen short of approved Loan Council programmes for all States. This short-fall of borrowings has been met through special loans taken up by the Commonwealth at the end of each financial year on terms and conditions offered in the Commonwealth public loans raised in Australia during that year. The major part of funds subscribed by the Commonwealth to these special loans has been derived from general revenue sources. To 30 June 1970 the Commonwealth had subscribed a total of \$2,654m to special loans for all States, and in 1969-70 debt charges

payable by the States in respect of these loans amounted to about \$133m.

The Commonwealth has viewed its subscription to special loans as a proper investment of funds which imposes no greater interest cost on the States than if the subscriptions to the loan had come from the rest of the community. On the other hand, the States have taken the view that with a different distribution of taxation revenues between the Commonwealth and the States, much of the States' capital works which have been financed by borrowings could have been financed by taxation without being subject to interest and the consequential increase in State debt.

#### *Uniform taxation of income*

Following the Financial Agreement of 1927 the next major development in Commonwealth-State financial relationships was the introduction of uniform taxation in 1942. It is worth noting the trends in income tax before this latter date. In 1929-30 Victoria's Consolidated Revenue totalled \$53.5m, which was some 70 per cent above the level of revenue a decade before. Over this period State taxation doubled to reach \$12.2m, largely as a result of a substantial increase in income tax revenue which had firmly asserted itself as a major source of taxation revenue; it reached almost \$6m, representing an increase of more than 200 per cent over the decade. The only Commonwealth payment to the State of any significance was the amount of \$4.3m payable under the provisions of the Financial Agreement. Railway expenditure of \$20.6m was still the largest item of State expenditure followed in turn by debt charges of \$12.5m and expenditure on education of almost \$6m. Education expenditure had shown the greatest growth over the decade and had almost doubled in that time.

By 1939-40 Victoria's Consolidated Revenue Fund receipts totalled \$56.2m, which was only a marginal increase over the level of a decade earlier. This small increase was the result of the severe financial depression of the 1930s with its consequent effects on the Government's revenues, both as a result of the economic decline and the reduced activity following the "Premiers' Plan" which attempted what was considered at the time to be an appropriate anti-depression policy. Revenue from State sources other than State taxation had declined during the depression with the largest fall being recorded in railway revenue, which decreased from \$24.2m for 1929-30 to only \$19.7m by 1939-40. State taxation increased strongly, however, with income tax remaining a significant \$9.5m out of a total tax revenue of \$21.5m. In addition, the other major source of taxation revenue was a tax imposed on incomes for unemployment relief purposes which was first introduced in 1930 and which totalled \$4m in 1939-40. Government expenditure showed little increase over the level of a decade earlier and if an expenditure of \$4m for unemployment relief is excluded, it totalled only \$52.2m compared with \$51.6m a decade earlier. Nevertheless, debt charges continued to grow and by 1939-40 had become the major item of Consolidated Revenue Fund expenditure, totalling \$16.9m and just exceeding railway expenditure.

The following table shows the relative importance of income tax as a source of revenue to the two levels of government in 1939-40 prior to the introduction of uniform taxation:

## VICTORIA—INCOME TAX AND TOTAL TAXES, 1939–40

Particulars	Income tax collected (a)	Total tax revenue	Income tax as percentage of total
	\$m	\$m	
Commonwealth	32.9	180.0	18
All States	66.9	(b) 108.8	62
Victoria	13.5	(b) 25.4	53

- (a) Includes taxes levied on income for financing unemployment relief.  
 (b) Includes motor taxation which was not paid to Consolidated Revenue but paid to special funds. In 1939–40 these taxes totalled \$3.9m in Victoria and this amount was paid to the Country Roads Board Fund.

The introduction of uniform taxation can be traced to the needs of war finance. As war expenditure increased the Commonwealth was faced with the need to impose high and steeply progressive income tax rates. At that time a separate Commonwealth income tax was levied, which, under the Constitution, had to be uniform throughout Australia. However, State income taxation rates varied widely: Victoria was a low tax State; South Australian tax rates were relatively heavy on low incomes, while Queensland rates were relatively high on high incomes. Consequently, the scope available for imposing additional Commonwealth tax was limited to that available in the State with the highest rate at any given level of income. A corollary of this was that in the States with lower levels of income tax the Commonwealth could not gain access to the total taxable capacity of the State and of the nation. The Commonwealth Government also believed that in the interests of morale, citizens on a given income should pay the same total tax, irrespective of domicile.

The first proposals submitted to the States in January 1941 were that all States' rates of income tax should be either reduced to the level of the most lightly taxed State or increased to the level of the most heavily taxed State. In the first case, States which had to reduce their tax rates would be compensated by Commonwealth grants, and in the second case the additional revenue collected by States which had to increase tax rates would be lent to the Commonwealth. The States rejected both alternatives.

At the Premiers' Conference of June 1941 another proposal was put forward: that the States should vacate the income tax field for the duration of the war in favour of the Commonwealth, and in return the Commonwealth would pay \$60m annual compensation for loss of revenue. Of this amount \$49m would be distributed on a population basis and the balance on a basis to be agreed. All States, with the exception of South Australia, rejected this proposal.

In April 1942 a committee appointed by the Commonwealth to consider and report on a scheme of uniform taxation recommended that the States should retire from the income tax field for the duration of the war and one year thereafter. The Commonwealth would become the sole income taxing authority as from 1 July 1942, and from that date the States were to receive compensation for the loss of income tax revenue. On 22 April

1942 a Premiers' Conference rejected the Commonwealth's proposals based on this report but three weeks later the Commonwealth Treasurer introduced a series of bills for a scheme of uniform taxation which would, for all practical purposes, exclude the States from the income tax field for the duration of the war and one year thereafter.

This scheme was in four parts :

1. a significant increase in Commonwealth income tax rates which, particularly at higher income levels, would have left little scope for imposition of a State tax even if other barriers had not been imposed ;
2. an Income Tax Reimbursement Act providing for grants to the States to compensate them for the loss of income tax revenue, a condition of the payment of the grants being that the States did not impose an income tax ;
3. an amendment of the Income Tax Assessment Act to provide that no taxpayer should pay his State income tax until he had met his liability for Commonwealth income tax (this became known as the "priority clause") ; and
4. the transfer to the Commonwealth of the staff, records, equipment, and accommodation of the State income tax offices.

The income tax reimbursement grants were based on the average collections of State income tax during the two financial years 1939-40 and 1940-41.

When the necessary Bills had passed both Houses of the Commonwealth Parliament, action was taken by four States (Victoria, Queensland, South Australia, and Western Australia) to challenge the constitutional validity of the legislation in the High Court. Basically, the States contended that the four Acts must be considered together as a scheme or plan, the substance of which was a legislative prohibition against the exercise by the States of their power to levy income tax, and which neither the taxation nor the defence power of the Commonwealth would authorise. The High Court unanimously rejected this contention. Treating the Acts separately, the Court held all four valid—the "Rates Act" under the taxation power ; the States Grants under the power in section 96 to grant financial assistance to any State "under such conditions as the Parliament thinks fit" ; the "priority clause" as a matter incidental to the taxation power ; and the War-Time Arrangements under the defence power. There were minority dissents in relation both to the States Grants and to the War-Time Arrangements. One Justice upheld the "priority clause" as a defence measure.

Later in 1942 the Commonwealth, in agreement with the five States which levied entertainments tax, established a uniform entertainments tax, and provided for compensatory reimbursement grants, based on 1941-42 collections, to be paid annually to the States concerned.

Apart from a supplementary grant of \$1.1m given to South Australia in 1945-46, the income tax grants were almost unchanged throughout the war years. The 1942 basis of income tax reimbursement virtually pegged State expenditure during the war and so pegged State claims on real resources, except in spheres where State activities were essential to the war effort, e.g., transport, power, water, and sewerage services to military establishments, etc. The tax reimbursement grants were generally adequate for State needs

during the war because unemployment relief expenditure ceased and war-time shortages of men and materials forced lower expenditures, while revenue remained virtually at pre-war levels. In addition, railway finances were especially buoyant. However, after the war, with a return to more normal expenditure levels, a new basis of income tax reimbursement was necessary if the scheme of uniform taxation was to become a permanent feature in Commonwealth-State financial relations.

*Tax reimbursement grants after 1945*

At the Premiers' Conference in January 1946 the Commonwealth indicated its intention of continuing uniform taxation on a permanent basis, its reasons being that :

1. the Commonwealth faced heavy continuing commitments as a result of the war (debt charges, repatriation, etc.) and it had to be assured of adequate revenues to meet these charges ;
2. uniform income taxation was a desirable weapon for the successful implementation of full employment policies in the post-war period ; and
3. Commonwealth rates of income tax were and would continue to be materially higher than before the war, and the States would therefore have a narrower field in which to operate ; some States with relatively low taxable capacities would be embarrassed if they had to impose separate taxes in addition to Commonwealth rates.

It was decided that the total tax reimbursement grants in both 1946-47 and 1947-48 should be \$80m, allocated as follows:

N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Total
\$32.9m	<b>\$17.7m</b>	\$13.2m	\$6.9m	\$6.8m	\$2.4m	\$80.0m

Following further discussions with the States during the next two years the total tax grant for 1947-48 was increased to \$90m. In 1948-49 and subsequent years, the aggregate grant payable to the States in each year was determined by varying the sum of \$90m in accordance with a formula which took account of variations in the total population of the six States since 1 July 1947, and the full percentage increase in the level of average wages per person employed in Australia as a whole over the level in 1945-46.

Distribution of the aggregate grant between the States was determined by another formula. In each of the financial years 1948-49 to 1956-57 inclusive, a decreasing percentage of the aggregate grant was to be distributed in accordance with the 1946-47 and 1947-48 allocations. The percentage to be divided according to those allocations was 90 per cent in 1948-49, 80 per cent in 1949-50, and so on down to 10 per cent in 1956-57, and nothing in 1957-58. The remainder was to be distributed in proportion to the populations of the States adjusted for the number of children of school age (i.e., an adjustment for education costs) and for the sparsity of population in the State (i.e., an adjustment for the relative difficulty of government administration). This meant that the whole of the tax reimbursement grants in 1957-58 and thereafter would be distributed in proportion to the States' adjusted population as outlined above.

It was thought that this formula would automatically work towards

meeting the financial needs of the States in future years, but rising costs together with an increasing demand for State services made it inadequate to provide sufficient grants to the States in post-war conditions.

Although no change was made in the tax reimbursement formula between 1948-49 and 1958-59, the Commonwealth made *ad hoc* grants to supplement the formula grants in each year from 1949-50 to 1958-59. These supplementary grants were made in order to meet some of the rapidly growing demands of the States as population growth and economic expansion proceeded at high levels in the post-war period, and were distributed in proportions which usually differed from those of the formula.

In July 1952 the Prime Minister announced that his Government was prepared to restore income taxing rights to the States. His reasons were that this action would make the States masters of their own budgets, that it would rationalise to a greater degree than anything else the financial relations between the Commonwealth and the States, and that the Commonwealth Government believed in the federal system for Australia and therefore recognised the difficulty which existed when the Commonwealth sat in judgment on matters in which the States had constitutional responsibility.

The administrative and technical problems involved in a return of taxing powers were investigated by a Committee of Commonwealth and State Treasury officials and a report was presented to a Premiers' Conference in February 1953. Three major problems were involved. First, whether the States were to tax on a "residence" or "origin" basis, i.e., according to where an individual lived or a company had its head office, or alternatively, where income was earned. Second, differing laws governing assessment of income tax would make administration difficult, and would not have the advantages of relative simplicity and equity under uniform taxation. Third, there were problems of collection. Before the war most State tax departments acted as collecting agents of income tax for the Commonwealth but in any restoration of State taxing powers it would be desirable to preserve one collecting and assessing agent in the interests of economy and simplicity. The Treasury Officers' Committee reported that satisfactory machinery could be developed for the resumption of State income taxation. This was based on one return and one assessment which would show the separate liability for Commonwealth and State taxation. The Commonwealth taxation offices would assess and collect the tax and credit the appropriate proportion to the States. The Commonwealth and the States failed to agree on a basis for resumption of income tax by the States, especially on the extent to which the income tax field should be vacated by the Commonwealth. In consequence, nothing came of these negotiations.

#### *Legal challenges to uniform taxation*

In 1955 and 1956 legal challenges to the constitutional validity of uniform taxation in peace time were made by Victoria and New South Wales and the cases were heard together before the High Court in April 1957. This time, only the State grants and the "priority clause" were attacked. The ground of challenge was that the Acts were inconsistent with the constitutional independence of the States, and that the 1942 decision should either be over-ruled as incorrect, or set aside as resting essentially

on the scope of the defence power in time of war, and therefore now irrelevant.

The High Court unanimously rejected the challenge to the Grants Act. It held that the Commonwealth could impose any condition it liked on a grant paid in accordance with section 96 of the Constitution. Thus the Commonwealth in making a grant can impose a condition that the State shall not exercise one of its constitutional powers, in this case, the power to levy an income tax. By a majority, however, the Court declined to follow the 1942 decision on the "priority clause". It held that, in the Australian federal system, the claim to priority could not be supported as incidental to the taxation power.

*Financial assistance grants, 1959-1970*

Because of the generally expressed dissatisfaction with the methods of determination and distribution of the tax reimbursement grants, and the fact that two additional States, Victoria and Queensland, had applied for special grants hitherto awarded only to three claimant States on the recommendation of the Commonwealth Grants Commission, the Commonwealth advanced the following proposals at the 1959 Premiers' Conference :

1. to amalgamate within some new revenue grant arrangements the large and increasing grants which were then being paid to supplement the tax reimbursement formula grants, and to devise a more liberal formula which would avoid the necessity for supplementary grants in the future ;
2. to reduce to two the number of States which would in future continue regularly to apply to the Commonwealth Grants Commission for recommendations for special grants, and to reduce the dependence of these States on special grants ; and
3. to arrive at a more generally acceptable basis of distribution of Commonwealth general revenue grants between the States.

The Commonwealth also proposed that the financial assistance grants payable to each State in the succeeding five years should be determined by adjusting the grant paid to that State in 1959-60 in accordance with a formula based on movements in the State's population, and on annual increases in the level of average wages for Australia as a whole. The formula also incorporated a "betterment" factor, the effect of which was to increase by 10 per cent the average wages component of the formula. Thus, in any financial year subsequent to 1959-60, the grant payable to each State would be determined by varying the grant paid in the preceding year according to the change in the population of that State and 1.1 times the percentage increase in average Australian wages in the preceding year.

In April 1965 the States expressed the view that the annual rate of growth of the financial assistance grants under the 1959 arrangements had been too slow to allow State services to be developed at a rate compatible with the increasing demands for them resulting from the rapid population and economic growth of the States. The core of the problem was that the States did not have access to "growth" taxes such as income tax and pay-roll tax which automatically yield increased revenue with the development of the economy.

At a subsequent Premiers' Conference in June 1965 the formula agreed upon for the ensuing five years was that the grant for each State for each financial year would be determined by taking that State's grant for the

previous year and increasing it by the percentage change in the population of that State during the year ending 31 December of the year of payment ; the amount so obtained would then be increased by the percentage increase in average wages for Australia as a whole for the financial year immediately preceding the year of payment ; and this amount would then be increased by a "betterment" factor of 1.2.

In February 1967 a change was made in the formula for determining financial assistance grants. It was agreed to calculate the percentage increase in average wages over the twelve months ending March in the year of payment, instead of over the financial year immediately preceding the year of payment. This had the effect of reducing the time lag before increases in average wages were reflected in the grants.

Despite the changes which had occurred in the grants formula, Victoria and the other States still claimed that the rate of growth of the grants was inadequate for the States to finance their increased expenditures. These had increased not only to provide improved services in fields such as education and health but also because of wage increases and other rising costs associated with State activities being carried on at normal levels.

#### *State revenue and expenditure, 1949-50 to 1969-70*

In the post-war period changes occurred in the structure of the revenue received by the Consolidated Revenue Fund and in the pattern of expenditure from that fund. Commonwealth payments changed from their pre-war marginal nature to an important source of revenue for the State. In 1949-50 Commonwealth payments totalled \$36.7m and by 1969-70 this had increased to \$297.9m, or by more than eight times. Over the same period the State, which had no access to income tax, pay-roll tax, or excise duties, increased its taxation revenue from \$15.0m to \$195.1m. This was partly achieved by large increases in probate duties and land tax and by taxing revenues from totalisator operations. Most importantly it was achieved by the extensive use of State stamp duties which had become by far the most important source of State taxation revenue.

In the post-war period significant changes also occurred in the pattern of the State's expenditure from the Consolidated Revenue Fund. Expenditure on education increased thirteen times from \$17.3m in 1949-50 to \$241.5m by 1969-70 to become the most important item. It was considerably in excess of debt charges, which totalled \$154.4m in 1969-70 and was the second major item of expenditure. Expenditure on health also showed a dramatic increase from \$9.6m to \$97.1m over the period, as did social welfare expenditure which grew from less than \$1m to nearly \$12m.

Expenditure on public works and buildings from the Consolidated Revenue Fund has shown a small rate of growth since 1949-50 and was only \$7.9m in 1969-70. However, almost all of the State Government's capital works expenditure other than for road works is financed from the Loan Fund. Victoria's loan programme for State works and housing purposes has increased from \$42.9m in 1949-50 to \$193.4m in 1969-70. Accompanying this has been a rapid rise in the public debt of Victoria to reach \$2,770m by 30 June 1970, with its consequent effects on the growth of debt charges.



### *State receipts duty*

In 1967-68 the Victorian Government extended its stamp duty legislation to include a duty on receipts at the rate of 1 cent in \$10 on an extremely wide tax base including wages and salaries. Victoria became the second State (after Western Australia) to extend receipts duty in this way. However, the Commonwealth Government announced that it regarded receipts duty as it applied to salaries, wages, and like payments, as an income tax, and, as such, contrary to the financial assistance grants arrangements. As a result of the Commonwealth's attitude, receipts duty as it applied to salaries and wages in Victoria was repealed from 30 June 1970.

By 1970 all States had passed legislation extending their receipts duty except on wages and salaries. On 19 February 1970 the High Court handed down judgment in two test cases concerning the constitutional validity of State receipts duty. In both cases the High Court judged that the duties constituted an excise and that the States' legislation, to the extent that it applied to money received from the sale of new Australian manufactured goods, was constitutionally invalid.

Following these judgments the Commonwealth Government submitted to Parliament a Bill to protect State revenues by imposing receipts tax on behalf of the States. The Bill was defeated in the Senate. The Commonwealth Treasurer subsequently announced that the Bill would be re-submitted in the Budget session as part of the Commonwealth's Budget for 1970-71. The Bill was not proceeded with when it became clear that it would face certain defeat in the Senate once more.

To protect the States' budgets from the loss of the receipts duty the Commonwealth agreed to make grants to the States in 1970-71 to make up the short-fall in receipts duty collections in that year. It was also agreed that an amount would be built into the Financial Assistance Grants formula to compensate the States for the loss of receipts duties. Receipts duty of all kinds ceased on transactions after 30 September 1970.

### *Revenue assistance arrangements, 1970-71 to 1974-75*

In February 1970 the Prime Minister and the Premiers of the States met in Canberra for preliminary discussions concerning the new financial arrangements between the Commonwealth and the States to be introduced after the financial assistance grant formula expired on 30 June 1970. For many months before the February conference the State Premiers had conferred to formulate their views on the arrangements to operate from 1 July 1970.

Following their deliberations the Premiers produced a document entitled *The Financial Relationship of the Commonwealth and the States. A Statement by the Premiers of all of the States*. After analysing the problems associated with the present structure of the Commonwealth-State financial relationships the Premiers, in Part VI of their statement, put forward four proposals for future long-term financial arrangements between the two levels of government:

1. That the tax reimbursement grants for a transitional period from 1st July, 1970, should be determined by adequately increasing the base total as determined under present arrangements, and adopting a new

system of increases upon that base in line with the observed rate of growth in income tax yields.

2. That Commonwealth and State Treasury officers be instructed to devise a scheme whereby the States shall have access to income tax broadly along the lines of the system presently operating in Canada, but adapted to Australian circumstances and to the recognized needs of the less populous States.

3. Upon re-entry of the States into the field of income taxation appropriate adjustments be made to financial assistance grants to offset the effects of the lower *per capita* yields available to the less populous States from income tax, to preserve the financial equalization provisions presently available to the less populous States, and to provide for escalation of the continuing financial assistance grants in line with the expected yield of income taxation.

4. In the course of financial re-arrangements, consideration must be given to permitting participation by the States in such capital and developmental funds as may be secured from revenue sources; to a review of the recent trend to proliferation of Commonwealth "special purpose" grants; and to the possibility of the States securing access to wider revenue fields presently under the control of the Commonwealth, as well as to income tax.

These proposals were the basis for discussion at the Conference in February 1970. The Prime Minister expressed the belief of the Commonwealth Government that "there is a need for an increase in the capacity of the States to provide the services that they are required to provide" and acknowledged that "the States have within the regions of taxation open to them done a very great deal indeed to help themselves."

But the Commonwealth Government insisted on the maintenance of uniform income taxation and therefore reached the conclusion as expressed by the Prime Minister "that we do not believe that we ought to vacate the income tax field, either company or personal income tax, and certainly we should not seek in any way to emulate what is being done in Canada in this direction." \*

The Commonwealth, however, made other proposals for improving the financial situation of the States. These were outlined in more detail at the Premiers' Conference in June 1970, and were implemented in 1970-71. Those which affected Victoria were :

1. The basic tax reimbursement grants to be paid to each State in the 1970-71 to 1974-75 period to be determined by applying the formula which had been used for the calculation of the grants in 1969-70 with the following additions and amendments :

(i) an addition of \$40m to be made to the 1970-71 grants determined under the existing formula and this amount to be incorporated in the 1970-71 base for purposes of determining the formula grants for 1971-72 and later years. The amount of \$40m to be distributed between the States in the same proportions as their 1970-71 formula grants.

(ii) the "betterment" factor in the formula to be increased from 1.2 to 1.8 commencing in 1971-72.

\* Conference of Commonwealth and State Ministers, Canberra, 26 February 1970. Proceedings of Conference, page 11.

2. In addition to the amounts calculated under the formula, grants of \$2 per capita to be made to New South Wales and Victoria for each of the five years.
3. An interest-free grant to the States of \$200m to commence in 1970-71 and increase in future years in the same proportion as the increase in the total Loan Council works and housing programme. The grant to be non-specific and to be regarded as a contribution towards non-revenue producing capital works expenditure by the States.
4. The Commonwealth to make grants to the States in 1970-71 equal to the debt charges on \$200m of State debt and on an additional \$200m in each of the subsequent four years so that, by the beginning of the financial year 1974-75, the Commonwealth will have accepted full responsibility for the interest and sinking fund payments on \$1,000m of the existing \$11,000m State debt. This amount of debt which will be formally transferred to the Commonwealth in June 1975 carries an average interest rate of 5.5 per cent and the distribution between the States will be in proportion to their respective outstanding debts under the Financial Agreement as at 30 June 1970.

The proposals were not accepted by Victoria or South Australia but were agreed to by the other States. In his Budget Speech in September 1970 the Premier of Victoria informed Parliament that the proposals put forward by the Commonwealth would present Victoria with grave financial embarrassment from the very first year, and that he could not therefore agree to them.

The proposals were made on the condition that, among other things, the States and their authorities would continue to pay pay-roll tax. The Government of Victoria did not seek an appropriation to pay pay-roll tax so that the validity of the Commonwealth legislation, in relation to its application to State Governments, could be determined and clarified. Victoria's challenge to the validity of the Commonwealth pay-roll tax legislation was heard before the High Court in November 1970. In a unanimous decision in May 1971 the Court upheld the validity of the Commonwealth legislation.

In February 1971 the effect on the States' budgetary position of the wage awards recently handed down by wage fixing tribunals was discussed at a special Premiers' Conference. The awards cost Victoria \$31m in 1970-71 and \$62m in a full year. The Commonwealth took the view that because of inflationary forces in the economy the States should carry the deficits they faced in 1970-71 but, after discussion, the Prime Minister suggested that there should be further discussion of the problem in April.

At the April conference, by which time Victoria had acted to reduce budgeted expenditure by \$10.5m, the Commonwealth provided special revenue assistance to the States of \$43m to reduce State budget deficits and agreed to discuss a growth tax for the States in detail at the Premiers' Conference in June 1971.

#### *Transfer of pay-roll taxation to the States*

In June the Commonwealth agreed to transfer pay-roll taxation to the States in 1971-72 to provide a growth tax. The financial assistance grants would be reduced by the amount of State pay-roll tax collections, at existing rates, in 1971-72, less \$22.7m. In addition the States would receive a non-

recurring grant of \$40m making their total additional revenue assistance for 1971-72 \$62.7m. It was also agreed that upon the transfer of pay-roll tax to the States, local authorities, other than in respect of their business activities, would be exempted and the cost of providing the exemption would be met by the Commonwealth. To obtain sufficient revenue growth from the new tax to finance their 1971-72 budgets, the States jointly announced their intention to increase the rate of pay-roll tax from 2.5 per cent to 3.5 per cent.

#### *Specific purpose payments*

In addition to general purpose payments by way of the Financial Assistance Grants, the Commonwealth has also been making payments to the States for specific purposes. Many of these payments have taken the form of grants, while others have been loans at interest. The table on page 306 summarises these payments to or for Victoria over the ten years from 1959-60 to 1969-70.

It is apparent from the table that education and roads have been the fields to which most of these payments have been directed. In some instances, for example, grants to independent schools and for science laboratories, the payments are a method of implementing a particular policy of the Commonwealth Government, and the State acts as the agent of the Commonwealth in making payments to the schools concerned. In other cases the Commonwealth payment made is usually accompanied by the proviso that the States make payments of a certain level to match the Commonwealth grant. The payments for universities and colleges of advanced education are examples of this type of arrangement. In order to receive the Commonwealth grants for recurrent purposes for these institutions, the State payments to the universities and colleges together with their fee income must amount to \$1.85 for every \$1 received from the Commonwealth, i.e., the Commonwealth provides some 35 per cent of the total recurrent funds of the institution and State grants and fees provide the remaining 65 per cent. Thus there are significant effects on the finances of the State if the Commonwealth decides to increase assistance to these institutions, the cost of the increase being always greater for the State than the Commonwealth. For capital grants to these institutions the State must provide \$1 for every \$1 received from the Commonwealth.

Commonwealth payments for roads are provided under the Commonwealth Aid Roads legislation which consists of five-yearly arrangements between the Commonwealth and the States. During the term of the 1964-65 to 1968-69 Agreement, State sources of funds were financing approximately 75 per cent of road works, with the Commonwealth grants providing the balance. A new arrangement has come into force for the 1969-70 to 1973-74 period and provides for an increase in Commonwealth payments. However, the Commonwealth's contribution during this period is likely to be less than half of total roads funds expended in the State.

The decline in payments for "other" purposes is a result of the completion of railway standardisation projects for which the Commonwealth made payments of almost \$32m to Victoria between 1957-58 and 1962-63. Of this amount \$9.5m was in the form of loans at interest and the remainder was a grant.

Despite the growth in specific purpose payments to Victoria, Commonwealth financial assistance to the State is still predominantly in the form of untied payments, the expenditure of which is determined solely by the Government of Victoria, having regard to the competing demands of the various sections of the public sector of the Victorian economy.

VICTORIA—COMMONWEALTH SPECIFIC PURPOSE PAYMENTS<sup>(a)</sup>  
(\$m)

Particulars	1959-60	1969-70	Increase
<b>Education—</b>			
Universities			
Recurrent purposes	2.0	14.8	12.8
Capital works	0.8	4.5	3.7
Colleges of advanced education			
Recurrent purposes	..	4.8	4.8
Capital works	..	2.9	2.9
Grants to independent schools <sup>(b)</sup>	..	4.0	4.0
Science laboratories	..	4.0	4.0
Technical training	..	3.0	3.0
School libraries	..	2.2	2.2
Teachers colleges	..	3.3	3.3
<b>Total education</b>	<b>2.8</b>	<b>43.5</b>	<b>40.7</b>
<b>Roads</b>	<b>17.3</b>	<b>38.2</b>	<b>20.9</b>
<b>Health—</b>			
Tuberculosis hospitals	2.2	3.5	1.3
Other	1.2	1.2	..
<b>Total health</b>	<b>3.4</b>	<b>4.7</b>	<b>1.3</b>
<b>Other</b>	<b>7.6</b>	<b>4.4</b>	<b>-3.2</b>
<b>Total</b>	<b>31.1</b>	<b>90.8</b>	<b>59.7</b>

(a) Excludes payments under Financial Agreement.

(b) In this context "independent schools" means all non-government schools.

RURAL INDUSTRY

---

In the early days of Australian settlement the Government of New South Wales encouraged the production of an adequate supply of foodstuffs for the support of the Colony, and gave assistance by the purchase of wheat at guaranteed prices and by the establishment of State-owned farms. By the early 1800s self-sufficiency was achieved in grains, but because of lack of export capacity there was little to be gained from cropping in excess of this requirement. Partly as a result of this, the authorities considered other kinds of land use and when they realised that the natural environment was well suited to the production of fine wools, efforts were made to introduce suitable types of sheep. The increasing activity of woollen mills in England, the removal of duty on wool imported from the colonies, and the increased availability of shipping at reasonable rates all assisted the development of the pastoral industry. Income in addition to wool sale earnings was gained from the provision of meat for a growing population.

The pattern of rapid development was checked by a severe drought and the consequent economic crisis in 1828. However, the industry recovered and speculation with borrowed funds was stimulated by foreshadowed changes in land prices and policies. Development and expansion continued until 1839 when the flow of funds from London virtually stopped, causing financial chaos in the pastoral industries both in New South Wales and the Port Phillip District. The economic situation was worsened by serious drought and falling stock prices and recovery was somewhat slower than after 1828. It was aided by the establishment of boiling down works to obtain tallow from sheep, which gave some relief from the very low prices, and also by the 1843 Act of Council permitting banks to lend against liens on livestock and wool. With finance available and the passing of the drought, the pastoral industries gradually recovered.

In Victoria, the gold discoveries of the 1850s not only substantially increased population but also resulted in acute labour shortages. Under these conditions, changes had to be made in the methods of husbandry—shepherding became less intensive, properties were fenced, and washing of sheep before shearing virtually ceased. Increased population meant increased demand for food, and so meat prices rose. After 1851 wool prices also recovered and the remaining boiling down works were closed. The pastoral industry was thus achieving financial strength.

The Victorian Land Acts of 1865 and 1869 gave a basis for agricultural as distinct from pastoral settlement. At this time the invention of the stripper, the stump jump plough, and later the harvester, permitted

economic wheat farming despite declining yields. From the 1870s onward the railway system developed rapidly and this facilitated the expansion of agriculture inland. The invention of the Bessemer steel-making process during the 1870s and the consequent mass production of iron products including wire meant that fencing and subdivision could proceed more quickly.

The general economic situation in the early 1880s was sound. The price of wool was steady, cropping areas had increased substantially, and there was a period of freedom from drought after 1879. The general terms of overseas trade favoured the Colony and it was hoped that refrigeration would solve shipping problems to Britain and Europe. Better sheep breeding and husbandry with improved water supplies resulted in increased output, while capital expenditure on rural industries, largely financed by banks and pastoral companies, reached high levels. British investment flowed into Australia, much of it into speculative ventures, with Melbourne as the centre of spectacular land deals. When speculation ended in the early 1890s, the whole economy was again affected and the situation was aggravated by falling wool prices. Once again finance became very scarce, and because landholders were unable to repay loans negotiated at high interest rates, many holdings were taken over by banks and pastoral companies. The difficulties of rural industries were accentuated by rabbits, which had reached plague proportions at a time when trade and other economic activities were severely retarded during the depression of 1893. A serious drought began in 1895 and continued virtually unrelieved until 1902. As the effects of the long drought waned, rural development, aided by research and general economic recovery, proceeded rapidly.

During the First World War adjustments in production and changes in the disposal of products became necessary, labour was scarce, supplies were not easy to obtain, and shipping was difficult. Soon after the war and before the recovery of European production, prices for rural products were high. Ambitious schemes of soldier and migrant settlement were undertaken, and rural industries expanded in spite of incipient price falls during that decade. However, with the world-wide depression of the early 1930s, all rural industries were affected by further falls in export prices. The values of agricultural machinery dropped and this compounded indebtedness; settlers on marginal land were especially vulnerable. The situation was helped in the early 1930s by the devaluation of Australia's currency by 20 per cent, although it was still necessary for other measures to be taken. Relief Acts were introduced providing work, housing, and food for the unemployed and preventing foreclosure for debt; later under the Farmers Debts Adjustment Board a scheme of debt adjustment reduced farmers' liabilities. However, in spite of these measures some farmers had to abandon their properties. After 1932 the Ottawa Agreement, which conceded preferential duties and sales quotas on the British market, alleviated the position of the dairy and meat producing industries, and from 1932 to 1936 bounties were paid to wheat growers. Despite these measures the rural industries had not fully recovered when war broke out in 1939, and, as in the First World War, the farmers worked under the difficulties of shortage of labour and of commodities such as superphosphate. Access to world markets was restricted and farm conditions deteriorated during the severe

drought of 1944-45. Before the war had ended, war service land settlement schemes had been planned and were to prove generally successful because of lessons learnt from the past. Government control of marketing in the form of inter-governmental contracts for many products continued for some years after the war ended. The post-war period was marked by world-wide shortages of food and fibres, and the rural industries thus enjoyed a period of prosperity, culminating in 1951-52 when wool prices reached previously unmatched levels. However, as production began to recover in other countries, world prices for most products declined from the mid-1950s onwards.

Production in Australia continued to expand under the stimulus of rapid technological advance, control of rabbits by myxomatosis, and the introduction of more effective marketing schemes. However, during the 1960s marketing problems intensified. Agricultural policies, notably in the European Economic Community and the United Kingdom, disrupted traditional trading patterns and had strong effects on world prices. The direction of trade for many rural products changed; the United States of America had become a major buyer of Australian meat, China became an important wheat purchaser, and Japan displaced Britain as the major purchaser of Australian wool.

However, in the late 1960s, difficulty in marketing some rural products, and especially the high costs in relation to returns from these products, put many farmers in financial difficulties. Government schemes for assistance to rural industries were introduced.

## SHEEP

### *Marketing*

The early settlement of Victoria by the Hentys at Portland in 1834 and by John Batman at Port Phillip in 1835 was prompted by pastoral aims. By 1836 there were 41,000 sheep, and soon squatters were moving down from New South Wales. Most of the wool produced from the rapidly growing flocks was carted by the grower to Melbourne, where it was sold to general merchants who carried out most of the District's trade. The wool was forwarded to England, and sold at the London auction to specialist buyers working on account of the ultimate processors. By the late 1840s, however, marketing methods had begun to change. A series of good seasons and prices, and an inflow of British capital, had allowed the majority of growers to avoid the middlemen's costs and to forward their wool under their own names to London. In fact, most wool was consigned by merchants and banks at the grower's risk. This method of sale has persisted until the present, but since the 1880s has been of steadily decreasing importance. Since 1946 only 1 to 2 per cent of the Australian wool clip has been consigned for sale in London.

In 1848 Richard Goldsbrough supplied the first facilities for the auction of wool in Melbourne. The buyers, however, continued to be mainly merchants and middlemen who resold on the London market. Auction sales began at Geelong in 1857. Most wool sold through these stores was provided by small growers who could not afford either the long delay in payment or the freight costs to London; the large "station lines" which were in demand were usually consigned direct. Nevertheless, the local auctions



grew in volume, helped by variations in prices and the droughts of 1865 to 1869, and of 1888, which forced more and more growers to attempt to cut selling costs and seek local finance. This usually tied them to a particular consignment agent or broker, and began to attract agents of European and British manufacturers, and dealers seeing advantages in cutting out the London selling agents and buying on an essentially speculative and "weak seller" market. This trend eventually drained so many buyers from the London market that the large finance and consignment houses which had previously handled most of the business were forced to set up their own broking establishments in Melbourne and other selling centres. Noteworthy among these were Dalgety and Borrodale, and the New Zealand Loan and Mercantile Agency. The opening of telegraphic communications in 1872 was an essential requirement for the development of the local auctions, because it allowed direct contact between the British manufacturers and their local agents.

Since the early 1900s the local auction method of selling has been consolidated and has persisted with practically no change. Wool is forwarded at the grower's risk to a broker's store. There it is sold, in approximate order of receipt, by displaying a portion of each line for buyers to evaluate, and then by auctioning by voice at a central location. As was the case in Melbourne, auction sales in Geelong came to handle increasing proportions of the clip. Methods of marketing small amounts of wool varied. It could be sold to a private buyer who would sell through the local auction room, by consignment to the London auction, or by forward selling on the Sydney Greasy Wool Futures market where the wools also pass through the auction room. An additional selling centre was established at Ballarat in 1918, but at its peak in 1949-50 only 4,480 bales were sold there. Since then there has been a steady decline and only 1,454 bales were sold in 1969-70. In 1962, after considerable demand for its establishment, an auction room was also opened at Portland; it has attracted significant quantities for sale and 210,000 bales were sold in 1969-70.

During the war years the auction system did not function normally. Practically all wool offered for sale from 1916 to 1919 and from 1939 to 1946 was purchased by the British Government by means of appraisal and reserve prices. Stocks held over were released on the normal markets following the acquisition schemes, leading to a significant fall in prices in 1920 but having little effect on the boom markets of 1946 to 1951.

In 1951 and again in 1965 referenda among wool growers rejected the proposal for reserve price schemes within the auction structure. However, in December 1968 the Australian Wool Industry Conference approved the establishment of a non-statutory wool marketing authority for maintaining and improving standards of preparation of wools, and eliminating 1, 2, and 3 bale lots ("star" lots) by amalgamation to form larger lots, which would be placed on the auction market under supply control and price averaging pool systems. Instituted in July 1969 this arrangement brought a large proportion of the Victorian sales under a modified reserve price scheme. In 1970 the wool auction system was modified by the creation of the Australian Wool Commission. Because of its essentially free nature in former years the auction system has allowed considerable price variation. However, as a more even distribution of wool types is available at the Victorian centres, this variation has not been as extreme as in some other States.

With the spectacular increase in the non-agricultural population after the gold rushes of the 1850s, the demand for mutton rose. Concurrently, during the latter part of the nineteenth century, the British wool market demanded mainly longer stapled wools. As a result Victorian growers placed more emphasis than previously on the long-wool mutton breeds. Helped by a more temperate climate and a generally smaller farm size, these breeds have persisted in Victoria to a greater extent than in other States with the exception of Tasmania.

### *Prices*

Prices appeared to be quite attractive until the early 1840s when a decline occurred until 1848. This was followed by a general rise until 1872 when a peak was reached. Although there were minor price fluctuations, generally a decline followed, culminating in a very low price period in the general depression from 1891 to 1902. The effects of these low prices on the growers were heightened by a series of major droughts. From 1902 to 1914 prices were stable but only slightly higher. A general rise then followed to a peak in 1924–25. During the depression of the 1930s prices were again at their previously low stable level, but revived during the Second World War. After the war, a spectacular boom occurred and prices rose to a record in 1951–52. After 1951–52 prices declined gradually until 1968–69 when there was a sharp fall. By 1970–71 the clip averaged only 30c per lb, which was the lowest price for more than 20 years.

Within the seasonal variation, there have been variations in the relative values of different wool qualities. For a period late in the nineteenth century some coarse wools received higher prices than fine wools. However, there has normally been a considerable price differential in favour of fine wools. In the late 1950s and early 1960s this differential narrowed again, but in 1967–68 a significant fall in the price of coarse wools allowed the difference to move towards more usual values. Since 1900 slightly less than 50 per cent of wool sold in Victoria has been of the Merino type. A significant amount of wool sold in Victoria is grown in other States: e.g., in 1969–70 of 1,700,000 bales sold, 600,000 bales (33.5 per cent) were from interstate. However, very little Victorian wool is sold elsewhere in Australia; there were only 6,700 bales in 1969–70.

### BEEF CATTLE

Beef cattle have always been a feature of Victorian pastoral production, but were of only secondary importance in the early years. Until the 1880s, when refrigeration permitted the export of frozen carcasses, the only markets for cattle arose from the local demand for meat, or for the tallow and hides of drought-stricken animals. However, with the availability of export markets, the production of cattle increased markedly during the latter part of the nineteenth century. A general fall in numbers followed from a peak in the 1890s until the 1930s. The most significant cause was competition with the Argentine for the British market, in which Australia had a freight disadvantage. But droughts also contributed greatly to the fall in numbers to the 1930s, for traditionally beef cattle are run on the less accessible and less improved areas and therefore are much more vulnerable to drought. Since the 1930s there has been a steady increase with rapid growth in numbers in the late 1960s.

Meat exports from the whole of Australia since 1936 have been controlled by the Australian Meat Board through the issue of export licences. The Board was set up with the aims of regulating shipments, arranging contracts for freight and insurance, promoting overseas sales by advertising, and encouraging research. Funds were originally provided by a levy on exported meat, but they are now provided by a levy on stock sold for slaughter. In 1951 a fifteen year meat agreement (1952 to 1967) was signed with the United Kingdom Government with the aims of promoting the production of meat in Australia and providing a satisfactory market for meat in Britain. Minimum prices were set and any deficiency was to be made up by Britain. In 1952, at the institution of the agreement, only 3 per cent of Australia's exports in the categories under the agreement were permitted to be sold on other markets. At various times since then minimum prices have been reduced, but to balance this Australia has been permitted to send larger quantities to other destinations. Although meat could be exported to the United States of America from 1948, these exports were relatively small until all restrictions under the United Kingdom-Australia Meat Agreement were removed on lower grades of beef in 1958. As a result, during 1959-60 the United States of America for the first time took more beef than Britain. Concurrently, exports of mutton and lamb have also increased greatly to the United States and even more markedly to Canada, and since 1960 the North American market has consistently taken more meat than Britain. However, in 1964 a United States-Australia Meat Agreement was signed, which restricted the amount of exports to the United States, and in 1968 the Australian Meat Board was forced to restrict supplies to the United States under this agreement for the first time.

Cattle production has frequently been associated with sheep. In 1971 the Western District carried 37 per cent of the Victorian sheep population and 25 per cent of the cattle population. Refrigeration also allowed the dairy industry to enter export markets. The resulting expansion of dairying led to an increase in surplus dairy cattle for slaughter. To a very large degree the dairy industry has met the demand for beef and veal, and limited the expansion of beef herds. In fact, although it had a relatively small beef herd, Victoria was second only to Queensland in beef production in 1967. As an overall meat producer, Victoria is the largest in the Commonwealth, primarily as a result of being the largest mutton and dairying producer. Depressed wool prices subsequent to 1969 and uncertainty regarding future markets for dairy products led to greater emphasis on beef production. In 1971 some 5.1 million head of cattle were grazed in Victoria, and production of beef was 290,000 tons in 1970-71.

#### WHEAT

Wheat growing from early settlement to 1860 was characterised by a slow expansion of acreage. As the population increased from 10,000 to 540,000 persons between 1840 and 1860, Victoria was not self-sufficient in wheaten flour. There were many reasons for this. Roads were poor and it was therefore necessary to grow wheat in areas accessible by water transport or close to the centres of population; coastal navigation was restricted to small vessels and this made the transport of wheat uneconomic;

shipping to and from Europe was difficult; government policy was largely one of laissez-faire and there was no protection from imports; and sheep grazing had a comparative physical and economic advantage over cropping. By 1859-60 there were 107,000 acres yielding 2.3 million bushels.

The Victorian wheat industry was really established only after 1860. The railways were extended; immigration expanded the population; surface gold mining declined and labour was redistributed; and improved machinery made it both feasible and economic to harvest large and lower-yielding areas. Most of the increase in wheat area occurred on the land made available under the Land Acts of 1860, 1862, 1865, and 1869. The growth in acreage first decreased in the north of the State in 1880, and then in the Wimmera in 1890. The last agricultural area to be developed in Victoria was the Mallee, where the soil was found to be light, making it responsive to the low rainfall and easy to work. However, it was not recognised that the establishment of a permanent agriculture on these light soils, particularly under conditions of low rainfall, required new husbandry techniques, and the result was a form of land settlement which forced upon the farmers an exploitive form of agriculture; this was to create difficulties for the farmers of the next generation. Between 1860-61 and 1893-94 the Victorian acreage increased from 161,000 acres to 1,469,000 acres. During this period Victoria also developed as a wheat exporting colony, second only to South Australia, the exports going mainly to the United Kingdom, and to Guam in the Mariana Islands. Clipper sailing ships, by exploiting the westerly winds, made low cost global circumnavigation a practical reality and therefore greatly assisted export development.

Although acreage expanded from 1860 to the depression years of the early 1890s, the yield per acre exhibited a steady decline which was not checked until the early 1900s. However, the factors which were eventually to reverse this trend were already under development. For instance, Farrer's pioneering work on wheat varietal breeding and selection, together with the introduction of superphosphate fertiliser and the improvement in farming techniques, especially fallowing for moisture conservation and nitrogen release, were to have great economic importance after 1900.

A number of important developments of economic consequence occurred between 1893 and 1903: mechanised equipment suited to local soil and surface conditions became widely employed; the vital significance of superphosphate in overcoming the most important Australian soil deficiency was recognised; and new varieties of wheat, suited to the environmental conditions of the newly developed wheat lands, were evolved and substituted for the earlier unsuitable varieties. The Government expanded the Department of Agriculture, nationalised the use of water, and encouraged closer settlement schemes.

An emergency expansion of acreage followed the 1914 drought, and 3,680,000 acres were sown in the season 1915-16; however, a violent contraction in acreage followed, owing to war-time marketing and production difficulties. It became necessary, therefore, for the Commonwealth Government to establish compulsory wheat-pooling. Initially growers were not represented on Commonwealth or State Boards which managed the pools, but later they were given one representative on the Commonwealth Board and one on each of the State Boards.

After the 1921–22 season the compulsory pools came to an end. Growers attempted to organise marketing on a voluntary basis, and pools existed in Victoria for every crop until 1937–38. However, with the exception of Western Australia, these voluntary State pools did not receive strong support.

During the 1920s seasons favoured the primary producer and prices were above average. Governmental schemes aimed at settling ex-service-men and others on the land. With the advent of the Wimmera–Mallee Domestic and Stock Water Supply System, the establishment of a stable mixed farming system became possible in these areas. Unfortunately, the land settlement schemes were based upon holdings which were too small for stable farming, especially in the Mallee division, and the economic crisis of 1929–30 marked the end of an era in the Victorian wheat industry.

During the world economic crisis of the early 1930s the Commonwealth attempted to maintain the volume of overseas funds by urging farmers to increase their wheat acreage. An attempt was made to stabilise wheat prices through the Wheat Advance Act of 1930. This guaranteed 3s a bushel, less freight and handling charges incurred in placing wheat for export on board ship at port of export, and the first payment was to be 2s a bushel on delivery. As long as the increased wheat acreage met with reasonable seasonal conditions, production could be expanded rapidly, and the Commonwealth and State Governments therefore launched a publicity campaign to grow more wheat. Victorian farmers increased acreage from 3.56 million acres in 1929–30 to 4.6 million in the following year, but the 1931 record crop met the lowest world wheat prices for many years. The Government was unable to meet either the 1930 or 1931 promised prices of 4s and 3s, respectively, and many growers faced bankruptcy.

Devaluation, farm relief Acts, granting moratoria to prevent foreclosure for debt, temporary assistance, and bounties all brought some relief. In 1933 the Victorian Government introduced measures aimed at correcting the situation of settlement in marginal wheat areas, and some 3,000 farmers were involved in reconstruction measures which continued into the 1940s. The Royal Commission of 1934 on the wheat, flour, and bread industries assisted stabilisation, and the first successful home consumption price scheme was introduced in 1938. Its object was to provide a home consumption price of 5s 2d a bushel f.o.r. for wheat manufactured into flour for local consumption.

The years between 1939 and 1950 witnessed a period of war and post-war recovery. The first Australian Wheat Board was appointed on 21 September 1939 under the National Security Act to acquire and dispose of all marketable wheat. The Government appointed all the members of this original Board, although during the next few years the Board's constitution changed. During the Second World War, isolation from markets, labour shortages, super-phosphate shortage, and restrictions on other supplies, together with two serious droughts, caused difficulties, but some consolidation of the Victorian wheat industry was achieved. In 1946 the Commonwealth Parliament passed the Wheat Industry Stabilization Act, which embodied the previous principles of a guaranteed price, a home consumption price, a stabilisation fund, and a central marketing organisation, and in addition incorporated an index of

costs of production. This was a new feature and connected the price guarantee with "fair" production costs. The Government undertook to guarantee a price equal to the costs of production for an export quantity of 100 million bushels. When the export price was higher than the guaranteed price, 50 per cent of the difference, but not more than 2s 2d a bushel, was to be paid into the stabilisation fund. On the other hand, when the export price was lower than the guaranteed price, the wheat growers were to be paid, from the stabilisation fund, the difference between the market price and the guaranteed price. If the fund accumulated to an excessive amount, the earliest contributors were to receive a refund, and should the fund be exhausted, it was to be supplemented from Consolidated Revenue.

High wool prices in the early 1950s gave impetus to the incorporation of sheep on wheat farms. However, the trend had been reversed in the 1960s when wool and lamb prices continued to fall and wheat again became the more important activity in mixed farming areas. This trend continued well into the late 1960s with an expansion of acreage, much of it on former grazing properties.

The wheat industry has grown into an important export earner and represents a powerful sector of the farming community. The history of the Victorian wheat industry since 1950 parallels the history of the Australian wheat industry, which in turn reflects the operation of the Commonwealth stabilisation schemes in relation to world markets. In the early schemes wheat prices were calculated on the basis of a cost of production formula which bore little connection with world prices. As a consequence, in the early years of the fund, the grower was paid less than world prices, the fund grew, and the Australian consumer benefited. However, with growing world surpluses and problems with the International Grains Agreement, the world price fell to the extent that payments into the fund ceased altogether in 1956-57; in 1959-60 \$6m was appropriated from the Consolidated Revenue of the Commonwealth to make good the deficiencies. Sums paid out rose to \$15m in 1966-67, with a tendency to become larger as the gap between export returns and costs of production widened. The 1963 stabilisation plan, while lowering the guaranteed price from \$1.58 to \$1.44 per bushel, increased the production in excess of home consumption covered by the guarantee from 100 to 150 million bushels for Australia.

Fortunately, world markets became available in the early 1960s for the extra wheat produced in Australia, and this had the effect of forestalling the need to discourage extra wheat production. Asia had become the area in which most of Australia's trade was conducted in the late 1960s; mainland China was the largest single importer of Australian wheat.

The fifth wheat stabilisation plan, providing for the five seasons beginning with the 1968-69 crop, involved an important change in policy as the old link between the home consumption price and the guaranteed price was broken. In this plan the guaranteed price is derived from world trading conditions. This was necessary because of the increasing amount of money being spent by the Commonwealth under the old plan. In the ten seasons from 1959-60 to 1968-69 the Commonwealth had spent a total of \$185m. The guaranteed quantity in excess of home consumption was increased from 150 million to 200 million bushels, and amending legislation introduced

in 1969 gave the Wheat Board power to sell wheat for stock feed in Australia at prices below those set for human consumption, but at not less than the guaranteed price. Because of world over-supply of wheat, the Australian industry was unable to market the record 1968–69 harvest and a quota delivery system was introduced for the 1969–70 harvest. The Victorian quota was 52 million bushels in 1970–71 and 57 million bushels in 1971–72. Since the introduction of production quotas it appeared that during the next decade the wheat farmer would need to farm more flexibly; he might even need to be able to change over to alternative crops and livestock enterprises according to wheat market demands, and higher levels of management efficiency would be required.

#### DAIRYING

In Victoria, the industry made little real progress until after 1870, although dairying had developed in areas close to Melbourne and to an extent on the better lands of the Western District. Before 1870, and in common with other colonies, the produce of Victorian dairymen was restricted in its market outlets. Export was not feasible. An attempt had been made to ship butter to England but the cargo deteriorated. The local market was subject to severe seasonal price fluctuations resulting from variations in supply. Spring prices for butter were often below 6d per lb, and the autumn–winter prices were as high as 2s 6d per lb. These conditions did little to encourage the development of land for dairying, particularly as most of the best country for the purpose (e.g., Gippsland) was heavily timbered and inaccessible. At this time dairy products were prepared on individual farms and there were great variations in quality.

Between 1870 and 1880 settlement of the forest area of western Gippsland began. However, early settlement was based on cattle and sheep grazing with dairying being relatively unimportant. Conditions were very difficult; land clearing costs were high, pests were prevalent, and vermin were destructive. Many settlers eventually abandoned their blocks. Events of the 1880s were of great importance to the Victorian dairying industry. In 1875 Thomas Mort had formed the New South Wales Fresh Food and Ice Company Ltd in Sydney and was responsible for the first attempt to centralise butter manufacture. By about 1883 refrigeration became a commercial possibility. In the late 1880s the centrifugal cream separator was introduced into Victoria, and two years later the Victorian Government appointed its first dairy expert. The Government had also set up the Vegetable Products Commission to collect information and to make recommendations on several industries including dairying.

The Commission claimed that losses in the dairying industry were the result of inefficient and old-fashioned methods. It suggested that butter factories should be established on a commercial basis, that modern equipment such as cream separators should be introduced, comparable with the successful example at Dookie Agricultural College, and that travelling model dairies should help to disseminate information. The Gillies Government therefore allocated £233,000 for bonuses to establish butter factories, creameries, and cheese factories in Victoria, for assisting the vine and fruit industries, and for export bonuses. The amount of bonus per pound of butter exported was regulated by the price obtained at sale on export

markets. In its final report, issued in 1894, the Commission stated that in the year ending March 1893 there were eighty-six butter factories in operation, yielding over 13 million lb of butter, while there was over 10 million lb from private farms. By the following year 155 butter and cheese factories had been established in the State. During the season 1892-93, 8,094,255 lb of butter was exported compared with 828,882 lb in 1889-90.

The introduction of the Babcock test as a basis of payment for cream in place of the old unreliable "cream line" test, was another important development. The first Babcock testers were installed in Victoria at the Koroit factory in 1892. Pasteurisation was also introduced, so that preservatives were no longer needed. These innovations established the factory system and permitted dairy products of satisfactory, uniform quality to be placed on the market. As a result there was a rapid expansion in dairying, particularly in Gippsland where transportation had been improved by the opening of the railway to Leongatha in 1891. The industry was well established by 1900, but the marketing structure did not change until 1924. In that year the Commonwealth Government at the request of the industry introduced the Dairy Produce Export Control Act, the main purpose of which was to set up the Dairy Produce Control Board, with the function of regulating the marketing of butter and cheese on export markets. The Board, renamed the Australian Dairy Produce Board in 1935, continues to operate. In 1951 casein was brought under the Board's control and three years later, by an amendment to the Act, the Board became the sole authority for marketing butter and cheese on the British market. The Board attends to all administrative arrangements (storage, shipping, etc.), purchases products at an interim advance price from factories, and fixes minimum sale prices on export markets.

In 1926, after earlier equalisation schemes had failed, a voluntary scheme known as the Paterson Plan was introduced. This involved payment of a levy on total manufacture and the funds raised were used to pay a bonus on exports. At the time exports accounted for almost one third of total production. A levy of 1d per lb on all production enabled the payment of a bonus of 3d per lb to be made on exports; it also permitted the local price to be raised by 3d per lb, resulting in a net overall increase of 2d per lb. The scheme was administered by a body known as the Australian Stabilisation Committee. It failed because prices on the British market fell seriously, and because some manufacturers refused to export, and sold all their produce on the local market to avoid paying the levy. In 1934 the Paterson Plan was replaced by a statutory Commonwealth Price Equalisation Plan, involving complementary Commonwealth-State legislation. The object of the scheme was to maintain prices on the protected home market and to ensure that each manufacturer obtained a fair share of that market. The State legislation set up State dairy produce boards, whose function was to fix quotas which manufacturers could sell within their own States. The Commonwealth legislation controlled interstate trade by licensing interstate traders and by prescribing that no manufacturer could trade interstate unless he had exported a proportion of his production. The Commonwealth legislation was challenged, and in 1936 it was invalidated for contravening section 92 of the Constitution. However, the benefits of the scheme had become



apparent and it was continued on a voluntary basis. The present equalisation scheme, which is based on the previous one, is administered by the Commonwealth Dairy Produce Equalisation Committee Ltd. Its functions are to arrange for equal rates of return to manufacturers by adjusting prices received from various avenues of disposal to an equalised price.

During the Second World War the British Government entered into annual contracts with the Commonwealth for the supply of definite quantities of butter and cheese. In 1944 a four year contract was signed between Britain and the Australian Government for the sale of Australia's total exportable surplus of butter and cheese. The contract provided for an annual revision of prices with a maximum variation in any one year of 7.5 per cent. It was renewed for seven years in 1948. In 1942 the Commonwealth had passed the Dairying Industry Assistance Act, providing for a subsidy to suppliers of milk and cream for manufacture. The subsidy was designed to return an average price of 21.27d per lb for butterfat. The Act was amended in 1943 and the subsidy rate was increased to give a return of 21.88d, which the industry had assessed as being the average cost of production. The subsidy arrangement under the Assistance Act continued, at varying levels based on cost of production submissions. In each year Britain refunded the amount of subsidy paid on exports (except in 1946 when the export price exceeded the guaranteed price) and the excess was distributed to producers.

After representations from the industry and following a cost of production study, the Commonwealth introduced the first five year stabilisation plan. The plan guaranteed producers the ascertained cost of production, deficiencies between realisations and costs being made up by subsidy payments. By 1951-52 the annual cost of subsidies was close to \$36m. A second five year stabilisation plan, under which the Government guaranteed the cost of production for butter and cheese sold on the local market, plus 20 per cent of that quantity, was introduced in 1952, and was renewed for a further five years in 1957. Production costs were estimated by an independent authority (The Dairy Industry Investigation Committee), and wholesale prices in Australia were determined by the Minister for Primary Industry, with the approval of the States. The fourth five year plan was introduced in 1962 and cost of production guarantees were abandoned. The Commonwealth agreed to provide a bounty fixed at \$27m annually on butter and cheese production, but instead of applying to domestic consumption plus 20 per cent, the subsidy applied to all production. Responsibility for the determination of wholesale prices was assumed by the Australian Dairy Industry Council instead of by the Minister for Primary Industry. The plan was renewed in 1967 (with compensation for devaluation) for a further period of five years.

Subsidy on the production of processed milk products was payable from July 1942 until June 1948, and again from July 1949 to June 1952. No further subsidy was paid until the Commonwealth provided a separate bounty under the *Processed Milk Products Bounty Act* 1962 for the payment of a maximum amount of \$700,000 on exports as a means of strengthening the competitive position of Australian products. The bounty has been continued in subsequent legislation at an amount of up to \$800,000 in each year.

Before 1932 the liquid milk supply to Melbourne and other city markets was provided through individual licensed dairies operating independently. However, the Milk Board Act was passed in 1932 which provided for appointment of a Board to report and make recommendations on the regulation, control, and distribution of the metropolitan milk supply. The Act was repealed in 1933 but was replaced by another Act which also provided for the appointment of a Board to carry out an inquiry into the matters previously listed. In addition, the Board was empowered to determine the minimum price to be paid to farmers for city milk, to define areas, to specify dairies which could distribute milk in each area, to cancel the licences of dairies not so authorised, and to assess compensation owing to dairies. Weaknesses in the Act were removed by an amendment in 1934, and in 1936 the Board was empowered to determine wholesale prices at milk depots. The Board's powers were again extended in 1939 to fix maximum retail prices and maximum charges for pasteurisation ; they were also to regulate the quantity of milk forwarded for sale from individual depots and to allocate to milk depots areas from which milk could be obtained. At the same time the practice of "standardisation" of milk was prohibited and a penalty was prescribed for the sale of any retail delivery business without approval of the Board. This system, under which milk was purchased by dairies from farmers under the supervision of the Board, continued virtually unchanged until 1951. The *Milk Board Act* 1951 amended the earlier Acts substantially : milk was not to be distributed in any proclaimed district unless the Board had first purchased the milk from farmers and resold it to dairies for sale and distribution. The amendment formed the basis for the contract for year-round daily quantities of milk to be supplied to the Board. Since the Board is not involved in export ventures, it has been able to maintain prices to farmers at relatively high levels. Milk for city supply usually has a farm-gate price which is about twice that of milk sold for manufacturing purposes.

#### OTHER PRIMARY PRODUCTS

The depressed conditions of the early 1930s accentuated the problems of most agricultural producers, and resulted in government action to establish statutory marketing schemes on a Commonwealth basis for several major products. However, for a variety of reasons these schemes were not extended to cover the minor agricultural industries. The traditional marketing of many of these products had been through consignment to merchants, and prices realised depended almost entirely on the supply position of the market. Production in excess of market requirements, even to a relatively small extent, had a markedly depressing effect on the overall price levels.

Producer organisations had pressed for the introduction of organised marketing proposals over a period of years, and in the politically favourable environment of the mid-1930s these pressures resulted in the passing of the Marketing of Primary Products Act in 1935. The Act has been amended several times since then but its basic provisions have remained unaltered. It provides the machinery for establishing marketing boards for primary products. With the exception of wool, hay, and fresh fruit (other than citrus, apples, and pears), any rural product may be brought under the

operation of the Act. Marketing boards, however, can only be established after a majority of producers have voted in favour. Once a board has been established for a commodity, the commodity then becomes the property of the board, which has the responsibility of marketing on behalf of producers. For most commodities, the Act envisages annual pooling arrangements, and the distribution of proceeds of sale among producers in proportion to the quantity delivered to the board for sale. Since 1935 a number of commodities has been brought under the operation of the Act. Boards have been established for the following: onions, eggs, chicory, maize (all in 1936); potatoes (1947); seed beans (1953); tobacco (1964); and oats (1971). The Potato Marketing Board and the Seed Beans Marketing Board were dissolved in 1962 and 1967, respectively.

During the Second World War the Commonwealth Government assumed responsibility for the marketing of barley, and the Australian Barley Board was established. After the war growers pressed for the establishment of a new marketing scheme similar to that for wheat. However, at that time export prices for barley were high and the industry would not agree to a contributory stabilisation scheme. In consequence, a proposal with provisions similar to those of the Marketing of Primary Products Act was adopted. Because 95 per cent of manufacturing barley was produced in the States of Victoria and South Australia, it was decided that a Commonwealth marketing scheme was unnecessary. A joint South Australian and Victorian barley marketing board was set up in 1948 to handle the barley grown in the two States. An essential feature of the scheme was the undertaking given by the brewers and maltsters (the major users) to purchase their requirements from the Board. The Board has operated successfully in general, but increasing production in other States has led to recent discussion of the possibility of establishing a Commonwealth board.

Because boards own the commodities concerned, they are able to fix wholesale prices on the local market. The supply to the market is regulated either by storage (in the case of seasonal crops such as onions) or by export of surpluses. Storage is usually costly and this means that there may be long delays before producers receive payments. Export prices are usually lower than the local price and where export is involved, producers are required to make equalisation payments. In both cases there is financial incentive for producers to avoid marketing through board channels, provided that they can immediately obtain the full local market price. A legal avenue exists for avoiding the provisions of the Act by trading interstate under section 92 of the Commonwealth Constitution. Such trading has been a constant problem in the operation of all marketing boards, and it eventually led to the dissolution of the Potato Marketing Board. Efforts have been made to overcome this problem, including an unsuccessful attempt to change the Constitution.

An arrangement which has proved workable was introduced in the egg industry. The Egg Boards in all States formed a non-statutory authority (The Council of Egg Marketing Authorities) which proposed a scheme under which a levy was to be imposed by the Commonwealth on all hens kept for commercial purposes. The necessary legislation was passed in 1965. The proceeds of the levy are used for equalisation purposes and replace levies previously raised on eggs by State Boards. The essential

difference, however, is that it is not legally possible to avoid payment of the Commonwealth levy. The scheme has operated reasonably satisfactorily in the egg industry, and may have potential for application to other industries, particularly where there are no price differences between the States and where the complete pooling of the proceeds of sale is possible. Such schemes, however, are only workable when the proportion of exports is relatively low or when export prices approximate to domestic prices. They do not have the potential for supporting unlimited production at economic producer prices. The potential for production in many of the industries concerned is far greater than that required for domestic consumption. For some of the industries, export outlets virtually do not exist and production must be geared to domestic requirements if price stability is to be achieved. For other industries export is feasible, but uneconomic.

## MANUFACTURING INDUSTRY\*

---

The following description of industrial development in Victoria since the late 1830s draws attention to important trends in the types of industries and in their location. Because of the large number of factories involved (especially in the Melbourne area) it has not been possible to cite more than a few by name. For factories outside the Melbourne area the problem of citation has been lightened by the smaller numbers involved, although nothing like a complete list is presented even here. Among the various industries mentioned there have been some which are cited for reasons of historical interest ; sometimes they subsequently became extinct.

Between the mid-1830s when Victoria was first settled and 1851 when gold was discovered in Victoria, manufacturing industry in the Colony was of a minor nature and almost wholly confined to Melbourne. Among the factories existing at that time were bakeries, flour mills, iron foundries, boiling-down works, tanneries, and small servicing industries such as blacksmiths and saddlers. The discovery of gold at Ballarat, Bendigo, and Castlemaine led to a general rush of tradesmen from Melbourne to the goldfields, and artisans from Britain and other overseas countries flocked to Victoria in great numbers. At the Census taken in March 1851 the total population of Victoria was 77,345. By the end of the year it had increased to 97,489, and by the end of 1852 it had risen to 168,321. As the number of gold seekers from overseas and interstate increased, some of the blacksmiths' shops and foundries were converted to crude engineering shops to fabricate tools and mechanical implements for the diggers ; cart and wagon repairers became wagon builders ; and cobblers became makers of boots and shoes. Some

\* Statistics showing the development of secondary industry in Victoria are available from three sources : the periodic Population Census, the annual factory census, and the annual registration of factories.

Comparability between statistical series cannot be realised unless the collecting authorities are agreed at least on the following : (i) the nature of the reporting unit, (ii) the classification of the reporting unit, and (iii) the period to which returns relate. As there was no agreement on the above matters, the statistical series mentioned above are not comparable. Both the Population Census and factory census sources have been used in this article and, unless otherwise specified, the source used is the factory census. However, in respect of many of the earlier years of the factory census, it was admitted by W.H. Archer, Registrar General of Victoria in 1873, that the number of the returns "must be looked upon as considerably understating the truth".

There is a close relationship between manufacturing industry and research and development into manufacturing industry. Readers are therefore also referred to the relevant sections of Part 5.

of the new artisans remained in Melbourne and demanded high wages. Employment was easy to obtain: thus a carpenter could earn £400 a year, while at the end of 1852 stonemasons, bricklayers, and blacksmiths were earning 25s a day.

However, by the end of 1854 there was considerable unemployment in Victoria. Wages were reduced and unemployment was greatly increased with the arrival of large numbers of assisted migrants from England. During this period meetings of unemployed were common; a public meeting of employers and employees was held in Melbourne to discuss the question of hours of labour, and despite unemployment the eight hour movement made rapid progress. By the end of 1856 an eight hour working day was generally recognised throughout Victoria. Then from 1860 to 1890 gold mining declined. According to the 1857 Census there were 62,428 males engaged in mining; by 1891 this number had been reduced to 22,453. Many unemployed miners were attracted to New Zealand in the 1860s; some turned to farming in the districts near the goldfields; others returned to Melbourne to seek employment in manufacturing, or sought work in the newly established industries on the goldfields.

Possibly the first distinctively Australian trade established in Victoria (after the boiling-down works in the 1840s) was the manufacture of eucalyptus oil which began near Dandenong in 1852. This industry still continues, but is now centred on the Inglewood district. Other early developments were in the chemical industry with the production of sulphuric acid in the early 1860s, the establishment of a small saltworks on French Island in Western Port in the late 1870s, and the beginning of the fertiliser industry at the same time. The Censuses of 1871 and 1881 showed that the employment of females in "industrial" (mainly manufacturing operations) became important in Victoria during the intercensal period and increased from 14,178 to 23,713. The female employment was concentrated in the clothing and textile industries. In 1882 there were complaints of "sweating" among homeworkers. The *Age* aroused public feeling to these conditions, and as a result there was some improvement, but it was not until the Factories and Shops Act was passed in 1885 that there was any real betterment in working conditions.

Some years earlier the *Age*, led by David Syme, had given its strong support to a campaign for tariff protection in Victoria as a means of solving the unemployment problem. By 1866 the protectionists were in the majority in the Legislative Assembly and the first protectionist tariff was introduced after a bitter constitutional struggle with the Legislative Council. At first the tariff was low: 10 per cent on certain manufactured goods. In 1871 the tariff was raised to 20 per cent for finished manufactures including boots, clothing, textiles, leather goods, and iron and steel goods. Six years later the tariff was raised again and duties of 30 and 40 per cent were imposed on some commodities. It is uncertain how effective these measures were, but by 1891 nearly 25 per cent more people were employed in secondary industry in Victoria than in the more populous New South Wales.

In 1861, 475 "manufactories and works" were recorded in Victoria. There were a few engineering shops, twenty agricultural implement works, twenty iron, brass, and copper foundries, fifteen fellmongeries, twenty-one

soap and candle works, and twenty-eight tanneries. In addition there were fifty brickyards, sixty-four sawmills, nine chaff-cutting and corn-crushing mills, twenty-five aerated water factories, thirty-eight breweries, six ship and boat building yards, five gasworks, and a beet-sugar refinery. From the 1860s Felton and Grimwade produced drugs and basic pharmaceutical products. This enterprise was to branch out into the manufacture of glass containers in 1872, and it eventually became part of one of Australia's largest industrial groups — Australian Consolidated Industries Ltd. In the following year Cuming Smith began to manufacture sulphuric acid and later, superphosphate. This was the beginning of a complex industry which in due time expanded to other States and was to be closely associated with rural development. Demand for building materials during this time grew steadily and David Mitchell began to supply lime from his Lilydale quarry in 1878. The gradual diversification of the economy was evident in the range of production and its location. These types of enterprises were to be the foundation of Victoria's manufacturing industry.

By 1886 Ballarat had seven foundries, three flour mills, three breweries, seven tanneries, five brickyards, and 134 other manufactories including agricultural implement works, woollen mills, printing establishments, and gas works, with a total employment of 2,679 hands. One cordial manufacturer, E. Rowlands and Co., which was established in 1854, also had factories in Melbourne, Creswick, and Smythesdale. By 1886 cordial production at the Ballarat factory was between 3,000 and 4,000 dozen bottles a day. E. Lucas and Co. Pty Ltd, frock manufacturers, which in the 1960s transferred part of its operations to a new factory on the outskirts of Ballarat, had a humble start in 1888 in a room of a private house occupied by Mrs Lucas and her three daughters. In the north-east of Victoria a tannery was established in 1858 at Beechworth and operated for 103 years before closing in 1961. In the central part of the State, Bendigo's secondary industries developed along similar lines to those of Ballarat. For example, Cohn Bros, who originally manufactured beer and vinegar, now operate as an aerated waters factory on the original site on land alienated from the Crown in 1857.

Aided by an increasing number of fine-wool flocks and assisted by State grants for the establishment of woollen mills, Victoria became the major wool processing State in the early 1870s, a position it still maintains. The first piece of woollen cloth made in the Colony was exhibited at the Victorian Woollen and Cloth Manufacturing Co. Ltd in Geelong on 22 January 1869. By 1880 mills were located at Geelong, Ballarat, Warrnambool, Castlemaine, and Melbourne. In 1870 worsted piecegoods were woven at Ballarat for the first time in Australia. Four years later a public meeting at Castlemaine decided to form a company to manufacture woollen blankets and cloth; the mill established as a result of this meeting is still operating. In the same town Thompson Bros, flour millers, decided to diversify into mining engineering equipment. By 1880 they had contracts with the Victorian Railways and still supply the Railways Commissioners with equipment. In 1896 Foy and Gibson established Victoria's first fully integrated worsted and woollen mill at Fitzroy where they carried out all processes from the scouring of greasy wool to the production of woven piece goods.

Another of the industries which has flourished in Victoria since the Colony's earliest days was the foundry industry. Ferrous and non-ferrous foundries were established in the early 1850s, largely to provide castings for the agricultural machinery and mining industries. The Victorian Soho and Union foundries were the most prominent and were supplying heavy mining engines and pumps for gold mines in other Australian colonies, as well as locomotives. Another such foundry, J. Furphy and Sons, established in 1872 at Shepparton, is still manufacturing equipment including the well-known Furphy water cart. Heavy engineering, established over one hundred years ago, grew out of the necessity to repair imported machinery. Gradually machinery for flour milling, baking, woodworking, paint making, abattoirs, and various other industries was built in the Colony. During the 1880s and 1890s persons with a high level of skill and technology were available. Against this background the enterprise of Charles Ruwolt, who started as a windmill manufacturer in Wangaratta, began to develop. His company was to manufacture a significant range of heavy engineering machinery for the rubber processing, mining, papermaking, and machine tool industries. Kelly and Lewis Pty Ltd of Springvale, who are now one of Australia's largest pump manufacturers, commenced engineering operations in Melbourne in 1889. They originally produced forgings for the Victorian Railways and boilers for locomotives. The development of the deep level goldfields in Western Australia created opportunities for the firm in steam-driven winders and decondensing plants. There were other important manufacturers. The first railways workshops, for instance, were established at Williamstown and Batman Hill (Spencer Street) in 1858. Between 1873 and 1904 the Phoenix Foundry at Ballarat (which closed down in 1905) supplied about 350 steam locomotives to the Victorian Railways in addition to supplying stationary engines to private firms. The firm also exported to Western Australia and New Zealand. The combine harvester was developed by H. V. McKay, first at Clunes and Ballarat, and from the 1890s at Sunshine. The enterprise has since been sold to an international company; its range of products has subsequently been extended to include the cane harvester and a full range of agricultural implements. Recently it has diversified into items of equipment for the earthmoving and construction industries.

Although the Colony had no steel making facilities, mainly because of a lack of suitable ores and coking coal, rapid development of secondary industry was achieved. It is interesting to note that in 1873 at Ballarat, which at that time was a major engineering centre with an urgent demand for pig iron, a group of businessmen became interested in the Lal Lal iron ore deposits as a local source of pig iron. A company was formed to work the deposit and smelt the ore, and building began on a blast furnace for large scale production in 1874. While smelting iron on a commercial basis between 1878 and 1880, the Lal Lal Works mined 518 tons of ore and produced 237 tons of pig iron. During 1880 a new blast furnace was built and production reached a peak in 1884 when 1,600 tons of ore were smelted to produce 600 tons of pig iron. The company collapsed suddenly, mainly because of competition from imported English pig iron.

Victoria's first paper mill was begun by Samuel Ramsden in Melbourne in 1868 and closed as recently as 1968. From the beginning the mill produced



brown wrapping paper and newsprint. Another mill began in 1879 (closing in 1923) at Fyansford near Geelong, and products from this mill were displayed at the Industrial Exhibition held at Geelong in 1887. In 1882 William Brookes and Archibald Currie bought the Melbourne mill and in 1895 they bought the one at Fyansford. In the same year they were joined by the owner of a mill established in 1890 at Broadford in founding Australian Paper Mills. By 1926, as a result of subsequent mergers, this company had become Australian Paper Manufacturers Ltd.

One company which played a major part in settlement in Victoria was Michael Donaghy's rope works founded at Chilwell in 1852 ; it manufactured products ranging from fishing lines to 10 inch hawsers, and is still trading. Another was Trehwella Bros of Trentham. This firm developed a variety of lifting jacks and tree-pulling equipment during the late 1880s, and before 1914 was exporting to south-east Asia where this equipment was used for clearing jungles for rubber plantations.

The development of manufacturing activity in Victoria continued steadily until the end of the land boom and the depression of the early 1890s. The depression led to the grave weakening of the Colony's financial institutions and caused widespread hardship and unemployment. From 1891 to 1893 Melbourne's population declined by 33,000. Employment in secondary industry declined from 58,452 in 1890 to 41,729 in 1893 and it was not until 1899 that employment in manufacturing passed the level of 1890. The principal industries to suffer from the aftermath of the land boom were brick making and glass manufacture, engineering, saw milling, and joinery and furniture manufacture. On the other hand, the numbers employed in the food and clothing industries increased substantially during the 1890s. Immediately before Federation the most firmly established industries in Victoria were those which could be considered basic, namely, engineering, clothing, food processing, and furniture manufacture. Before Federation Victorian manufacturing was fostered under a protective tariff structure applied against imports from the other Australian colonies and overseas. The structure which had evolved during the nineteenth century was highly geared to supplying domestic needs ; the largest category of factory employment was in the clothing and textile industries.

In 1901 the Australian market was unified as a result of Federation. Uniform tariffs helped industries in New South Wales more than they did those in Victoria, as New South Wales had pursued a policy of free trade before Federation. The fastest growing industry group in Australia at that time was the metal and metal-working group, which had its greatest concentration in New South Wales. Federation resulted in increased competition for Victorian manufacturers, particularly from New South Wales. Sales from Victoria to other States rose by 39 per cent in the first 10 years after Federation, whereas manufactured imports from the other States increased by 120 per cent. Victorian manufacturers did benefit to a certain extent by an expansion of the market into Australian States other than New South Wales ; between 1904 and 1910 the value of output of Victorian factories increased by 59 per cent. The early years of this century reveal that the common tariff structure for each State facilitated the concentration of manufacturing in Victoria and New South Wales. This resulted in the

other States becoming more dependent on these industrial States for supplies of manufactures in the early days of Federation.

The First World War exercised a profound influence on the pace and nature of industrial development. Employment in secondary industry during the war varied between 114,000 and 118,000, although the four years were really a period of turmoil as manufacturing firms endeavoured to adjust to the changing circumstances brought about by the war. Some changes, such as the decline in horse-drawn vehicle production, were the result of technological developments ; others were the result of changing export patterns or of home consumption demands, including the need for war supplies ; most significant were the effects of the war in limiting imports. Some industries suffered as markets were lost or raw material supplies were cut off, while others benefited by shelter from overseas competition. The war can be regarded as a transition period from a simple to a more mature economy. Among the industries where employment increased between 1913 and 1920 were textiles, engineering, paper and printing, skins and leather, food, drinks, tobacco, chemical and pharmaceutical products, and rubber.

The first association of government in Australia with mass production concerned the manufacture of supplies for military purposes. By 1910 the Commonwealth Government had authorised the establishment of an explosives factory at Maribyrnong, a clothing factory at South Melbourne, and a harness, saddlery, and leather accoutrements factory at Clifton Hill. A government woollen factory was established at Geelong in 1914. The following year it began to manufacture cloth, blankets, flannel for underclothing, and similar woollen requisites for the troops. This factory was sold to the Federal Woollen Mills Pty Ltd in 1922 and was to become one of the largest mills in Australia. In 1923 the Commonwealth Government decided that war factories should be closed. The harness factory ceased production and was sold. However, the clothing factory and the explosives factory were retained. The small arms ammunition factory, which had been established in 1888 and leased from the Colonial Ammunition Company in 1921, was purchased outright by the Commonwealth Government in 1927 and re-built.

Shortages of certain imported commodities during the war led to their manufacture in Victoria. These included surgical, optical, and other scientific instruments formerly imported from Germany, as well as chemicals, drugs (including aspirin), and certain paints and varnishes. With help from the Victorian Government, a co-operative company was established at Shepparton in 1917 to build a fruit cannery which would handle the produce from the irrigation settlement there. This company, which is now known as the Shepparton Preserving Co. Ltd, processed 350 tons of fruit in its first season. In 1922 the Ardmona Fruit Products Co-operative Co. Ltd set up a dehydration plant at Mooroopna, where canning of fruits began in 1925.

The temporary dislocation caused by the war was followed by a period of reconstruction and prosperity. An interesting post-war phenomenon was the formation of co-operative ventures by returned soldiers who used their war gratuity bonds as capital in manufacturing enterprises. One of the most successful of these was the Returned Soldiers and Sailors Woollen and Worsted Co-operative Manufacturing Company at Geelong. Most such ventures, however, were involved in marketing rather than in manufacturing,

as illustrated by the dried fruits packing organisations in the Murray valley.

The uncertainty of coal supplies from the disturbed New South Wales coalfields encouraged the State Government to develop local sources of power. Mining of black coal at Wonthaggi began in 1909, but of much greater significance was the establishment of the State Electricity Commission in 1919 and the first intensive exploitation of the immense brown coal deposits of the La Trobe valley in that year. After some initial problems the Commission was generating power at Yallourn in 1924, and a steady expansion of its works has given Victoria a sound and flexible source of cheap power on which to base its industrial development. In addition to the generation of electricity, the coalfields have been used to produce briquettes and, from 1957 to 1969, town gas by the Lurgi process for domestic and industrial use. Most of Victoria's power is generated in the La Trobe valley, and the continuing growth of power generation has attracted a significant population. Some power (especially for peak loads) comes from the Commission's Kiewa scheme in the Victorian Alps and from the Snowy Mountains scheme in New South Wales. From March 1969 the State's power resources were further diversified by the reticulation of natural gas from fields off the Gippsland coast.

During the 1920s rapid expansion of secondary industry continued, helped by increasing population, availability of credit, and government assistance. At the Federal level this expansion was encouraged by rising and spreading protective tariffs and, at the State level, until 1942 when uniform taxation was introduced, by one of the lowest income tax payments per head of population in Australia. In 1928-29 the value of production from secondary industry passed that of primary industry and the gap between them widened. The industries which expanded most significantly during this period were cement, engineering, textiles, furniture making, paper and printing, pipes, and rubber.

Between the two world wars several new manufacturing plants were introduced, giving Victoria a more substantial industrial base. The Ford Motor Company of Canada Ltd established the first motor vehicle assembly plant by a large scale manufacturer at Geelong in 1925. Although the woollen textile industry was already established in the area, Ford's arrival was the beginning of a movement of industry towards Geelong. Ford was followed in 1939 by the International Harvester Co. of Australia Pty Ltd which set up a plant at Geelong for the manufacture, first, of farm machinery, and subsequently, of tractors and commercial motor vehicles. In 1925 a cement works, originally formed at Fyansford near Geelong in the 1890s, became a public company and merged with Kandos Cement Co. Ltd of New South Wales in 1929. Now the Australian Portland Cement Ltd, this company also controls the Gippsland Cement and Lime Co. plant at Traralgon, which was established in 1953 and operated the first successful vertical cement kiln in Australia. In 1964 another major cement works was built at Waurn Ponds on the outskirts of Geelong by Victoria Portland Cement Co. Pty Ltd, thus making Geelong one of the major cement producing areas in Australia.

During the early 1920s local residents at Maryborough, where the gold mining industry was rapidly declining, subscribed large amounts of capital to set up secondary industries. One of these, Maryborough Knitting Mills

(Cuttle) Ltd is a major employer, with annexes in the nearby towns of St Arnaud, Dunolly, Avoca, and Beaufort. Furthermore, during this decade a number of entirely new and important industries was established in Victoria, such as the production of radio receivers which began in 1923. In 1929 Imperial Chemical Industries Ltd of the United Kingdom established its Australian branch, I.C.I.A.N.Z. Ltd with its headquarters in Victoria, although one or two of the component firms, e.g., Nobel, had been operating in the State since the early 1900s. The initial Australian shareholding included Commonwealth Fertilizers and Chemicals Ltd, B.H.P., and some of the "Collins House" group. The following year Monsanto (Aust.) Ltd, another overseas chemical company, was set up in Victoria. These overseas-based companies supplemented the local old-established chemical industry dating back to Felton and Grimwade, and Cuming Smith and Co., in the 1860s and 1870s.

By 1927 employment in secondary industry in Victoria had grown to 162,000, but the world-wide depression brought employment in manufacturing industries down to 126,000 in 1931, the lowest level since 1919. It was not until 1935 that employment in secondary industry in Victoria again reached the level of 1927. Victoria suffered during the depression years. Prices of primary products on world markets dropped and continued at a low level throughout the 1930s. Between March 1929 and September 1931 unemployment among members of trade unions in Victoria rose from 8.6 per cent to 26.8 per cent, and by the end of 1931, 170,000 persons were dependent on unemployment relief. Aided by a tariff policy which curtailed imports, unemployment was slowly reduced although it remained high until the outbreak of the Second World War, when 11.2 per cent of trade union members in Victoria were still unemployed.

The first motor vehicle with an internal combustion engine made in Australia was produced by the Tarrant Engineering Company at South Melbourne in 1901. In 1903 a Tarrant subsidiary, The Melbourne Motor Body Works, was established. Tarrant acquired the Ford agency in 1907 and ceased manufacturing Tarrant cars. The Ford agency was relinquished to the Ford Company of Canada in 1925, and a large factory was built in West Melbourne under the name of Ruskin Motors Pty Ltd, which produced motor bodies from 1925 to 1952 for various makes of cars. In 1905 James Flood, while an employee of Tarrant, made the first fully enclosed passenger car body to be fitted to a motor vehicle in Australia. In 1907 he established his own car body building firm and concentrated first on making custom-built bodies, later moving into bodies produced by assembly line methods.

In the mid-1930s General Motors-Holden's Pty Ltd, which had commenced the assembly of cars in 1926, obtained land from the Crown at Fishermens Bend for the factory which became the headquarters of its operations in Australia. The Australian motor industry, which is still heavily concentrated in Victoria, is thus a particular product of the years between the wars; it has developed into a major employer of labour, and has saved substantial amounts of foreign exchange. In contrast with the usual pattern of growth, development of the motor car industry began with the manufacture of car bodies, largely as a result of a Commonwealth

regulation imposed during the First World War and designed to conserve limited shipping space ; it restricted the ratio of motor bodies to motor chassis which could be imported. Victoria's early prominence in carriage building greatly assisted the later development of the motor car industry which embraces many skills and techniques. Motor vehicle assembly plants in Victoria encouraged Repco and others to make automotive parts, including electrical components, both for original equipment and spare parts. In addition, a large share of Australia's motor tyre and battery manufacturing is evident in Victoria ; Dunlop Australia Ltd and Olympic Tyre and Rubber Co. Pty Ltd, the State's two main producers of rubber goods, date from 1899 and 1922, respectively.

In the paper manufacturing industry, Victoria's first integrated woodpulp and paper mill began to operate at Maryvale in 1939, adding capacity to the mills at Broadford (established in 1890) and Fairfield (1921).

Victorian factory employment between 1938-39 and 1948-49, the decade of the Second World War, increased from 201,831 to 292,006 persons, an increase of 45 per cent, while the annual value of factory production increased from \$132m by nearly 180 per cent to \$366m. The war brought a large measure of industrial maturity to Victoria, best illustrated by industry's achievements in producing a wide range of specialised equipment including machine tools, precision instruments, aircraft, ordnance, and other armaments. After the First World War there was, of course, a reduction of expenditure on munitions. Despite this curtailment a programme of re-equipping Commonwealth Government factories in Victoria was successfully carried out. This affected the ammunition factory at Footscray and the explosives and ordnance factories at Maribyrnong. During the depression, when there were virtually no orders from the Armed Services, these factories were kept in working order and a nucleus of trained staff was retained by the production of goods for the domestic market.

The first motor driven aeroplane made in Australia was flown at Mia Mia near Bendigo in July 1910 by J. R. Duigan. In 1915 orders were placed for the production of aircraft engines by the Australian Flying Corps and three were produced by Kelly and Lewis in Little Bourke Street, but the need for large scale production never arose. Gypsy Moth aircraft were produced by the Larkin Aircraft Supply Company at Coode Island in the 1920s. In 1927 the British De Havilland Aircraft Company formed a subsidiary company and in 1928 began the assembly of aircraft at South Melbourne. The company moved to Sydney in 1930.

However, the Commonwealth Aircraft Corporation Pty Ltd, which was formed in Victoria in 1936 largely through the foresight of some Australian businessmen concerned about the possibility of war in Europe, produced its first aircraft at Fishermens Bend in March 1939. Since then the aircraft industry in Australia has assumed importance. The Corporation's plant was then the only one in Australia producing significant quantities of aircraft and probably the only factory in the world producing aircraft engines and air frames under one roof. A total of 757 Wirraways, 250 Boomerangs, and 170 Mustangs was built, as well as a prototype for a most advanced piston engined fighter—the CA15. Many engines, and later on, some 200 Wackett Trainers, were also produced. In 1940 the adjacent and complementary Government Aircraft Factory was established

and began producing Beaufort bombers. In all, 700 Beauforts and 364 Beaufighters were built for war service and, immediately after the war, 73 Lincoln bombers. Australia's aircraft industry, centred in Victoria, suffered a severe decline after the war, but efforts were made to maintain its capacity to manufacture aircraft and retain its highly skilled work force. In these post-war years the Sabre jet fighter and Macchi jet trainer were made by the Corporation and production of the Canberra bomber and Mirage fighter was shared between the Corporation and the Government Aircraft Factory. The latter also produced the pilotless Jindivik and Turana target aircraft and the Ikara anti-submarine missile. This factory has recently been testing two prototypes of the Nomad twin turbo-prop aircraft, designed by the factory's own engineering staff. A second government aircraft factory was established in 1950 at Avalon aerodrome to maintain, repair, and flight-test aircraft.

At the outbreak of the Second World War the three munitions establishments in Victoria operated by the Commonwealth Government were the Ordnance Factory and the Explosives Factory at Maribyrnong and the Ammunition Factory at Footscray. During the war four more ordnance factories were established in Victoria at Bendigo, Horsham, Hamilton, and Stawell; an additional explosives factory was built at Geelong; and a gun-cotton factory was established at Ballarat. In addition to these government activities, some forty munitions annexes were established with various Victorian manufacturing firms. These produced a wide range of munitions and equipment such as mortar bombs, optical munitions, marine diesel engines and marine craft, mines, and aircraft parts; many of these had not been made in Australia before. After the war most of these ordnance factories were converted to general industrial use. The most successful was the gun-cotton factory at Ballarat which provided a site for a paper coating plant. This factory complex was purchased later by the Victorian Government and the balance of the area converted into an industrial estate where a number of companies now operate. The former ordnance factory at Horsham is now occupied by Prestige Ltd, while that at Hamilton has been taken over by Frost Engineering Co. Ltd which is engaged in the manufacture of twist drills. The ball bearing plant established by the Commonwealth Government at Echuca during the Second World War has continued to expand and is now operated by United Bearing Corporation Pty Ltd.

The technological challenge successfully met by Victorian manufacturing industry during the Second World War paved the way for large scale post-war overseas investment in Victorian secondary industry in many localities, and for a further expansion of manufacturing in the State. A programme of immigration helped to enlarge the work force necessary for this expansion, which took place over a wide area, Dandenong being the first major post-war regional development site. Another of Victoria's decentralisation ventures was the transfer of Cleckheaton Ltd to Shepparton. In 1949 this firm brought out its whole spinning plant from the United Kingdom, and the company now operates at Shepparton, Mooroopna, Tatura, and Benalla, and at several Melbourne factories. In 1960 Campbell's Soups (Aust.) Pty Ltd was established in the Goulburn valley, and now operates a large factory at Lemnos near Shepparton. Bruck (Aust.) Ltd, which in 1947

took over a factory at Wangaratta intended for aluminium production and established a major mill to manufacture, dye, and finish man-made fibre fabrics, has recently built a new finishing mill and textile chemical plant. A further important factor in decentralisation was the expansion during the 1950s of railway workshops at Ballarat and Bendigo.

In 1936 the Commonwealth Government announced that it intended to encourage the manufacture of motor car engines and chassis in Australia, and that tariff protection and a bounty of £30 on each engine unit was to be granted to intending Australian manufacturers. However, the manufacturers did not respond. In 1939 when the National Security Act was passed as a war-time measure the Federal Government acquired the power to control manufacturing industry; interested companies were asked to submit plans for the manufacture of motor vehicles, but no workable proposals were received. The Commonwealth Government then approached Australian Consolidated Industries Ltd and ratified an agreement with them in the *Motor Vehicles Agreement Act 1940*, giving the company protection against foreign or foreign-controlled, but not Australian, manufacturers; because of war-time commitments the company was unable to establish a motor vehicle plant.

Manufacturers were again invited to submit plans for the manufacture of motor vehicles in Australia. The proposal from General Motors-Holden's Pty Ltd, which operated manufacturing and assembly facilities in Victoria and South Australia, was accepted, and the first Holden car was displayed in November 1948. In January of the following year manufacturing began on a large scale, and since then more than 2.5 million Holden vehicles have been produced. During the same period Ford greatly expanded the production of motor vehicles at their Geelong and Campbellfield plants. Other manufacturers or assemblers of importance have been the International Harvester Company of Australia Pty Ltd, and Volkswagen Australasia Pty Ltd; the latter ceased operations in 1967 and re-opened shortly afterwards as an assembler of German and Japanese cars. By 1971 there were several other assemblers of both local and imported vehicles operating in Victoria.

The durable consumer goods industry has expanded greatly since the Second World War. The growth of this sector has been dominated by the motor vehicle industry but has also been apparent in the home appliances, rubber goods, and plastics industries. Since 1945 an increasing range of appliances has been adopted in the home as standard equipment, including such items as electric irons, vacuum cleaners, refrigerators, washing machines, and kitchen appliances. The introduction of regular television transmission began in Victoria late in 1956, in time for the Olympic Games held in Melbourne, and further expanded the previously established electronics industry. The production of motor vehicle components for supply to manufacturers and for replacements has grown commensurately with the development of the motor vehicle industry, and the range of parts and accessories made in Victoria has steadily been extended.

In addition to spectacular growth in the automotive industry in Victoria, the petroleum and lubricating oil refining industry developed rapidly during the 1950s and 1960s. The first oil refinery was established by The Commonwealth Oil Refineries Ltd at Laverton in 1924. Except for the period from 1942 to 1946 the refinery operated until 1955. Three

major refineries are located in Victoria : that of Shell was established at Geelong in 1954, that of Petroleum Refineries (Australia) at Altona in 1949 (as a lubricating oil and bitumen refinery, subsequently expanded into a petroleum refinery in 1955), and that of BP at Crib Point in 1966. The Geelong refinery was linked to Melbourne in 1954 by a pipeline approximately 33 miles in length. The refinery at Altona was expanded recently to facilitate the processing of Bass Strait crude oil. The oil refinery project at Crib Point was the first sizeable industrial enterprise to be established at Western Port and is planned to include a large integrated iron and steel works and gas fractionation plants in the same area.

The oil refining industry, which has expanded in Victoria since the Second World War, has helped considerably to replace hitherto traditional imports and made possible the development of the petrochemical industry which dates from 1961. In this field a complex involving a number of companies has been set up at Altona which includes a plant for the production of ethylene, butadiene, and propylene from petroleum distillate ; also, plants for the manufacture of styrene butadiene, polybutadiene synthetic rubber, styrene monomer, chlorine, caustic soda and ethylene dichloride, P.V.C. resins and latexes, expandable polystyrene, high and low density polyethylene, polyvinyl acetate, and sulphur. Carbon black has been produced in Altona since 1959 from imported feed stock. A new plant to produce phenol and acetone at West Footscray has been set up. Australia's first acrylonitrile-butadiene-styrene plastics plant was built at Dandenong in 1966.

Three ligno-cellulose board mills have been established in Victoria since the early 1950s : one at Bendigo manufacturing a straw-based ceiling and interior lining board, one at Rosedale, and one near Bacchus Marsh. These two latter plants utilise raw materials from adjacent forests. In addition, two plants producing gypsum plaster board have been set up in Victoria.

Other significant examples of recent local investment in secondary industry have been the installation of a paper and paper-board machine by Australian Paper Manufacturers Ltd at their Fairfield mill, and the establishment of a superphosphate plant at Portland. One fertiliser plant, dating from 1929, operates at Geelong, and another is located in Yarraville.

Another basic industry, the manufacture of plastic products, has also grown substantially during the 1950s and 1960s.

The government enterprises in the La Trobe valley associated with the exploitation of the vast brown coal resources have resulted in a large female labour pool in the La Trobe valley towns of Moe, Yallourn, Morwell, and Traralgon. A number of firms have taken advantage of this labour pool and are manufacturing telephone equipment, shoes, and women's clothing, and are spinning cotton. Brown coal also provides the raw material for char, an industry new to Victoria, which was established in the La Trobe valley in the late 1960s. On the coast at Bullock Island, Lakes Entrance, a pet food cannery and fish meal plant has been built, the first of its kind in Victoria, and another large pet food factory was set up at Wodonga in 1966. One of the more significant of recent industries to be established in Victoria has been the aluminium plant of Alcoa of Australia Ltd at Point Henry near



Geelong, where an aluminium smelter with an extrusion and rolling plant was installed in 1963. A steam generating power station for the plant has been erected at Anglesea, about 25 miles from Geelong, where brown coal reserves are estimated to exceed 400 million tons.

Heavy engineering and construction industries have been closely connected with transport. The Commonwealth Government Engine Works was established in 1943 and was originally equipped to build reciprocating steam engines. Between 1943 and 1952 steam engines, cargo winches, steering engines, and high-speed engines were built. In 1949 production was changed to the manufacture of marine diesel two-stroke engines and eleven years later to building two-stroke turbo-charged marine engines. As well as producing new engines the Works provides an engine repair and consultant service to ships in Australian waters. The naval dockyard at Williamstown is situated on the site of the Alfred Graving Dock which was completed in 1873. Shipbuilding facilities were added in 1913 and the dockyard began converting cargo ships to troop transports in the following year. It was purchased by the Melbourne Harbor Trust in 1924 and preparations began in 1940 for the construction of naval ships. Eight Australian minesweepers were built in three years. The keels of the first two merchant ships of 9,000 tons were laid in 1941 and 1942, respectively, and the Department of the Navy officially took over the Dockyard in 1942. Current construction and refitting work is mainly on destroyer escorts. Duke and Orr's Amalgamated Dry Docks Ltd operate the only remaining commercial graving dock in Victoria. The company was founded in 1910 as an amalgamation of two firms (Wright, Orr and Co. and Charles Duke's dry dock) which date back to 1852 and 1874, respectively.

Various heavy engineering works have built rolling stock for the Victorian Railways. The largest railway engine, an H Class, was built in 1941 by the Newport Workshops and weighed 260 tons. Rolling stock workshops are now established at Newport, Jolimont, Ballarat, Bendigo, and North Melbourne, and are mostly engaged in repair and maintenance activities. In all, hundreds of steam engines were built at the various railway workshops but all have now been removed and replaced by diesel-electric locomotive engines made in New South Wales under contract. Modernised and air-conditioned carriages are made in Victorian Railways workshops and by interstate contractors, and suburban electric motor carriages and trailers are made by Martin and King Pty Ltd of Campbellfield. Prototypes of new stainless steel trailers for introduction on suburban lines during the 1970s have been made at the Newport Workshops.

No account of Victoria's economic development during the past century would be complete without reference to two groups of enterprises which, although their activities were not located in Victoria, directed and financed them from Melbourne. One group, The Broken Hill Proprietary Co. Ltd, originally worked the central leases at Broken Hill, but later sold these to Broken Hill South Ltd and embarked on the production of steel in New South Wales in 1915. Its activities expanded in succeeding decades; its board, originally based in Adelaide, in due course moved to Melbourne where it has remained ever since. Now Australia's largest company, The Broken Hill Proprietary Co. Ltd employs over 55,000 people in a spectrum of activities including steelmaking,

shipbuilding, shipping, and mining. The company's wholly owned subsidiary, Hematite Petroleum Pty Ltd, in conjunction with Esso Australia Ltd has developed oil and gas fields in Bass Strait. Already these fields are meeting over two thirds of Australia's petroleum needs. Work has commenced on a new steel mill at Western Port.

The other enterprises became known as the "Collins House" group, a name derived from the building they occupied in Melbourne. Through a combination of many factors these companies—Broken Hill South Ltd, North Broken Hill Ltd, the Zinc Corporation Ltd, and New Broken Hill Consolidated Ltd (the latter two originally London based)—gained control of the important mines at Broken Hill. Other companies which have been associated with Collins House over the years have been EZ Industries (operating in Tasmania), Broken Hill Associated Smelters Pty Ltd (in South Australia), the Western Mining Corporation Ltd (in Western Australia), Electrolytic Refining and Smelting Co. (at Port Kembla), and Associated Paper and Pulp Mills Ltd (in Tasmania). Some of these companies, such as EZ Industries and Conzinc Riotinto of Australia Ltd (the descendant of the original Zinc Corporation), have since severed their connections with the Collins House group and have moved their head offices elsewhere in Melbourne. North and South Broken Hill companies have also taken part in the foundation of the Commonwealth Aircraft Corporation Pty Ltd (which was originally also sponsored by B.H.P.) and with Western Mining Corporation Ltd have formed Alcoa of Australia Pty Ltd.

Employment in almost every class of Victorian manufacturing industry expanded between the mid-1940s and the late 1960s. In recent years secondary industry has also exported a wide range of manufactured goods, some of the more important being butter, cheese, flour and other foodstuffs, motor vehicles and parts, animal fibres, chemical and petroleum products, agricultural machinery, and electrical machinery and apparatus.

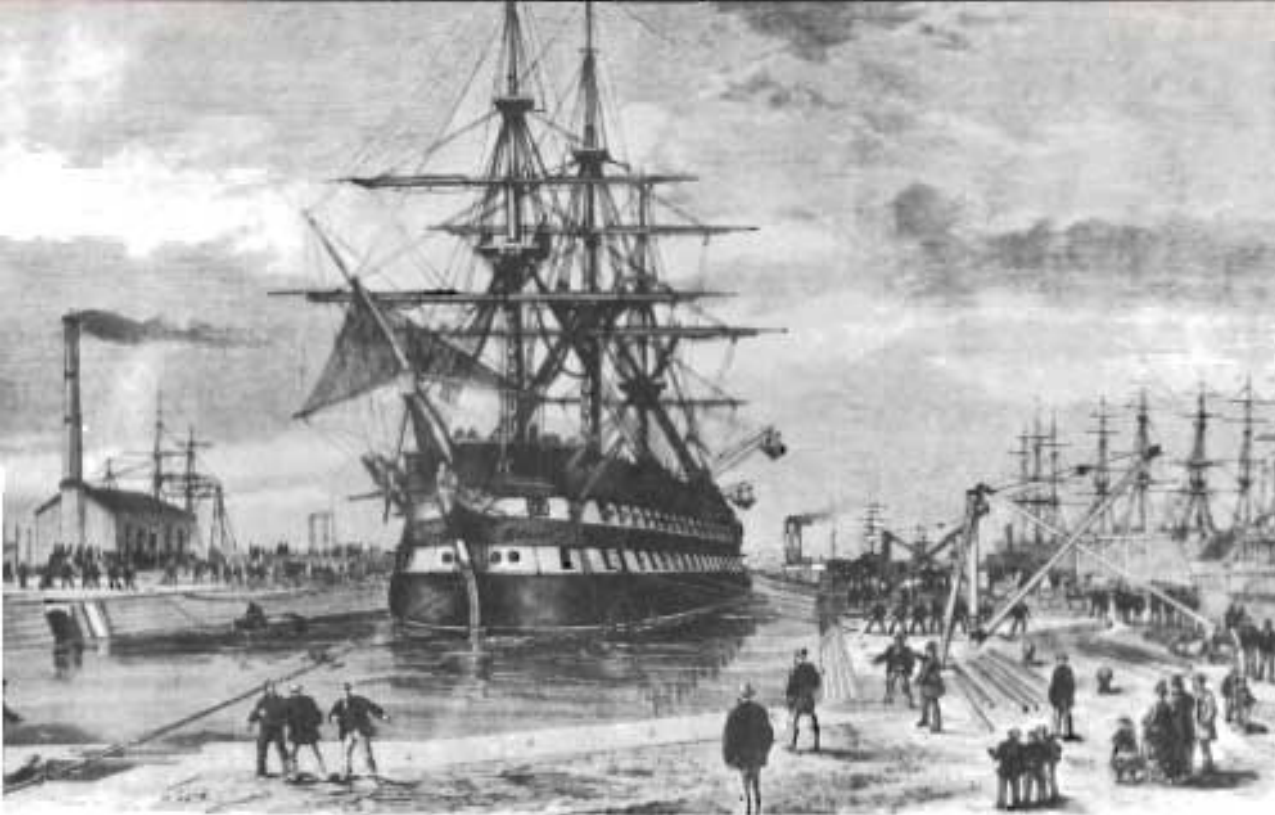
Foreign investment capital with the technical knowledge and modern equipment which has accompanied it has played a significant part in Victoria's industrial progress. Overseas firms have shared in, and contributed to, this expansion, mainly by establishing new branches and subsidiaries or by expanding existing ones, or by organising a wide variety of licensing or royalty agreements. There has also been portfolio investment from overseas in Australian companies. Direct overseas investment has been particularly prominent in the motor vehicle and electrical engineering industries including the manufacture of telecommunications equipment, electrical control apparatus, and electric motors, and also in oil refining, man-made fibre textiles, petrochemicals and industrial chemicals, fertilisers, and paint, and in food, drink, and tobacco manufacture. In 1968 the old-established Carlton and United Breweries Ltd ceased to be the only brewer in Victoria when Courage Breweries Ltd established a new \$11m brewery at Broadmeadows.

A diverse and complex range of products making a significant contribution to the Australian economy is now being produced in Victoria. Most of the State's secondary industrial development is concentrated around Melbourne, the metropolitan area accounting for about 80 per cent by value of the State's industrial production. In addition to virtually being the financial

capital of Australia (based on the number of large companies centred in Melbourne), Melbourne has other advantages : it is a large centre of population, providing labour on the one hand and a ready market on the other ; its port has been able to sustain large scale commercial development ; and it is the major hub of the State's rail, road, and air transport systems. However, areas which have grown rapidly outside Melbourne are Geelong and the La Trobe valley. Geelong is the major industrial centre outside the metropolitan area with established motor vehicle, agricultural machinery, tractor and other light engineering, aluminium smelting and extruding, textile, clothing, foodstuffs, petrol refining, cement, and glass industries. Another industrial centre, the La Trobe valley, has been the scene of Victoria's power production and this has given rise to a complex of various industries. Other parts of the State have also witnessed industrial development : in Ballarat and Bendigo this has gone far back into the early years of Victorian history ; in other centres such as Wangaratta (textiles), Shepparton (foodstuffs), Warrnambool (clothing), and Wodonga (pet food) the development has been more recent. Looking back to the 1830s one is thus aware of a pattern of virtually continuous industrial development and diversification emerging side by side with such national events as the discovery of gold, Federation, two depressions, and varying inflows of migrants, as well as with the more immediate domestic effects of various social and political developments and two world wars. By the beginning of the 1970s Victoria's economy was based on sure sources of power from brown coal, crude oil, and natural gas ; concentrated on such major industries as light engineering, clothing, food, chemicals, and paper ; diversified to some degree in its location ; and looking to the future for markets both at home and abroad.



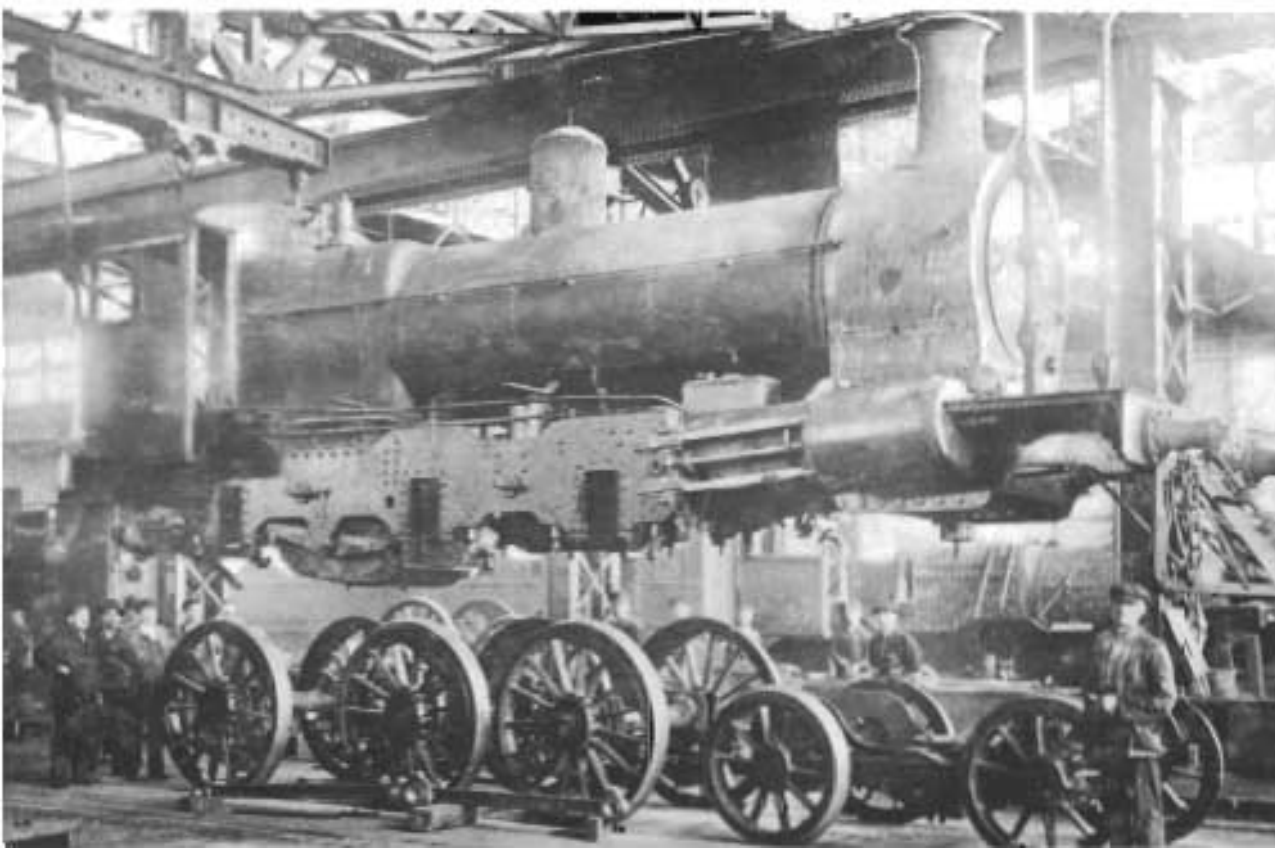
Specialised machining of disc brake calipers.  
*Repco Ltd*

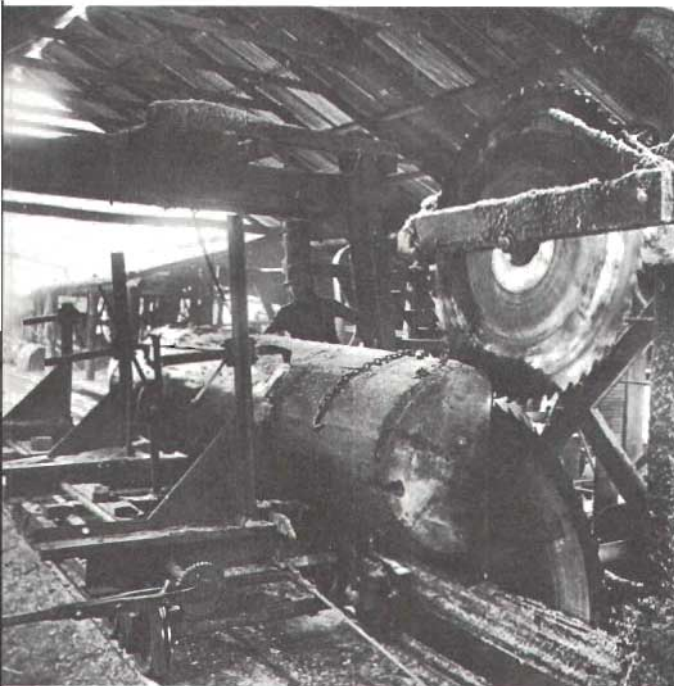


Opening of the graving dock at Williamstown in 1874.  
*Melbourne Harbor Trust*

Locomotive being assembled at Bendigo railway workshop in 1920

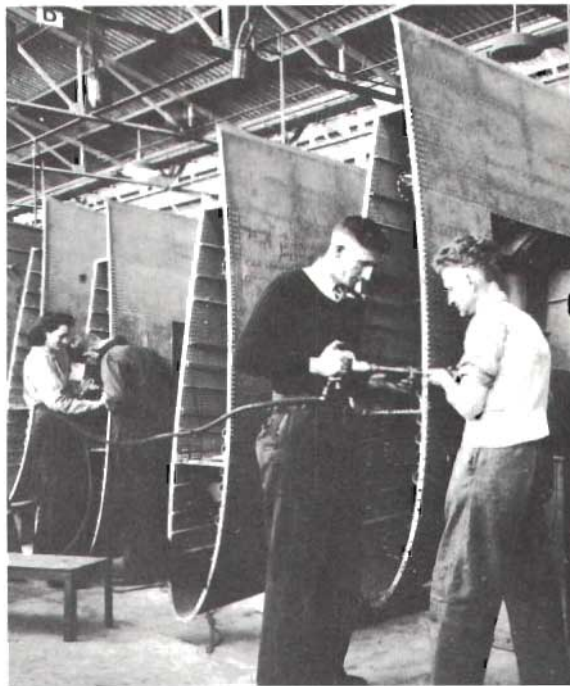
*Victorian Railways*





Breaking down saw of the type commonly found in Victorian timber mills.

*Forests Commission*



Assembling wings for the Australian designed *Boomerang*, c. 1943.

*Department of Supply*

A clothing factory in Melbourne, centre of Australia's fashion industry.

*International Public Relations*





Preparation of pasta foods for canning.  
*H. J. Heinz Co., Aust., Ltd*



Continuous butter making at Leongatha.  
*Val Foreman*

Bulk carriage terminal for milk.  
*Australian Dairy Producers Board*





Bundles of quad wire being laid up to form a large telephone cable.

*Olympic Cables Pty Ltd*

Cast iron bath being removed from heating furnace for enamelling.

*Beaver Photographic*



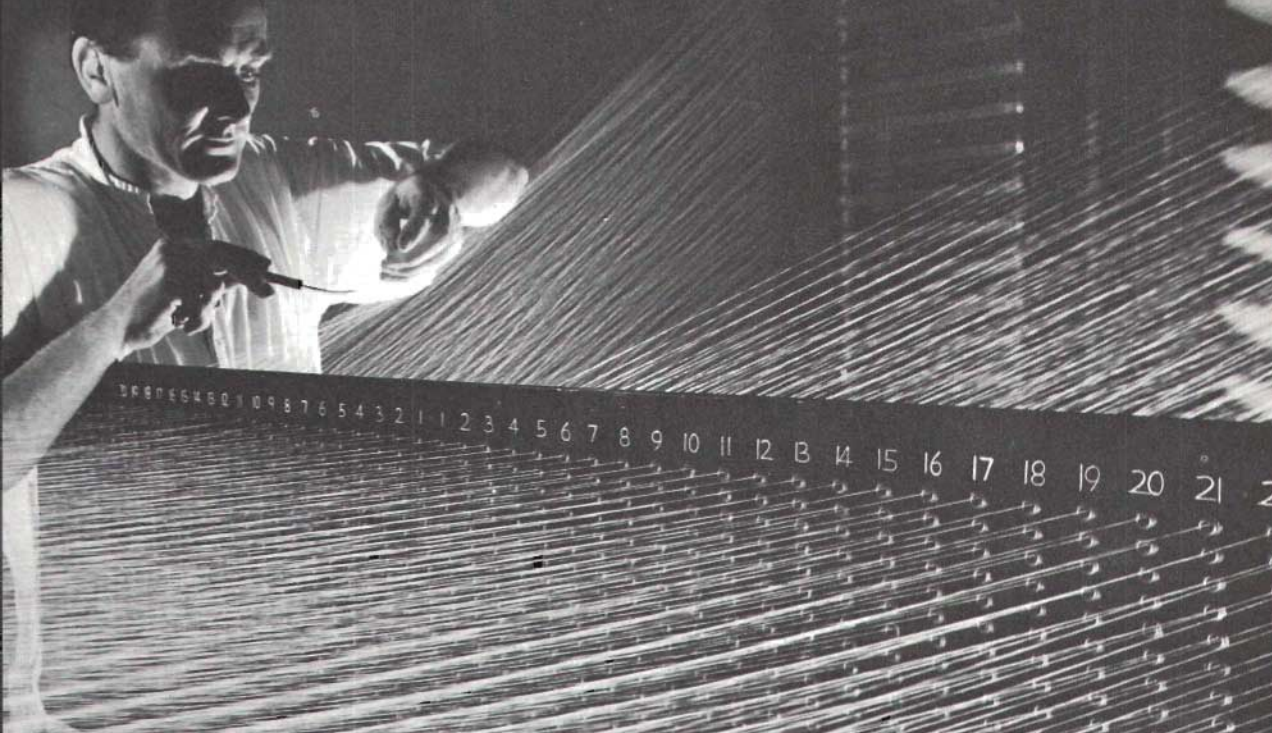




Assembly line production of motor vehicle bodies.  
*General Motors-Holden's Pty Ltd*

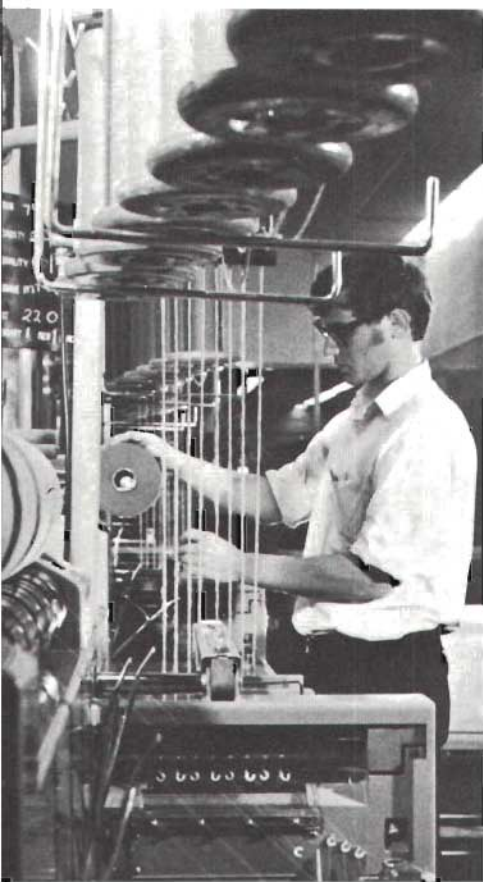
Naphtha fractionation unit at the Altona petrochemical complex.  
*Mobil Oil Australia Ltd*



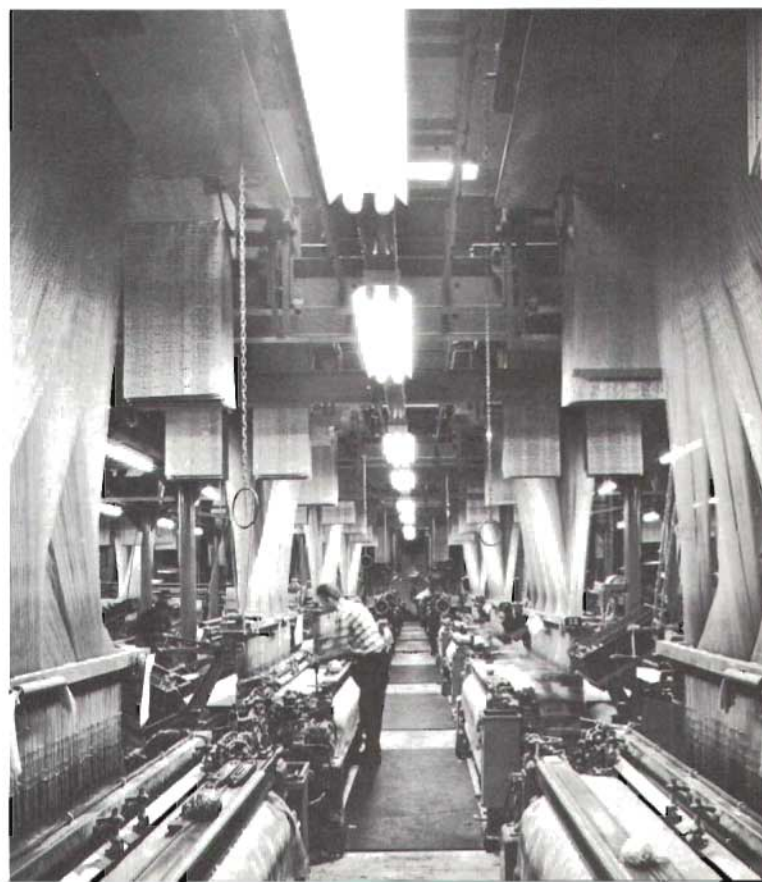


Processing synthetic fibres.  
*Fibremakers Ltd*

The C.S.I.R.O./Repco self-twist spinning machine.  
*Repco Ltd*



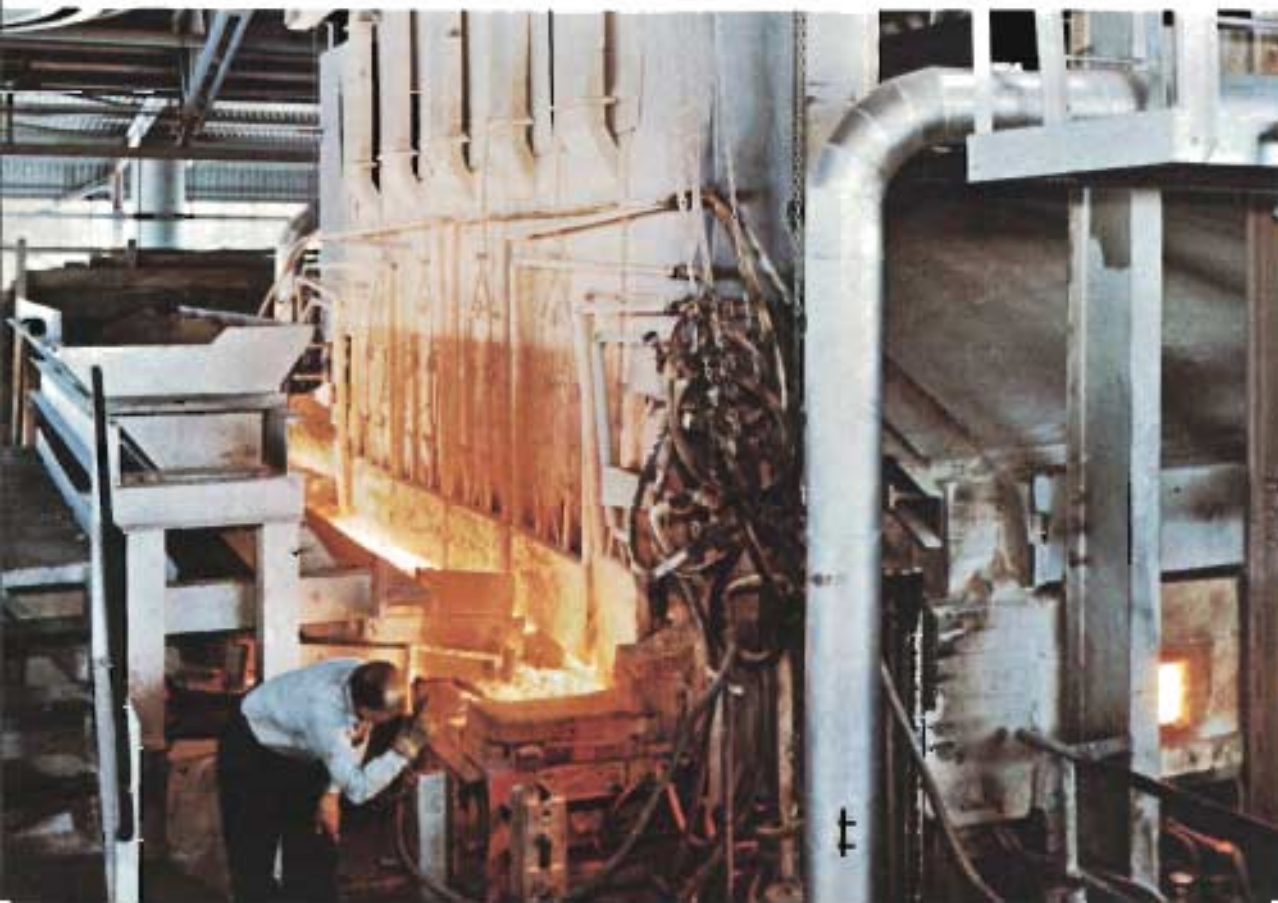
Loom weaving jacquard ticking.  
*Bekaert (Australia) Pty Ltd*





Continuous paper-making machine at Fairfield.  
*Australian Paper Manufacturers Ltd*

Modern glass furnace for producing window glass.  
*Australian Consolidated Industries Ltd*



## PRIVATE FINANCE

## BANKING

During the 1830s Australia was developing a mixed economy with free enterprise financed by British capital ; at this time Melbourne was settled largely as the port and commercial centre for the pastoral industry. Banking functions were provided mainly by the Government Commissariat which paid local suppliers by bills drawn on the British Treasury, thus providing foreign exchange in sterling to pay for imports. In the same way, salaries of Her Majesty's officers were often paid in sterling, which could be used to purchase imports. A sterling exchange standard virtually existed in Victoria, therefore, from its establishment.

*Trading and savings banks*

The early dominance of the private sector in the Port Phillip District supported demands for economic as well as political independence. The economy was also expanding geographically, and added pressure to the demand for a flexible banking structure. The first attempt to establish banking in Victoria was made by the Derwent Bank, which opened an agency in Melbourne in February 1838 ; in October of that year it was taken over and converted to a branch by the English financed Union Bank of Australia. Two other banks opened in Melbourne in 1838. The Commercial Banking Company of Sydney opened an agency in June but its operation was short-lived, for it closed in December 1839. The Bank of Australasia, London based, established its first Melbourne branch on 28 August. The Port Phillip Bank, the first locally sponsored bank, operated from 1839 to 1842, when it failed during one of the recessions which occurred after bad seasons and falling export prices. The resultant withdrawal of British capital aggravated these recessions, especially because most banks accepted deposits, as well as capital, from Britain. The Savings Bank of Port Phillip, an offshoot of the New South Wales Savings Bank, opened in 1842, and soon operated several branches. It was the forerunner of the State Savings Bank of Victoria and, lacking at that time the traditional savings bank asset of government security, began to engage in mortgage lending as its chief source of income. This practice was not favoured by the trading banks of the period. The trading banks, accompanying the pastoral expansion, moved into the major country centres, and provided facilities for the frequent use of drafts and cheques, a necessary feature of widespread settlement. From 1838, therefore, branch banking as distinct from unit banking began in Victoria.

In 1851 two important events transformed life in Victoria: first, the Colony was separated from New South Wales, and second, gold was discovered. These events required a larger banking network and a wider range of credit opportunities. Near the diggings, banks also set up branches or agencies authorised to buy gold.

A number of banks opened during the 1850s. In 1851 Australia's oldest bank, the Bank of New South Wales, established a branch in Victoria. This was followed in 1852 by three English banks: the English, Scottish and Australian Bank, the London Chartered Bank of Australasia, and the Oriental Bank Corporation, all with head offices in London. During 1852 the Post Office Savings Bank system began to operate in Victoria, and post offices throughout the Colony were used as branches. It amalgamated with the Port Phillip Savings Bank in 1896. The Bank of Victoria opened in 1853, the Colonial Bank of Australasia in 1856, and the National Bank of Australasia in 1858.

Diggers returning from the goldfields turned to farming, grazing, shopkeeping, or manufacturing, and banks had, therefore, to adjust their patterns of lending. However, the English banking tradition which maintained that discounting of bills was the "proper" business of banks lingered into the 1850s. Merchants, hitherto the main banking clients, continued to have access to credit borrowing on bills, and rural credit was provided through them. Farmers borrowed from the merchants, who sold the farmers' produce on commission and supplied their provisions and equipment. Until the 1860s banks were able to lend on liens on wool and by mortgages on stock. After that time they broadened their basis of lending and began to advance money on the security of land; this was to play a major part in Victoria's expansion in the second half of the nineteenth century, although this course was not taken by choice. Liquid security was not available in sufficient amounts, as the mercantile community was not large enough to absorb a major portion of bank funds in its trade bills. Consequently, much of the trading banks' funds were unavoidably placed beyond quick recall.

A feature of banking development after the gold rush was the spread of banking networks, not only in the path of farming development, but also over several colonies; through deliberate merger and amalgamation policies, nation-wide branch systems emerged. This spread of interests was essential in a vast country where bad seasons or weak export markets could rapidly depress large areas. The ability to support these areas by drawing funds from prospering regions was a welcome development. The 1860s saw the establishment of the Ballarat Banking Company (1865) and the Commercial Bank of Australia (1866), and in 1867 the opening in Melbourne of the first cheque clearing house in Australia. More new banks were opened in the 1870s to serve the growing Colony, especially following the growth of wheat farming in the Wimmera, and by the late 1870s there were twelve, several with London head offices.

The decade of the 1880s was a very prosperous period in Victoria's history with English capital flowing into the Colony at a rapid rate and Melbourne's population rising from 300,000 to almost 500,000 during the decade. Many Victorian banks made advances to speculators on the security of grossly overvalued land. The economic collapse of the 1890s led to possibly the most severe depression ever experienced in Victoria,

with large numbers of unemployed and the failure of many of the financial institutions. So serious did the crisis become that in April 1893 the Victorian Government declared a bank holiday of one week to enable the banks to consolidate their coin reserves. Some banks ignored the declaration and stayed open during the week, but of those which closed, some either did not re-open or were forced to suspend payment shortly after re-opening and to undergo reconstruction. One result of the financial difficulties was the appointment of a Royal Commission on Banking in 1895, some of whose recommendations were subsequently adopted. An 1896 Act introduced a credit foncier department into the State Savings Bank of Victoria, and this played an important role in extending to farmers long-term credit at a cost much lower than that previously available. This was one result of the recommendations of the Royal Commission.

The first new bank to be established in Victoria in this century was the Commonwealth Bank of Australia, which was set up by the Commonwealth Government in 1911 as a savings, trading, and central bank. The Commonwealth Government, through its new central bank, took over the note issue from the private banks, a course of action which had already been recommended by the Victorian Royal Commission. The first Australian notes were issued in 1913 by the Commonwealth Treasury. The bank's functions have been strengthened over the years. Branches of the Bank of Adelaide, the Comptoir National (now the Banque Nationale de Paris), and the Bank of New Zealand were also established in the early years of this century. From 1910 long-term, low interest rate loans (credit foncier) were made available by the State Savings Bank to home builders as well as to farmers.

A feature of banking in this century has been the Australia-wide amalgamations which have continued to the present time. The first to concern Victoria was the merger between the National Bank and the Colonial Bank in 1918. In 1921 the English, Scottish and Australian Bank absorbed the London Chartered Bank, and later (1970) merged with the Australia and New Zealand Bank, itself the result of a merger between the Bank of Australasia and the Union Bank in 1951. The Commercial Banking Company of Sydney, which was briefly established in Victoria in the 1830s, returned to the State when it took over the Bank of Victoria in 1927. The National, having absorbed the Bank of Queensland in 1922, the Queensland National Bank in 1948, and the Ballarat Banking Company in 1954, discussed plans for merging with the Commercial Banking Company of Sydney in 1969, but failed to reach agreement. This series of amalgamations meant a consolidation of financial power into relatively few major trading banks operating a large number of branches and agencies.

The financial power of the banks had been a matter of concern for the Federal Government. The inadequacies of its central banking powers exercised through the Commonwealth Bank became more obvious during the 1930s, and the Royal Commission which was set up in 1936 to inquire into the Australian monetary and banking system underlined the need for an improvement in its central bank controls. The 1945 Commonwealth legislation strengthened the Commonwealth Bank's central banking functions by enabling it to retain most of its war-time emergency powers. However, the constitutional validity of sections 18 to 22 (dealing with Special Accounts procedures) and section 48

(compelling the transfer of all government and semi-government accounts from trading banks to the Commonwealth Bank) of the 1945 legislation was challenged in the High Court of Australia, and the Court upheld the challenge to section 48. The judgment eventually led to the passing of the *Banking Act* 1947 which provided for the nationalisation of all private banks in Australia. The validity of this legislation was challenged in the High Court which, in August 1948, held that certain vital sections of the Act were invalid. The Privy Council later upheld this decision. Ultimately the central banking powers were transferred to the newly created Reserve Bank of Australia in 1959.

Another important development has been the entry of private trading banks into the savings bank field. This began in 1956, when three of the private trading banks established savings bank subsidiaries at all their Victorian branches, and by 1962 all the major trading banks had established subsidiaries. The State Savings Bank of Victoria subsequently extended its facilities and its branch network, so that, in scope of operations, it now compares more nearly with the trading banks.

Since April 1962 each of the major trading banks has maintained a Term Loan Fund account with the Reserve Bank. These accounts, which have played an important part in extending the lending facilities of the banks, provide a special source of finance from which medium-term loans for capital expenditure and export purposes can be made. A similar but more specialised account is the Farm Development Loan Fund account which was established in March 1966. Each of the major trading banks has such an account with the Reserve Bank. Farm development loans provide finance to increase productivity in rural industries and to assist in drought relief.

In August 1964, with the help of the Reserve Bank, the major trading banks set up the Australian Banks Export Re-Finance Corporation Ltd. This supplements resources, including Term Loan Funds, already available to the banking system for the financing of exports. Its re-finance support supplements the capacity of the banks to allow large or extended export transactions to be undertaken without causing an undue strain on the banks' resources.

Commercial bills are an established feature of trading bank financing, but they have recently come to assume a greater significance in the banks' business operations. In January 1965 the Commonwealth Treasurer allowed the discount houses to deal in commercial bills provided they carried acceptance or endorsement by a trading bank, when the Reserve Bank would act as lender of last resort by providing the discount houses with credit facilities for this new purpose. The development of a commercial bills market has provided the business community with an additional source of finance for seasonal and other short-term needs.

The Australian Resources Development Bank was established in November 1967 by the major trading banks with the support of the Reserve Bank, and it commenced operations in March 1968. The main purpose is to help Australian enterprises participate more fully in the development of Australia's natural resources. The Resources Bank may lend and invest directly in the undertakings being financed, or re-finance loans made by the participating trading banks. In addition to capital and

loan funds from the shareholding trading banks and other participating banks, including the Reserve Bank and some savings banks, funds are obtained locally and from overseas. The Resources Bank introduced Transferable Certificates of Deposit, which are marketable registered securities, as a form of investment in Australia; these were first issued in April 1968. Marketable Certificates of Deposit were also issued by the trading banks from March 1969. They are issued in amounts of \$50,000 and over for periods ranging from three months to two years.

Over recent years the trading banks have moved into avenues of higher risk lending, such as unsecured and partly secured personal loans, leasing finance, and short-term bridging loans for land and property development. Savings banks have introduced new forms of deposits which offer higher interest rates than their traditional passbook accounts.

Victorian banks provide the full range of banking and related services. They accept deposits for safe keeping which are repayable on demand and transferable by cheque and, while paying no interest on such current accounts, they make a service charge. They also accept deposits for defined periods at interest; transfer money within the Australian banking system; with agent banks throughout the world, provide working capital for trade and industry, mainly on overdraft with interest charged on the daily balance outstanding; provide finance for home purchasers; and finance overseas trade by such means as the bill of exchange. They offer special services including trade introductions, market appraisals, economic reports, and specialised publications, and act as nominees, registrars, and travel agents. Most of the banks are associated with finance companies and some with unit trusts, their branches acting as agents for these businesses.

#### *Central banking*

Australia's central bank is the Reserve Bank of Australia. It derives from the Commonwealth legislation of 1911 which established the Commonwealth Bank of Australia. The Bank was to carry on both savings bank and general banking operations, and it commenced the former in July 1912 and the latter in January 1913.

Under the *Australian Notes Act* 1910 it became an offence for any bank to issue notes or circulate notes issued by a State government, and at the same time a tax was imposed under the Bank Notes Tax Act to discourage the trading banks from issuing notes. Under the *Australian Notes Act* the Commonwealth Treasurer became the issuing authority for Australian notes. The note issue was related to a statutory gold reserve, although the right to export and import gold was unrestricted until 1915 when the consent of the Commonwealth Treasurer became necessary before gold could be exported. This restriction was removed in 1925. The Note Issue Department of the Commonwealth Bank was created in 1920, and in 1924 the Bank became the Australian note printing and issue authority.

During the First World War the Bank helped organise and finance commodity pools to market exports as well as float and manage local loans for the Government, which had previously relied largely on London funds. In the depression years the Bank became involved in emergency financial measures. To help protect Australia's overseas reserves, the Bank had the power under the *Commonwealth Bank Act* 1929 to requisition



all Australian gold and to prohibit its export without authority, although no formal action was taken under this legislation. The trading banks had accepted deposits with the Commonwealth Bank in return for voluntarily relinquishing their gold holdings.

Up to 1929 most of Australia's overseas exchange was held in London, but during 1930 and 1931 long-term government borrowing abroad ceased, imports were heavy, export prices were falling, and consequently the trading banks' London funds decreased rapidly; this resulted in a depreciation of the Australian currency in terms of sterling. In 1931 the Commonwealth Bank assumed control of the exchange rate by buying and selling exchange on London at fixed rates. This practice continued until war broke out in 1939, when specific exchange rate responsibilities were vested in the Bank for the first time. The Royal Commission into the Monetary and Banking Systems in Australia stated in 1937 that it was important for Australia to have a strong, publicly-owned central bank to exercise control over the trading banks.

The emergency measures adopted from 1939 to 1941 under the National Security (Banking) Regulations formed the basis for Australia's post-war system of central banking. At the outbreak of war in 1939 the Bank acquired all newly-won gold, and exports of gold from Australia without permission were again prohibited. During the Second World War other emergency powers given to the Bank included the mobilising of Australia's overseas funds and wide powers of control over the banking system. This control included such measures as determining lending policy and interest rates, and requiring the private banks to lodge funds with the central bank in the form of Special Accounts.

The Commonwealth Bank Act and the Banking Act of 1945 enabled the Commonwealth Bank to retain most of its central banking powers acquired during the war. The 1959 legislation (now in the *Reserve Bank Act* 1959-1966 and the *Banking Act* 1959-1967) resulted in a structural reorganisation of the Commonwealth Bank, which became the "Reserve Bank of Australia". The former commercial and savings bank subsidiaries, except the Rural Credit Department, were lost by the Reserve Bank. A new banking institution, the "Commonwealth Banking Corporation", was created and this was composed of the Commonwealth Trading Bank, the Commonwealth Savings Bank, and the new Commonwealth Development Bank, this latter being the union of two former specialised departments of the Commonwealth Bank, the Mortgage Bank Department, and the Industrial Finance Department.

## INSURANCE

### *Life assurance*

Before 1869 most life assurance business written in Victoria was provided by British based companies and the Sydney based Australian Mutual Provident Society. In 1869 the first major Victorian mutual life company, the National Mutual Life, was established. This company was the first in the world to introduce a full non-forfeiture condition whereby if a policy lapsed it would be continued as long as it had a surrender value. By 1876 four more companies were established in Melbourne: the

Mutual Assurance Society of Victoria, the Australian Widows' Fund, the Colonial Mutual Life, and the Australasian Temperance and General. In 1872 a British company, the European Assurance Society, which held many policies in Victoria, failed. This event led to the promulgation of the Victorian Life Assurance Company Act of 1873 which ensured publication of company accounts to protect the public against weak companies; the Act became operative on 24 April 1874. At this time the death rate in Australia was significantly lower than in Europe; during the period 1871 to 1877 the average crude death rate in England and Wales was 20.3 per 1,000, while in Victoria the average was 15.8. This situation gave the Australian companies a competitive advantage over their British counterparts who based their premiums on British life tables. Furthermore, at a later stage the British Revenue Act of 1884 required probate duty to be paid in England on amounts claimed on policies overseas. These events gave the British companies little hope of attracting policy holders in Victoria.

In the mid-1880s, amid much controversy, the activities of three American companies, the New York Life Insurance Company, the Equitable Life Assurance Society of the United States, and the Mutual Life Assurance Society of New York became prominent in Victoria. One type of policy issued by the companies was Tontine insurance\* which raised many objections among local insurance men, but despite this the American companies flourished.

In 1884 the Insurance Institute of Victoria was established, the first of its kind in Australia. Following a period of great speculation on the strength of increasing land values, much of which was carried out on credit, a recession occurred in the late 1880s and early 1890s. This produced a run on the surrender of policies. Heavy unemployment in Melbourne caused emigration to other colonies, and for the first time since the gold rushes the population of Victoria was exceeded by that of New South Wales. However, most companies weathered the storm, but some small companies were taken over by larger concerns and a merger between the National Mutual and the Mutual of Victoria occurred in 1896. Life assurance statistics for the whole of Australia were published in *The Australian Insurance and Banking Record*. The first Victorian life assurance statistics were published in 1891 and appear below:

## VICTORIA—LIFE ASSURANCE POLICIES IN FORCE, 1891

Nature of policy	Number		Amount	
	Total	Per 1,000 of population	Total	Average per policy
			£	£
Assurance	108,513	93.7	23,726,232	219
Endowment	14,334	12.4	1,174,642	82
Annuity	92	0.1	11,972	130

\* A system of life insurance owing its name to Lorenzo Tonti, an Italian banker born in Naples early in the seventeenth century, who settled in France about 1650. Under this system associated policy holders agreed to receive no dividend, return-premium, etc., until the end of a fixed period called the Tontine period. The profits were equally distributed among those who survived the Tontine period.

By 1893 there were fifteen companies which carried out life assurance business in Victoria, six of them with head offices in the State, their Victorian assets being £7m and the estimated annual premiums £940,000.

In 1896 the Victorian Government appointed a Royal Commission to consider, *inter alia*, the desirability of any amendment in the law relating to the registration, supervision, and control of societies or persons transacting insurance business or business of a like nature. The Commission recommended that more detailed information should be provided about the business transactions and affairs of life assurance companies. Prior to Federation some aspects of life assurance were covered by legislation in four colonies including Victoria. In 1908 an inquiry in New York into life office management led to accusations that offices were not being run for policy holders but for the benefit of shareholders. Legislation was subsequently passed limiting the amount of new business which could be written and controlling annual bonuses. Consequently the American companies in Victoria either ceased writing new business or drastically reduced their turnover; between 1922 and 1928 the business of these companies was absorbed by Australian firms. The growing number of companies engaged in the insurance business led in 1905 to the formation of a Life Offices' Association of Australia with the aim of promoting the interests of members and their policy holders. In the same year the Commonwealth Life Assurance Companies Act was passed, and in 1909 a Commonwealth Royal Commission examined complaints relating to the conduct of industrial assurance, a class of life assurance where premiums were paid regularly to a collector. The scope of this inquiry was subsequently extended to cover ordinary life assurance and then to all forms of insurance. As a result of the 1909 Royal Commission a Commonwealth Bill was proposed in 1912 but was not passed.

At the same time industrial assurance was increasing rapidly, and by 1911 the number of policies was 147,044 and the sum assured \$6m. The boom of the 1920s led to a great increase in the amount of new business of both types written in Victoria. The number of ordinary life assurance policies in force in 1920 was 238,414 and the sum assured was \$107m, but in 1929 policies numbered 288,847 and the sum assured was \$174m. During the same period industrial life assurance policies also increased from 286,106 to 552,943 and the sum assured rose from \$16m to \$47m.

The depression followed and the volume of new business decreased sharply. Numerous policies were allowed to lapse or were surrendered. By 1933 all major life offices were underwriting superannuation schemes and by 1940, although there were only three more offices than in 1920, the combined number of ordinary and superannuation policies in force had reached 373,359. This number represented a sum of \$261m, over twice the level of policies in existence in 1920. In 1945 the Commonwealth Insurance Act was passed under section 51 of the Constitution. This Act replaced existing Commonwealth and State Acts and resulted in uniform legislation throughout Australia. Industrial assurance continued to grow and by 1946 accounted for 1,119,476 policies worth \$117m. In 1955 more British companies began to conduct business in Victoria. However, most business still remained in the hands of Australian companies. By 1968 industrial business in Victoria had declined to 756,180 policies worth \$308m.

On the other hand the number of ordinary and superannuation policies was 1,287,951 and the sum assured \$5,774m. These figures reflect the extraordinary growth of life assurance in Victoria.

Income tax concessions on life assurance premiums constitute a major factor which has determined this growth. In 1915, when taxation concessions for life assurance premiums were first introduced, the State Government allowed £50 deduction on behalf of the taxpayer only and the Commonwealth Government £50 on behalf of the taxpayer or his dependants. The Commonwealth also allowed an additional £50 deduction in respect of contributions to a superannuation, sustentation, or widows' or orphans' fund, or any friendly society. In 1936 the Commonwealth allowances were amalgamated into a total allowance of £100. In July 1942 the Commonwealth, under the uniform tax legislation, became the only authority to impose taxes on income. In 1943 the concessional deduction system was replaced by a concessional rebate system set at £100. In 1950 the rebate system reverted to a concessional deduction system and the maximum allowed was increased to £200; in 1956 it was increased to £300, in 1959 to £400, and in 1967 to \$1,200.

The *Income Tax and Social Services Contribution Act* 1961 introduced into the income tax law new features relating to the incomes of life assurance companies and superannuation funds. The practical effect of the new provisions was that certain deductions and rebates available to a company carrying on a business of life assurance would vary according to the proportion of its assets invested in public securities. The basic test in this regard was whether not less than 30 per cent of the total assets of the company or fund were held in public securities, including Commonwealth securities equal to at least 20 per cent of the total assets.

Life assurance companies have provided a large segment of the funds available for the capital market. Since 1960 a significant variation has taken place in the distribution of assets held in Australia between the various classes of investment open to life offices. The percentage of assets invested in governmental and semi-governmental securities has decreased, whereas the percentage of assets invested in property, company debentures, and shares has substantially increased. Life offices are, and have long been, large investors in mortgages of real estate. Besides lending on real estate, life offices have invested heavily in property and in the construction of new buildings. In the 1960s, in the City of Melbourne alone, they erected fifteen multi-storey buildings.

#### *Fire, marine, and general insurance*

Before 1839 insurance of buildings and ships in Victoria was provided by companies based in Britain, Sydney, or Tasmania, and the *Port Phillip Patriot and Melbourne Advertiser*, later absorbed by the *Argus*, criticised this trend at the time. The delay and uncertainty of transacting insurance business through Sydney and Tasmanian agencies finally led to the formation of the Melbourne Fire and Marine Insurance Company at a meeting in the Lamb Inn in Collins Street on 6 April 1839. This company carried six classes of risk at premiums ranging from 5s 6d to 42s per £100. In 1843 this office closed down after claims arising from two extensive fires in Collins Street. Meanwhile, in 1840, Lloyd's of London established an agency in

Melbourne. In 1847 an attempt to start a new insurance company failed through undersubscription, but in the following year the Victoria Fire and Marine Insurance Company commenced operations. By August 1857 there were thirteen companies in the field. An estimate of premium income for Melbourne (excluding that of the Alliance, the Launceston, and the Derwent and Tamar) for the year ended 31 August 1861 was £66,366. Further afield in Geelong an attempt was made in 1847 to form the Australia Felix Fire and Marine Assurance Company; however, the company eventually established in that city in 1850 was the Geelong and Western District Fire and Marine Insurance Company.

There was no fire tariff at the time but a common area of interest was the insurance companies' fire brigade. The first fire brigade was formed in 1845 under the command of W. J. Sugden, the Chief City Constable, and was called the "Fire Prevention Society". It was eventually taken over in 1851 by the Victoria Insurance Company. By 1859 most companies possessed fire engines and there were several volunteer fire brigades. Before the opening of the Yan Yean Reservoir on 31 December 1857 water was carried from the Yarra River in carts; the first and second carts arriving at the scene of the fire received payments of £3 3s and £2 2s, respectively. Eventually in 1890 the Metropolitan Fire Brigades Board was constituted by the *Fire Brigades Act* 1890, and insurance companies are still legally required to contribute to the upkeep of fire brigades.

In 1874 the various companies agreed upon a uniform tariff but the agreement collapsed in 1882 and resulted in a rate-cutting war. At this time forty companies were transacting fire, marine, and general insurance business in Melbourne. In 1887 the Fire Underwriters Association was formed, followed by the establishment of the Accident Underwriters Association in 1902.

On 21 November 1897 a fire in the heart of the city of Melbourne laid waste most of the block bounded by Elizabeth, Flinders, and Swanston Streets, and Flinders Lane. Damage was estimated at £1m (a very large sum in those days) and the insurance companies were liable for £0.75m.

Fire, marine, and general insurance statistics for Victoria were first collected in 1904. In that year premiums for all classes of insurance were £614,283 and claims £254,059. Business increased rapidly and by 1913 premiums had reached £1m. In 1914 the State Government passed the Workers Compensation Act which compelled employers to insure their employees against death or injury incurred in the course of their employment. In the same year the State Accident Insurance Office was established under this Act. During the First World War the additional insurance required by ships at sea increased marine insurance premiums from £180,694 in 1913 to a war-time peak of £308,792 in 1918. Marine insurance premiums continued to rise for some time after the end of the war, reaching £403,027 in 1921 then declining to £200,819 in 1932. During the Second World War, as in the First World War, marine insurance premiums showed a marked increase from £288,358 in 1938-39 to a peak of £1,279,757 in 1942-43.

In the meantime the advent of the motor car was becoming significant in the field of insurance. In 1924 car insurance premiums amounted to

£355,071, 11.8 per cent of total premiums as compared with 2.5 per cent in 1918. In 1929–30, 120 offices were transacting general insurance business in Victoria; by 1938–39 the number had risen to 129. The Fire Underwriters Association and the Accident Underwriters Association amalgamated in 1939 to form the Fire and Accident Underwriters Association of Victoria. In the same year the Motor Car (Third Party Insurance) Act compelled every owner of a motor vehicle to insure against any liability for death or injury to others. Business under the Act was transacted from 22 January 1941, the year in which the State Motor Car Insurance Office was established. The State Accident and State Motor Car Insurance Offices are controlled by the Insurance Commissioner, and policies issued by both are guaranteed by the Government of Victoria. The number of Victorian motor vehicles covered by third party insurance has risen from 233,587 in 1941–42 to 1,390,980 in 1969–70.

Since the mid-1950s Victoria has witnessed many life offices branch out into general insurance either by arrangement with existing fire, marine, and general insurance companies, or by establishing their own organisations. Over this period the major international reinsurance firms and insurance brokers have also entered the Victorian market. The total number of firms doubled during the period 1949–50 to 1969–70, while premium income increased from \$29m to \$275m.

#### THE STOCK EXCHANGE OF MELBOURNE

The *Argus* of 15 October 1852 published what is apparently the first Melbourne stock and share list of fourteen companies under the name of Edward Khull, who was also a gold and bullion broker. Later in the decade this list was published under the authority of a group of brokers, reflecting the growth of a regular market as distinct from occasional sales. Company activity, largely in the public utility sector, expanded during this time, the trend being illustrated in 1856 by a press complaint at the lack of an organised market in stocks and shares.

However, gold mining featured most strongly in the 1850s, and when the rich shallow deposits had been worked out, mining developed the deep leads, which meant a demand for capital and the need for company legislation. Acts of 1855, 1857, 1858, and 1860 set up Mining Courts and provided the principle of limited liability, a necessary prelude to investor confidence. In 1859 there was a burst of mining speculation in companies operating at Bendigo, Ballarat, Chewton, and Maryborough.

The boom increased the number of sharebroking firms from less than a dozen to over twenty, and possibly thirty. A meeting was held on 12 October 1859 at Temple Court to “establish a daily official list of prices for buying and selling shares” and this was followed by attempts to form a stock exchange. However, the established and leading firms did not join, and the resulting Melbourne Brokers’ Association was a body of newer entrants to the profession. It held regular meetings to conduct buying and selling operations, and also released market reports to the daily press. However, the dealings of the Association constituted only a small proportion of total sales of the market. After May 1860 it did not publish any further reports. At the same time, although the established firms did not succeed in forming a company, they did produce a Stock and Share Journal between July 1860

and April 1861. By the end of the year activity in gold mining shares had become very subdued and made the formation of a unified stock exchange more difficult as disagreements on practices in the market tended to be intensified. These included the question of whether a broker could sell his own shares to a client.

The next significant event occurred when, on 16 March 1865, it was reported that "the brokers of the Stock Exchange of Melbourne held their first meeting under the new rules at the Hall of Commerce". This was the Melbourne Stock Exchange which was to become The Stock Exchange of Melbourne in 1884.

A quartz gold mining boom developed during the 1860s, with discoveries at Stawell and Walhalla. The introduction of the "no liability" principle in the Act of 1871 was important for this, as it enabled shareholders to decline payment of further calls on shares held by them. Under these circumstances shares could be forfeited and the company could possibly re-issue them later if conditions again became favourable.

It appears that the Rules of 1878 established a link between the Melbourne Stock Exchange of 1865 and The Stock Exchange of Melbourne of 1884, providing a fundamental continuity in the organisation of a stock exchange in Melbourne for over one hundred years. A basic feature was the system of Call Room trading, which continued until 1962. Before 1884 the organisation of the Stock Exchange was rather informal in the sense that it was merely the largest centre for dealing in shares and its "official list" did not cover the extent of actual market activity. For instance, in 1874 there were two stock exchanges operating under the same name, unable to agree on the question of advertising by members. In 1881 the Victorian Stock Exchange was established after the Melbourne Stock Exchange raised its entry fee from ten to twenty guineas. Further bodies included the Australian Open Exchange Company, the Federal Stock Exchange Company Limited, and the Public Stock Exchange Company Limited.

The Stock Exchange of Melbourne arose out of a meeting held on 16 October 1884 at which ten persons were present. All had been members of the earlier Melbourne Stock Exchange which disbanded following a disagreement about the right of members to publish their sales in the press. The new Exchange gained further strength in November 1885 when the remaining twenty-three members of the Melbourne Stock Exchange transferred their membership. The other bodies were not serious competitors to the Exchange—in 1891 the Victorian Stock Exchange suffered reduced turnover, and in the same year the Australian Open Exchange Company was closed.

A notable feature in the 1870s was the growing importance of brokers in raising new funds, as evidenced by the introduction of brokerage rates on new securities in that decade. Loans were raised in Melbourne for the Governments of Queensland and New Zealand. During the 1880s the real expansion of underwriting in Melbourne took place. By then close relations had been established with British capital sources which later helped foster the land boom and the growth of urban transport. Although gold mining was declining and being replaced by the greater profitability of silver-lead mines at Broken Hill after 1885, gold was the basis which partly enabled Melbourne to become the centre of share trading in the various Broken Hill companies. This mining activity benefited the Stock Exchange, where share

volume for 1888 was three times greater than for any previous year. The pressure of business grew until the following Easter, when an extended holiday was declared. The boom later receded, partly due to the re-appraisal of the outlook, and by July the volume of new share issues subsided, influenced by bank action. Land speculation was also limited in 1888 by a credit contraction and higher interest rates.

In December 1891 the first failures of the building societies occurred, followed in July 1892 by some land banks. Depositors suffered losses and this led to a loss of confidence by British investors and a reduction in capital inflow. In 1892 prices for wool, wheat, and silver fell, and the cumulative economic recession was accentuated by drought. During the financial crisis in January 1893 the Stock Exchange remained open, but the time for delivery of documents was extended from three to seven days. One indication of the trend is the number of Stock Exchange transactions : in 1886 these were 6,494 ; in 1888, 59,411 ; in 1890, 77,282 ; and in 1892, 36,400.

In 1887 the Stock Exchange began to erect new premises in Collins Street (it occupied them four years later) ; a large part of the capital was subscribed by the Stock Exchange through the Committee. The estimated cost was £185,000 including £120,000 for the site, but the eventual cost was £254,000 and reflected increasing costs during the land boom. Jobbers and the press were now admitted to the Great Hall of the new building ; the first paid Secretary and Reader had been appointed in 1888, and listing fees introduced in 1887, followed by listing requirements as the Exchange became established as a main market for securities in the early 1890s. Whereas earlier applications for listings were often handwritten letters, a form of agreement was introduced and later expanded to cover the reports required to be furnished by listed companies.

After the crisis of the early 1890s, share market activity remained below the level of 1888–1890. Industrial companies paid reduced dividends, many of them being overcapitalised, and investors' interest transferred to the Western Australian gold mines and the Mount Lyell copper group in Tasmania. In 1893 the Exchange bank account had to be transferred twice because of suspension of payment by the banks ; two years later a reasonable balance had been achieved between the Exchange's receipts and expenditure. The price of seats rose to £2,500 in 1891, and fell as low as £200 in 1894 ; by 1900 it had recovered to £1,000. The late 1890s brought further developments in underwriting : in 1899 two leading firms jointly underwrote a preference share issue for The Dunlop Pneumatic Tyre Co. Leading brokers have developed this function since then, latterly in competition with merchant banks.

In 1901, after the Commonwealth Government was established, the State's tariffs were replaced by a Commonwealth customs tariff which led to several share issues by manufacturing companies in succeeding years. Federation also prompted the first conference of Australian stock exchanges in 1903 at the invitation of The Stock Exchange of Melbourne. From 1906 the Exchange published its first *Monthly Official List* (later to become the *Official Record*), and seven years later, following another interstate conference in Melbourne, it amended its listing requirements.

At the outbreak of the First World War in 1914 the Australian Stock Exchanges closed for eight weeks. One of the immediate consequences of the



war was the suspension of exports of silver-lead-zinc concentrates to German-controlled refineries. As a result of this, Broken Hill Associated Smelters Ltd and Electrolytic Zinc Co. of Australasia Ltd were formed in 1915 to develop local smelting and refining facilities, and The Broken Hill Proprietary Co. Ltd began to produce steel in the same year. These developments all needed capital as did the Commonwealth Government which raised its first war loan in 1915. In the following year the Committee of the Exchange decided not to appoint any further jobbers, and Wheat Certificates (issued by the Victorian Wheat Commission in parcels of 1,000 bushels) were first traded on the Exchange—a practice which continued until 1923. Another unusual type of security traded was the British Australian Wool Realisation Association Ltd (Bawra) Shares and Priority Certificates; these were traded from 1921 until the liquidation of the company in 1932.

In 1925 the Stock Exchange occupied its new premises in 422 Little Collins Street. Since 1921 its publications had been expanded to include company balance sheets and profits in the *Monthly Official List*. Australia's first share price indexes were introduced in 1929, the year of the Wall Street stock market reverse. The effects of the world depression which followed were seen in the rise of Commonwealth Loan Yields to £6 9s per cent in 1930, the devaluation of Australian currency by 20 per cent in 1931, and the various measures of the Premiers' Plan. Between 1937 and 1939 other events of significance to the Stock Exchange took place: the Australian Associated Stock Exchanges were incorporated; audit of brokers' accounts was introduced; stamp duty on share transfers (one quarter per cent) was also introduced; and brokerage rates were increased and made payable by both buyer and seller.

At the outbreak of the Second World War the Stock Exchange closed again, this time for only one and a half days. During the war, capital issues control was introduced but discontinued in 1954, and National Security (Economic Organisation) Regulations fixed share price ceilings (these were removed in 1947). After the war there were several changes in the internal organisation of the Stock Exchange: Saturday trading was discontinued in 1948, and three years later the exchange introduced the Odd Lots Department which was transferred to the Odd Lots Specialist in 1952. Four years later the Call Room was reconstructed and the Public Gallery and Second Call Room opened.

In the early 1950s discoveries of oil at Rough Range in Western Australia and uranium in Queensland created considerable interest in investment and the Exchange attempted to disseminate more information for the benefit of the public. The *Annual Report* of the Committee was first published in the *Official Record* in 1955, and in the following year the Exchange promulgated the first take-over code, followed by the inauguration of radio broadcasts direct from the Stock Exchange in 1958. Other means of providing information included lectures on the Stock Exchange and the small investor, launched in co-operation with the Council of Adult Education, the publication of Stock Exchange accounts in Australia for the first time in 1959, and expansion of the *Annual Report* to cover statistics of the *Official List*. In 1962 the Call Room was remodelled and post trading introduced. Advanced services introduced between 1958 and 1963 included the loose-leaf Stock Exchange Investment Service, the Transfer Marking

and Document Noting Service, Telex facilities for interstate exchanges, and the Melbourne Share Price Index (base year 1960). The first Chart Book of the Melbourne Share Price Index was issued in 1965.

Government legislation which affected the activities of the Exchange in those years included the Companies Act, amended in 1958 to cover take-over offers, the Company (Public Borrowings) Act in 1963 following defaults of some companies in the early 1960s, and the Marketable Securities legislation in 1966 providing for a new transfer system as well as changes in stamp duty.

From 1965 onwards Australia witnessed some major mineral discoveries : natural gas and oil off the Victorian coast from 1965, nickel in Western Australia from 1966, and copper at Bougainville. These discoveries resulted in stock exchange activity in the later years of the decade which broke many records in volume and value of transactions, partly as a result of overseas capital inflow and partly due to increasing local investment interest. However, a reaction set in during 1970 and in 1971 both prices and volume of turnover declined.

In 1968 The Stock Exchange of Melbourne moved to a new twenty-six storey building in Collins Street, almost opposite the site it had occupied in 1891, and in 1970 was incorporated as The Stock Exchange of Melbourne Ltd, with total assets in 1971 exceeding \$2.7m.

#### COMPANY LEGISLATION

The first Victorian legislation dealing generally with incorporated companies was passed in 1864, and was modelled quite closely on the English legislation of the time. In the century which followed, successive reforms of company law showed an increasing willingness to make bold experiments and to shape local law against the background of local problems.

As early as 1871 mining companies were allowed to be incorporated on a "no liability" system, which meant that shares could be forfeited at any time if a company's prospects appeared unattractive. In 1896 the same privilege was offered to trading companies ; apparently they saw no advantage in the system, and the privilege was withdrawn when the law concerning trading companies was consolidated in 1910. The *Companies Act* 1896 recognised the interest of the public in companies by requiring the companies to keep proper books of account, appoint auditors, and prepare and publish balance sheets. These obligations were evidently regarded as burdensome, because the Act exempted a class of smaller companies known as "proprietary" companies from these obligations. Similar relief was later offered to companies of the same kind in the other States and in England.

The early part of the twentieth century saw the appointment of a number of committees in England to consider reforms in company law. As a result of their recommendations, a number of significant changes was made in England in 1928. In Victoria, Sir Leo Cussen prepared a draft Bill revising company law in the light of the English reforms, and his draft formed the basis of the *Companies Act* 1938. In the same year, the Victorian Parliament passed an Act regulating strictly the affairs of investment companies.

The *Companies Act* 1958 consolidated the legislation concerning companies, and greatly shortened and improved the arrangement of the earlier legislation. Perhaps its most important contribution was to require public companies to file an approved prospectus before borrowing from the public and issuing debentures. About this time the business communities of the States and Territories of the Commonwealth began to press for uniform legislation in the fields of business law. The Standing Committee of Attorneys-General undertook the preparation of a uniform Companies Bill. Using the 1958 Victorian Act as a starting point, they introduced a number of new principles inspired by overseas studies and legislation, with the result that the Bill represented a fundamental re-examination of company law in the light of modern developments. The Uniform Bill was introduced in the Australian States and Territories during 1961 and 1962, and its success has been very largely responsible for later demands for uniformity in other fields of law.

Recent experience has shown that the passing of the uniform Acts has not hindered the making of further reforms. Amendments have already been made, the most important of which were those made in 1963 and shortly afterwards to control more strictly the borrowing of money from the public. In 1967 the Standing Committee of Attorneys-General appointed a Company Law Advisory Committee to inquire generally into the extent to which company law protected investors. The Advisory Committee has made several reports recommending important changes particularly in relation to the disclosure of substantial shareholdings, the making of take-over offers, and the preparation, auditing, and publication of company accounts. The States and Territories of the Commonwealth are now in the process of giving effect to the Committee's proposals.

#### TRUSTEE COMPANIES

The earliest recorded date in an English common law country of an executorship being committed to a trust institution is 21 June 1834 when an estate was committed to the administration of a South African trustee company. It was not until about forty years later that T. M. Stewart, Melbourne manager for the Bank of New Zealand, brought to Australia from South Africa the concept of corporate trusteeship. Shortly afterwards in 1878 the first trustee company in Australia was incorporated in Victoria. During the ten years which followed several other trustee companies were formed and seven now operate in Victoria.

In order to protect the beneficiaries of the estates they administered, special Acts of Parliament were passed for each company shortly after its formation to empower it to act as executor or administrator; this was necessary to clarify the legal position concerning a grant of Probate or Letters of Administration to a corporation. To safeguard further the interests of all parties, the legislation limited the companies' powers to engage in activities outside their accepted fiduciary services, and required each company to lodge substantial security with the Treasurer of the State.

In 1928 Victoria consolidated the various Acts relating to trustee companies in the *Trustee Companies Act* 1928, thus bringing the activities of all statutory trustee companies operating within the State under one statute. At the beginning of 1971 there were still two States within the



Superfine Merino wool on pre-sale display at a Geelong wool showroom.  
*Elder Smith Goldsborough Mort Ltd*

A Melbourne wool auction in the early 1870s.  
*La Trobe Collection, State Library of Victoria*

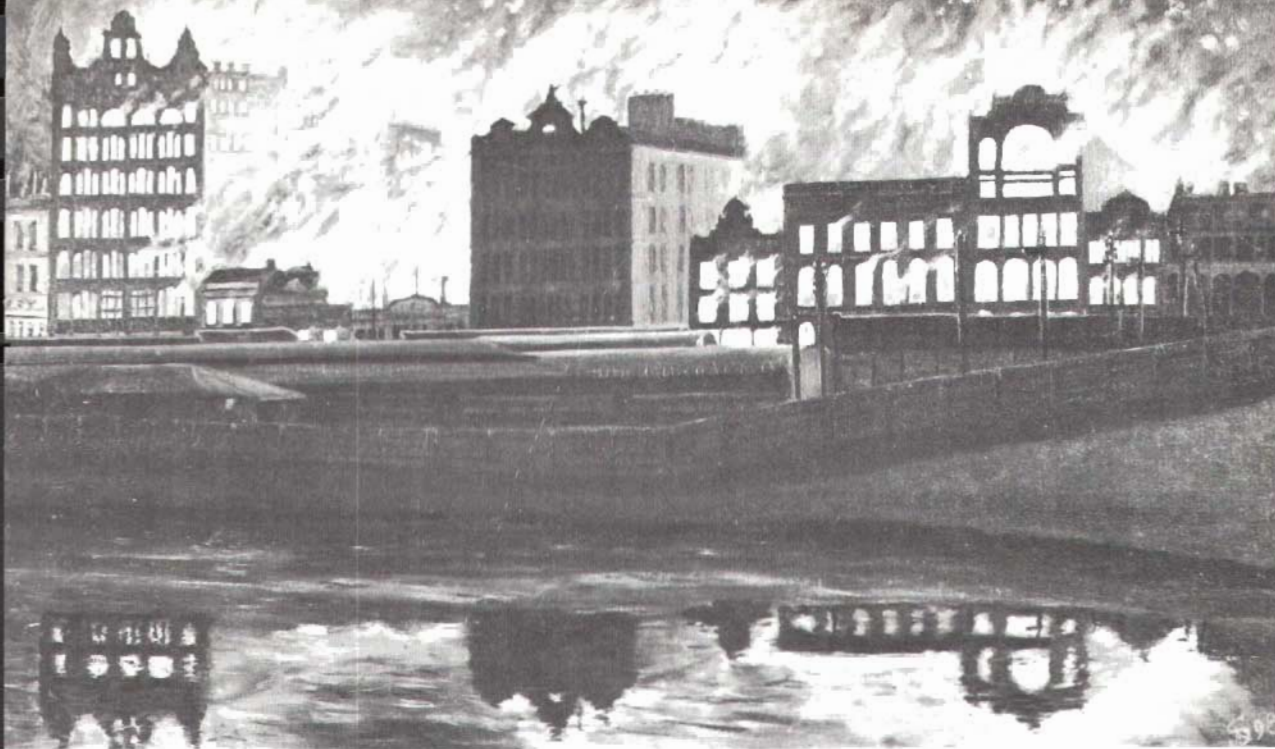




Dealing in mining shares at "The Corner", Ballarat, in the early 1860s.  
*La Trobe Collection, State Library of Victoria*

Brokers trading at the Stock Exchange of Melbourne in the 1960s.  
*La Trobe Studies*





An artist's impression of the great fire which started near the corner of Flinders and Elizabeth Streets in Melbourne on 21 November 1897.

*Wormald Brothers (Aust.) Pty Ltd*

Customers queue to cash their "Christmas Club" savings accumulated during the year.

*State Savings Bank of Victoria*





Auction sales of nineteenth century items indicate an increasing sense of history among Victorians.

*The Age*

The Block Arcade, one of Melbourne's fine nineteenth century shopping arcades, still retains much of its earlier atmosphere.

*Gordon De'Liste*



Commonwealth where each trustee company operating within those States was covered by its own private Act of Parliament.

The growing complexity of the law relating to trusts has produced a challenge ; the companies have met this by developing specialist skills within their organisations and establishing the Executor and Trustee Institute, which is unique to Australia and provides basic and advanced training in all facets of trust administration.

Fiduciary services offered by trustee companies have expanded in recent years and now include several activities. Among these, trustee companies can act as trustees for debenture and note issues, act as trustees for investors in unit trusts, and act as agent or attorney for persons or corporations ; they can manage investment portfolios and real estate for local or non-resident owners, supervise and keep books of account of rural businesses, act as income tax consultants, and administer superannuation and pension funds.

Since the early 1950s the growth in the value of the assets under the administration of Victorian trustee companies has exceeded anything experienced previously. During the 10 years to 30 June 1970 the value of assets under administration increased from \$349m to \$568m. In addition, the companies had been appointed to act as trustees for holders of debenture and note issues valued at more than \$1,500m at 30 June 1970.

#### PASTORAL FINANCE COMPANIES

Pastoral finance companies provide predominantly short-term finance for primary producers, mainly woolgrowers, and supplement bank credit facilities as necessary from funds provided by share or debenture capital and reserves. The basis of the activities of these companies is the sale of wool and such connected financial operations as buying and selling clients' livestock, and the sale of rural properties.

Before 1850 the demand for finance for pastoral activities was very limited and borrowing was restricted. In the second half of the nineteenth century wool production grew strongly, leading to the formation of firms specialising in wool marketing. These firms became sources of external credit for woolgrowers as the demand for pastoral finance grew.

Initially general colonial agents arranged for the shipment of wool for sale in London on behalf of the Victorian growers. Over time, and as the importance of the Australian wool clip to British mills increased, the wool for sale on the London market was transmitted through the hands of special wool consignment agents. Strachan and Co. was one of the first to begin activities in Geelong in 1836. The businesses started by F. G. Dalgety in 1846 and Richard Goldsbrough in 1848 expanded rapidly during the decade of the 1850s. In Adelaide wool marketing and pastoral finance were expanding the business of Thomas Elder. The founder of Dennys, Lascelles Ltd, C. J. Dennys, began a wool broking business to handle western Victorian wools in 1857, and many other local wool broking enterprises were established in the following two decades.

Under the initiative of Richard Goldsbrough, local auction sales began to replace sales on the London market. Most growers sending their wool to these auctions asked for an advance against the clip in order to meet shearing and transport costs. In addition, many growers wanted credit to



buy stock and properties, and turned to the local wool brokers for much of it. The wool brokers such as Dalgety, Mort, Goldsbrough, and William Sloane, together with some major incorporated (usually British) mortgage companies, in turn borrowed from the banks to finance their own operations.

After a three year slump in the period 1867 to 1870 the pastoral industry, through its demand for funds, came to exert a profound influence on the financial systems of Victoria, Australia, and the United Kingdom. A boom in wool followed peak wool prices in 1872, and at least for the remainder of the decade pastoral enterprise was lucrative. Rising property values attracted the interest of speculative operators who intensified the pressures on the real estate market, and, in the process of encouraging transactions in station properties, created conditions for a great increase in the demand for funds which flowed in abundance from Melbourne. In the boom years the rising flow of pastoral finance centred increasingly around the banks and the pastoral finance houses. The activities of these institutions were becoming more and more similar. The banks, from the end of the 1860s, had added direct consignment of wool to their functions of deposit banking, while non-banking companies had spread from wool broking and mortgage lending to the acceptance of deposits, the operation of current accounts, and the provision of overdraft and mortgage finance.

During the 1870s and 1880s limited liability companies using shareholders' funds from both local and overseas sources were reconstructed from a number of privately owned broking houses. For example, the Dalgety partnerships were incorporated in 1894 to form Dalgety and Co. Ltd. Incorporated broking and mortgage business was strengthened by the transfer, effective in 1874, of the operations of the New Zealand Loan and Mercantile Agency Co. Ltd to Australia, and later by the establishment of British registered finance companies, mainly as a result of large scale mergers and amalgamations within Australia.

British investment in the Victorian pastoral industry was very important in the 1830s and again in the 1870s. From 1874 the part played by British investment in Australian pastoral expansion became increasingly significant. British loans were raised by company debentures and British funds were deposited in Australian banks, normally for a fixed term of 3 or 5 years. Funds were poured into non-liquid propositions on the security of often highly risky and experimental undertakings, while at the same time rapidly rising commitments for fixed interest on relatively short-term British investment in Australia were accepted.

Throughout the 1850s and 1860s wool lien and stock mortgages were the basic forms of collateral for loans from the pastoral finance companies; interest rates on loans were relatively high—between 9 and 12 per cent per annum. When the banks became direct lenders in the 1860s, station mortgages became the collateral for loans, and interest rates moved closer to normal overdraft rates. During the 1860s loans tended to be restricted to those who were actively expanding and improving their properties. But from 1874 Melbourne-based pastoral finance companies began financing with readily available funds the large scale expansion into the arid and less suitable grazing areas of Australia. Rising wool prices in 1884 increased the confidence of borrowers and lenders, companies began indulging increasingly in reckless lending policies, and, although wool income later

tended to decline, British capital continued to flow in volume into the pastoral industry.

However, this inflow of British capital ceased in 1893 when Victoria faced a severe financial crisis, and the banks and pastoral finance companies became exposed to great financial pressure. Also, the effects of over-optimistic lending and non-liquidity were greatly aggravated by the growing physical problems of the industry itself. Financial depression, drought, a rabbit plague, and the long-term effects of prolonged overstocking caused livestock numbers to decline drastically between 1892 and 1902. Many pastoralists and agriculturists were ruined, and the pastoral finance houses, which had a large proportion of their funds advanced to primary producers, either suspended business or were forced to execute major reconstructions. In 1894 the Australian Estates and Mortgages Co. Ltd acquired the assets and liabilities of the Union Mortgage and Agency Co. of Australia Ltd. In the same year reconstruction of the New Zealand Loan and Mercantile Agency Co. Ltd took place. In 1896 Younghusband and Co. Ltd acquired the business of Messrs Chenery and Co. of Albury and Wodonga. In 1897 Strachan Bostock and Co. and Shannon, Murray and Co. amalgamated to form a proprietary company, and in 1910 F. A. Nuske established the Victorian Producers' Co-operative Co. Ltd.

During the 1890s and throughout the phase of financial reconstruction which lasted until the early 1920s, loans by pastoral finance companies scarcely rose at all. During the First World War their activities were concerned mainly with assisting Australian war production. In this period woolgrowers were able to repay their debts, and advances fell until the post-war boom in property values raised demand. The impetus given by the war brought prosperity to Victorian pastoral finance companies, and between 1924 and 1930 loans by the leading pastoral finance houses increased rapidly in response to the growing demand for credit to finance property transactions. To make the expansion possible they called on shareholders for new funds and utilised funds which had previously been idle. Paid-up capital of all Victorian pastoral finance companies rose spectacularly, and from 1924 to 1930 the industry was in a position to meet its investment programme without overseas funds.

In the 1931-32 season pastoral companies were severely affected by falling prices and by the inability of graziers to repay advances. After 1931 in the post-depression rehabilitation period, pastoral companies dealt leniently with clients who could not repay loans and, in many cases, interest. By 1936 improved world trading conditions, better seasons, and higher wool prices returned profits practically to pre-depression levels.

With the lifting of restrictions in 1947 after the Second World War, the period until 1955 was one of great prosperity for the wool industry in general, especially during the 1951-52 season when the prices of wool reached record levels because of the demand prompted by the Korean War.

In recent years pastoral companies have helped finance the substantial increases in stock numbers, and some have also, through financing of superphosphate, seed, and machinery, assisted in pasture improvement. Since 1958-59 the degree of concentration in the industry has been increased with the mergers of Dalgety and Co. Ltd with New Zealand Loan and Mercantile Agency Co. Ltd in 1961, and of Elder Smith and Co. Ltd (an

Adelaide company which commenced operations in Victoria in 1937) with Goldsbrough Mort and Co. Ltd in 1962 and Younghusband Ltd in 1971. These two firms now share the business in Victoria with four pastoral finance houses incorporated in this State, namely The Australian Estates Co. Ltd, Dennys Lascelles Ltd, Strachan and Co. Ltd, and the Victorian Producers' Co-operative Co. Ltd. By 1970 almost \$350m was owing to pastoral finance companies in Victoria.

#### INSTALMENT CREDIT

Instalment credit, as now known, developed with the advent of mass production. The term "instalment credit" is here defined as relating to financing schemes in which repayment is made by regular predetermined instalments. The schemes covered include hire purchase, time payments, budget accounts, and personal loans relating primarily to the financing of retail sales of goods. Excluded are lay-by accounts and credit accounts which do not involve repayment by regular predetermined instalments, financing of sales of land and buildings, property improvements, and services such as repair work, travel facilities, and rental and leasing schemes. The term "retail sales" includes the sale of goods of all types to final buyers thus including, for example, plant, machinery, and tractors.

A particular form of instalment credit is hire purchase. A hire purchase agreement is not an agreement to sell but an agreement whereby the owner hires the goods to the hirer and gives the hirer an option to purchase the goods after having paid an agreed amount of the hire. A hire purchase agreement allows the hirer the use of the goods while paying for them and gives the owner security for payment because the goods remain his property until the agreed amount of hire has been paid, so that if the hirer defaults in his payments the owner can repossess the goods.

Hire purchase originated not later than the mid-nineteenth century in Great Britain and France. In Australia, it was begun in Melbourne in 1860 by Wilkie's (the forerunners of Allan and Co. Pty Ltd) in respect of the sale of pianos. In the 1920s the motor vehicle industry began to emerge in Australia and this provided a stimulus to consumer credit in financing sales.

The legal importance of hire purchase dates from 1895 when decisions given in English cases determined that :

1. A hire purchase agreement containing a provision that the property in the goods did not pass to the purchaser until payment in full was made, was not a Bill of Sale void for non-registration under the Bills of Sale Acts.
2. A hire purchase agreement did not constitute an agreement to buy under the Sale of Goods Act of 1893 because the purchaser had a right to terminate the hiring by returning the goods without incurring any further liability.

The need for legislative control first became apparent with the rule that, even though the hirer had made substantial payments he lost all his rights if he later defaulted, thus allowing the owner to repossess the goods, and that he was not necessarily or usually entitled to recover the money under common law. Other reasons which brought about this control included onerous terms in the contracts, such as the "minimum hiring clause" which required the hirer to pay a certain minimum amount or minimum

proportion of the purchase price if he decided to exercise his option to terminate the agreement. In the depression years of the 1930s repossessions became frequent, and in 1936 protective legislation was introduced in Victoria and later in Queensland, South Australia, and Western Australia. The most comprehensive Act, however, was that of New South Wales in 1941.

After the Second World War there was a pent-up demand for consumer durables denied to the public in war-time, and conditions of near-full employment; to curb inflation there were official controls over bank lending in the early post-war period. These conditions helped divert business to non-bank financial intermediaries.

To overcome discrepancies between the hire purchase legislation of the States, conferences were held between the Commonwealth and the States. This gave rise to legislation introduced in 1959 and 1960 which achieved a considerable degree of uniformity.

The statutes are designed to ensure that the precise nature of the commitments is brought to the attention of the hirer, to give the hirer the full and free right to terminate the hiring if he desires without being obliged to make a further final payment as a condition of such a right, to regulate the owner's right to repossess, and to give the hirer the protection of adequate warranties and conditions of fitness of the goods. In Victoria, the legislation was the *Hire Purchase Act* 1959.

In statistics of instalment credit for retail sales, hire purchase is identified separately and all other types of agreements are included as "other instalment credit". In Victoria there has been a marked decline in the relative importance of hire purchase and in 1968-69 less than 50 per cent of the total amount financed (excluding interest, hiring charges, insurance, etc.) was accounted for by this type of agreement. In 1958-59 the total amount financed was \$214.0m of which hire purchase accounted for \$182.0m. In 1968-69 the total amount financed increased to \$306.3m of which hire purchase accounted for \$121.9m.

Examination of amounts financed for the three categories of goods—motor vehicles, plant and machinery, and household and personal goods—reveals that the substitution of other types of agreements for hire purchase has occurred mainly in connection with the purchase of motor vehicles. During the same ten year period amounts financed for motor vehicles under hire purchase declined from \$101.0m to \$59.5m, while advances under other instalment credit increased from \$1.2m to \$129.4m. Of some significance is the fact that motor vehicles being purchased under hire purchase attracted substantially higher premiums for comprehensive insurance cover.

During this period stamp duty also had a different impact on the various types of agreements. The *Stamps Act* 1958 contains provisions relating to instalment purchase agreements (which were then mainly hire purchase) imposing a duty of 2 per cent of the "purchase price", defined in the Act to be, in effect, the amount financed. Duty is payable on all agreements, except where the "purchase price" is less than \$20 and, in addition, the credit grantor is prohibited from passing on the duty to the hirer-purchaser. Excluded from these provisions are most "other instalment credit" agreements, in particular chattel mortgage, a type of agreement under the *Moneylenders Act* 1958 which provides the credit grantor security

over the goods being purchased by way of the right to sell them should default occur.

Stamp duty on "other instalment credit" agreements became more significant under the *Stamps Act* 1966 which relates mainly to credit and rental agreements other than housing loans, and imposes a duty of  $1\frac{1}{2}$  per cent of the amount advanced when this exceeds \$200 and the rate of interest is over 10 per cent per annum. Short-term loans are subject to duty at the rate of  $\frac{1}{4}$  of one per cent per month. If repayment of loans, other than short-term, occurs within 10 months of the making of the loan, a rebate of duty is applied at the rate of  $\frac{1}{4}$  per cent for each complete month between repayment and the expiration of twelve months from the making of the loan. When these provisions became effective early in 1967 the rate of duty on instalment purchase agreements was reduced to  $1\frac{1}{2}$  per cent. However, there was no provision made for rebates of duty when repayment occurs within 12 months, nor for enabling the credit grantor to pass on the duty to the hirer-purchaser as may be done with other instalment credit agreements.

In Victoria the total amount financed by all forms of instalment credit has increased steadily each year, except during one period of restricted credit in the early 1960s when there was a decline in the total amount financed. In 1959-60 the total amount financed was \$252.5m; in 1960-61 \$221.6m; in 1961-62 \$194.5m; and in 1962-63 \$222.6m. The decrease was due to a curtailment in the amount financed under hire purchase from \$212.5m in 1959-60 to \$174.5m in 1960-61 and to \$148.5m in 1961-62. Other instalment credit expanded from \$40.0m in 1959-60 to \$46.0m in 1961-62. By 1968-69 the total amount financed had increased to \$306.4m and at the end of that year \$418.4m was owed by borrowers.

The effects of the growth of instalment credit have been substantial. By adding to the buying power of consumers, both the level and the structure of consumer demand has been affected. This demand has also increased because of other factors: the trend to "asset ownership" by households in Australia since the Second World War; technical improvements in producing new forms of household goods; a rising level of average real income; and advertising. The main stimuli to the growth of instalment credit since the 1940s have been a belief in security of employment, and income available after satisfying basic needs; a high rate of home building which has stimulated a demand for household goods; the increasing range of durable household goods; and the social prestige of "asset ownership". Finally, an important consideration is that in times of inflation repayment of fixed debts becomes easier.

Instalment credit is available for the purchase of plant and machinery for productive use, as well as for consumer goods; also an unknown proportion of the category "motor vehicles" would be used for business purposes. If the interest rate charged for the provision of credit is below the expected profit rate from the productive equipment then it will pay a producer to borrow, whilst for many new and small firms and farmers the access to sources of capital funds may be limited.

In addition to instalment credit, private lending institutions provide a range of other financial services to businesses and consumers, including commercial and personal loans, wholesale finance, and factoring. Recently the provision of finance by means of lease agreements has also become prominent.

On all these types of agreements, balances outstanding to finance companies (as defined for statistical purposes) in Victoria were \$457.7m at 30 June 1970, compared with instalment credit outstandings of \$393.6m.

#### HOUSING FINANCE

Victoria's housing industry has always depended on the availability of finance, one of the main determinants of the level of building activity. After the granting of some security of land tenure in 1847 and the gold rushes of 1851, the demand for houses and housing finance was stimulated. The gold discoveries initially drained the building industry of its labour force and caused a virtual cessation of building activity, but led later to an increased demand for accommodation and the availability of labour to satisfy it.

Until the 1850s housing finance was scarce and expensive, with banks and private mortgagees the main lenders. During the 1840s friendly societies and building societies were established; at least one existed in the Port Phillip District before 1846. The Melbourne Benefit Building Society and the Victoria Benefit and Land Building Society date back to 1848. By 1866 there were twenty-six building societies in Victoria with 8,600 shareholders and assets of £650,000. During the second half of the nineteenth century when Melbourne grew from a settlement to a sizeable city, building societies expanded rapidly. Terminating building societies of a fixed life (26 to 31 years) with limited membership, monthly share subscriptions, and receiving their funds largely from banks and life offices, were the predominant source of society lending up to the 1870s. However, after the 1870s permanent societies became relatively more important in the building society movement.

Permanent building societies, formed to secure "permanent" capital by share subscription, bank overdrafts, and deposits from the public, were generally willing to lend greater amounts than terminating societies, although at higher interest rates. They expanded rapidly during the late 1870s and the 1880s; this was encouraged by the Victorian Building Societies Act of 1874 which permitted registered societies to deal in freehold land and property if sanctioned by a resolution of members.

The rapid expansion of the building society movement was checked during the financial crisis of the 1890s. The building industry stagnated; building societies actually declined in importance, and banks once more became the main lenders for housing. Although the land boom of the 1880s was largely financed by building societies (new advances between 1874 and 1890 ran at about two thirds of the level of the new residential investment throughout most of these years), bank lending for houses also grew. Land, building, and investment companies, and mortgage banks increased in importance in the 1880s, but even at the peak of the boom in 1888 their aggregate assets were only about half of those of the building societies.

The Savings Bank of Port Phillip (now the State Savings Bank of Victoria) concentrated on short-term mortgage loans from the commencement of operations in 1842 until the 1890s and did not play a major role in the housing boom of the 1880s. However, in 1896 this bank introduced "credit foncier loans", i.e., loans of long duration (as much as 30 years) at low rates of interest. Originally designed to aid farmers in re-negotiating short term mortgage loans in periods of "tight money", credit foncier loans were extended to housing in 1910.

At the beginning of this century there was a shortage of houses as well as low housing standards; this encouraged governments to enter the field of housing finance. In 1918 the Commonwealth Government supplemented State home finance agencies by establishing the War Service Homes Commission to help provide homes for ex-servicemen and their dependants. The Commission was empowered to build houses for sale on easy terms and to make available long-term loans at relatively low rates of interest for the erection of houses, the purchase of existing homes, and the discharge of mortgages. In Victoria, legislation was enacted in 1920 to permit the State Savings Bank of Victoria to make housing loans "on generous terms" to people whose income did not exceed the equivalent of £400 per annum. Throughout the 1920s the State Savings Bank maintained a high rate of lending for housing, and balances of loans outstanding increased sixfold in the decade ending 1929.

The depression of the 1930s adversely affected the housing industry. Following an official inquiry in 1936 into housing conditions in Victoria, the Housing Commission was established in 1938 to be the central governmental authority for housing in Victoria. At that stage the Commission did not have authority to embark on housing schemes. The *Slum Reclamation and Housing Act* 1938 established it as a slum reclamation authority; its authority to build houses for rental or sale came later.

During the Second World War building of new houses virtually ceased. The Commonwealth Government agreed to share the responsibility of the anticipated post-war housing demand and since 1945 has entered into a series of housing agreements with the States; it makes loan funds available to the States for the construction of dwellings primarily for families of moderate means. The agreement between the Commonwealth and State Governments in 1956 set the pattern for subsequent agreements every five years. Under these agreements at least 30 per cent of the funds provided by the Commonwealth are used to finance loans for persons wishing to build or purchase houses privately through building societies or other approved institutions. The remainder is used for State housing. The Victorian Government established the Home Finance Trust in 1956, authorising it to receive money on deposit for the purpose of making housing loans to deserving persons on the security of a first mortgage.

In the decade following the 1956 Agreement the number of registered co-operative terminating building societies more than trebled. More recently, the co-operative societies have languished as providers of housing finance, whereas the permanent building societies, which have been able to offer higher interest rates for funds, have increased in popularity and their lending for housing has grown rapidly. Of significance also have been trading banks, insurance and other finance companies (including mortgage management companies), company housing schemes, pension funds, and individual lenders; however, the largest share of housing finance has come from the savings banks, with the State Savings Bank of Victoria the dominant lender in this State. Savings bank lending for housing is determined for the Commonwealth Savings Bank and the so-called "private" savings banks by the provisions of the Banking Act. Under the Act savings banks could lend virtually up to a maximum of 35 per cent of their deposits in

Australia for housing. This was raised to 40 per cent late in 1970. The Act does not apply to the State Savings Bank of Victoria but that bank generally observes similar patterns of lending with, if anything, a higher ratio of housing loans than for the other banks.

An interesting development in recent years has been the formation of insurance facilities for real estate mortgages. The Housing Loans Insurance Corporation (a Commonwealth instrumentality) was established in 1965. The Mortgage Guarantee Insurance Corporation of Australia Ltd, a private organisation, was also formed in the same year. Both insure lenders against the risk of loss in making loans to home purchasers, thus encouraging lenders to make high ratio loans. In the event of default by the borrower, these organisations make good to the lender any loss or expenses incurred.

#### CO-OPERATIVE ORGANISATIONS

Co-operative organisations operating in Victoria are registered under the provisions of the Industrial and Provident Societies Act, the Companies Act, the Co-operation Act, and the Co-operative Housing Societies Act. They are engaged in a number of activities chief among which are the production, marketing, and distribution of goods, and in the provision of finance for home building. Since the passing of the Co-operation Act in 1954 a considerable number of co-operative credit societies has also been registered, and by 30 June 1970 there were 172 such societies with assets valued at \$15m. This same Act also provides for the registration of community advancement and community settlement societies.

Historically, producer societies and co-operative housing societies have been the more significant types. For statistical purposes, producer co-operatives have been defined as those societies which are engaged in the manufacture and/or marketing of their goods and which substantially fulfil certain conditions relating to dividends, ownership, voting powers, and the conduct of business.

The first producer society in Victoria was the Ballarat Boot Manufacturing Industry Society Ltd, registered in 1878 under the *Industrial and Provident Societies Act 1873*. The oldest active society registered under this Act is the North-Eastern Co-operative Society Ltd of Wangaratta which was originally registered in 1906. With the introduction of the

#### VICTORIA—PRODUCER CO-OPERATIVES

Year	Number of societies	Number of members	Total income	Total assets
			\$'000	\$'000
1926-27	62	48,568	16,259	5,856
1932-33	63	38,959	11,608	5,213
1936-37	59	37,720	8,532	5,790
1940-41	57	36,189	9,396	5,441
1945-46	52	43,245	10,785	6,033
1950-51	60	38,774	23,925	11,476
1955-56	53	34,763	38,854	19,480
1960-61	68	46,552	52,924	30,256
1965-66	102	66,468	89,564	51,115
1969-70	92	83,392	87,853	71,750



*Co-operation Act* 1954, registration of co-operatives under the *Industrial and Provident Societies Act* has declined. The data shown, which encompasses registrations under all of the earlier mentioned Acts, provides an assessment of the growth of producer co-operatives in Victoria.

Between 1926-27 and 1960-61 there was little variation in the number of registered societies, but noticeable growth in their total income, and assets in particular. Between 1960-61 and 1969-70, total income further increased by 66.0 per cent and total assets by 137.1 per cent, while the number of members increased by 36,840 to 83,392. The growth of producer co-operatives in Victoria from 1926-27 to 1960-61 has therefore been characterised by strong increases in total income and assets, and since 1960-61 also in increases in the number of societies and members.

#### FRIENDLY SOCIETIES

At the time of the first settlement in Victoria, friendly societies in Great Britain had been providing valuable social insurance benefits for many years. It was not surprising that offshoots of these old established Orders were very soon formed in Victoria, but it was not until after the passing of the 1855 Act that any steps were taken for their registration as legally recognised institutions. This Act, entitled "An Act to consolidate and amend the Laws relating to friendly societies", received assent on 12 June 1855 and provided for the appointment of a certifying barrister who would confirm that the rules of the society were in accordance with the law before registration could be effected by the Registrar. The Act also provided that prior to registration the table of contributions had to be certified by an actuary of an assurance company or other person appointed by the Registrar.

The Government gave no further attention to friendly societies until 1875, when a Royal Commission was appointed to inquire into "the working of the Friendly Societies Statute, the position and operations of the societies registered under it and what amendment, if any, is desirable in the existing law". The outcome of this Commission was the *Friendly Societies Act* 1877; this provided for the appointment of a fully qualified barrister as registrar in lieu of a registrar and a certifying barrister, for the submission of returns annually to the Government Statist, and for a periodic valuation of the assets and liabilities of societies at least once in every five years. The passing of this Act resulted in an increased measure of control by the Government over the operation of friendly societies. In accordance with these provisions, an actuary was appointed under the Government Statist in 1881 to carry out the periodical valuations of societies, but gave him no power to enforce payment of adequate rates of contribution to enable a society to meet its liabilities. He could only give advice about the best means to be adopted to achieve that end.

It was not until 1907 that registration was made compulsory and societies were required to adopt adequate rates of contribution for existing members as well as new members. An Act of that year embodied these provisions, the penalty for failure to adopt adequate rates of contribution being cancellation of registration. However, the operation of this Act, in so far as it related to the scale of contributions payable, was limited to a period of eighteen months; this was a serious defect, as contributions which prove sufficient at any one time may later become

inadequate because of fluctuations in interest, sickness or mortality rates, or faulty management. To remedy this defect another Act was passed in 1911, which required societies to adopt adequate rates whenever called upon to do so by the Government Statist.

By the end of that year, despite a significant fall in membership during the depression years of 1892 to 1895, friendly societies were firmly established in Victoria. There were then forty-eight societies registered with a membership of 148,603 and funds totalling over £2.25m. The type of benefit developed over the years was proving very valuable to all sections of the community. Although other forms of benefits have been added periodically over subsequent years the basic benefits provided by the societies at the beginning of the century remained almost unchanged for over fifty years. These included sickness benefit, funeral benefit, medical services, and medicine at a greatly reduced dispensing fee. As well as providing these monetary benefits, all lodges had regular social gatherings, together with various sporting activities and debating competitions between the various lodges in the district. These activities were very popular and provided further means of attracting members to the movement.

The first reverse in the progress of societies occurred during the First World War when the membership fell from 159,741 in 1914 to 149,558 in 1918, the latter figure being only 955 more than for 1911. This decrease was mainly due to a dispute between the British Medical Association and the societies which led to the resignation of nearly all medical officers as from 1 February 1918. The war also had an adverse effect on the membership because of the high mortality rate amongst servicemen and the generally unsettled condition of the State. In addition, heavy financial losses resulted from amounts paid out to members in the services for sickness and funeral benefits. These losses would have been far greater but for the re-insurance scheme introduced by an amendment of the Friendly Societies Act in 1915, which gave societies the power to reinsure with the Government or with an approved assurance company for liabilities which might be incurred due to the war.

The immediate post-war period showed a continued decline in membership due mainly to the general effects of the war and the large number of deaths of members during the influenza epidemic of 1919, and it was not until 1921 that a recovery was evident. This recovery continued until the depression, the effects of which became apparent after 1929. Membership began to decline in 1930-31, but the funds continued to rise, due mainly to the high interest earnings of investments. At the end of the same year funds amounted to £5.3m and represented over £32 10s per member. In the period after the depression, the growth of societies was the greatest in their history. It was during this period that the major societies established hospital benefit funds to provide for payments towards the hospital costs of members and their dependants. Despite the Second World War both membership and funds continued to increase. Under the *Friendly Societies (War Service) Act* 1939 the contributions of members on war service were temporarily suspended and the benefits payable for the member were restricted to £20 on the death of the member and £10 for his wife. No sick pay was payable during that period.

In the period immediately following the war the economic situation

improved rapidly. Amid conditions of full employment fringe benefits offered by employers increased significantly and it became common practice for an employer to provide a superannuation scheme which included payments in the event of death prior to the retiring age ; liberal sick leave benefits were also provided. This meant that the basic friendly society benefits, namely, sickness and funeral benefits, which had proved such value to members previously, were not as attractive, and membership began to fall. On 31 August 1951 the "Contract System" agreement with the doctors, under which a member received complete general practitioner service for himself and family for a fixed annual contribution, was terminated, and members were required to pay the normal consultation fee for each service provided by the doctor. As a result it was necessary for societies to establish funds to provide a rebate to members on fees paid for medical services. This scheme, associated with the hospital benefit scheme introduced earlier, was the basis for the present voluntary health insurance scheme under the National Health Act, and marked the beginning of a new era for the friendly society movement. In addition to all the benefits associated with the National Health Scheme, the larger friendly societies now provide most forms of life assurance benefits including sickness and superannuation schemes for employee groups.

## 6

### WHOLESALE AND RETAIL TRADE

---

The history of retail and wholesale trade in Victoria is closely associated with the history of Melbourne because most of the population, and therefore its trade, has always been centred on the capital city. Other cities of major consequence in Victorian trading history are Geelong, Ballarat, and Bendigo, and they, in general, underwent changes similar to those which occurred in Melbourne.

At the end of 1836 most of the population of the Port Phillip District lived near the market square which was later to become the Western Market. Storekeepers began to set up their shingles. On 1 January 1838 Fawcner's *Melbourne Advertiser* was first published and it is through this paper and succeeding publications that much knowledge of the early traders is to be learned. In addition to foodstores there was a hairdresser, a brewer, and an importer of musical instruments; among their goods a few tons of the best potatoes were offered at the moderate charge of 9s 6d per cwt, and oats sold at 6s per bushel. The advertisements also featured quite a wide variety of consumer goods which would have been needed in a young settlement. Among these goods were baby linen, children's clothing, millinery, and dresses made to measure. It is interesting to note that many of the advertisements were directed to the needs of women, although men predominated in numbers at this time. These establishments were followed by harness makers, confectioners, and a registry office for servants. In 1839 there was the opening of an "Australian" store which sold groceries, ironmongery, tobacco, ready made clothes, and coffee. This made it possibly Melbourne's first general store and an elementary fore-runner of the modern emporium. By 1840 Melbourne was a thriving community with a surprisingly wide range of craftsmen and stores.

Although Melbourne had been created a township in April 1837, it did not possess an established market of the popular European type until the end of 1841. Following the appointment of Market Commissioners in December 1841, the Western Market began business as a principal place for the sale of fruit, vegetables, fish, butchers' meat, and poultry; a cattle market had also been established in that year. However, in a short time the Western Market became a collection of hovels and in 1849 was reorganised. In 1855 the new shops were burnt down, and, although a year later a more ambitious building was erected, the market lost favour with growers. Another task of the Market Commissioners was to establish a hay and corn market,

which they did in Bourke Street in February 1842. This was only temporary and the market was moved to its originally intended site on the corner of Flinders and Swanston Streets; in 1847 it was moved back to Bourke Street. In addition to the original hay and corn all kinds of goods were now sold, but the market degenerated into a row of shanties which were also destroyed by fire in 1855. The site was taken over by cart and wheel-barrow vendors and that year became known as the Eastern Market. Market gardeners traded their produce in the morning and farmers sold hay in the afternoon while, on Saturday nights, it became a public forum, popularly known as "Paddy's Market".

The hay market was transferred to a new site in 1874. Three years later the market gardeners moved to the Queen Victoria Market, which had been opened to accommodate wholesalers while the Eastern Market was being rebuilt—work on which commenced in 1877. The Eastern Market was re-opened in May 1880 but, as was the case with the Western Market earlier, it failed to revive and gave way to the Queen Victoria Market. Nevertheless, it continued to be an amusement centre and general market, until rivalled by newer amusement arcades and more attractive shops and the opening of picture theatres in the 1920s. Meanwhile the Queen Victoria Market, officially opened in March 1878, was extended in 1922 over the site of Melbourne's first cemetery and continued to be the chief wholesale market in Melbourne, until a wholesale fruit and vegetable market complex in Footscray Road, West Melbourne, was begun in 1968. The new market extended over 7 acres under one roof.

Geelong, like Melbourne, also witnessed a rapid growth in its earliest years. After 1839 the announcement of new stores, shops, or smithies was a weekly occurrence. Some of the new owners failed through lack of proper preparation or financial backing, but others succeeded during a time of rivalry for public patronage. This was especially so in foodstuffs supplied by the city's bakers, grocers, butchers, and confectioners in Corio Street and its close neighbourhood. Later, business moved to other areas of the town.

Until 1851 Melbourne was the principal town of what was then basically a large pastoral and agricultural district. However, the discovery of gold changed its character and brought many immigrants with a corresponding increase in trade. Whole streets were full of shops selling implements needed by the diggers, and British consignors were sometimes reckless in shipping goods to Melbourne. In 1853, for example, so much was imported that British manufacturers were unable to sell their goods at a profit in Melbourne and a severe depreciation in the value of goods resulted which seriously damaged both wholesale and retail business. At this early stage nearly all the business misfortunes were brought about by an excessive inflow of imports.

When gold was first discovered near Ballarat in August 1851, followed by discoveries at Bendigo in the following November, both towns, as well as others which grew on the goldfields, catered principally for the diggers. Trade flourished even though the cost of transporting goods from the nearest Victorian port to the goldfields was higher than the cost of bringing them by ship from Britain. However, with the decline in alluvial gold mining in the 1870s, wholesale and retail trade in the Ballarat and Bendigo districts gradually became geared both to the needs of the work force in secondary

industry which became permanently established in these cities and to that employed in the surrounding agricultural districts.

Between 1851 and 1861 many firms were established in Victoria, among them a number of retailers, of which Buckley and Nunn, which was established in Bourke Street in 1851, is the oldest to survive. Nearby, at the corner of Swanston and Bourke Streets, the Leviathan had its beginning in 1852. Mark Foy, who had worked for Buckley and Nunn, went to Bendigo to establish a store on the goldfields, and in 1883 his son entered into a partnership to form Foy and Gibson. Another firm, Ball and Welch, was founded in Vaughan, then a gold mining town, in 1855, but the firm moved to nearby Castlemaine some years later and in 1899 opened its first Melbourne store in Flinders Street, although it had operated a store in Carlton for some years before this time.

The rush of the 1850s was followed by a steadier period in the 1860s. In Melbourne the shopping area of the city was now largely occupied by small scale retailers and a great deal of trade was still transacted directly between the craftsman and the buyer. Collins Street had already come to be regarded as the most fashionable street, where the leading drapers, jewellers, and music and book sellers were located, and shops then remained open until 9 p.m. every night and until midnight on Saturdays. Ladies attired in their latest crinolines would gather to gossip, or to be seen "doing the Block". The Stock Exchange, the trading banks, and the insurance companies were nearer Queen Street, and Elizabeth Street was noted for its cafés. Swanston Street was also one of the main shopping centres, and Flinders Street and Flinders Lane, because of their nearness to the Yarra wharves, were already becoming the main district for warehouse proprietors. Two of the earliest "bonded stores" to be established were in Market Street and Flinders Lane, respectively.

During 1865 Melbourne's first fish market was being erected; previously no centre for selling fish had existed, and they had been hawked in the streets or at general markets. For a number of years the demand for fish had far exceeded the supply: prices sometimes reached 2s 6d per lb for flounder, and 9s and 10s per dozen for whiting. In 1892 the fish market was transferred to a site in Spencer Street.

Most of the suburbs which later became populous were then only small independent townships, such as Prahran and Windsor. At the end of April 1864 agitation commenced to establish a market at Prahran as the Melbourne City Corporation had refused to reduce what the market gardeners regarded as exorbitant rates for selling their produce in the Eastern Market. The Prahran Council sought to establish a market, but apparently because of costs the project was abandoned, and about this time an unsuccessful attempt was also made to establish a market at Fitzroy. However, a market was operating in South Melbourne. The idea to build a market at Prahran was revived in 1867, and a market of sorts was established in the following year, the places for stalls being roughly indicated. This make-shift method continued until 1891 when proper accommodation was provided.

By the 1870s Melbourne was beginning to establish its first important industries as a result of the policy of protection adopted by the Victorian Parliament in 1866, and the first sale from the woollen mills at Geelong in 1868 caused great interest and realised high prices. Importers, accustomed to buying in the cheapest market and selling in the dearest, were distressed,

but local manufacturers were delighted. The strong growth in trade was reflected in the Census of 1881 which showed that the commercial class—those who bought, sold, carried, and stored goods, and conveyed messages—grew from 27,079 persons in 1871 to 35,184 in 1881, an increase of 30 per cent.

The 1880s were a period of great optimism, and, after the decline in gold mining in the 1870s, foreign capital was invested in other ventures. Huge blocks of offices, financial institutions, coffee palaces, and large buildings completely transformed the city. The block on the southern side of Bourke Street, between Queen and Elizabeth Streets, had become the equine centre of the city, boasting seventeen saddlers' shops. Situated in the block opposite, in Bourke Street, was Kirk's Horse Bazaar, established in 1842, where hundreds of horses were auctioned weekly.

The original townships surrounding Melbourne gradually merged as the city spread out, and the suburbs lost much of their individual character. However, a new focus for suburban life was supplied with the growth of shopping centres, including Chapel Street, Prahran, and Smith Street, Collingwood, while attractions such as Foys Fair, launched soon after Foys were first established in Melbourne, and Paddy's Market in Smith Street became very popular. The rise of city land values gave suburban retailers a price advantage which further attracted bargain hunters.

As the chief port of the Colony, most trade and commerce continued to be centred on Melbourne, but during the 1880s active trading conditions degenerated into wild speculation. The land boom of the 1880s, stimulated by large quantities of overseas capital, affected other saleable assets, and merchants bought on the expectation of a rise in prices. The boom reached its peak in 1890, and was followed by the financial crisis of 1893; retail and wholesale trade suffered as a result of the financial instability. To add to trading difficulties, the population declined for some years through emigration.

The Craig Williamson store in Melbourne was burnt down in 1897 in a fire which destroyed most of the block bounded by Elizabeth, Flinders, and Swanston Streets, and Flinders Lane.

At the turn of the century Victoria's financial stability appeared to revive and the population began to increase. It was at this time that one of the State's best known firms was founded. Sidney Myer, who had established a store in Bendigo in 1900, bought the Craig Williamson store there eight years later. After selling his original Bendigo business, he opened stores at Geelong and Ballarat and began a new phase in the concept of Victorian retailing when he moved to Bourke Street in 1911, where his sales methods, backed by large-scale newspaper advertising, brought startling results. Another important event during the decade was the passing of the *Factories and Shops Act* 1907, which changed the official closing hours of metropolitan shops from 10 p.m. on Saturday to 1 p.m., thereby granting a half holiday, but also provided for shops to remain open until 10 p.m. on Friday night, instead of 7 p.m.

In this period retailers began to build and buy factories to produce goods for their own marketing purposes. A year after establishing their bulk store in Collingwood in 1896, Foy and Gibson established their own factories to manufacture socks, clothing, furniture, and head wear, and established a

London buying office. Retailers found that there were advantages in by-passing wholesale importers, as buying direct from London meant that they could keep up with the latest trends and were not bound to purchase what the merchant wanted to sell.

In 1914 an event occurred which was to affect both Victorian and Australian retailing. G. J. Coles and Co. Ltd, as it came to be known in later years, opened the first 3d, 6d, and 1s store in Australia. The store operated on a ceiling price level for all goods purchased in the shop, and this type of retailing became so popular that by 1932 a chain of twenty-nine Coles stores had been opened throughout Australia. The "chain store" was not entirely new to Victorian retailing as Arthur Adamsons Pty Ltd had been founded in 1860, and another, Permewans Food Stores Pty Ltd, three years later. One interesting acquisition of G. J. Coles and Co. Ltd was the purchase of Cole's Book Arcade, the well known bookshop of Mr E. W. Cole, in Bourke Street, who in 1883 had set up his sign of the rainbow, which had attracted many children to his famous arcade.

By the early 1920s the centre of activity in retailing in Melbourne had come to be located in Bourke Street, where the Myer Emporium had become an important attraction. A marked change in the city's shopping pattern occurred in 1916 possibly as a result of a new type of newspaper advertisement—the introduction of "star bargains". They were offered on Mondays, a time traditionally dull for business. The importance of advertising in retail trade was growing steadily.

A new impetus in retailing also resulted from a change in customer tastes and buying habits and in the increasing variety and volume of goods available and demanded. A wider range of domestic appliances—both electrical and non-electrical—made retailers aware of the possibility of sales through newspaper advertising and window displays. Although newspaper advertising had been used previously, its range, style, and format changed towards recognisably modern layouts.

During the early 1930s wholesale and retail trade suffered from poor custom, and sales fell to the levels of those experienced a decade earlier, or even lower. There were, however, some retailers who were reasonably successful during these years, notably the chain stores with their lower prices. The chain store grew out of a need to increase the turnover of goods in order to utilise less capital in inventories. In addition, the chain stores' amalgamated orders were, in total, larger than those of the wholesale warehouses, and these stores approached manufacturers for similar concessions. Eventually the chain stores commissioned manufacturers for particular products. This was quite a change from the early days of the Colony when the wholesalers provided the goods and the storekeeper distributed these goods throughout the agricultural districts from a central warehouse. Because farmers received a seasonal income the wholesalers had to finance the storekeepers while they awaited payment. Later, banks provided funds for financing these operations. However, the aggregation of large groups in retail distribution lessened the importance of the "middle man" and the "wholesale" function, and consequently many famous names disappeared from Flinders Lane. The chain stores spread into the towns throughout Victoria, where many of the previously settled retailers were unprepared or unable to meet this new type



of competition. After the depression, the years of the Second World War were again difficult for retailers and wholesalers, this time because they suffered from both severe shortages of most goods and great uncertainty with deliveries.

By the 1940s the motor car had become established as a very common mode of private transport. Entry to the city shopping centre was becoming more difficult because of traffic congestion and some even predicted the eventual abandonment of the city centre for shopping and its transfer to suburban areas. To meet this possibility, large department stores moved into suburban shopping areas, which usually provided adequate room for parking. It was during the late 1940s and early 1950s that the supermarket, or self-service store, began to spread throughout the State. During the later 1950s the new type of discount house appeared to challenge Victorian retailers. Discount selling was not new to Victorian trading, as many stores already had a long history of allowing a discount for cash; however, these newer stores set prices for many goods, such as electrical appliances, well below those of other retailers.

Apart from store expansion, further activity was taking place in warehousing, and in January 1956 G. J. Coles and Co. Ltd opened their new warehouse at Fishermens Bend. This distribution centre, occupying an area of some four acres, introduced quite novel methods into materials handling, with a system using an endless underground electric conveyor for movement of goods.

The great increase in motor cars had overtaxed the parking facilities of some of the older suburban shopping areas; this, together with a lack of customer amenities, hampered expansion and led to specially planned shopping centres. The first such centre in Victoria, built in 1957 at Heidelberg, was a "community centre", which, in addition to convenience goods and services, provided for the sale of softgoods, general hardware and appliances. This type of centre was built around a variety supermarket or junior department store. The second type of centre built in Victoria was the "neighbourhood centre", the first of which was opened at Mentone in 1958. This was built around a supermarket, and usually had about ten to fifteen stores, providing mostly for the sale of convenience goods and personal services. The third type of centre, and by far the largest, was the "regional shopping centre". The earliest example in Victoria, and then the largest in Australia, was the Chadstone Shopping Centre, opened in 1960. This centre, built around a major department store, included general merchandise, apparel, furniture, and home furnishings and has been followed by other similar centres situated in strategic suburban locations.

After many years of comparative obscurity, the retail food industry emerged in the 1960s as one of the major facets of marketing in Victoria and throughout Australia. This development was accentuated by the entry of several major variety chain stores into foodlines through takeovers in this area. The underlying reason had been the rapid and widespread adoption by the retailer, and the general acceptance by the consumer public, of self-service operating methods in the 1950s. One of the earliest advocates of self-service was Interstate Buyers Ltd. Established in 1935, this company departed completely from traditional wholesaling concepts, to introduce low cost distribution methods to the hard pressed, independent grocers. In 1958, to combat the growing competition from chain stores and the possible extinction of the

small grocer, this company launched an aggressive retailing operation with some 400 independent retailing members, the company acting as a wholesale distributor. There are several companies working in this, or related fields such as advertising, which bring the small operators together and where the advantage of increasing size benefits both the small operator and the consumer. This trend, of course, has been especially marked during the 1960s and not surprisingly one of the most important changes which has taken place over the period has been the gradual decline in the local service grocery store.

The geographical pattern of retailing in Melbourne has changed over the years. Since the mid-1950s, the actual level of retail sales in the Melbourne city area has risen, but retail sales made in the remainder of the metropolitan area have increased to a much more marked extent. This trend has undoubtedly been influenced by the establishment of regional shopping centres and suburban supermarkets, together with increased facilities for motor car parking in suburban areas. It is also indicative of the ability of the Victorian distribution sector to adapt itself to changes in the pattern of life experienced by the consumers of their goods.

## TRANSPORT

---

Transport is generally taken to mean vehicular movement, that is, passenger and goods operations by vehicles such as bullock drays, wagons, coaches, motor vehicles, trains and trams on fixed rails, movement by vessels on inland and coastal waters, and movement by aircraft. The terminal handling, storage and security of goods, and the maintenance and repair of vehicles are also included.

Important changes have taken place in Victoria's transport pattern since early settlement. These have affected prices and costs in industry, the degree of competition and monopoly, the organisational structure, the relative levels of investment, and the factors underlying demand for, and supply of, transport. These various economic aspects of transport activity can be considered over four periods: from about 1835 to the beginning of the 1850s, the 1850s to the early 1900s, the 1900s to the mid-1950s, and from the mid-1950s to the present day. These periods have some historical significance concerning the development or decline of particular transport technologies, but they are used mainly as convenient points of reference, rather than as definable transport eras.

In the formative years to the 1850s, transport development was closely linked to exploration and settlement. At first, sea communications with Sydney and Tasmania, from where the first settlers came, were most significant. The first major land route from Melbourne to Sydney generally followed the route taken by the overland explorers, Hume and Hovell.

For the first twenty years land transport within the Colony was almost exclusively by horse, bullock, or on foot along the paths and tracks established by the early explorers and settlers: it was costly, time consuming, and generally unscheduled and uncomfortable. The Colony in these early years was highly dependent on imports of most staple goods from other colonies and from overseas. Mainly because of this, land transport developed radially inland from the coastal ports and harbours. Melbourne was dominant as the major port, but Geelong, Port Albert, Port Fairy, and Portland also served their respective hinterlands as centres of trade.

By 1847 Melbourne's basic street system in the central business area had been established, Collins Street already being a main thoroughfare. Regular steamship services had also been established between Sydney and Melbourne, and Melbourne and Geelong. A number of township sites had been selected and surveyed, especially in the Western District and on the track between Melbourne and Wodonga. Some of these early centres owed their future development to their proximity to the first inland transport

routes. Internal communications were predominantly based on dirt tracks, frequently impassable in the winter; punts were used at important river crossings; tolls were payable on most key roads; and road and bridge construction was almost wholly in private hands. Most farmers brought their produce to market in their own wagons or carts.

Until the discovery of gold in 1851, the function of transport was to meet the demands of an economy almost wholly centred around the fledgling pastoral industry, located in the west and north and in the hinterlands of the port towns. The Mallee, most of Gippsland, and the alpine country had not been opened up. For the pastoral industry access to a port was vital, and a feature of this period was that private capital and initiative provided the major stimulus to transport development.

By the end of this first period Melbourne was the geographical pivot for Victorian transport. However, its population was small, and the overall population distribution in the Colony was influenced by the location of other ports. The general condition of internal communications was poor, the costs of transport inordinately high, and the traffic volume too small to warrant the rapid improvement of tracks or the introduction of a more efficient transport system.

During the latter half of the nineteenth century the infra-structure of land transport and ports and harbours developed. By the end of the period sailing ships were being supplanted by steamships; motor vehicles and aeroplanes were being discussed; and electric trams were being considered seriously. At the same time, the boom and speculation resulting from the gold diggings, the long period of adjustment after the gold rush, the land boom, and the collapse in the 1890s, followed by a further period of adjustment, all affected Victorian communications. Although Sydney and Melbourne were linked by rail in 1883, and Melbourne and Adelaide in 1887, different railway gauges in the various States hindered transport efficiency.

The movement of people and goods to the first gold diggings caused unprecedented transport demands. Gold towns developed mainly in districts which were relatively poor by agricultural standards, particularly in the north-central, northern, and north-eastern districts, although some were located in areas where pastoral development had already occurred. As a result, during the early years nearly all these centres lacked even primitive transport connections, and amenities such as banks, post offices, shops, etc., were slow in coming.

Land transport for goods to the diggings was predominantly by means of horse and bullock drays over roads which were just bush tracks, unpaved and undrained. Packhorses and manpower were used mainly to convey goods and equipment to remote settlements and to areas near the diggings. In districts which were still principally agricultural, road cartage was provided by farmers and small land-holders.

Cargoes, often out of all proportion to Victoria's needs, and persons travelling from other colonies, usually came by sailing ship. However, there was no way of getting the speculative stocks of merchandise from the ports to the gold mining towns. The rains played havoc with the roads, and in wet weather cartage rates advanced five and six times above normal. Freight rates of £90 per ton from Melbourne to Bendigo were not uncommon.

However, the deficiencies evoked some response both from the Govern-

ment and from private enterprise. By 1854 the first railway line was in operation ; the original Cobb and Co. was running horse-drawn coaches to the diggings ; the first steamboat had arrived at Echuca on the Murray River from South Australia; a Central Road Board had been set up; a government inquiry into the internal communications of the Colony had been held ; and a recommendation to construct a trunk railway network owned and operated by the Government had been foreshadowed.

In the same short period Melbourne's centralised position in the future transport system was confirmed. This was reinforced by its proximity to the goldfields, its hastily developed port facilities, and its position as the seat of government. Technological improvements in transport, particularly the development of railways and coaches, also tended to centralise the distribution and collection of merchandise in Melbourne. The speed of railways meant it was no longer necessary to undertake journeys in short 10 mile stages by horse-drawn coach, and it put nearly all the major gold mining centres only half a day's journey from Melbourne.

Gold mining, therefore, had far-reaching effects on both the pace and the direction of development of the road and railway network, much of which is still dependent on routes surveyed and planned at this time. As a result of political decisions based on the recommendations made by a Select Committee of the Legislative Council in September 1854, about £13.2m was spent by the Government on railway works between 1858 and 1874-75. Approximately £6.8m was invested in roads and bridges between 1851 and 1874-75, the greater proportion in the period 1854 to 1865 during which the Central Road Board operated.

Government policy concerning roads and railways changed significantly in this period. The Central Road Board, the predecessor by over fifty years of the present Country Roads Board, was abolished in 1863. All road construction and maintenance then devolved on District Road Boards or Shires, the fore-runners of many of today's local government authorities. Although railways were initiated by private enterprise and were granted land free of charge for the track and station sites, it was decided early that government ownership and operation of railways was necessary. The Government acquired a number of railway lines between 1856 and 1866, but the last important acquisition was in 1878. In 1866 the Government passed Acts authorising the construction of 185 miles of railway, including lines from Melbourne to Castlemaine, from Geelong to Ballarat, and further westward. In the following year the construction of further main trunk lines was authorised, including the line to Wodonga. From 1854 to 1868 275 miles of private railways were constructed and between 1869 and 1878 the Government laid 704 miles of track.

Investment in transport facilities was accompanied by considerable increases in the efficiency of services in terms of speed, comfort, and convenience, and also in decreasing costs. After the opening of the Ballarat and Bendigo railway lines in the late 1860s, passenger fares were approximately 3½d per mile first class, and 2½d per mile second class. Goods charges averaged 5d per ton mile. By contrast, coach passengers were charged up to 7d per mile and goods might cost as much as 1s 2d a ton mile to transport. Before the construction of railways, costs of 3s per ton mile

were being quoted for road cartage, with a delivery time of four days. In contrast, railway advocates quoted charges of 1s 6d per ton mile, with delivery in six hours, when the feasibility of establishing railways was being investigated in 1854. In fact, the early railway passenger and freight tariffs were based on British railway rates, plus 50 per cent for higher labour and material costs, and these rates continued until 1892, when they were increased. Road coach charges were also reduced gradually from 1860 to 1890, and this reflected to some extent various improvements in road communications and technology, as well as the effect of railway competition.

Other competitive influences also affected transport freight rates on particular routes. From Echuca, which in the 1870s was Victoria's second largest port, river boats transported merchandise and wool: they steamed on the Murrumbidgee River as far as Wagga, the Murray River to Albury, and the Goulburn River to Seymour. When the rivers were navigable, boat rates were between £2 10s and £5 per ton; in the dry season the rates by road were as much as four times as high. Coastal shipping trades which were then developing also provided competition. By the 1870s and 1880s regular services for cargo and passengers had been established between Melbourne and Tasmania, Adelaide, Sydney, Brisbane, and Newcastle. A number of the early shipping companies, such as the Adelaide Steamship Co., Huddart Parker Ltd, Australian Steam Navigation Co., Howard Smith Pty Ltd, and McIlwraith McEacharn Ltd were also established.

As with other forms of transport, shipping freight rates and fares gradually declined as efficiency increased: this was largely a result of improved technology as well as competition. By the early 1890s shipping freight rates between Melbourne and Sydney had dropped to a quarter of those charged in the 1850s, and fares had decreased to a fifth. During the 1890s rates for cargo transported between Melbourne and Sydney fell to 4s per ton, while passage rates were only £1 per saloon single. This decline was largely a result of increased competition, but also reflected the economic depression of that time. By the end of the 1890s, after a succession of rate wars, steamship operators agreed that freight and passage rates should be fixed. In July 1899 a meeting of operators decided that a shipowners' association should be formed, and the Australian Steamship Owners' Federation was inaugurated in September 1899.

The increase in the size of vessels is indicated by dredging carried out on the lower reaches of the Yarra. In 1856 it was dredged to only 10½ ft; by 1887 it had a depth of 18 ft; and by 1893, 22 ft. The Melbourne Harbor Trust was established in 1877, and by 1893 it had opened Victoria Dock, still one of Melbourne's main cargo-handling areas. By 1920 the Trust had invested \$9m in port improvements. In the period 1877 to 1887 the tonnage of shipping entering the Port of Melbourne had more than doubled. Other ports both inland and coastal, while attracting regular shipping services, were never seriously able to challenge Melbourne's superiority in facilities, ancillary services, or traffic offering.

By the 1890s Victoria had a comparatively sophisticated, if not necessarily economic, transport system. Approximately 500 miles of streets in Melbourne and the suburbs had been paved; about 2,450 miles of railways, serving all major Victorian towns, had been constructed, together with

connections to Adelaide, and, with a break of gauge, to Sydney ; and 43½ miles of double track cable and 4½ miles of horse-drawn tramlines existed in Melbourne. Regular shipping services were also in operation on overseas and coastal routes and on inland rivers and lakes.

During the half century from 1850 to 1900, a large part of the transport infra-structure which is currently in use was planned and laid down. The effects of many of the decisions then made are still reflected in railway budgets, in the railway tariff structure, in track capacity, and in the standards adopted for roads and bridges. The failure of coastal shipping in the 1950s probably depended partly on developments up to 70 years before. The most costly decisions were almost certainly those relating to railway and tramway construction in the 1880s and 1890s, although this probably also applies to road building in certain areas. Railways, in particular, were built not so much to match development but rather to generate land speculation and to serve sectional interests. At the same time, much of the public capital outlay on infra-structure and equipment was warranted, and has been economically utilised. The trunk railway system, with the exception of one or two extremely expensive lines which were laid down before the 1880s, has almost certainly been a profitable investment. Capital expenditure on ports and harbours, particularly in Melbourne, generally appears to have yielded positive returns ; many road and bridge investments made early in the period also appear to have been planned with foresight.

It is difficult to evaluate private investment in transport, as it was almost wholly centred in goods and passenger movement by road, and in coastal shipping. There is little documentation available to indicate whether road transport operators fared better or worse than proprietors of other industries. Road cartage was, however, almost exclusively confined to short haul operations around towns and cities and to feeder services for rail and shipping.

Coastal shipping was probably a profitable enterprise. Competition between the Australian inter-colonial shipowners was sometimes severe, but on certain inter-colonial routes trade monopolies developed. Monopoly profits were, however, not usually of a long-term character ; until the promulgation of the Commonwealth Navigation Act in 1912, Australian-owned shipping had no statutory protection against overseas vessels trading between Australian ports, and actually had no effective protection until the coastal trade provisions of the Act became operative in July 1921.

In the first half of the twentieth century the most striking transport development was the motor vehicle; of equal if not greater technological significance was the development of aircraft. However, in Victoria as elsewhere the motor vehicle has had more far-reaching effects for a number of reasons. First, it was used so ubiquitously, both in co-ordination with, and in competition against, existing forms of transport service ; second, when used in competition, it gained high-rated (net revenue producing) traffic from railways and shipping ; third, it set new standards in speed, mobility, comfort, and convenience; and fourth, it posed fundamental questions about the safety of life, the quality of the environment, and, therefore, about who should pay its social costs.

The number of motor vehicles, motor cycles, and drivers and riders has increased steadily except for a decline in motor cycles during the Second

World War. Motor vehicles increased from 27,900 in 1922 to 208,200 in 1942 and 495,000 in 1952. Drivers and riders increased from 44,900 to 339,300 and 637,500 at these respective dates.

One of the first 24 hour counts of traffic was made in March 1913 on the St Kilda Road approach to Melbourne. A total of 4,176 vehicles comprising 1,091 motor cars, 48 motor wagons, 202 motor cycles, 940 bicycles, 773 wagons and drays, and 1,122 light vehicles, was then recorded. In March 1951 a total of approximately 12,000 vehicles, comprising predominantly motor cars and light and heavy commercial vehicles, was counted in one 12 hour survey. These figures demonstrate the increase in traffic volume which has characterised the arterial road network since the beginning of the century.

There was a marked improvement in the main road system after the Country Roads Board had been established in 1913. The Board initiated the first systematic programme of road construction since the District Road Boards ceased to have control of main roads, and by 1950 the Board had assumed responsibility for 3,850 miles of State highways and 9,800 miles of main roads, of which 73 per cent and 38 per cent, respectively, were bitumen sealed.

The motor vehicle was not the first form of transport to compete economically with the railways. In the depressed years of the 1890s road hauliers had offered transport at rates considerably below those charged by the railways. To meet this competition, fares and freight rates were reduced in 1894, and also in 1908 and 1912. By the 1930s it was estimated that road transport competition was diverting between 85,000 and 100,000 tons of high-rated traffic from the railways, which were losing revenue to the extent of £1.5m per annum. Until this time freight carrying motor vehicles were regulated only in respect of speed and loads carried: under the Highways and Vehicles Act, four-wheeled vehicles operating outside the metropolitan area were limited to a laden weight of 8 tons in competition with railways, and to 10 tons otherwise. This restriction failed to curb road competition effectively, and in 1934 the Transport Regulation Board was set up to control road transport, to preserve the adequacy of existing transport services (both rail and road), to foster co-ordination among transport operators, and to develop a workable land transport co-ordination policy.

While the development of competitive road transport within Victoria dominated the transport situation in the 1930s, an embryonic air transport industry was emerging, mainly concentrated on interstate services. Holyman Airways commenced operations between Tasmania and Melbourne in October 1934. In July 1936, when the Holyman company was registered as Australian National Airways, it serviced a network stretching from Hobart and Melbourne to Adelaide and Perth. Ansett Airways began a regular air service between Hamilton and Melbourne in February 1936, and within a few years had developed a network in the Adelaide-Melbourne-Sydney triangle. By 1938 about 70 tons per week could be flown between Melbourne and Tasmania, with similar levels on routes connecting Melbourne and Sydney. By 1945 Australian National Airways had secured by far the largest share of traffic in Australian internal air services, the major competitor being Ansett Airways. It was in 1946 that the Australian National Airlines Commission was formed and began operating Trans-Australia Airlines



(T.A.A.). T.A.A. entered the competition, and by the end of 1946 was providing daily services between Brisbane, Melbourne, Hobart, and Perth. By 1948 the Melbourne to Sydney and Melbourne to Adelaide air routes, with traffic tasks of about 1,130 tons per week and 630 tons per week, respectively, had increased nearly thirty times over their 1938 levels.

The period from 1900 to the mid-1950s was marked by one further important event. In November 1954 the Judicial Committee of the Privy Council handed down a decision which was to free interstate road goods transport from State regulatory control. After this decision numerous road transport operators began carrying goods between Melbourne and other capitals at freight rates only half the previous level. This change came at a time when railway rolling stock and track were suffering from inadequate maintenance, when equipment was overdue for replacement, and when coastal shipping was plagued by industrial disputes and deteriorating productivity, arising from old vessels and increasing operating costs. As a result of the increased traffic, major roads between capital cities were seriously damaged by the number of heavy vehicles. This road transport competition resulted in a significant erosion of high-rated railways and shipping freight traffic and, though mainly confined to interstate operations, in retrospect demarcates the beginning of the present transport era. It is noteworthy that the competitive market forces arose from a combination of a judicial decision relating to interstate road transport and improved road transport technology.

The period from 1955 to 1970 has been marked by considerable advances in technology and in the quality of available transport services. The railway system has been rejuvenated through the replacement of steam by diesel locomotives. By 1962 the historical barrier of railway break-of-gauge between Victoria and New South Wales had been remedied with the opening of the Albury-Melbourne standard gauge line. Roll-on roll-off ships were operating between Melbourne and Tasmania, and rail, road, and sea container services were available within, to, and from the State. In the same period interstate and intrastate air services have been improved by the advent of jet and turbo-prop aircraft.

Apart from the effects of technological innovation, the most influential element in transport demand and supply is the preference for private car transport. Private car use for the journey to work in Melbourne's central business district increased significantly during the period 1951 to 1964. In 1964, 68.2 per cent of employees coming to the central business district travelled by public transport compared with 86.9 per cent in 1951. In 1964 travelling by tram accounted for 21.7 per cent (36.5 per cent in 1951), by train 41.0 per cent (45.0 per cent in 1951), and by bus 5.5 per cent (5.4 per cent in 1951). On the other hand, the proportion travelling by car to work in the central business district increased from 13.1 per cent to 31.8 per cent.

The relative decline in public transport patronage is probably related to the lower price of vehicles relative to income levels, the greater availability of motor cars, and the dispersion of population to low density suburban areas where public transport is either less accessible or not available. This increase in motor vehicle ownership and usage in Victoria is reflected in the following table :

## VICTORIA — MOTOR TRANSPORT

Period	Motor cars and station wagons (a)	Motor cycles (a)	Other road vehicles (a) (b)	Personal consumption expenditure on vehicles (c)	Public expenditure on roads
	number	number	number	\$m	\$m
1953-54	397,658	30,881	130,707	112	32
1954-55	456,024	29,193	143,930	143	39
1959-60	585,867	20,644	196,445	235	75
1964-65	818,331	12,526	218,957	350	114
1968-69	1,008,506	18,527	227,605	456	160
1969-70	1,067,919	21,342	232,255	499	170

(a) On register at end of period.

(b) Includes utilities, panel vans, all trucks and omnibuses but excludes tractors, trailers, and equipment.

(c) Unofficial estimate of expenditure on purchase and operation of motor vehicles.

By contrast, between 1956-57 and 1969-70 the number of passenger journeys undertaken by rail fell from 167 million to about 144 million per annum, and by tram from 213 million to 110 million. Apart from the increase in the ownership and usage of private cars for the journey to work, other factors affecting the use of public transport in the metropolitan area have included the impact of television on the frequency of travel at night, the location of large scale shopping centres in the suburbs, and changes in the location of industry away from existing railway routes. Whether other influences, such as growing peak hour congestion on the roads, the provision of free car parking facilities at suburban railway stations, and the introduction of express public transport services to the city by bus and by train will have any significant effect on present trends, is yet to be seen.

During the period 1956-57 to 1965-66 the railways moved an increasing amount of freight, both intrastate and interstate. Approximately 80 per cent of the total tonnage of freight carried, and just over 75 per cent of the total ton-mileage performed over this period, was attributable to intrastate traffic. About 50 to 55 per cent of the total intrastate movement has been accounted for by three basic commodities—wheat, briquettes, and fertilisers. As has been the case in the past, these major classes of traffic are subject to wide seasonal and cyclical variations which may quite significantly affect the economy and efficiency of railway operations.

Since the introduction of standard gauge freight services between Melbourne and Sydney in January 1962, there have been substantial increases in the flow of traffic between Victoria and New South Wales, as well as between Queensland and Victoria. Until the completion in 1970 of the standard gauge trans-continental line via Broken Hill and Port Pirie, traffic through the Victorian railway system increased between Queensland and New South Wales on the one hand, and South Australia and Western Australia on the other. Besides the influence of standardisation, other innovations such as bogey exchange (introduced by the Victorian Railways in 1962 at Dynon yards, and at Wodonga in 1964), the development of containerisation, and the selling of freight capacity to forwarding agents at line-haul rates, in truck load or even train load lots, have been important in expanding Victorian

Railways' participation in interstate freight traffic. The combination of these factors has resulted in the development of inter-capital city railway services, which match the competitiveness of long distance road transport. This concentration of the interstate railway service on line-haul functions, and the co-operation of forwarding agents, has relieved the railways of handling goods at the terminals, a task which is highly specialised as well as expensive. It is difficult to assess whether the introduction of container ships in the Australian coastal trade will affect the present trend of growth in rail traffic.

Few statistics illustrating the patterns and trends of Victorian road freight transport are readily available. However, in 1963 the Commonwealth Statistician conducted a survey of vehicle usage on an Australia-wide basis, from which some estimates may be derived. The results of this sample survey indicated that nearly 40 per cent of vehicles engaged in goods-carrying activities in Victoria operated within, or to and from, Melbourne, and that these vehicles performed about 49 per cent of the estimated total ton-mileage. From the survey it was also estimated that nearly 75 per cent of the total tonnage of goods moved intrastate was carried 25 miles or more from Melbourne, and was moved in vehicles other than those belonging to primary producers. The survey showed that the greatest proportion of all goods-carrying vehicles carried the following classes of freight: farm produce and farm supplies, tools of trade and servicing and maintenance equipment, general goods, foodstuffs, and building and construction materials. The classes of commodities which involved the largest ton-mileages were general goods, mine and quarry products, and foodstuffs. Over 87 per cent of all commercial goods-carrying vehicles in Victoria were operated by enterprises other than hire-and-reward carriers. The survey indicated, however, that this class of cartage was essentially short haul and that it accounted for only about 40 per cent of the total ton-mileage estimated for the State.

Interstate road transport freight movement between Victoria and New South Wales is predominantly between the respective capital cities, between the Riverina and Melbourne, or between major provincial cities. It is estimated that in 1963-64 over 1 million tons of freight were moved between Melbourne and Sydney alone. Since 1963-64 this freight traffic has increased by an estimated 50,000 to 100,000 tons per annum. There is also a significant movement of general merchandise between Melbourne and Adelaide and, on a smaller scale, between Melbourne and Brisbane.

In interstate transport, competition exists not only between road hauliers, but also between road transport and rail transport and on certain routes with sea and air transport. Competition for freight transported between capital cities has been rationalised during recent years by the emergence of a few large, highly capitalised enterprises. These large firms control the loading of large fleets of vehicles, but a significant part of the long distance interstate work is subcontracted to owner-drivers and to smaller businesses. Transport freight rates for the door-to-door delivery of merchandise on these inter-capital city routes tend to be about the same for road and rail.

Intrastate shipping operations on the Victorian coast, with the exception of the movement of petroleum products between Melbourne, Geelong, Western Port, and Portland, are negligible. Interstate shipping services for general cargo have been well developed in the last decade,

particularly between Melbourne and Tasmania by the Australian National Line and the Union Steamship Company, and between Melbourne and Perth by Associated Steamships Pty Ltd. In the interstate movement of petroleum products, and to a lesser extent iron and steel products and black coal, significant quantities are still transported by sea, but rail transport shares a large proportion of the interstate iron and steel traffic from New South Wales, while the changeover to the use of natural gas will further reduce imports of black coal to Victoria. Unless considerably larger volumes of general cargo for interstate movement are attracted to coastal shipping, there could be a relative decline in the importance of this traffic to and from Victoria.

The development of the Port of Melbourne as a major container terminal for imports and exports carried in overseas container vessels, and the provision of special coastal container ships to service these vessels, is likely to assist the growth of Melbourne's overseas and interstate traffic. Traffic through Portland and Western Port should also continue to increase, especially for bulk cargoes.

As is the case with shipping, scheduled air transport services in Victoria are mainly centred on interstate and overseas operations, with the difference that passenger movement is appreciably more important than freight, and is predominantly between capital cities. The new international airport at Tullamarine, 12 miles from the city centre, not only serves domestic traffic, but also brings larger numbers of overseas visitors direct to Melbourne.

In the future it can be expected that competition between different forms of transport for passenger and freight traffic, both interstate and intrastate, will intensify. At the same time, there will continue to be a large amount of traffic suited only to one form of transport, largely for economic or technological reasons. The past history of transport development indicates that the efficiency and economy of the system can be influenced by events and by personalities, by private as well as government initiatives, by technology and management, and by competition and regulation. The combination of these factors will determine the long-term viability of the transport system.

## MARITIME TRADE

The Victorian maritime trade pattern falls under three headings: overseas, interstate, and intrastate. The extent of trade under each of these headings is affected by the internal economics of the industries concerned and the competition between the various means of transport. Overseas trade differs from the other two forms of trade because, since the 1860s, it has been subject to a protectionist policy, introduced by the Victorian Government and continued by the Commonwealth Government after Federation. The nature of the articles given protection is influenced by government measures which encourage trade in certain items, so assisting local industries while at the same time preserving a balance between imports and exports.

An important factor in the pattern of maritime trade is its flow through ports from its source to its destination. This is influenced by port facilities, the concentration of population and industry in the hinterland, and the effectiveness of internal transport. Some changes in this flow of trade through different ports have resulted from government action. The extension of the rail link connecting Melbourne and Bendigo to Echuca, opened on 19 September 1864, made Echuca the main distributing port for the river trade, and also diverted trade from the western coastal ports to Melbourne. Originally the river trade was developed to shorten the long bullock wagon trek from north of the Murray to the coast, but this diversion through Echuca also attracted the trade from a number of areas south of the river and for some years its trade amounted to one fifth of the total for Victoria. At the same time the maritime trade of Portland, which previously had represented some 12 per cent of the total Victorian trade, dropped to about 0.4 per cent. Warrnambool and Port Fairy suffered similarly, but they had an added disability in that the growth in size and draught of ships demanded better facilities than they could provide. An unsuccessful attempt was made in 1886 to provide a sheltered harbour at Warrnambool, while Portland, although it enjoyed much better natural conditions, was only able to maintain an intermittent trade until 1900, when the construction of a deep water jetty improved facilities. Fifty years later the Victorian Government began the construction of a sheltered harbour and modern port facilities at Portland, and these have operated since 1960. The maritime trade of the port has now risen to 2.4 per cent of Victorian trade and further advances can be expected with the more recent development of facilities for wool sales, the bulk handling of grain, and the production of artificial fertiliser.

Further government action in installing bulk wheat handling facilities

at Geelong also influenced the trade flow. Originally aimed at diverting the wheat rail traffic of the western areas of Victoria to prevent congestion of the metropolitan railway system, it proved so successful that a proposal for a similar installation at Melbourne for wheat from northern and eastern areas was abandoned, and since 1930 the Geelong installation has satisfactorily handled almost all of the State's wheat exports. The influence of port facilities on the flow of trade is also illustrated by the establishment of a large modern refinery at Geelong. This port had previously handled only some 10 to 12 per cent of Victorian maritime trade, but increased port revenue from the oil trade allowed its dredging to be improved, and it therefore attracted the development of other industries. The port now handles approximately one third of Victorian maritime trade.

The Port of Melbourne, which in 1877 was placed under the control of a Board of Commissioners who had full financial responsibility, was developed sufficiently to be able to handle the large trade growth in the 1880s. It has kept abreast of port development to the present time, including the new specialised techniques of containerisation and roll-on roll-off cargo handling.

The development of maritime trade in Victoria can conveniently be divided into five characteristic periods. For purposes of comparison the figures used are the average annual quantity or value over each decade computed from the yearly recorded figures. By using these average figures for each ten year period the short term variations are eliminated and a better perspective is gained of the trends over 133 years.

#### *Before 1850*

The origins of maritime trade can probably be traced to the whaling stations which Tasmanian interests established near Portland in the late 1820s and early 1830s. In 1834 Edward Henty settled at Portland, and in 1835 Batman and Fawkner settled in Melbourne. Equally important were the overlanders who came with their sheep from New South Wales after September 1836, when Governor Bourke issued a proclamation opening the Port Phillip District for settlement.

One factor closely associated with the development of maritime trade has been the change in size, type, and speed of vessels since 1836. Until 1840, all vessels were sailing ships, averaging 110 tons net measurement, with about 180 vessels entering Victorian ports annually. (Net tonnage approximates to the cargo carrying capacity, and not gross tonnage. The latter is the more usual ship measurement and in a cargo vessel it is about twice the net tons.) In the next decade these figures increased to 145 net tonnage and 348 trading vessels. These ships were all of British register, and until 1850 trade was almost exclusively with Britain.

The first use of steam power on sailing vessels was for the operation of cargo handling winches, and by 1850 most sailing ships had a donkey engine and boiler for cargo handling. The use of the steam winch for cargo handling has persisted with only minor changes for over one hundred years, and is only now being superseded.

There is no official record of maritime trade in 1836, but a small quantity of wool was shipped in that year. Maritime trade expanded rapidly: the average annual figure for the four years until 1840 was £268,838,

of which £207,178 was imports (mostly livestock), and £61,660 was exports, £37,198 being wool and tallow, and the remainder wattle bark, whale oil, and a small quantity of dairy produce. Trade more than tripled in the next decade. Much of this was interstate and coastal trade, and it was handled by the ports of Portland, Port Fairy, Warrnambool, Geelong, Melbourne, and Port Albert. From the beginning until 1850 the growth of trade increased by about 18 per cent per annum, a rate exceeded only during the initial period of the gold discoveries.

*From 1850 to 1870*

The second period began with the separation of Victoria from New South Wales and the discovery of gold. The growing population stimulated trade, and with the backing of gold there was no difficulty in obtaining overseas credit. Nevertheless, the export of primary products continued to expand. During the 1850s, with the gold discoveries and the great influx of persons to the diggings, the average net tonnage of vessels rose to 300 and the average number of vessels entering Victorian ports rose to 1,926 per annum. As a result of world-wide interest in Victoria's gold, a number of these vessels came from Europe and America; maritime trade with non-British countries had begun. During this period a few steam ships were engaged in Victorian trade, and there were also sailing ships with auxiliary steam propulsion. Before the introduction of steam a voyage between Victoria and Europe could last up to six months, but this was reduced with auxiliary power to an average of ninety days. The first overseas steamship to visit Victoria, the P. & O. steamer *Chusan*, entered Port Phillip Bay in July 1856; however, on average, only 5 per cent of ships trading during the 1860s were steamers. The percentage increased rapidly to 60 per cent in the 1870s, 70 per cent in the 1880s, and 80 per cent in the 1890s. The speed of the early steamships was between 8 and 10 knots, which halved the time taken between Europe and Victoria. The average speed of ships since then has increased by about one knot per decade, the average speed now being 18 to 20 knots.

The construction of ships changed generally from wood to iron during the late 1860s, and whereas the earlier ships had only needed berthage with a depth of from 8 to 12 ft, depths exceeding 15 ft now became a common requirement. This, and the need for larger areas of sheltered water as the size of ships increased, embarrassed most of the small coastal ports, and partly caused their loss of trade. Trading ships brought immigrants and goods to Victoria and loaded Victorian products for the return voyage. During this period the main overseas imports comprised manufactured food-stuffs, 10 per cent; clothing and textiles, 30 per cent; liquor and tobacco, 7 per cent; metal manufactures and machinery, 25 per cent; oils, mostly lighting kerosene, 2 per cent; and about 1 per cent each of earthenware and glassware. During the 1850s the value of gold exported averaged over £9m per annum, and in the following decade fell to about £6m per annum. Wool was still the main primary product and wool exports continued to rise, the corresponding values being £3.3m and £6.0m.

Maritime trade increased at an average rate of almost 40 per cent per annum during the 1850s. Owing to the change from surface mining to deep mining and to the increasing unemployment in the following decade, the overall rate for the whole period was only 19 per cent per annum; attention



A country general store in north-eastern Victoria.

*Gordon De'Lisle*





A typical retail establishment of the gold rush era at Bendigo in 1853 (top).  
 The Eastern Market, Melbourne, c. 1864 (centre). A view of the eastern  
 end of Collins Street, Melbourne, in the early 1860s (bottom)

*Le Trone Collection, Jones Library at Victoria*



Buckley and Nunn Ltd in 1913, now the oldest major extant retail store in Bourke Street, Melbourne.

*La Trobe Collection, State Library of Victoria*

Closing day, 3 June 1928, at Coles' Book Arcade.

*La Trobe Collection, State Library of Victoria*





The Myer Chadstone shopping centre with its car park, the first major suburban retailing complex developed in the 1960s.

*Aerial Photographers*

also turned to industrial development in the 1860s and led to the adoption of protective policies.

*From 1870 to 1910*

The advantages of protective policies were felt at the beginning of this period. Maritime trade became increasingly diversified, and its flow pattern changed as transport from the ports developed to suit the more urban settlement associated with industrial expansion. During this period trade began with India, the Middle East, the Far East, New Zealand, and Canada; that with Europe and America increased and for the first time trade with the United Kingdom showed a significant decline. Overseas trade remained at a nearly constant level during this period but interstate trade expanded 60 per cent over that of the previous twenty years. During the later 1870s and the 1880s Victoria enjoyed general prosperity and became a major distributing centre in Australia for both import and export cargoes. The population continued to increase, but the rate of increase was far lower than in the preceding period. From the beginning until after the gold rushes, the increase had been as high as 70 per cent per annum, but it fell to about half this during the 1860s. The rate of trade increase from 1870 to 1910 averaged 1.2 per cent per annum.

The average net tonnage of vessels continued to increase. It rose to 760 net tons in the 1870s, and has increased at approximately 450 net tons per decade to the present time. The average number of vessels entering Victorian ports annually has risen from 2,153 during the 1870s to the present figure of 3,305 for the 1960s.

Although some local manufacturing activities were well established, the nature of overseas imports changed only slightly during this period. Liquor and tobacco, which averaged 7 per cent in the 1850s and 1860s, fell to 4 per cent at the end, but averaged 5½ per cent for the period; manufactured foodstuffs, correspondingly 10 per cent, fell in this period to 5½ per cent; clothing and textiles were unchanged; metal manufactures and machinery rose from 25 per cent in the previous period to 27 per cent in this; and timber and paper rose from less than 1 per cent each to 3 per cent and 4 per cent, respectively. Wool, which began as the main export, maintained its lead throughout; in this period it averaged a little over £2.5m per annum; gold averaged about £1m. Butter and grain exports were increasing steadily, and after successful ship refrigeration was introduced in the late 1880s, frozen meat became an increasingly important export.

Many factors contributed to the depression of the 1890s, and the impact on Victoria's balance of trade became evident in 1893-94; signs of the impending recession had been noticeable from import and export activities as early as 1884. By 1897 the trade position had recovered, and by 1900 a favourable balance of trade existed. Federation, ensuring free trade between the States, became effective in 1901 and further helped Victoria's recovery from the depression.

*From 1910 to 1950*

The economic and social problems of this period, following both world wars as well as the depression of the 1930s, were accompanied by increasing industrial troubles on the waterfront. Nevertheless, although more variable, maritime trade showed an average increase of 2.3 per cent per annum.

By 1920 the sailing ship had ceased to be a significant factor in maritime trade. The exception was the rare sailing ship transporting an export wheat cargo, and a few small sailing ketches which remained on the Tasmanian and Bass Strait island trade until the 1930s. In the late 1920s ships powered by diesel engines instead of steam began trading; by the end of the 1940s they formed a significant proportion of ships, and during the 1950s they exceeded the number of steamers. The main advantage, apart from their general economy, was the electric operation of cargo winches, which permitted better deck arrangements, larger hatch openings, and faster cargo operations. The installation of electric wharfside cranes in the larger ports also helped increase the loading and discharge rates of ships. The introduction of the motor car and other self-propelled vehicles has had a very marked effect on maritime trade. Not only have these vehicles, and their parts and components, become a significant item of trade, but imported fuel and lubricants now rank largest in the volume of maritime trade, and the fourth largest in value. Refined petroleum products in the form of lighting kerosene have been imported since the early days of trading, when they amounted to about 2 per cent of total value. After 1905 motor spirit was imported in drums and by 1920 the increase prompted the oil companies to erect bulk storage facilities and to bring in refined petroleum products by tankers.

The internal combustion engine also provided the means for operating mobile cargo handling equipment developed largely during the Second World War for loading and unloading ships. Its introduction to port operation immediately afterwards helped to overcome the difficulties of a period when the ports were experiencing an upsurge of trade and had accumulated arrears of developmental works owing to war-time shortages of manpower and materials. During the late 1940s and the early 1950s efforts were made to accommodate the expansion of trade, despite the lack of space available for cargo because of the greater operating areas needed for the new equipment. Although these difficulties were overcome, they prompted the reconsideration of the whole concept of general cargo handling, and basic changes were initiated. These led to the use of specialised ships and port facilities.

Wharf transport had largely changed from horse-drawn to motor transport by the end of the 1920s and a few years later the conversion was completed for the movement of goods within the State. General road improvements followed, and as internal transport accelerated it became necessary to quicken ship turnaround in the 1940s. In the Port of Melbourne, the number of electric wharfside cranes was doubled, and a fleet of approximately 100 mobile units was provided by the port to augment a similar number provided privately. As the size of motor land transport increased, interstate highways were improved, and interstate maritime trade began to lose volume to land transport. A further indirect loss to interstate maritime trade came when road competition affected the Victorian Railways, which sought to improve its interstate service; in doing so the railways attracted some heavy items of maritime trade which were less suited to motor transport.

From 1910 the official recording of interstate maritime trade ceased, leaving only the various port records as an authoritative source for this information. Since these records show only volume of trade and no monetary

value, all comparisons from 1911 onwards have been made in terms of volume.

Maritime trade during this period has shown further diversification. There was a substantial increase in the percentage of trade with European countries, New Zealand, Canada, U.S.A., India, and the Far East, while trade was begun with Japan, the Arab States, South Africa, and later with the U.S.S.R. The average annual volume of trade showed a steady rise in each decade, that of interstate trade rising more rapidly than overseas trade. This rise in interstate trade was the result of the transport of refined petroleum products in tankers operated by oil companies, and more than outweighed the fall of 30 per cent in interstate general cargo which had caused the failure of several well established shipping companies.

*From 1950 to 1970*

Trade was further diversified during this period and showed some marked changes. In particular, the average increase in maritime trade was almost 6 per cent per annum as compared with 2.3 per cent in the previous period. A higher standard of living and highly competitive commerce produced a tendency to imbalance between imports and exports in spite of the encouragement given to exporting industries, and the Commonwealth Government was forced to apply import restrictions to correct the position in 1952, 1956, and 1961.

The volume of maritime trade, in comparison with the previous period, had increased by 50 per cent with America, 400 per cent with Japan, 100 per cent with south-east Asia, 100 per cent with the Arab States, 300 per cent with Canada, and 60 per cent with the U.S.S.R. It had decreased by 13 per cent with the United Kingdom, 7 per cent with Europe, 8 per cent with India, and 20 per cent with South Africa. A small trade with South America began, and that with New Zealand remained the same. Wool still remained the main export followed in order by grain, butter, frozen meats, dried and canned fruit, refined petroleum products, and machinery (including motor cars and parts). These comprised 78 per cent of the total; the other 22 per cent consisted of many items, each less than 1 per cent. The main imports, comprising 48 per cent of the total, were metal manufactures and machinery, clothing and textiles, crude oil, manufactured foodstuffs, and paper.

Specialisation in certain cargoes has been accepted for many years. The tank ship, now so common as a petroleum carrier, was used for carrying whale oil in the 1860s, and the many types of ore carriers, originating as coal carriers, date from the time the steam engine was invented in the mid-eighteenth century. The main difference now is the enormous size of this type of vessel; it requires special shore installations to handle cargo quantities expeditiously, as well as deep water channels and berths. Because of difficulties of depth at the entrance to and within Port Phillip Bay, Victoria's third oil refinery was sited at Western Port. The use of very large ore carrier vessels to Victorian ports appears unlikely; the import of coal has given place to oil, phosphatic rock is now shipped to a number of separate ports, and other bulk cargoes are not handled sufficiently often to warrant ships of abnormal size. Refrigerated ships have operated from about 1890 when frozen meats were first exported; they have aided the export of dairy

produce and fresh fruit, of which only small quantities were exported earlier. In Melbourne the first trial of handling cargo in specialised ships took place in 1959 with a roll-on roll-off vessel in the Tasmanian trade, and in 1964 with a container-carrying vessel in the Western Australian trade. In April 1969 the first overseas container carrying vessel berthed in Melbourne. This type, and roll-on roll-off vessels now operate between Australia and Japan, Europe, North America, and New Zealand. The Commonwealth Government, through the Australian National Line, owns one specialised vessel in each of the European, Japanese, and east coast North American trades, and has a share in a roll-on roll-off vessel in the west coast North American trade.

The Port of Melbourne is Australia's largest general cargo port and during 1969 handled 13.2 million tons of which 7.7 million tons were general cargo. Containerised general cargo comprised 14.7 per cent of total general cargo in that year. During 1970 the total tonnage of general cargo increased to 9.3 million tons and the proportion containerised increased to 29.7 per cent.

Industrial conditions on the Victorian waterfront have been difficult since the beginning of this century. For some time working conditions for wharf labour were not as good as those generally enjoyed in other industries, and improvements came only after complicated and indirect negotiations. This resulted from the fact that labour was employed by an agent of the principal, but worked on property controlled by the port. During the Second World War the Commonwealth Government under war-time regulations held some control over labour, and as a result a board was established in 1947 to regulate waterside conditions. Changes in both the constitution and the powers of this body have been made from time to time, but although some stoppages have occurred since its introduction, none has been as protracted as those of the 1920s. Industrial action has had little effect on either the quantity or pattern of overseas maritime trade, although the delays have increased freight charges. The decline of interstate trade, however, has been severe, and has contributed largely to its loss to land transport.

The substantial freight rises in the early 1960s and their adverse effect on the Australian export trade were the main reasons for the recent Commonwealth inquiry into the stevedoring industry. Its findings have brought about some basic changes. Permanent employment, together with retiring and long service allowances, are now provided.

#### A NOTE ON THE TARIFF

Overseas trade and manufacturing industry developed against a background of tariff protection to which only brief reference has been made elsewhere, where the origin of Victoria's tariffs before Federation was noted. They were important to the establishment of manufacturing industries and became a lively political issue. At Federation the first tariff was ostensibly to raise revenue but, to do this, it incorporated the protective rates applying in the States. The first major revision was made in 1907, and duties were increased in 1911 and 1914. During the First World War the range of local industries widened as a result of growing wartime demands and difficulties in obtaining imports. After 1918 there were more demands for increased protection to consolidate the newer as well as the older industries, and

tariff policy met these demands during the 1920s; in fact, there was agreement among employers and employees in primary and secondary industries that this should be so.

The idea of an advisory body to the Commonwealth dates back to 1910 but the Tariff Board was not established until 1921. Its first full examination of tariffs led to the revised Tariff Schedule and to its further upward revision in 1927. In that year the Prime Minister appointed the Brigden Committee to report on the operation of the tariff. The findings, published in 1929, concluded that for the size of the population it was unlikely that the level of national income in Australia would have been as high under free trade, but it warned that indiscriminate tariff-making could channel resources from areas of production which were economic and efficient to those which were not, and could consequently reduce the potential level of national income.

The Commonwealth Government increased duties, prohibited many imports, and imposed primage duties between August 1929 and July 1931 as emergency measures to deal with the unemployment and balance of payments difficulties of the depression. While the United Kingdom was still Australia's most important trading partner (although decreasing in importance), guidance for the work of the Tariff Board was given in the 1932 United Kingdom–Australia Trade Agreement (the Ottawa Agreement) which provided that tariff protection should only be given to those industries which were reasonably assured of success and that United Kingdom producers should be given the opportunity for reasonable competition in Australian markets. Following on this the Tariff Board reviewed the tariffs for individual items, resulting in a general downward adjustment of tariffs between 1932 and 1936, and reciprocal preferential tariff rates (the British Preferential Tariff) were levied upon agreed British Commonwealth exports.

In May 1936 the Government initiated a policy of trade diversion to increase exports of primary products and expand secondary industry to strengthen Australia's foreign exchange reserves. To implement this policy it restricted imports of certain items with a view to manufacturing them in Australia. It was intended to obtain certain other imports from countries which were more likely to expand their purchases of Australian exports. The Government proceeded by means of import licensing and, where it appeared desirable, by the imposition of tariff barriers. British Commonwealth countries' exports were generally exempt from licensing and the United Kingdom was totally exempt from the licensing system. In May 1938 the licensing restrictions were replaced by tariff duties to protect Australian industries which had developed or expanded under the licensing system.

During the Second World War emergency import controls were introduced to conserve shipping space and foreign exchange for essential commodities. The Tariff Board in 1942 was given a reference to make general investigations into the post-war reconstruction of Australia's secondary industries but this was changed with the creation of the Department of Post-war Reconstruction and the establishment of the Secondary Industries Commission and the Secondary Industries Division in 1943, and action by the Tariff Board under this reference was limited to specific industries. At the end of the war import controls were progressively eased, but due to a severe drain on



Australia's currency reserves they were reimposed in March 1952.

Australia developed further trading relations with countries other than the United Kingdom and this was reflected in the trade agreement with Japan in 1957, which was reviewed in 1963 according to the objectives of the General Agreement on Tariffs and Trade (established in 1948 with Australia as one of its original members). In addition, the 1957 United Kingdom-Australia Trade agreement lowered the obligatory preferential margins allowed by Australia to the United Kingdom.

With most import licensing controls removed in 1960, the tariff became more significant in protecting Australian industries against import competition. The Report of the Committee of Economic Enquiry (the Vernon Report), published in 1965, found that tariffs had been important in the expansion and diversification of local manufacturing but referred to the need for an examination of protected industries to ensure they were "efficient" and "economic" or were likely to become so. It also suggested that the Tariff Board should consider whether particular tariffs were likely to hamper the economic operation of other industries to such an extent that the disadvantages outweighed any gains resulting from them.

Since the 1930s the trading relations of Australia have widened, secondary industries have grown and diversified, and mineral exports have expanded. Against this background, the Tariff Board has been examining the traditional tariff-making principles and practices. It has concluded, and has reported its conclusions in its recent annual reports, that changes in circumstances have made the traditional tariff-making principles and practices inadequate to deal with the current requirements of the economy.

Accordingly, the Tariff Board has developed a new approach to its work, which involves a systematic review of the tariff and the establishment and use of "points of reference" based on the concept of effective rates of protection. Points of reference represent levels of effective protection reflecting in the Board's view, "high", "medium", and "low" cost production. The Board considers that "high" cost production is that where effective rates of protection exceed 50 per cent, "medium" cost production is where effective rates exceed 25 per cent but do not exceed 50 per cent, and "low" cost production is where effective rates are 25 per cent or less.

Points of reference are based on the concept of effective rates of protection, that is, the protection accorded the value added (the total value of the work done) in the production process. The Tariff Board has explained that the points of reference are not in themselves definitive or independent criteria for assessing the economics of local activities; that the existence of "high" levels of protection does not necessarily mean that an industry is uneconomic; and that an element of judgment will always be involved in the assessment of external effects.

The incidence of the tariff during Australia's history has been determined by the needs of the country at a particular time. Originally it was used to give employment to the population after the gold rushes in Victoria and it enabled secondary industries to exist and expand. Since the Second World War tariff issues have increased in complexity and this has led to more comprehensive and nationally-based considerations on which to assess the tariff structure.

## EMPLOYMENT AND INDUSTRIAL RELATIONS

---

### EMPLOYMENT AND UNEMPLOYMENT

On 19 November 1834 Edward Henty, the first permanent settler in Victoria, landed at Portland Bay, bringing with him four indentured servants, supplies, and equipment. In the early stages of settlement employees were, generally speaking, unskilled workers—shepherds, plough-hands, and the like—and they came to the settlement with their employer, although in the course of time other persons arrived seeking employment. In the first years of the infant settlements almost all requirements were imported, and labour needs were simple—erecting huts, fencing, clearing land, tending the flocks, and occasionally engaging in a little farming and vegetable growing.

As life became slightly more sophisticated the pattern slowly changed—the percentage of pastoral and agricultural workers dropped and the percentage engaged in manufacturing, etc., rose. In 1841 over 27 per cent of the population of 20,416 was engaged in rural pursuits (five years later the figure was 23 per cent) and 9 per cent were artisans, mechanics, and labourers (by 1846 this had risen to over 12 per cent). Up to the time of the gold rushes settlement had been slow. In sixteen years the European population had grown to more than 77,000 with major concentrations in Melbourne and Geelong. Melbourne had 4,073 houses and 23,143 people. Apart from Melbourne the only settlement large enough to be called a town was Geelong with 8,291 inhabitants. The settled country consisted of large tracts of land called “stations” or “runs” for the grazing of cattle or sheep. Manufacturers hardly existed, except those concerned with preparing for local use the products of stations and farms. In 1848 there were 223 flour mills, 62 tanneries, 51 breweries, 30 soap and candle works, 27 foundries, and 86 other establishments called factories in Australia; as the average number of workmen in them was under 4, they gave employment to less than 1 per cent of the population.

The discovery of gold on the Turon and in other localities in New South Wales early in 1851 caused a mass migration to these areas, thus creating a labour problem for Victoria, an infant colony wanting settlers. This migration was reversed later with the discovery of goldfields at Ballarat, Bendigo, Castlemaine, and other places in Victoria, but Melbourne and Geelong were almost entirely denuded of their male populations. Sailors and masters alike deserted incoming ships, police left their posts, and Governor La Trobe was forced to summon military help from Tasmania to provide a gold escort from the diggings to Melbourne. People

from overseas prepared to migrate to Victoria, and the resulting influx presented new problems. Many were unaccustomed to hard physical work, and many brought their families and all their possessions, posing problems of finding provisions and accommodation. By 1854 over 15 per cent of the population was engaged in mining.

The labour situation in Melbourne began to ease with the return of many diggers who had failed in their quest for gold. The proportion of rural (pastoral and agricultural) workers had fallen suddenly as men left for the diggings but rose again in a few years as the gold fever waned. In 1851 over 15 per cent of the population was in rural occupations—by 1854 the figure had fallen to 6 per cent but by 1857 had risen again to 9 per cent. On the other hand, the proportion of artisans, mechanics, labourers, and carriers rose to meet the demands of the greatly increased population but in a few years fell to below pre-goldrush proportions. In 1851 they formed 12 per cent of the population, rising to 14 per cent in 1854 and falling to 11 per cent in 1857. As surface mining became less important some of the original diggers returned to their homelands but many stayed in Victoria and took up farming (after the successful agitation for the release of great tracts of land held by squatters). Others went to work in the cities and towns where they were quickly absorbed and the remainder continued in mining occupations, mainly as employees of companies using mechanised techniques.

Following the early years of the gold rushes distinct changes occurred in the employment pattern in Victoria. Manufacturing industries, few and small as they were, grew to meet the demands of the increasing population—in 1850 there had been only 68 manufacturing establishments, but by 1861 there were 531 employing 4,395 hands. As gold production in Victoria began to fall (from £12m value in 1856 to £6m in 1866) the diggers sought other employment. The Victorian diggers, to a much greater extent than those of New South Wales, were immigrants from Europe and America, knew little of farming, and had originally been tradesmen or factory hands. Many returned to their previous occupations and soon formed a body of artisans eager for economic protection when the end of the mining boom had occasioned much temporary unemployment throughout the Colony. However, the increasing population ensured a continuous demand for local products and for services, thereby easing the situation. The rise of factory industries, aided by protective tariffs (the Victorian Government was anxious that those leaving mining should not leave Victoria) offered further employment opportunities. Factory development in Victoria was mainly directed towards manufacturing consumer goods, whereas in New South Wales industry was mainly engaged in the preparation of raw material for use in manufacturing establishments. By 1867 the first factories manufacturing woollen textiles, boots, shoes, and clothing had been established and by 1891 over 3,100 “manufactories and works” were submitting annual returns showing 52,225 persons employed.

The 1871 Census records indicate a work force of 293,000 persons. By 1881 the numbers had risen to 375,000 persons, by 1891 to 485,000, and by 1901 there were 524,000 persons. At the Census of 1891, 19,930 men and 3,317 women classified themselves as unemployed. There was an increase

in the proportion of females in employment—from 15.5 per cent in 1854 to 24 per cent in 1901.

During the 1880s the adoption of the harvester introduced mechanisation to the wheatfield, thereby diminishing the demand for some seasonal rural labour. The depression of the 1890s caused much hardship. The weight of the bank failures in 1893 fell most heavily upon labour. The volume of employment was at once greatly reduced and the decline extended to the building industry as well as to every form of manufacture. Factories, which had employed some 52,000 persons in 1891, employed less than 40,000 in 1893. Also, the severe drought in the latter years of the 1890s created unemployment in rural industries. During the years 1891 to 1905 the total net emigration from Victoria was 164,626 persons. A majority of the emigrants travelled to Western Australia seeking a living from the newly found goldfields. Gold mining again became of importance as a means of livelihood in Victoria—in 1897 it was estimated that in Victoria there were 32,820 gold miners, an increase of 54.8 per cent on the number recorded at the 1891 Census. However, towards the end of the 1890s the worst effects of the depression were over. The development of rural industry during the 1890s did much to stabilise the economy, while irrigation schemes, the building of railways, and subdivision for closer settlement provided some employment. The subsidising of butter manufacture did much to expand the dairying industry, thus providing employment in what was to become a leading export industry in a few years. As recovery continued, the demand for labour increased rapidly and many thousands of British immigrants arrived in the years before the First World War. To encourage this migration the States had returned to the policy of assisted migration; 44,366 assisted persons had arrived in Victoria in the years 1907 to 1914.

During the years 1903 to 1916–17 the number of factories increased from 4,151 to 5,445, an increase of 31 per cent, and persons employed increased from 73,229 to 116,970, an increase of 60 per cent. The number of factories employing over 100 hands increased from 118 to 191, an increase of 62 per cent during the period, and the number of employees in these factories increased from 24,136 to 50,603, an increase of 110 per cent. In smaller factories the numbers increased from 4,033 to 5,254, an increase of 30 per cent, and persons employed rose from 49,093 to 66,357, an increase of 35 per cent.

Employment opportunities increased during the First World War because of an increase in industrial activity. Enlistments for service overseas (about 330,000 went from Australia) and compulsory national service within Australia also absorbed a large number of younger males, thus easing the unemployment position—45,152 had been registered as unemployed at the Victorian Government Labour Bureau in 1914; in 1917 the number was 12,575.

During the first ten years after the war unemployment was generally low although it did rise during the recession of 1920–21, in 1924–25, and again in 1928 and 1929 at the commencement of the world depression. The period was marked by a great increase in factory production and factory employment—in 1918–19 there were 5,720 factories employing 122,349

workers ; by 1927–28, just before the depression, there were 8,245 factories employing 160,357 workers. In the rural sector, closer settlement and soldier settlement had broken up some of the remaining large estates, changing the rural employment pattern, although many of the areas were not sufficient to provide for what was known as a viable “ Home Maintenance Area ”; private settlement, particularly in the fruit growing regions of the Murray valley irrigation areas, had increased the number of small holdings employing seasonal labour.

By 1929 prices of primary products on world markets began to decline quickly. The Australian manufacturer depended almost entirely on the local market which was now seriously affected by the reduced spending capacity of primary producers and others, and unemployment grew quickly in both town and country.

During the January to March quarter 1929, 8.6 per cent of unionists were recorded as unemployed; during the April to June quarter 1932 the figure had risen to 27.7 per cent—it was not until the October to December quarter 1937 with 7.3 per cent of unionists unemployed that it fell to pre-depression levels. Although there had been a slight diminution of employment in factories in 1928–29 and 1929–30, it was not until June 1932 that the real crisis occurred. The effects of unemployment showed that the number employed in factories in Victoria was about 17 per cent less in 1930–31 than in 1929–30 (i.e., it fell from 151,009 to 126,016). Unemployment rose from 12,740 in 1929 to 22,448 in 1930. Generally it was the unskilled worker in both town and country who suffered, although in some industries skilled workers were retrenched. These circumstances necessitated government action to relieve the resultant distress. Finance for this was raised by the imposition of special taxes (in the first instance a stamp tax, later by annual assessment). Subject to an income test, sustenance was provided, based originally at 6s per week for an individual, with additional amounts for dependants. In September 1933 a scheme was inaugurated under which genuine unemployed males were, as far as possible, provided with some employment each week. At 30 June 1932, 47,098 family units were in receipt of sustenance; by 30 September 1932 this number had fallen to 39,069, by June 1936 to 14,723, by June 1937 to 12,008, and by June 1943 to 237. Every male person who had received sustenance was required on demand to perform work of a prescribed class for the municipality within which he received sustenance. At 30 June 1932, 1,034 recipients of sustenance were working and by June 1934 the number had increased to 21,127.

A marked recovery, with a consequent drop in unemployment, occurred between 1933 and 1939, despite a setback in 1938 and 1939. In July 1931, 52,166 males were registered as unemployed with the Government Labour Bureau. The maximum number of 61,214 was reached in July 1932; the number declined to under 15,000 by May 1937. As conditions improved employment began to rise and industry recovered quickly—employment in factories rose from 128,265 in 1931–32 to 191,383 in 1936–37, and by 1938–39 it had reached 201,831.

The outbreak of the Second World War in September 1939 caused great changes in the pattern of employment. Compulsory military training for home defence was re-introduced; enlistment of a special force for service

outside Australia began ; the Empire Air Training Scheme (resulting in the formation of new service schools in Australia and in the posting of recruits overseas for advanced training) was begun ; and generally Australia's manpower was planned for defence needs. With complete control of manpower after the commencement of the war in the Pacific in 1941 all efforts were directed to the successful prosecution of the war. By June 1943 729,000 were in the defence services and a further 54,758 were directly employed in munitions factories. In Victoria factory employment rose steadily, reaching a peak of 262,357 in 1942-43.

At 15 June 1938, 24 per cent of males and 43 per cent of females employed in Victoria in factories were under 21 years of age ; by 15 June 1947 the equivalent figures were 12 per cent for males and 26 per cent for females, and by 30 June 1952, 9 per cent and 19 per cent. Females were 33 per cent of those employed in factories in 1937-38, 32 per cent in 1944-45, 29 per cent in 1946-47, and 28 per cent in 1951-52. Of the total number of females in factories in 1946-47, 60 per cent were engaged in the textile and clothing groups of industries, 11 per cent in industrial metals and machines, and 12 per cent in the preparation of food and drink. In 1951-52 the equivalent figures were 57 per cent, 14 per cent, and 12 per cent, respectively.

The immediate post-war period was one of adjustment—about one million persons in Australia had to be re-absorbed into civilian employment after periods in the fighting services, munitions supply, the provision of service requirements, etc. Large numbers of displaced and stateless persons from Europe created further problems, but the disadvantages were offset by the benefits of increased population, including the staffing of public utilities. Their arrival saw an eventual rise in demand for commodities not previously produced in Victoria, resulting in the assimilation of some of these persons into new industries. War-time experience also laid the foundations for fields of manufacture not previously covered ; the numbers employed in factories rose from 265,757 in 1946-47 to 316,792 in 1950-51. At the same time the numbers registered as requiring employment fell away and the number of vacancies registered in Victoria stood at 49,453 at the end of June 1951. The 1951 financial controls to counter inflationary trends changed conditions considerably and by 1952-53 factory employment fell to 310,759 and the number registered as unemployed exceeded the number of jobs available. In 1946-47, 16,272 persons were granted unemployment benefits; in 1948-49 only 288 were granted the benefits. The number rose to 39,245 in 1952-53 but fell rapidly to 2,398 in 1954-55.

By 1953-54 factory employment had risen to 331,277, in 1959-60 it had reached about 383,000. By then building and production were expanding. The November 1960 credit restrictions had a pronounced effect on factory employment, particularly in the motor industry—employment in factories fell from 388,050 in 1960-61 to 378,349 in 1961-62, then rose again reaching 445,557 by 1967-68.

Applications to the Commonwealth Employment Service for employment in Victoria rose from 77,560 in 1947-48 to 103,601 in 1949-50, fell to 98,010 in 1950-51, but again rose to 144,391 in 1952-53. Falling to 111,261 in 1953-54 the number of applications again rose, reaching about 168,000 in 1958-59. In 1961-62 they rose to 232,770. By 1964-65 applications had fallen to 200,707, but by 1970-71 had risen to 291,000. By 1957-58

unemployment benefits granted numbered 26,378 and in 1961-62 the number rose to 72,201 after falling to 17,635 in 1959-60. By 1964-65 they had fallen to 11,394, and they stood at 32,653 in 1967-68, 20,038 in 1969-70, and 29,271 in 1970-71.

From 1947 to 1966 the building and construction industry showed a very large increase in employment, from 58,792 workers in 1947 to 108,876 in 1966, a rise of 85 per cent. Communications also absorbed increased employment from 14,596 to 29,838 (104 per cent), and in other fields of employment, finance and property increased by 135 per cent, commerce by 87 per cent, manufacturing by 68 per cent, and transport and storage by 16 per cent.

#### FACTORY LEGISLATION

The first Victorian factories legislation was "The Supervision of Workrooms and Factories Statute" which came into operation on 1 January 1874. It followed the developments in the 1860s and 1870s when factory employment rose from 4,395 hands in 1861 to 43,208 in 1881. The Act defined a "factory" as a place where not less than ten persons were employed for hire or reward in preparing or manufacturing articles for trade or sale, and restricted the working hours for females in such establishments to eight hours a day. Its administration was entrusted to local Boards of Health and factories were open to inspection by Board inspectors. The Boards could make regulations in respect of the numbers employed in any one room, for the warmth, ventilation, and cleanliness therein, and for the provision of sanitary requirements.

As factories began to increase in number and size, the Government and the Trades Hall Council became concerned at the incidence of employment in factories or private homes for long hours, low wages, and under poor conditions.

The practice of giving out work to persons to do or complete in their own homes was widespread, particularly in the clothing trades, and the conditions under which such work was performed were neither subject to the limitations nor the inspections of the Workrooms and Factories Statute. While some outworkers did this work by choice and others under the stress of circumstances, they and their families were in most cases working long hours in cramped and unsuitable, if not unhygienic conditions. Outwork also promoted the establishment of places which were not "factories" as defined in the Act. The strike by tailoresses in Melbourne in 1882, which highlighted the conditions of clothing workers, was in part responsible for the Factories and Shops Act of 1885.

This Act, which came into operation in March 1886, repealed the Supervision of Workrooms and Factories Statute and made a significant contribution to the improvement of working conditions, in respect of both health and safety. It provided for the appointment of inspectors to ensure observation of the new standards. The nature of some of the provisions of the 1885 Act will indicate their importance; appropriately modified they appear in the *Labour and Industry Act* 1958. They were concerned with registration and inspection of factories, cleanliness and ventilation of factories, the provision of satisfactory sanitary accommodation, guarding of dangerous parts of factories and factory machinery, and intervals for meals.

In addition, the working hours of any male under the age of sixteen

years or of any female were restricted to forty-eight per week, and employment of a person under thirteen years of age in a factory was prohibited. Certificates of fitness had to be obtained for persons under sixteen years of age before they could be employed in factories, and the spread of hours of their employment was limited to between 6 a.m. and 6 p.m. The Second Schedule to the Act listed hazardous occupations at which young persons under specified ages might not be employed.

To supplement the 1885 Act, the Central Board of Health made regulations under the Act relating to the submission of factory plans for approval before registration, the installation of ventilation and of lavatory and sanitary accommodation, and the use of specified materials in the construction of some classes of factories.

Although the 1885 Act had required a factory occupier to keep a record of work given out and the name and address of the outworker, it was not until 1896 that the occupier of a factory employing outworkers could be compelled periodically to send returns of his activities to the Chief Inspector with whom outworkers were registered.

The Report of the Chief Inspector of Factories for 1897 stated that ". . . it was no uncommon thing to find dress-makers and one or two other classes of manufacturers carrying on business entirely with the aid of unpaid so-called 'learners'. As soon as the 'learner' required a wage she was promptly sent away." In an attempt to stop this practice, the 1896 Act fixed a minimum weekly wage of 2s 6d for any person employed in a factory. This measure was only partially successful, as some factory owners then demanded a premium from parents which was returned to the "learner" at 2s 6d per week. This practice was prohibited in 1900.

The *Factories and Shops Act* 1896 contained other provisions which benefited not only the outworker but also the factory workers in the clothing and footwear trades, and which ultimately conferred the advantages of fixed rates of pay and standard conditions of employment on practically all types of industrial and other occupations. The provisions referred to were for the appointment of Special (Wages) Boards "to determine the lowest prices or rates which may be paid to any person or persons . . . wholly or partly preparing or manufacturing either inside or outside a factory . . . articles of clothing or wearing apparel. . . ."

The first Special Boards were appointed for the bread trade, the furniture trade, the clothing trade, the shirt trade, and the underclothing trade. The membership of the boards consisted of equal numbers of representatives of employers and employees, with an independent chairman. The appointment and operations of Wages Boards completed the prototype for the industrial regulations of today—minimum standards were required for registration of factories; hours were restricted for women and young persons; protection was provided against dangerous machinery and industrial processes; and, finally, minimum wages were determined for a fixed number of hours of work.

The new industrial legislation did not win the immediate acceptance of all concerned. Some employees resisted the installation of machinery guards; some factory owners manufactured large stocks before the Wages Board fixed a minimum rate, and then dismissed many of their employees; and it was alleged that in the Chinese section of the furniture trade, employers and



employees conspired together to defeat the law by making false and identical statements about wages. The initial difficulties were not unexpected and the amendments to the Factories and Shops Act and the Labour and Industry Act over the next 70 years are evidence that the various governments have tried not only to improve and expand the legislation, but also to correct anomalies.

The early Determinations of Wages Boards were very simple documents. The Bread Making and Baking Board fixed a rate of 12d per hour, restricted the number of apprentices to one to every three persons receiving the 12d per hour, fixed a minimum wage for such apprentices of 5s per week, and prohibited the employment of improvers under the age of eighteen years. By 1900 the Board had fixed rates for apprentices and improvers according to experience, and had set a 48 hour week. In 1913 the Board expanded the Determination considerably to include differential rates for tradesmen, e.g., a maker of Good Friday buns got 2s 6d per hour and the ordinary baker 1s 4d per hour. The weekly hours of work were reduced to 44 in 1927 and to 40 in 1948, and in the meantime the Determination had been expanded to include provisions for annual leave (1939), sick leave (1941), and a detailed chart showing the hours when persons could be employed at bread baking (1947). Provision for long service leave was first introduced in the *Factories and Shops (Long Service Leave) Act 1953*.

The introduction and maintenance of standards in industrial legislation requires not only the registration and inspection of premises, but also the means of enforcing the legislation and making evasions and other breaches uneconomic. The proprietor of a factory in 1874 was liable to a penalty for each offence he committed in employing females for more than eight hours per day. The 1885 Act introduced a variety of penalties including a fine for a parent of a person under eighteen years of age who was employed in a factory contrary to the provisions of the Act.

With the institution of the Wages Board system in 1896, it became necessary to provide penalties for failing to pay the minimum rate fixed by a determination; fines ranged up to £100, with mandatory cancellation of factory registration for a third offence. This had a salutary effect on factory occupiers who were prosecuted for breaches of determinations, but was of little consolation to the employee who had to take separate civil action to recover arrears of wages. The *Factories and Shops Act 1909* remedied this situation by providing that the court which had convicted the offender might also order the payment of arrears of wages for a period not exceeding 12 months.

Until 1915 the Factories and Shops Acts and Regulations and the Determinations of Special Wages Boards were administered by a section of the Chief Secretary's Department known as the Factories Office, but in that year a separate Department of Labour was created and the legislation mentioned as well as other Acts transferred to its administration.

When the Factories and Shops Acts were consolidated in 1928, all the current regulations made under the Acts were also consolidated. The first part set out the form of application for registration of a factory, the annual record of employees to be forwarded to the Chief Inspector, and provided for information about outworkers. Detailed building requirements covered

construction, ventilation, lighting, stairs, fire escapes, fire extinguishers, and sanitary and lavatory facilities. In addition, the special requirements for factories where dangerous or noxious trades were carried out were greatly expanded.

Although the granting of certificates to engine-drivers and boiler attendants was a function of the Mines Department and the Board of Examiners (it is now a function of the Department of Labour and Industry), the regulations governing the issue of the certificates were made under the Factories and Shops Act.

A list of articles to form a first-aid kit for all factories where power driven machinery was running appeared before the section of the Act dealing with the guarding of machinery. The regulations concerning the guarding of machinery were the product of much investigation and experience, and dealt with the guarding of chaffcutting machines, belts and ropes for transmitting power, mincing machines, tanning machines, and in particular woodworking machines (such as circular saws and surface planing machines) and power presses. Emphasis was placed on the last two categories as they were most frequently associated with accidents. Finally, requirements were listed for the removal of dust from factories where grinding, polishing, or buffing was carried out.

The forerunner of the present Labour and Industry Act was the *Labour and Industry Act* 1953, which was largely the result of the work of the Board of Inquiry into the Factories and Shops Act, which sat intermittently from 1940 to 1949. The commencement date of the first Labour and Industry Act was 1 July 1954. This Act established the Department of Labour and Industry as it is today, and listed powers designed to secure the effective carrying out and the co-ordination of measures conducive to the industrial welfare of the people. Regulations made under the Factories and Shops Act up to 1954 remained in operation until they were replaced with new regulations made under the *Labour and Industry Act* 1958. Apart from the Labour and Industry Act, industrial legislation at present administered in the Department of Labour and Industry includes the Apprenticeship Act, the Bread Industry Act, the Boilers Inspection Act, the Industrial Safety Advisory Council Act, and the Lifts and Cranes Act.

#### INDUSTRIAL ARBITRATION AND CONCILIATION

Two systems of industrial arbitration and conciliation for the adjustment of relations between employers and employees exist in Victoria: the State system operating under the law of the State within its territorial limits, and the Commonwealth system applying principally to industrial disputes extending beyond the limits of the State.

Under Commonwealth law there are special tribunals to determine the industrial conditions of employment in the Public Service of the Commonwealth and in the stevedoring industry, and there is a joint Commonwealth and State tribunal for the New South Wales coal mining industry. There is also a flight crew officers industrial tribunal.

The relationship between the State and Commonwealth systems of industrial arbitration depends on the legislative powers of the Commonwealth and the States. Commonwealth powers in regard to industrial arbitration are defined in the Commonwealth of Australia Constitution Act; all residual powers remain with the States. The Constitution Act provides that a State

law inconsistent with a valid Commonwealth law becomes inoperative in so far as it is inconsistent. An award of the Commonwealth Conciliation and Arbitration Commission has been held to be a Commonwealth law, and, in certain circumstances, awards of the Commonwealth industrial tribunal over-ride those made by State tribunals.

The Commonwealth jurisdiction is limited by the Constitution Act to "conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State". In interpreting the law, the High Court of Australia has decided that the Commonwealth Parliament cannot empower an industrial tribunal to declare an award a "common rule" or industry-wide award to be observed by all persons engaged in the industry concerned.

Notwithstanding these limitations the Commonwealth system has gradually become predominant in the sphere of industrial arbitration throughout Australia. Its influence extended, in the first place, because of federation in trade unionism and in political organisation, a tendency which gathered force during the First World War period. As industry grew, uniformity of industrial conditions was sought by employers, while employees were attracted to the Commonwealth jurisdiction in the expectation of better terms as to wages, etc., than those awarded under State legislation. In many cases the organisations concerned in a Commonwealth award have sought to have its terms embodied in State awards to become binding as a common rule in the industry. Again, for the sake of uniformity, legislatures of some States, notably Victoria and New South Wales, adopted the Commonwealth wage standards as the basis of State awards and agreements.

In Victoria, Wages Boards, statutory bodies under the State Department of Labour and Industry, regulate and arbitrate on industrial matters. Wages Boards are established for specific industries or occupations; a general board deals with certain trades not covered by determinations of the specific Wages Boards. A Board may be appointed for any trade or branch of it, and each Board consists of an even number of members and a chairman. Originally, each Board was composed of equal numbers of employers and employees, each representative being actively engaged in the trade concerned. This qualification was later extended in 1934 to include officers of appropriate organisations or associations as representatives of employers and of employees, or persons nominated to represent corporations or public bodies.

The *Conciliation and Arbitration Act 1904-1972* defines an industrial dispute as "(a) a dispute (including a threatened, impending or probable dispute) as to industrial matters which extends beyond the limits of any one State; and (b) a situation which is likely to give rise to a dispute as to industrial matters which so extends, and includes—(c) such a dispute in relation to employment in an industry carried on by, or under the control of, a State or an authority of a State; (d) a dispute in relation to employment in an industry carried on by, or under the control of, the Commonwealth or an authority of the Commonwealth, whether or not the dispute extends beyond the limits of any one State; and (e) a claim which an organization is entitled to submit to the Commission under section eleven A of the *Public Service Arbitration Act 1920-1956* or an application or matter which the Public Service Arbitrator or a Deputy Public Service Arbitrator has refrained from hearing, or from further hearing, or from determining under section fourteen A of that Act, whether or not there

exists in relation to the claim, application or matter a dispute as to industrial matters which extends beyond the limits of any one State ”.

An extensive amendment to the Conciliation and Arbitration Act, assented to on 20 June 1956, altered the structure of the arbitration machinery by separating the judicial functions from the conciliation and arbitration functions. The Commonwealth Industrial Court was established to deal with judicial matters and the Commonwealth Conciliation and Arbitration Commission to handle the functions of conciliation and arbitration. Further amendments have since been incorporated.

During the 1880s Conciliation Boards of Employers and Employees were formed in Victoria to deal with labour disputes. They were constituted of representatives to the Employers Union and the Trades Hall Council, but a Bill to establish Councils of Conciliation failed because of opposition by the Trades Hall Council in 1884. An Act in 1891 was passed providing for the Councils but any awards made by them were not binding.

The Report of a Board of Inquiry on the subject of “sweating” in certain industries revealed a state of affairs so unsatisfactory that the Turner Government in 1895 considered that machinery was required for ensuring humane conditions of employment. The Act of 1895 provided for Wages Boards only in respect of the clothing, furniture, and bread making trades. It was not intended to control industrial relations as such but its success led to its extension to about 130 industries and to its development along lines seeking the prevention of industrial disputes. This Act represented the first example in Australia of legal regulation of wage rates. The Chief Secretary, Alexander Peacock, devised the system of appointing Boards of equal numbers of employers and employees, presided over by independent chairmen, in particular trades.

Until the early 1900s the wages of the majority of wage earners were not determined by industrial tribunals. In most cases wage rates were simply determined by collective bargaining or, where unions did not exist, by individual work contracts. In 1900 a Commission appointed to inquire into the working of the Wages Boards and of legislation on similar lines in other States reported adversely on the work of the Boards, but despite this the Wages Board Act was re-enacted in 1902. However, provision was made for appeals against the awards of the Boards to be heard by an Industrial Appeals Court created by the Act.

The Act of 1900 extended the operations of the Act to include all persons employed either inside or outside a “factory” or “workroom” and in 1903 the “Reputable Employers Clause” was written into the Act. It provided that Boards should establish average rates paid by reputable employers to employees of average capacity, and that in no case should the minimum rates fixed by any determination exceed the average rates so ascertained. The clause was removed in 1907.

During the 1890s, when a series of conventions was being held to frame the Commonwealth Constitution, the incidence of widespread labour disputes indicated the need for government intervention or control on a national scale. The success of New Zealand’s compulsory conciliation and arbitration legislation, and the failure of the schemes of voluntary arbitration in New South Wales and of the Conciliation Councils in Victoria, caused a decision in favour of a system based on a single major tribunal applying conciliation and arbitration procedures in interstate industrial disputes. In 1904 the Conciliation and Arbitration Act was passed establishing the Commonwealth

Court of Conciliation and Arbitration, but applying only to industrial disputes extending beyond the limits of any one State.

In 1907 the principle of a living wage was enunciated in the "Harvester Judgment" and the principle was adopted by the Commonwealth Court of Conciliation and Arbitration for incorporation in its awards. At the time of this judgment (November 1907) only forty-three determinations in Victoria featured a minimum wage for unskilled workers and the doctrine of the living wage was not systematically considered or applied. The period 1907 to 1921 saw an increase in wage determining tribunals to cover the majority of wage earners throughout the State. At the same time the principles of the living wage were clarified. By December 1921 there were 170 Wages Boards existing or authorised. By an amendment of the law made in 1922 the Boards were empowered to provide that in all trades carried out in factories or shops, a person working fewer hours than those fixed for an ordinary week's work should be paid from 33 to 50 per cent above ordinary wage rates for the first half of such a week's work.

An amendment to the Factories and Shops Act in 1934 gave Wages Boards discretionary powers to include relevant provisions of Commonwealth awards. A further amendment in 1937 made it compulsory for Wages Boards to adopt these provisions and empowered them to adjust the basic wage in accordance with the retail price index published by the Commonwealth Statistician, as the Boards considered appropriate. The Commonwealth Court of Conciliation and Arbitration discontinued automatic adjustments of the basic wage in 1953; legislative amendments allowed Wages Boards to continue these until August 1956. After this date Wages Boards resumed the practice of incorporating the Commonwealth rate.

The *Labour and Industry Act* 1958 (in general, a consolidation of the previous Acts) required that every Wages Board should, in determining wage rates or piece work prices, take into consideration relevant awards of, or agreements certified by, the Commonwealth Conciliation and Arbitration Commission; powers similar to those incorporated in the Commonwealth Conciliation and Arbitration Act relate to wages and conditions of labour. These powers enabled Wages Boards to make determinations concerning any industrial matter whatsoever in relation to any trade or branch of trade for which such a Board has been appointed.

In 1967, after the Commonwealth Conciliation and Arbitration Commission decided to eliminate the basic wage and margins from its awards and to introduce the total wages concept, Victorian Wages Boards also deleted wages and margins and introduced the total wage concept.

Wages Boards are not empowered to determine any matter relating to the preferential employment or dismissal of persons because of membership or non-membership of any organisation, association, or body. Appeals against the determination of Wages Boards may be made to the Industrial Appeals Court, a Court first set up in 1903. Such appeals must be made by the employer's or employee's organisation or by a majority of the employer or employee representatives on the Board concerned. In addition, any person may apply to the Supreme Court to have a determination quashed on grounds of illegality.

The Minister of Labour and Industry is empowered by the *Labour and Industry (Amendment) Act* 1960 to intervene in the public interest in

any appeal to the Industrial Appeals Court against a determination of a Wages Board. Further, as consumers are not represented on Wages Boards, the Act also authorises the Minister to refer, under appropriate circumstances, the determination of a Wages Board to the Court. Where a matter requires to be determined by ten or more Wages Boards the Minister may refer the matter to the Industrial Appeals Court under the provision of the *Labour and Industry (Amendment) Act* 1965. This provision was extended by the *Labour and Industry (Amendment) Act* 1966 which empowers the Minister to refer any residue of less than ten applications to the Court. The aim of the amendments is to remove the necessity to convene individual meetings of the Boards in such cases.

### INDUSTRIAL STOPPAGES

Stoppages were rare in Australia in the first fifty years although there are some instances of convicts taking some strike action.

In New South Wales the Master and Servant Act of 1828 provided that the penalty for leaving a job in breach of contract of service should be forfeiture of wages due, together with six months' imprisonment. In 1829 compositors on the newspaper *Australian* struck against a reduction of real wages and during the 1830s various small groups of city workers struck, usually on wage issues. The amended Master and Servant Act of 1840 was partly in response to this unrest. Conspiracy to raise wages or otherwise to improve conditions of employment became punishable by imprisonment.

The first recorded stoppage in Victoria was a strike of "tonguers" in the whaling trade at the Henty whaling establishment at Portland in 1835. It was suppressed by a show of strength by Edward Henty who threatened to use outside labour.

During the 1850s a number of stoppages was held against employers who refused to grant 8 hour day and 48 hour week concessions. The stonemasons in Melbourne struck to achieve an 8 hour day in 1856, and with other unions inspired to claim similar benefits, there was a general growth of union activities. In the mid-1870s the first strike in the history of the Victorian Railways Department occurred over conditions of overtime and non-payment for extra work. This strike was settled when the workers' requests were granted. There were also strikes for an 8 hour day by miners, government labourers, tanners, saw-millers, blacksmiths, and wheelwrights.

During the 1880s trade union organisation spread to light industries, and was often followed by strikes; there was a strike of tailoresses in Melbourne, and a 3 month strike of boot trade workers in Melbourne was finally settled by a committee of representatives of the employers and the Trades Hall Council. Because of the centralised trade union development of the 1880s strikes which would previously have remained localised now tended to become colonial and inter-colonial.

The major issues of the maritime strike of 1890 were the union demands for recognition of unionism and the employers' demand for freedom of contract. This strike involved transport workers, miners, and shearers in the eastern colonies and in South Australia and New Zealand. The unions were defeated, and in all cases the men returned to work on terms imposed by or acceptable to the employers.

The defeats of the unions in the maritime strike and also in the shearers' strikes in the early 1890s encouraged the unions towards direct political action, and the formation of a "labour party" so that legislation could be introduced for the benefit of the "working class" and to prevent the resources of the Colony being used in support of the interests of the employers.

In 1903, when the Victorian Government insisted that railway unions were not to be affiliated with the Melbourne Trades Hall Council and threatened the dismissal of unionist employees, a 7 day strike occurred. A Strike Suppression Bill was passed which provided heavy penalties against strikers, and the unions were forced to capitulate.

In 1913 the Commonwealth Bureau of Census and Statistics initiated the collection of information on industrial disputes involving a stoppage of work. However, the collection excluded disputes involving less than ten work people, or those lasting less than one day except where the aggregate number of working days lost exceeded 10 days. Effects on other establishments were not measured.

In the period to 1923 there was a series of strikes, especially in the transport, mining, building, and maritime industries. A record 40,000 workers were involved in stoppages in 1920. In November 1923 approximately one third of the Victoria Police went on strike for a week because of the appointment of special supervisors to maintain secret surveillance of police on duty. The passing of a Public Safety Bill granting the Government emergency powers resulted in the dismissal (without re-instatement) of 636 police out of a total of 1,820.

In 1929 the average number of days lost per worker involved in strikes was at a peak of 60 days. There were stoppages of miners and timber workers, and stoppages occurred in the building industry; building was suspended from April until a conference reached a settlement in June. Widespread unemployment and the weakness of major unions during the depression years led to a period of relative peace which mostly extended into the war years. However, there was a 4 month stoppage at the State Coal Mine at Wonthaggi in 1934 and two 13 week stoppages in 1938, one of State Electricity Commission workers and one of timber workers. A serious stoppage occurred in 1940 when coal miners in Victoria, New South Wales, Tasmania, and Queensland struck for 10 weeks over demands for a 40 hour week (with no consequent reduction in wages) and for the removal of a penalty clause in their award relating to the taking of annual leave.

In 1946 engineering unions went on strike for increased wages. This strike spread to other unions and resulted in a 9 day train and tram stoppage. Although only 7,934 workers were involved in disputes in 1947 the average working days lost per worker was 42 days. In 1949 there was a 59 day tram stoppage, and a general coal strike affected the stevedoring industry. A 55 day rail stoppage in 1950 followed the refusal of the Conciliation Commissioners to vary awards and conditions and there was a further one day stoppage in 1951 for the same reason.

In the 1950s and until the mid-1960s there were a considerable number of stoppages on the waterfront: in 1954, 27,573 workers lost 69,038 days; in 1955, 20,833 workers lost 26,391 days; in 1960, 41,065 workers lost 60,819 days; and in 1964, 46,403 workers lost 49,374 days.

Other disputes in 1964 involved 143,667 workers and occurred mainly in the engineering and metal trades (55,960 workers), and the transport industry (44,000 workers). In 1965 stevedoring stoppages accounted for 48,936 lost days, and stoppages in the food, drink, and tobacco industries cost 63,460 days. In 1967, although only 8,566 working days were lost involving 14,288 workers in the stevedoring industry, there was considerable unrest in the engineering and metal trades involving 47,022 workers who lost 52,215 days.

The number of disputes has increased greatly—from 29 in 1913 to an average of 343 per year for the 5 years ended 1971. The number of workers involved in disputes reached a peak of 380,100 in 1971 but each worker involved averaged only 8 days lost. Most days were lost in 1929 (1,296,676) and 1950 (1,208,365), while the average working days lost per worker involved was also highest in 1929 at 60 (16 in 1950).

#### TRADE UNIONS

The first permanent industrial unions of workers were formed after the discovery of gold. Prior to that there existed organisations such as benefit societies and combinations of workmen, and earlier still convicts had attempted to form organisations to obtain higher wages and increased rations. Most of the earliest unions were formed in the building and printing trades. The Operative Stonemasons Society was established in Melbourne in 1850 and was followed by other societies. The main objectives of the early unions were to protect the interests of their particular trades and to limit the working week to 48 hours. In Melbourne the demands of the individual unions were co-ordinated by the Eight Hours League.

In 1856 the "Operatives" Board of Trade was formed in Victoria among building trades to advise unions in disputes with employers, and in that year the 8 hour day was recognised for the building trades. Also in 1856 the Melbourne Trades Hall Committee was formed for the purpose of securing a central meeting place for the various unions, although no permanent delegate committee came into existence until 1879.

Between 1860 and 1871 a marked decline in wage rates caused wage claims to feature in union demands, and the question of the admission of Chinese, particularly in the mining and furniture industries, assumed importance. During the 1870s common interests in industrial legislation, the growth of inter-colonial trade and the protection of the seamen engaged in it, and the objection to State-aided European immigration and to the admission of Chinese encouraged national union development. Many disputes, mainly concerning higher wages or shorter hours, took place, and trade unions developed through the organisation of large numbers of unskilled and semi-skilled workers.

In 1872 a Miners Association was established in Bendigo to secure an 8 hour shift, to resist attempts to reduce wages, to oppose the admission of Chinese, and to promote legislation for the regulation of mining. After a strike at Stawell in the same year the miners obtained the 8 hour shift. In 1874 at a conference of miners' unions held at Bendigo, the Amalgamated Miners Association of Victoria was formed. Recommendations by it were incorporated into the Regulation and Inspection of Mines and Machinery Act of 1877. The Seamen's Union was established simultaneously in Sydney and



Melbourne in 1874, and after a strike several years later an agreement was made with the ship owners to limit the number employed. The Melbourne Waterside Workers Union was formed in 1882.

The first Australian conference of trade unions was held in Sydney in 1879 and twenty-four unions with a membership of 11,087 were represented. Resolutions were passed on subjects including factory and workshop legislation and shipping laws.

In 1882 William Guthrie Spence, secretary of a Victorian gold miners' association, set out to unite all miners. By 1890 he had succeeded and branches of the Amalgamated Miners Association (A.M.A.) existed in all colonies. He also helped organise the Amalgamated Shearers Union (A.S.U.), whose formation was encouraged when pastoralists in 1886 attempted to reduce shearing rates and to impose conditions unacceptable to shearers in Victoria. These two unions were unions of semi-skilled or unskilled workers whose activities spread both inter-colonially and intra-colonially, and they saw themselves as representing a class rather than a trade.

Over this period unions were seeking legal recognition since the English laws of 1824 and 1825 (to which they were subject) gave them freedom to combine but construed combinations in restraint of trade as unlawful and consequently union funds as unprotected. Arrangements for the protection of trade union funds were coupled with the *Criminal Law and Practice Amendment Act* 1871 which provided severe penalties for picketing, etc. In 1884 a Trades Union Act was passed in Victoria recognising unions as lawful bodies capable of holding property, placing them on a par with other organisations, and providing for voluntary registration. The Act was amended in 1886 and a consolidating Act was passed in 1890.

Although the first unions were non-political, many of their members were prominent in political organisations, and the fact that Members of Parliament were paid in Victoria from 1870 helped make political representation feasible. Union efforts in supporting Parliamentary candidates had resulted in two Labour representatives being elected in 1876.

During the 1880s Conciliation Boards of employers and employees were formed with representation from the Trades Hall Council and employers' unions, but a Bill in 1884 to establish Councils of Conciliation failed because of the opposition of the Trades Hall Council. An 1891 Act set up the Councils but any awards they made were not binding.

The second Australian Trade Union Congress took place in Melbourne in 1884 and decided to form a Parliamentary Committee in each colony to assist in passing through Parliament measures for the benefit of labour and to obtain direct representation in Parliament. Two constitutional reforms were urged, namely, "one man one vote", and the payment of Members of Parliament wherever this had not been adopted. Approximately 33,700 unionists were represented. The third congress in 1885 adopted a scheme for the federation of trade unions throughout Australia. The fourth congress in 1886 unanimously adopted a motion that the several trades and labour councils should form an electoral programme and that any candidate who did not adhere to that programme should not receive the support of the labour group. Altogether eight congresses were held before Federation.

The defeat of the unions during the maritime strike of 1890, the consequent loss of prestige and members, and government action then and

during the shearers' strikes of 1891 and 1894 led to a union attempt to establish a "labour party". In 1891 twenty-nine members were returned on the party platform in New South Wales.

From 1891 to 1895 only about ten new unions were established in Australia, the growth of unionism being interrupted by a series of strikes and lockouts including those mentioned above. However, in the period of increasing prosperity and industrial activity from 1896 to 1900, fifty-seven new unions were organised. The first Commonwealth Trade Union Congress was held in 1902. Then, and again in 1907, a scheme for an Australian Labour Federation was drafted and a Federal Executive Council was appointed, but the scheme was not adopted until 1913. Unions were encouraged by the arbitration system to arrange federations or amalgamations across State borders as a means of bringing themselves under the jurisdiction of the Court and by 1917 there were ninety-four interstate unions with a membership representing 81 per cent of total union membership. In Victoria there were 156 separate unions, 353 branches, and 148,700 members.

Between 1914 and 1920 there was a period of industrial unrest marked by many strikes. Militant unions were stimulated and a rise in unemployment due to economic and political crises followed the end of the war. Union membership rose by 35 per cent. A trade union congress in 1921 re-defined the Labor Party's aims as including the socialisation of the means of production, distribution, and exchange.

In 1927 the Australian Council of Trade Unions (A.C.T.U.) was established. Great unrest occurred in 1929 just before the onset of the depression and prolonged strikes were held by miners and timber workers. A proposal by the Commonwealth Government to repeal the Commonwealth Conciliation and Arbitration Act, thus withdrawing from the field of industrial arbitration except in the maritime and waterside industries, failed when the Bruce-Page Government was defeated in 1929.

During the depression the number of Victorian unionists declined from 247,618 members (in 1927) to 195,089 members (in 1933). The number of disputes also declined, although there were 1,296,676 working days lost in 1929 mainly due to building trades disputes. The majority of strikes were decided in favour of the workers. When economic conditions improved, union membership and disputes increased but membership did not reach the 1927 level again until 1941. Unions concentrated on securing shorter working hours and an increased basic wage. During the Second World War, after certain initial problems, some co-operation developed between the Government and the unions but this alliance only partially extended after 1945.

Between 1946 and 1954 union members as a percentage of wage earners grew from 49 to 53 per cent in Victoria. While wage issues were dominant, the question of compulsory arbitration was raised, and the idea received support of linking wages and productivity more directly and scientifically than previously. By the mid-1950s the unions emphasised policies to provide higher wages without consequent unemployment or inflation. In 1953 the Australian Congress of Trade Unions gave limited recognition to the principle of incentive payments.

The 1957 Federal Conference of the Australian Labor Party decided to substitute "preference for unionists" for "compulsory unionism" as an industrial aim of the party. In Victoria legislation prohibits Wages Boards from determining any matter relating to the preference of employment or dismissal of persons as being or not being members of an organisation, association, or body. In recent years there has been a tendency for unions to concentrate resources on the "work value" method of wage fixation although still campaigning for the reduction of total working hours, increases in paid annual leave, equal pay for women, and security of employment.

As the industrial organisations grew in size and complexity the unions tended to develop specialist staff, and the importance of education and training at all levels of union activity became recognised. Although total union membership has continued to increase (to 545,500 in 1967) the number of separate unions has decreased to 152 and union members as a proportion of total wage and salary earners has also decreased to about 49 per cent. Women members in 1971 accounted for 23 per cent of all unionists (in 1912 the figure was 5 per cent), but only about 37 per cent of all women wage and salary earners were union members in contrast to 56 per cent of males. About 39 per cent of unionists belonged to unions covering the manufacturing industries, but as the proportion of the population engaged in professional, administrative, and clerical groups has increased, the traditional forms of union organisation have tended to alter.

#### EMPLOYERS' ASSOCIATIONS

Employers' associations first appeared in Victoria in the 1850s, notably in the building trade and the coachbuilding industry; their main purpose was to resist pressure for an 8 hour day by the early trade unions. Permanent associations of employers did not appear until the 1870s. The Master Builders' Association dates from 1875 and the Victorian Chamber of Manufactures from 1877, the latter body being formed with the objective of influencing tariff policy and factory legislation, as well as resisting the 8 hour day agitation. These two bodies were followed within a few years by the Victorian Employers' Union, which later changed its name to become the Victorian Employers' Federation.

A stimulus to the formation of employers' associations in Victoria was the establishment of the Wages Board system. Associations of Master Wheelwrights and Blacksmiths, Master Drapers, Master Hairdressers, and Master Grocers followed closely upon the establishment of Wages Boards in their respective trades. Employers had to unite in order to nominate their representatives on the Boards. Since 1934 paid officials may represent employers, and many associations have nominated officers of the Chamber of Manufactures or of the Victorian Employers' Federation as their representatives.

Employers' associations in Victoria may be divided into three groups. One group is constituted by the Victorian Chamber of Manufactures, together with a small number of affiliated associations. The Chamber, with 6,500 members from about 200 industry sections, is incorporated as a company limited by guarantee and is administered by a council of 140 members. Its secretariat acts for the various sections before both State and Federal industrial authorities. Besides industrial matters, it takes part in proceedings

before the Tariff Board. It also operates a subsidiary insurance company, and has developed advisory commercial services for its members.

A second group is constituted by about eighty associations affiliated to form the Victorian Employers' Federation, an incorporated body registered with the Commonwealth Conciliation and Arbitration Commission. In addition, about 2,000 firms, mostly in the building, distribution, and service trades, are members of the Federation. Several primary producers' unions are also affiliated with the Federation, as are also some federations of smaller and more specialised bodies. The Federation provides secretarial services for some of its members' associations and undertakes industrial services for others. It has been active in organising training courses in business administration and secretarial work, in providing advisory services on financial matters, and in sponsoring various community services and movements for economic development. It also operates a subsidiary insurance company for members of its affiliated associations.

Third, there are employers' associations such as the Victorian Showmen's Guild and the Electrical Contractors' Federation not affiliated with either the Chamber or the Federation. In the case of some associations the absence of affiliation is caused by ties with corresponding associations in other States. A few are actually branches of Australia-wide associations. These associations with interstate affiliations are frequently concerned with Commonwealth industrial jurisdiction, rather than with the Victorian Wages Boards, and most of them rely on their federal secretariats to represent them before the Commonwealth tribunals, since very few specifically Victorian associations are registered for this purpose. In addition to the Chamber of Manufactures, the Victorian Employers' Federation, and the Automobile Chamber of Commerce, other Victorian employers' associations are registered with the Commonwealth Conciliation and Arbitration Commission.

Unlike the trade union movement, employers' associations lack any central representative organisation in either the Federal or the State sphere. The Victorian Employers' Federation, the Chamber of Manufactures, and many individual associations are affiliated with corresponding bodies in other States, but their federal organisations remain independent of one another, although they may co-operate on particular issues.

## SUPERANNUATION

*British background*

The Industrial Revolution changed the British economy over a period of years by introducing new methods of organising labour to increase its productivity. A result of the change was that young family members seeking employment were drawn into the new industries in urban areas and this caused a breakdown in the interdependent membership of rural family units. Although considerable difficulties must have been experienced by the older family members who remained on their farms without their children's traditional support, the major social problems eventually were to be felt by the new generation of urban dwellers who, when they in turn became too old or too sick to work, had no farm or family to support them.

The position of the older urban dwellers was made more difficult by an abundant supply of labour at that time, with employers preferring healthy young males to fill the available jobs. Wages were at a low level, permitting practically no savings by employees, and their taxable capacity to provide social service assistance for the needy was very limited. Moreover, a person who sought relief under the Poor Law Acts was regarded almost as a social outcast.

A natural outcome was that an employee who became too old or too sick to work would, if he had a compassionate employer, be kept on the pay-roll or provided with a pension; otherwise, with no means of support, he and his family would have been destitute. Thus, pensions came to be granted by an increasing number of employers, and employees came to expect them as a long service right. Indeed, the increased volume of goods and services which became available from the more efficient use of labour and capital (a direct result of the Industrial Revolution), made possible the wider adoption of pension schemes.

Although there had been earlier self-help co-operative arrangements through guilds and friendly societies, and by grants from charitable organisations, amongst the earliest and most important plans were, for widows, the plan established in 1744 for the widows of the ministers of the church and professors in the universities of Scotland, and for employees, the plan established in 1834 for retirement benefits for members of the English Civil Service. The latter plan provided a male member on retirement at age 65 after 45 years' service, with a pension equal to two thirds of his salary. The member was not required to make any contributions for his pension.

At the same time as these social and economic changes were taking place the medical profession was achieving significant success in its efforts to increase the expectation of life, which was then very low by today's standards. This progress, however, was aggravating the existing social problem of providing for the aged, and seems to account in some measure for the rapid development in superannuation which followed.

#### *Developments to 1920*

Victoria was the first State in Australia in which a superannuation scheme was established. In 1862 the Victorian Civil Service Act was passed to provide male public servants on the classified list, and a few railway officers, with non-contributory pensions of two thirds of the average last three years' salary on retirement at age 60 after 40 years' service. Pensions under this Act were abolished in 1881 by the Public Service Act.

In December 1884 pensions were granted by the Public Service Act of 1883 to every person appointed to the public service before 24 December 1881, whether classified or not, and to every permanent officer of the railways appointed before the passing of the Railways Act of 1883. Under these two Acts, a newly appointed officer of the public service or of the railways was required to effect a life insurance policy for a sum assured equal to the maximum annual salary of his class. This left those who were appointed between 1881 and 1884 (in the Railways, between 1883 and 1884) without pensions or life insurance; they became known as "twilighters"; those "twilighters" surviving in 1926 (approximately 400) became eligible for superannuation benefits under the Superannuation Act passed in that year.

In the private sector, large organisations were tending to replace the personal employer, necessitating the establishment of formal relationships all round. Superannuation schemes known to have been established by some of the large organisations operating in Victoria in this period to 1910 were set up by the Union Bank of Australia Ltd (since merged into the A.N.Z. Banking Group Ltd) in 1861, the Bank of New South Wales in 1862, The National Bank of Australasia Ltd in 1874, the Bank of Australasia Ltd (since merged into the A.N.Z. Banking Group Ltd) in 1880, the Australian Mutual Provident Society in 1889, the English, Scottish and Australian Bank Ltd (since merged with the A.N.Z. Banking Group Ltd) in 1898, and The Commercial Bank of Australia Ltd in 1905.

There is no published information to suggest that schemes in the Victorian private sector had any major financial problems. In Britain, however, many employers in this period had not been funding their superannuation liabilities correctly. They had seen their funds growing at a very rapid rate, with relatively small amounts of benefit pay-outs, and took the view that excessive provisions were being made.

Thus, a number of British schemes fell into financial difficulties, in particular those of certain railway companies, and a governmental inquiry was held into their affairs in 1910. The lessons learnt from this inquiry and from papers written by leading actuaries at the time clearly showed the very high cost of providing the pensions which had been offered under the relevant schemes, and the importance of setting aside adequate reserves in respect of each employee during his service in order to meet the liability

for his pension when it fell due. The high cost of pensions which had to be met by employers came to be understood, and in order to provide the highest possible payments on retirement or invalidity, and for the support of a member's dependants on his death, it was appreciated that the benefits payable in other circumstances, such as on voluntary resignation, had to be kept at the lowest possible levels. Most employers also required employees to make contributions for their pensions.

Much credit is due to the designers of the early pension plans which had been developed before 1900 on a basis now known as a "benefit promise" basis. Under this basis, the benefit payable is usually based on the employee's average salary throughout his service (or his average salary in the last few years of his service) and the period of his service. As the benefit is defined (or promised), the contributions necessary to meet its cost must vary according to the fund's experience.

The ability to save for superannuation purposes was seriously disturbed by the First World War, and the few new schemes known to have been established in this period were the State Superannuation Fund of New South Wales in 1916, the scheme of the Commonwealth Bank of Australia in 1916, and that of the National Mutual Life Association of Australasia Ltd in 1917. The Commonwealth income tax enactment in 1915 provided allowable deductions of up to £50 to employee-taxpayers for personal contributions to a superannuation fund. Employers were also allowed tax deductions for contributions made for the benefit of their employees.

The benefit and contribution structure of the new New South Wales State Fund (incorporating new and important principles developed by the Irvine Committee), which Victoria followed, was based on units of pension of £26 per annum for each £52 of a member's salary within specified salary limits. Members made contributions to provide £13 per annum of each unit. Pensions were payable to members on retirement at age 60 or on earlier invalidity. On death, whether during service or after retirement, a member's widow (if married to him before he retired) was paid one half the member's pension, together with allowances for each child under age 16.

Women in industry were being provided for in a few of the new schemes, which admitted both males and females to membership. Pensions to females in the new government schemes were generally available on invalidity and on retirement, sometimes at a retirement age 5 years younger than for males; the contribution rates payable by them were based on different scales than those for males.

The first superannuation scheme underwritten by an Australian life office appears to have been established in 1917 for the employees of Marcus Clark Ltd by the Colonial Mutual Life Assurance Society Ltd. Retirement benefits were available in the form of pure endowment policies with death cover under whole of life policies.

#### *Inter-war period*

After the First World War both public and private organisations endeavoured to improve standards of living and conditions for retired employees and dependants through social service benefits and superannuation. The maximum taxation deduction for personal superannuation was increased

in 1922 from £50 to £100 to employee-taxpayers and was extended to taxpayers who were not employees, if their taxable incomes did not exceed £800 per annum.

As skilled labour was becoming very scarce in the 1920s, some employers saw superannuation schemes as a means of discouraging the voluntary resignation of their employees. During this decade, inflation was becoming a serious problem, and whereas most of the plans established previously provided pensions at retirement based on an employee's average salary throughout his service, it was recognised that pensions had to bear a reasonable relationship to the final salary or the final average salary in the last few years of an employee's service. Many leading companies established superannuation schemes during this period, but few, other than governments, provided adequate pensions on invalidity. In the government schemes, the pensions on invalidity were the same percentages of the member's salary as were payable on retirement at age 60 or 65. Schemes established during this period included the following employers \* : Commonwealth of Australia (1922), City of Melbourne (1922), Colonial Mutual Life Assurance Society Ltd (1925), State of Victoria (1926), Melbourne and Metropolitan Board of Works (1926), The Broken Hill Proprietary Co. Ltd (1926), ICI Australia Ltd (1926), Conzinc Riotinto of Australia Ltd (1928), Broken Hill Associated Smelters Ltd (1928), North Broken Hill Ltd (1928), Broken Hill South Ltd (1928), and the State Electricity Commission of Victoria (1930).

During the depression, little thought could be given to superannuation or to saving for retirement. Moreover, unemployment was so rife that employers had no need to rely on superannuation schemes to stop employees from leaving for better jobs.

As the worst effects of the depression subsided, jobs became more plentiful and many of the salaries cut in 1931 were restored by 1936. Improved conditions enabled the community to think again about saving money for superannuation, and in 1938 the National Health and Pensions Insurance Act was passed by the Commonwealth Government, though never implemented.

By 1933 all the major Australian life insurance offices had commenced underwriting superannuation schemes. Non-medical business was extended to superannuation schemes in order to facilitate the acceptance of this class of business. Although most of the early schemes issued by life offices were in the form of endowment assurance policies, some employers preferred benefits based on deferred annuities, payable on retirement, with lump sums payable on death in service before age 65, and a few of this type of scheme were written before the Second World War. In 1936 the maximum taxation deduction of £100 for each taxpayer was changed to include personal contributions to superannuation funds and life insurance premiums.

#### *Post-war period*

Very few new schemes were introduced during the Second World War. Community interest in superannuation and social security, however, was soon renewed after the war and the earliest new schemes established were the Victorian Hospitals Superannuation Fund in 1945, the Broken Hill Mine

\* These employers are shown by their titles in 1972.



Employees Fund in 1946, and The Broken Hill Proprietary Co. Ltd female scheme in 1947. In 1944 employers were allowed to deduct from their assessable income their contributions to their staff superannuation funds, up to £100 or 5 per cent, whichever was greater, of each employee's salary, with the Taxation Commissioner being given discretion to approve larger amounts.

Before 1945 many private sector employers had taken the view that as most females would marry, it was not generally necessary to provide for their superannuation. Some employers were providing pensions outside their formal superannuation schemes for the few female employees who reached the retirement age. This meant that any female employee who was likely to remain in service until her retirement age would have to depend on her employer's goodwill at the time of her retirement for payment of whatever pension he might choose. However, the increased demand for female labour during and after the war emphasised the fact that it is as important for females as for males to have their pensions secured by a trust deed and a fund.

Between 1948 and the early 1950s there was a high rate of inflation and the salaries of many employees doubled. Some large organisations conducting "benefit promise" schemes contributed £1m to £1.5m to restore the actuarial solvency of their superannuation funds and, in addition, increased their contribution rates. The lessons learnt from the British 1910 governmental inquiry had not passed unheeded. Inflation was also seriously affecting pensioners, many of whom, finding great difficulty in maintaining their accustomed standard of living because of the reduced purchasing power of their pensions, were exerting pressure on their former employers for increases. In the Victorian State Fund, the pension unit, which had remained unchanged at £26 since the Fund's establishment in 1926, was accordingly increased as follows :

Date of increase	Particulars
2 January 1948	Pension unit increased to £32.10.0 per annum
30 June 1950	Pension unit increased to £39 per annum
3 April 1953	Pension unit increased to £45.10.0 per annum
4 March 1955	Pension unit for first four units, where total number of units was less than ten units, increased to £52 per annum
30 December 1960	General increase in pensions to offset cost of living increases prior to 1 January 1956, in respect of pensions up to the maximum scale of £364.10.0 per annum
30 November 1962	General increase in pensions due to rise in maximum number of available units to persons currently being employed by the State, with corresponding adjustments being made to relevant pensioners
1 April 1966	General increase in pensions to offset cost of living increases prior to 14 July 1961
16 January 1970	General increase in pensions to offset cost of living increases prior to 1 July 1967.

In the Commonwealth and some other State funds, the changes made have been similar. The Commonwealth Government, which was the first to make the change, increased the pension unit from £26 to £32.10.0 per annum in 1947.

A State Government employee in Victoria has never had to contribute for more than \$26 per annum of each pension unit. This means that, whereas the Government and members were each initially responsible for one half of the cost of each pension unit, as a result of the subsequent adjustments an employee is now meeting a maximum of two sevenths of the cost.

In 1950 the maximum allowance to taxpayers for their personal superannuation contributions, etc., was increased to £150, and in 1951 it was increased to £200, including personal contributions to medical and hospital benefit organisations. The allowance to employers was also increased in 1953 to £200 or 5 per cent, whichever was greater, of the employee's salary, with the Taxation Commissioner still having discretion to allow larger amounts. The period since 1945 has been characterised by very low rates of unemployment and employers have adopted various welfare and benefit schemes, including superannuation, as a means of attracting and retaining employees.

In the 1950s and the early 1960s the retirement benefits which became payable in this period, where based on a member's average salary throughout service or on fixed money terms, were very obviously inadequate in relation to the member's final salary, due to the severe inflation being experienced. Inflation was also causing substantial increases to occur in the market prices of some ordinary shares and of property. These various factors resulted in the benefit redesign of many superannuation schemes and in an increased proportion of funds being invested in ordinary shares and property. Some employers considered themselves unable to accept the liabilities of a "benefit promise" scheme based on final salaries which were increasing at unprecedented rates; at the same time, schemes which offered direct participation in the increasing market values of ordinary shares were found to have appeal to employees. Thus, many of the new schemes established in this period in the private sector were designed on a "contribution promise" basis. In these schemes, the employer (and employee, in most cases) contribute specific fixed percentages of the employee's salary from time to time on the employee's behalf, and the contributions of both, together with interest earnings, and capital appreciation (less depreciation) on the fund's investments, accrue for the direct benefit of the employee on his retirement.

In "benefit promise" schemes, benefits increase automatically in conformity with increases in salary levels, with the greatest proportion of the extra cost thus generated usually having to be met by the employers. In the "contribution promise" schemes adopted in this period, the expected retirement benefits were generally turning out to be unsatisfactory because, in the early 1960s and subsequently, the market prices of some ordinary shares had begun to fluctuate widely and unpredictably. Furthermore, amendments made to some of these schemes to correct the anomalies emerging in their retirement benefits were still not able to achieve retirement benefits which were consistent multiples (as between employees with the same periods of service) of their final salaries. In particular, in the "contribution promise" plans, the retirement benefits to lower paid employees were tending to be higher multiples of their final salaries than those to higher paid employees.

These higher paid employees could not have been expected to allow this situation to continue and towards the end of the 1960s there was a tendency for private sector plans of this type to be changed to "benefit promise" plans, with a preference for lump sums.

The preference for lump sums is certainly influenced by the relatively more favourable income tax treatment these receive, as compared with pensions, as well as by the ready manoeuvrability of lump sums to conform with the Commonwealth's Social Service Act for the maximisation of benefits thereunder. In addition to these two factors, there appears to be a fascination with lump sum benefits, probably because the retired employee wants his family to be assured of receiving an estate from him on his death. But there can be disadvantages for a person, accustomed to receiving a regular weekly income during his working life, who receives a lump sum as an alternative to a continued regular pension income after he ceases working. This is so particularly if the retired employee has not available to him reliable family support and, in order to produce an income from his lump sum, is required in his declining years, to cope alone with its investment and the related complexities with which he could scarcely be expected to have had the necessary technical experience.

In most government schemes, also, the benefit design has tended to favour lower paid employees, insofar as the highest paid employees are paid pensions which are lower percentages of their final salaries. There is, however, a set-off to this differential in the case of government employees, first, due to the very limited (if any) commutation allowed by government schemes which would enable any significant income tax advantage referred to above to be gained and, second, due to the Australian progressive tax system under which, in general, the percentage fall in the spending power of a high salaried employee, represented by his pension net of tax, as compared with his salary immediately prior to retirement net of tax at a very much higher rate, is much less than the ratio of his pension to salary before tax.

In 1956 the taxation deductions allowed for personal superannuation and life insurance premiums to taxpayers were raised from £200 to £300 (excluding medical and hospital contributions which remained allowable deductions, but under a different section of the Act). The allowable deduction was further increased to £400 in 1959 and to the present amount of \$1,200 in 1967.

The intense interest in superannuation engendered since the Second World War has attracted increased attention from banks, trustee companies, and life insurance companies, which have sought to undertake the management of the accumulating investments of superannuation funds. Life insurance companies have been very active in seeking superannuation business in Australia. Prior to 1961, when the Income Tax and Social Service Contributions Assessment Act was passed, the earnings of superannuation schemes managed by life insurance companies on behalf of the trustees of those schemes were taxed, while the earnings of self-administered funds were exempt from tax. Life insurance company managed schemes, as compared with self-administered funds, generally had further disadvantages: their administrative costs (including commissions payable to agents) were relatively high; their investments were geared more to fixed benefits payable

under individual whole of life and endowment assurance policies than to providing suitable retirement benefits for groups of employees; and the benefits they provided on invalidity (other than on total and permanent disablement) were too small.

Under the Income Tax Acts of 1961 and 1964 all *bona fide* superannuation schemes became tax exempt, whether self-administered or managed by a life insurance company, subject in broad terms to their investing not less than 30 per cent of the fund's investments in public securities, with at least 20 per cent being in Commonwealth Government securities.

Life insurance companies had been striving before 1961 to improve their superannuation services, and more flexible arrangements, with reduced levels of administrative charges and commissions, were achieved under deposit-administration and managed-fund techniques, which were introduced in the late 1950s. However, it was the 1961 Act that offered a great opportunity for the expansion of their superannuation business.

Throughout the 1960s superannuation business was actively sought by the major life offices, competing very keenly against each other. Three significant developments occurred during this decade. The first was that, within their overall management, certain of these life offices offered investment facilities of the unit trust type, under which trustees could select the proportions of their superannuation funds to be invested in ordinary shares and property, company debentures, mortgages, and other fixed interest type of securities, with 30 per cent being invested in public securities as necessary to obtain income tax concessions. The second was to manage only the investments of certain large funds, leaving the trustees to organise the remainder of their fund's conduct, namely, benefit design, the trust deed, and the maintenance of the fund's records. The third was the offer to underwrite benefits of a more comprehensive nature than the former total and permanent disablement benefits, namely, salary continuance insurance on invalidity. These life insurance companies also made substantial reductions in their administrative charges for superannuation business.

The practical effects of the Commonwealth's 1961 taxation legislation have also been to direct the attention of employers to their superannuation schemes, as evidenced by their support for the Association of Superannuation and Provident Funds of Australia which was established in that year. In order to obtain the available income tax concessions, superannuation funds are required to ensure that the trust deeds governing their management secure the rights and interests of their members and their beneficiaries. (Funds incorporated under State Acts such as the Victorian Superannuation Fund, the Hospitals Superannuation Fund, the Local Authorities Superannuation Fund, etc., are exempt from this Commonwealth legislation.)

Before the 1961 Act a minority of high income earners established superannuation arrangements as a means of tax avoidance. The 1961 Act ended much of this activity and the contributions and earnings of a private sector fund are now fully tax deductible only if its projected level of benefits at the employee's retirement age, as related to his final salary, broadly speaking, does not exceed the corresponding benefits paid by the Commonwealth Superannuation Fund. This level permits the payment of

pensions up to about 70 per cent of final salary subject to at least 20 years' service with reversionary pensions to widows and children. Lump sums, which are the equivalent of these pensions, are also allowable. Personal contributions necessary to provide these benefits (including any life insurance premiums) since 1967 have been allowed as tax deductions against an employee's earnings up to \$1,200 a year and the contributions by the employer necessary to provide the residual amount are tax deductible in full. Should an employee be required to contribute more than \$1,200 in any year, the excess is deductible for taxation purposes, on a basis determined by the Commissioner of Taxation, but only if a pension is payable to him after retirement, and against that pension.

Since 1961 tax concessions to encourage the establishment of funds by self-employed persons have also been allowed.

In Victoria, the Probate Act of 1962 provided that in the case of *bona fide* superannuation schemes, if a member were not more than 72 years of age when he died in service, the benefit from the scheme to his widow and children under 21 years or any other dependant of the member would be exempt from duty, within prescribed limits. The legislative enactments of the 1960s indicated the increasing significance attached by governments to superannuation funds owing no doubt to the fact that by 1967 superannuation funds were providing an estimated 25 to 35 per cent of all net personal savings in the Australian economy and this percentage appears to be increasing.

#### *Preservation of benefits*

The Victorian Government was the first in Australia to demonstrate an interest in the preservation of superannuation benefits, which had been receiving much attention overseas, particularly in Britain. Under this concept, an employee moving from one employer to another, subject to certain conditions, preserves the superannuation benefits which have accrued on his behalf, either with the employer's fund in which his benefits had accrued or with a central fund. The Government first displayed this interest in 1969, due no doubt to the belief that in an era of full employment, an employee should not be required, in order to preserve his accrued superannuation entitlement, to remain with his employer throughout the whole of his working lifetime. In a draft dated 27 May 1971 the Victorian Government made its Superannuation Benefits Bill available so that interested members of the public could make submissions prior to the preparation of legislation. Since the Victorian Government sponsored preservation of superannuation benefits, the Commonwealth Government passed the *Superannuation Act* 1971 for the preservation of superannuation benefits in relation to inter-government and university transfers of Commonwealth employees and the staffs of universities, respectively.

#### *Social implications*

The objective of superannuation schemes is now seen by the community to be the maintenance of an employee's domestic situation when his salary or wages cease at retirement or earlier through invalidity. This concept leads to the proposition that superannuation schemes must provide adequate

benefits, if an employee is to be able to maintain his domestic situation when he ceases in employment. It follows that the criterion of adequacy seems to be that the benefit payable must bear a reasonable relationship to the employee's final salary. Also, because of the wide variety of possible domestic situations with their continual changes in respect of every employee, the scheme, if it is to achieve its objectives must be designed to be able to cope adequately with all the possible domestic situations which may arise.

The concept of providing adequate benefits to meet all possible domestic situations has evidently been held for some years by Australian governments and some large private sector employers, a fact which is indicated by the range and the size of the benefits provided from their schemes. Generally, in the government schemes the contributions being paid by employees are being accumulated in funds, while the governments defer making their contributions towards any benefits until the relative benefits actually become payable. In the large private sector employers' funds providing the highest scale of benefits, the overall accruing liability for these benefits have required contributions from the employer and employee combined in the range of about 15 per cent to 22 per cent of the pay-roll. This high cost, *inter alia*, helps to explain why some smaller employers had confined their schemes to the "contribution promise" basis, with contributions of 5 per cent of the employee's salary being paid by both the employee and his employer. Most schemes have adopted fixed retirement ages, for example, age 60 or 65, to save the employer from any embarrassing requests from employees to discontinue employment before age 60 (even with a reduced benefit) or to allow an employee to defer his retirement beyond age 65, for an increased benefit.

By the early 1970s superannuation funds tended to be under financial pressure, either through inflation requiring the supplementation of benefits, or through demands by employees for improved benefits to match those being provided by other funds; as provisions were made for these increases in benefits, the assets of funds increased rapidly. Public service pensions were being supplemented regularly by governments, and private sector pensions by an increasing number of employers, to enable beneficiaries to cope with the continuing effects of inflation, namely, the increasing costs of goods and services.

Even for an employee on a high salary, it is virtually impossible for him alone to accumulate the large amount of assets needed to provide a standard of living for life after retirement comparable with the standard he had attained immediately before retirement. However, with substantial assistance over a long period from his employer and aided by the tax savings applicable to both employer and employee, a superannuation plan with a suitable "benefit promise" provision can in fact accumulate the assets required in respect of employees. The Commonwealth income tax laws do not extend comparable tax exempt savings opportunities to self-employed persons.

A unique feature of the Australian Income Tax and Social Services Acts is the favoured treatment which lump sum superannuation benefits receive, and most schemes are providing benefits in this form rather than as pensions. Even where pensions are available under a scheme, provisions are usually

made for the commutation to a lump sum benefit of at least a portion of the pension. In the Victorian State Superannuation Fund, provision was first made in 1966 for members to commute, and now up to 12 units of pension at retirement or 30 per cent of their pension entitlement, whichever is the greater, may be commuted for a lump sum benefit.

Superannuation schemes in the 1970s are seen as an arrangement whereby participants elect to forego the benefit of a proportion of the goods and services currently available to them while in employment, in order to provide goods and services for themselves and their dependants when they cease to be in remunerative occupations at a later date. These savings, in money terms, marshalled into superannuation schemes, are invested for the purpose of generating goods and services for the future. Superannuation schemes experience a flowing-in of moneys from their investments and from the savings of new and existing participants, and a flowing-out of moneys to pay benefits to, or in respect of, the participants on their ceasing to be in remunerative occupations. The net yearly increases in superannuation funds are invested with compounding effect to provide an ever increasing volume of goods and services for the whole community.

There are, however, factors which may cause concern in this superannuation mechanism. As stated earlier, the inferred assumption in "benefit promise" schemes is that the employer generally must meet the balance of the cost of the superannuation of his employees, over and above the personal contributions made by them. It follows that this balance of cost could escalate seriously with steep increases in salaries, and the objectives of these superannuation plans, together with other socially desirable plans, could be jeopardised, if inflation is not kept within reasonable limits.

The effects of inflation on employers could be mitigated if available investments had the capacity to increase in market value to offset in whole or in part the reduced purchasing power of the currency. In the hope of being able to cope with these problems of inflation, the trustees of many funds have invested a percentage of their assets in ordinary shares, property, and other "inflation hedge" securities. For various reasons, these investments give no assurance of any inflation hedge and the trustees of funds are continually facing the investment dilemma of high yielding debentures and mortgages versus low yielding potential growth equities. Unfortunately, any substantial falls in the values of equities held by a fund which arise from a general decline in business, will, if the "benefit promises" are to be sustained, give rise to substantial demands on employers to make good the shortfalls—possibly at a time when this could be most inconvenient for them to do so, because their profits could probably also be low and for the very reasons that equity prices could have fallen on the stock markets.

In addition to inflation, there is the problem of the apportionment of a company's earning capacity between its employees and shareholders. If employees' demands result in increased wages with disproportionately reduced dividends for shareholders, not only the dividends, but also the market value of the employing company's shares could fall. Therefore, to the extent that superannuation funds are the owners of such shares and the shortfall cannot be made up from other sources, the funds' investments in

such company shares will have failed as a means of transferring foregone goods and services by the current generation of employees to the time of their retirement, when they would have hoped to have benefited from their earlier sacrifices.

These problems notwithstanding, an increasing number of employers are accepting the responsibility of endeavouring to assist their employees to provide a reasonable standard of living for themselves and their dependants after they have ceased to be engaged in remunerative employment and it can be expected that superannuation funds will continue to grow at an accelerating rate, for the simple reason that there is no other practical way for employees to achieve this objective.

The estimated amounts accumulated by Australian superannuation funds as at the end of June 1971 were:

	\$m
Through government, semi-government, and self-administered funds	2,800
Through life insurance companies	1,100
	<hr/>
Total	3,900
	<hr/>



PART FOUR

---

*Social and Political  
Development*

# CONSTITUTIONAL AND ADMINISTRATIVE DEVELOPMENT

---

## SOCIAL AND POLITICAL DEVELOPMENT

The Port Phillip District was settled in the mid to late 1830s, first from Van Diemen's Land by pastoralists who sought pasturage for their flocks and who were prepared to ignore the law which put this area out of bounds, next by overlanders from the Sydney settlement following Major Mitchell's track, and then by migrants attracted directly from the British Isles. Within a decade of Edward Henty landing at Portland nearly one thousand squatters with about two million sheep had occupied almost all the accessible area of the District, and had forced the Aborigines back out of the region or had herded them into reserves. Many of the squatters were Scottish farmers' sons; most of them were men of some education and standing; a very few of them, including some former army officers, were gentlemen in a strict sense. Many of their pastoral servants were emancipated convicts or those on "ticket-of-leave", while some of the Scots had brought out Gaelic-speaking highlanders as shepherds. These were reinforced by a flow of State assisted migrants, largely from the agricultural counties of England and Ireland. A strong group of Anglo-Irish gentry migrated in the 1840s; they included the lawyer William Stawell, authoritative administrator of the early gold rush period and Chief Justice, and Redmond Barry, first Chancellor of the University of Melbourne and a patron of culture and the arts.

The squatters were dominant: Melbourne until shortly before the gold rushes was little more than the "head station of the Port Phillip run". Unlike New South Wales there were only a few of the landowning gentry type; these formed agricultural estates at Heidelberg and near Geelong. Agriculture, centred on Geelong, was slow to develop, though pockets of Irish farmers later formed at Port Fairy and Kilmore; fewer than half a million acres had been sold by 1850. Inspired by the ideal of yeoman farming, John Pascoe Fawkner led the campaign against squatter control, and business interests in the growing town of Melbourne joined him. Artisan migrants of the Geelong area, encouraged by the Reverend J. D. Lang, formed democratic Chartist-type organisations. Townsfolk led the campaign, which became the first Australian national cause, against the revival of convict transportation; 1,700 convicts with conditional pardons, "exiles" or "Pentonvillians", were landed in the Port Phillip District between 1844 and 1849. Eventually Superintendent Charles Joseph La Trobe refused

to accept a shipload and sent it on to Sydney. Another great uniting cause was the campaign for separation from New South Wales; representation in its Legislative Council from 1843 proved to be farcical since few candidates could be found who were prepared to spend long periods in Sydney. Protests swelled through the 1840s, and Port Phillip's contribution to the year of revolutions was to elect Earl Grey, resident in England and the Secretary of State for the Colonies, to represent it in Sydney. Relief from the "tyranny" of New South Wales was at last provided by an Act "for the better Government of the Australian Colonies" of 1850, and the Colony of Victoria was proclaimed on 1 July 1851.

The impact of the gold rushes was remarkable. Over a decade Victoria produced one third of the gold mined in the world during that period. The Colony's population rose from 80,000 to 540,000—46 per cent of all those in Australia and more than the entire European population of Australasia in 1851. An almost unknown pastoral backwater became the most famous and wealthy British colony and an advanced, modern, largely self-governing community. The early colonists on the spot prospered most, for the greatest yields were won before the influx of overseas migrants from mid-1852. Though many men made a competency, few large fortunes were won directly from gold; more men did well behind a counter or from selling land than from digging. Many migrants, especially merchants and professional men, neglected the goldfields and exploited the opportunities open to early comers in an expanding, prosperous community. Although Lieutenant-Governor La Trobe and his inexperienced officers, and the new Legislative Council, had to struggle to reduce chaos to order, within two years the Government was broadly in control. However, a fundamental miscalculation allowed perpetuation of an inequitable licence system which, together with central and local ineptitude, provoked the tragic Eureka revolt. Later, when the bushrangers and other criminals had been suppressed, the most notable feature of the diggings was the prevailing orderliness, restraint, and respect for law. Within five years an advanced system of democratic local and industrial self-government was operating in the mining areas.

This one generation of young migrants, swamping the existing society, controlled and set the tone of Victoria for almost the rest of the century. Victoria, unlike all the other colonies, was overwhelmingly peopled by migrants who had not been brought out under State financed schemes but who had paid their own fares. State-assisted migration, largely of females, continued through the 1850s and 1860s, mainly in order to redress the lack of balance of the sexes, but was virtually suspended between the mid-1870s and 1907. The quality of these gold migrants in terms of economic skills and education was extraordinarily high. Most were working men, but there was a large leavening of middle class people and skilled artisans. The great majority was churchgoing and in 1861 Victoria had one of the lowest proportions of illiterates in the world, relatively far fewer than England, Scotland, or any of the colonies. The high proportion of readers and letter-writers goes far to explain the subsequent closeness of touch with Britain and the marked imperial loyalty of Victorians. The respectable nature of these migrants led them to be especially sensitive to the convict taint; lasting efforts were made to keep out and suppress convict elements, and in the 1860s Victoria led a fervent campaign to end transportation to Western Australia.

The great majority of the adult male migrants of the 1850s had not had the vote in Britain and took the Chartist points for granted as desirable. Most of them worked for at least a few weeks on the goldfields where social relationships were entirely egalitarian; the usual social order was even reversed to the extent that the skilled navvy tended to be most respected for his ability. "The equality system here would stun even a Yankee", a migrant wrote home in 1853, "all are mates". The mercenary ambition to make a fortune, and fraternal generosity and camaraderie were common characteristics. Men of all backgrounds learned to endure hardship, developed qualities of self-dependence and self-control, and acquired a wider tolerance from mixing with men of many nations and classes. They were also often schooled in the democratic processes of self-government in diggers' movements against the authorities, in subsequent controversies about local mining law, and in spontaneous movements to maintain order in the absence of constituted authority. The men of the 1850s, like nearly all migrants, had transferred themselves to the new world primarily in the hope of bettering their material condition and of each becoming his own boss, no longer dependent as was the wage earner in the industrial towns and agricultural counties of Britain.

Such hopes appeared increasingly delusive as the surface gold ran out, the diggings contracted, and mining became more a routine wage earning activity of a company employee. Gold production declined steadily from 1856, but the largest number of miners at work was in 1858. Victoria by now simply could not provide economic opportunities for its inflated population; painful adjustment followed by means of emigration to the gold rushes in New Zealand and to the other colonies. Great gold discoveries were still to be made, especially in the deep alluvial rivers of Ballarat and the deeper quartz reefs of Bendigo. But the basic change in the nature of Victoria in the 1860s and 1870s was the decline over twenty years of the number of miners from 80,000 to 35,000 and the increase of agricultural and pastoral workers from 53,000 to 123,000.

Early during the gold rushes the Government had brought forward considerable quantities of land for sale, especially near the goldfields, at a minimum price of £1 an acre. But the mass demand was for cheap or almost free land, as in the United States and Canada. The intense land hunger of so many migrants, the urgent need to find employment for the Colony's bloated population, and the envious determination to upset the squatters' near-monopoly forced the passing of radical land legislation: this aimed at converting the bulk of the land from pastoral to agricultural use, and acknowledged the poor migrant's right to land against the first occupiers and those with capital. However, the Selection Acts of the early 1860s were unfortunate in their effects. The Nicholson Act of 1860 enabled the Western District squatters to consolidate their hold, and the Gavan Duffy Act of 1862 proved completely ineffective. Squatters' dummies and sham selectors waiting to be bought off were almost as numerous as genuine selectors, and perjury, corruption, and widespread evasion of the law became commonplace. J. M. Grant's Act of 1865 was more successful, and the 1869 Act, which Grant drafted, at last proved to be almost knave-proof. About 11 million acres were alienated in the 1870s; the country north of the Great Dividing Range, apart from the Mallee, was then effectively and permanently

occupied. Most of the large pastoralists gave way, except in the Western District, and pastoral expansion was transferred to the Riverina and Queensland. Wheat-growing moved almost entirely inland; the population of the Wimmera (including many originally from South Australia) and northern Victoria increased by 70,000 in the 1870s while the earlier settled rural areas lost population. New townships began to grow rapidly, Horsham and Shepparton being conspicuous among them. The Sale and Bairnsdale areas made good progress, and the first clearings were made in southern Gippsland. The family-unit farm became the rule; only a small minority of farmers employed other than seasonal or casual labour. In 1877 Victoria at last became self-sufficient in wheat and began to export; railway extensions in this period go far to explain the growth in production. Despite this, perhaps half the selectors failed utterly and abandoned their blocks or were absorbed by their neighbours. During the 1880s especially, the process developed of running sheep and growing wheat on the larger farms, while many selectors moved on after exploiting their land. The assumptions of self-sufficiency died hard; life was difficult for the farmer without capital, supplementing his income by casual work on fencing, dam-sinking, or road-making, and unable to graduate to the business of specialised production. The capture in 1880 of the Kellys, the last of the bushrangers, indicated the close of the pioneering period and the final establishment of law and stability in rural areas.

One method of providing employment to hold the gold rush migrants was to foster local industries by tariff protection, but the political battle over protection was drawn out too long and the immediate effects of limited tariffs were too small for this to have had more than a marginal impact. The tariffs of 1866 and 1867 were the first with protective elements, but there were no increases to substantially protective levels until 1871 and 1879. David Syme in the *Age* (bitterly opposed by the free-trade *Argus*) and migrant craftsmen campaigning for opportunities to follow their trades were the chief propagandist forces. Victoria's manufacturing population did grow markedly in the 1860s, but the increase was essentially in response to needs for food, shelter, and clothing: mills, bakeries, breweries, tanneries, quarries, brick yards, and sawmills grew naturally; the developing clothing and footwear industries were especially helped by protection, while foundries, agricultural machinery works, and carriage manufactories were aided to some extent. The first woollen mills and glass and paper manufactories were established in the 1860s and 1870s. An industrial base was being laid, and from the late 1870s more men were working in factories than in the mines.

The newly received constitution, settled from 1853 to 1855, gave almost unqualified powers to an Upper House narrowly based on wealth. Immediately the first Parliament assembled, manhood suffrage for the Assembly was passed and property qualifications for members were abolished; the secret ballot had already been made law by the old Legislative Council. However, manhood suffrage was effectively restricted by an Act of 1863 which provided for automatic electoral enrolment of ratepayers and qualification of others only by payment of a fee and strict residential requirements. Payment of members, an essential for democratic representation, was fought over bitterly for more than twenty years before it was made permanent in 1886. Until about 1880

Victorian politics may best be seen as a clash between the new men of the gold rush period and long-established pastoral, mercantile, and banking interests protected by the Legislative Council. From time to time the miner, selector-farmer, and manufacturer-artisan interests coalesced on a programme of land reform, protection, reform of the Council, and legislation in the mining interest, such as the right to mine on private property which the Council rejected almost annually for nearly thirty years. Over long periods between 1860 and 1880 radical coalitions protested vainly against the veto of the Legislative Council; in the intermediate periods of comparative calm, governments concentrated on the agreed business of channelling finance for developmental policies. These class-conflicts sometimes reached an extreme pitch of bitterness as in the late 1870s. After the National Reform and Protection League (with 150 branches it was the first approximation to a modern political party) had returned Graham Berry with an overwhelming majority in 1877, conflict degenerated almost into an incipient civil war situation. The naked defence of property by the powerful Council reduced much of the Assembly's proceedings to futility. The Constitution was ill-adapted to the political assumptions of the great majority of the community. The conflicts of the late 1870s ended with the Council widening its electorate but retaining its powers intact. Nevertheless, liberal though not democratic views prevailed over a wide area. The assumption behind land legislation was that every man should have an equal opportunity; it was agreed that wide diffusion of wealth and property was desirable; the equality of religious denominations was recognised and the State subsidy to religion was withdrawn; the "free, compulsory and secular" Education Act was passed in 1872 which, after the inefficiency of clerical competition in education had been demonstrated, encouraged the growth of State schools organised by a Department of Education, and abolished financial support for church schools. The Catholic Church opposed this solution, and the conflict between liberals and Catholics was for long reflected in politics.

About 1880 the Australian colonies differed from each other more, perhaps, than at any other time. Practical isolation was so great that Victoria had possibly been more closely connected with New Zealand than with New South Wales. The colonial economies were largely separate from each other; and few businesses were carried on in more than one colony, although businessmen and politicians were sometimes acquainted with their opposite numbers in the other colonies. In many respects Victoria was much more like South Australia than New South Wales or Queensland in economic balance, religious affiliations, and the background and attitudes of its population. Compared with New South Wales, Victoria had a large gold mining group but virtually no coal miners; its farming was far more developed while its pastoralism was of relatively minor significance; and its manufacturing was more advanced. Victoria relatively had many more Presbyterians and non-conformists and hence a much stronger sabbatarian movement. Its population included relatively few assisted migrants and ex-convicts (although some of the latter had immigrated, mainly from Tasmania). It was still dominated by the one generation of migrants, whereas New South Wales had a more even balance of migrants and native-born of different periods. Above all, Victoria was in very close touch with the "home country" and her people were more fervently loyal to the Crown and Empire than were many other Australian colonists.

Victoria was in most essential respects a migrant society—rather like another huge English county with a Birmingham or Liverpool as capital, but with a strong Scottish and Irish mixture and local features produced by a new environment. British institutions had been adopted automatically, new voluntary societies were quickly reproduced, and the latest trends of thought “at home” were speedily taken up. The gold towns, where so many famous Australians of the next generation were born and educated, were of at least as high a quality in their intellectual and cultural life as was Melbourne. Victorians inherited the rich musical tradition of the British Isles, read the same books and magazines, admired the same great actors of the day when they toured the colonies, regarded Shakespeare and Tennyson as their own, and revelled in performances of Gilbert and Sullivan. Yet at the same time, Tom Roberts, Arthur Streeton, and others were founding a national school of art, Henry Handel Richardson and Joseph Furphy were preparing themselves for their great literary interpretations of the Australian experience, and a native code of football, which was to become a local obsession, was developing.

The 1880s were years of marked material advancement when most people prospered, and working men achieved as high a standard of living as perhaps anywhere in the world. Capital flooded in from Britain on a scale, it has been suggested, relatively several times greater than overseas inflow of capital to modern Australia; immigrants from overseas and from the other colonies followed close behind; and coalition ministries headed by James Service and Duncan Gillies provided unaccustomed political stability. The lavish private capital available was ploughed into pastoral investment in New South Wales and Queensland, into Queensland sugar plantations, and especially into land speculation, into the rebuilding of Melbourne city, and into the outward spread of suburban housing. The Government lavishly extended railways, water supply, and other public works. The Broken Hill mining boom of 1887 and 1888 was immediately followed by excesses in suburban land speculation inspired by numerous new land banks and other land finance companies. The Centennial Exhibition of late 1888 marked the peak of the joyous extravagance of the boom. Even when the banks pricked the speculative bubble late in the year, the myriad other financial institutions found more capital in Britain with which to sustain an Indian summer of the boom in 1889. Economic prospects were grim, for wool and wheat prices were falling, the balance of trade gap was widening, government expenditure was rash, and the economy was becoming grossly distorted. Many of the recently floated financial companies were either corrupt or based on outlandish optimism. Yet the Government and nearly all the leading businessmen were carried away by assumptions of limitless progress and were blind to the yawning chasm ahead. The gullible public, investing as never before in land and on the stock market, assumed that dreams of making their golden fortunes were at last coming true.

The boom produced “Marvellous Melbourne”, but neither the farmers nor the provincial towns shared in the prosperity. Melbourne’s population grew from 283,000 in 1881 to 491,000 in 1891, and it became one of the major cities of the world—about thirtieth in terms of population (seventh in the British Empire) and much higher, of course, in terms of wealth. In this period, when Melbourne’s proportion of Victoria’s population rose from 33 per cent to 43 per cent, criticism of the rise of the “great

wen" became sharp. The preponderance of the metropolis, which was so unusual at the time, was based on the low labour requirements of the Australian pastoral and agricultural industries, the absence of natural inland trading junctions supported by lasting rich mineral assets, the lack of alternative natural ports, and the early development of a railway network channelling into the capital.

Late in 1889 there were many signs of alarm, and in the following three years it became clear that Victoria was financially very unstable. The rash and sometimes grossly culpable activities of many financiers led them to adopt desperate measures to stave off the insolvency which was frequently unavoidable; land finance companies and many building societies collapsed one after the other; a minority of the banks had irrevocably jeopardised their position by extravagant credit on paper-thin security; and the over-extended railways began to incur large deficits. World economic trends exposed the unbalanced Victorian economy, and growing loss of confidence in Victoria by British investors led to a decline of capital imports. As genuine and speculative demand fell away, the huge building industry was almost wiped out. The crash eventually came in May 1893 when all but four of the banks closed their doors and had to adopt schemes of reconstruction. In the end, public panic in withdrawing deposits destroyed several of the major banks which were fundamentally in a sound position; inept political measures increased the seriousness of the crisis. The ensuing depression was the most severe in Victoria's history and recovery was slow. For the second time in its history, Victoria suffered a major loss in its work force, mainly to the Western Australian goldfields and to other colonies, none of which were affected so severely as was Victoria. The proud, leading colony was humiliated and had to endure bitter days; the old age of many of the remaining migrants of the 1850s was desperately sad. New South Wales, which had caught up in population by 1892, forged ahead to a commanding lead; Sydney passed Melbourne in about 1902. Victoria's proportion of the Australian population fell from 36 per cent in 1891 to 30 per cent in 1906. The Turner Government from 1894 to 1899 set out to balance budgets by imposing stringent economies; such was the wisdom of the day. The brightest features in a period of gloom were the development of the dairying industry through technical innovations such as refrigeration which made exporting possible, the mild revival of gold mining, and some slight development of the Gippsland black coal fields.

Almost since the 1850s Victoria had been, in practice though not in theory, virtually self-governing in her domestic affairs. Governments showed no desire to challenge imperial control of external affairs until European powers became active in the Pacific in the early 1880s. In 1883 and 1884 Victoria led an unsuccessful campaign to persuade the British Government to prevent Germany occupying part of New Guinea; similarly from 1883 to 1887 sustained efforts were made to prevent French occupation of the New Hebrides, possibly as a convict colony. In 1885 the imperial government pledged itself in future to consult colonial governments on matters of regional interest. Victoria was also most prominent in building up its local defences—navy, militia, and fortifications; it was ever wary of the possible threat of Russian attack, and anxious to take its part in any imperial war which might break out. Chiefly because of the foreign threats James Service



as Premier supported a campaign for immediate Federation which Victorian governments kept up throughout the 1880s. After agreement at an inter-colonial conference in 1883 the Federal Council of Australasia (created by an Imperial Act in 1885) first met in 1886, but New South Wales was never to join and South Australia belonged only briefly. Moreover, the Council's powers were so puny that it never became an active or influential body. It is probably true that national feeling and sensitivity to threats to the Empire, both of which made for Federal sympathy, were more developed in Victoria than elsewhere. Victorian businessmen had more intercolonial interests and contacts than businessmen in other colonies and were more aware of the hindrances to trade caused by tariffs and differing laws relating to business; Victorian manufacturers, moreover, were hoping to capture the national market when border duties were eliminated by Federation. From the mid-1880s the Australian Natives' Association acted as a powerful inspirational group. In the concluding stages of the campaign in the late 1890s, Victoria remained the colony most committed to Federation. The *Age* was lukewarm, and some farmers who worried about the economic effects of Federation were hostile, but the proportion voting for the Bill at both referenda held was higher in Victoria than in the other States. For twenty-seven years after Federation Melbourne was the seat of the Commonwealth as well as the State Parliament. The national tariff eventually adopted protected the interests of Victorian manufacturers. Immediately after Federation the "Kyabram movement" demanding economy succeeded in reducing by a quarter the number of State politicians. The State Government retained a considerable degree of financial autonomy and relative freedom of action at least until the effect of the uniform taxation agreement of 1942 became clear. The question of when Victorians began to regard themselves primarily as Australians and to look with more interest to the Commonwealth than the State Government is unanswerable; perhaps this was not demonstrably true of the majority until 1914.

From the early 1890s the organised Labor movement gave a new slant to politics. Trade unions of skilled artisans had developed in the 1850s when their greatest achievement was the eight hour day in the building and some other industries. In the late 1870s and through the 1880s trade unionism developed rapidly in a period of high prosperity. By 1890 about 50,000 unionists were affiliated with the Melbourne Trades Hall Council; including those tied to provincial trades halls, perhaps a sixth of the work force belonged to unions. The numerically strongest unions were the Amalgamated Miners' Association and the Australian Shearers' Union, both having W. G. Spence as secretary and headquarters in Creswick. Despite major strikes between 1882 and 1886 by tailoresses, bootmakers, and wharf labourers, harmonious recognition of common interests generally prevailed between employers and unionists. The massive Australian contribution to the relief of the London dockworkers in 1889, two thirds of which came from Victoria (the greater part was donated by the public and not by the unions) is one of the most extraordinary events in Victorian history; it demonstrated both colonial ideals of social justice and a determination to identify Victoria with the problems of the "mother" country. The maritime strike of 1890 was a crucial turning point which led to the foundation of Labor parties in Victoria and elsewhere. However, for ten

years or more the Victorian Labor Party was neither as successful nor as militant as Labor in New South Wales and Queensland. The Labor members were barely distinguishable from the liberals and there was considerable criss-crossing between the two groups. Nevertheless, the lasting effect of the maritime strike was the polarisation of politics on a class, rather than a tariff, basis; class hostility eventually wiped out the liberal notion of the harmony of interests between employer and employee. The railway strike of 1903 also helped to shape twentieth century political attitudes.

Meanwhile, Victorian politics had been dominated by radical liberals who were determined to stand between, and find rational solutions for, the conflict between capital and labour. The gold towns especially were unwilling to accept the notion of economic class as the chief political determinant. The radical liberals had set the tone of Victorian politics: the high-minded inspiration of George Higinbotham, the determined leadership of David Syme in the *Age* and of Graham Berry, and the creative vision of Charles Pearson were taken up in the 1890s and 1900s by Alfred Deakin, H. B. Higgins, Isaac Isaacs, George Turner, and others in State and national politics. John Murray, Alexander Peacock, and W. A. Watt co-operated in State politics after 1900 in elaborating the network of legislation begun by the Factories Act of 1896 which had established the Wages Boards as a solution to "sweating"; and the New Protection, basic wage, and conciliation and arbitration systems of the Commonwealth tried to create a system of social justice by which the employee shared fully in the profits of industry. The Victorian liberals set the tone of the first decade of Commonwealth politics, but in both Federal and State politics were squeezed out of existence by Labor and conservative anti-Labor groups and ultimately also by the Country Party which emerged after the First World War to represent the rural settler.

The most remarkable aspect of Victorian government in the period around 1900 came to be the extent and variety of State enterprises. Victorian "state socialism" was the product of the combination of the need for the State to step in and conquer problems arising from distance, the lack of rural resources, and of the weakness in Australia of the philosophy of *laissez-faire* individualism. By 1910 State enterprise in Victoria was on a remarkable scale and involved pioneering the use of various State instrumentalities, especially the statutory corporation. The Railways (a Commission since 1883), the State Rivers and Water Supply Commission (1905), the Melbourne Harbor Trust (1877), the Melbourne and Metropolitan Board of Works (1890), the Country Roads Board (1913), the Melbourne and Metropolitan Tramways Board (1918), the State Electricity Commission (1919), the Housing Commission (1938), and the Gas and Fuel Corporation (1950) are some of the major authorities. One of the most important functions of State politics came to be the allocation of finance between these competing authorities.

Victorian farming was greatly diversified by the development of dairying (especially in Gippsland), mixed farming, fat lamb production, and irrigation. The Chaffey settlement at Mildura, which began in the late 1880s with high hopes, almost collapsed in the 1890s when the promoters were bankrupted and the community was riven with internal disputes. However, progress was rapid after 1900, and 20,000 people were settled in the area

by 1920. Meanwhile the State Rivers and Water Supply Commission had steadily been extending a network of channels, mostly across northern and north-western Victoria. The wheat belt was enlarged by the slow and arduous settlement of the Mallee from the late 1880s. State schemes to encourage closer settlement and occupation of marginal areas met with mixed success. Few of the scores of "village settlements", which were created partly to cater for the unemployed in the 1890s, produced successful farmers. In response to a keen demand to break up pastoral freeholds, legislation of 1898 provided for State purchase of these lands on a voluntary basis, and later legislation introduced compulsion. Until 1918 rather more than 4,000 farmers were settled on a little more than half a million acres; the schemes had been gravely limited by administrative and political difficulties. Between the wars 3 million acres, largely in the Mallee, were settled by returned soldiers and others, but by the late 1930s a large proportion had abandoned their holdings. Farming as a whole became prosperous only after the Second World War with the application of greater capital, mechanisation, the trend towards larger holdings, higher prices for primary products, greater scientific knowledge and readier application of it by farmers, and skilled administration of soldier settlement. But by 1970 this prosperity started to waver, this time because of adverse world markets.

By the early twentieth century Victoria had become a markedly agricultural and manufacturing community. The numbers employed in gold mining fell from 25,000 in 1903 to 3,000 in 1923. The factory population doubled between 1900 and 1914 and grew two and a half times again by 1950, and until about 1930 was markedly ahead of that in New South Wales. Victoria's great deficiency, however, which prevented much growth of heavy industry, was black coal; the limited Gippsland deposits were worked from the 1890s and a State coal mine was founded at Wonthaggi in 1908. Eventually the power problem was solved by the State Electricity Commission's exploitation of Gippsland brown coal whose use had long been delayed by technical problems; Yallourn was "turned on" in 1924. This was made possible by adopting the techniques of brown coal mining from the brown coal workings near Cologne in Germany. The Government had sent some experienced technicians there after the First World War for this purpose. Limited hydro-electric schemes were added later. Melbourne's manufacturing development was mainly in light industry with textiles and clothing prominent, although specialised foundry, engineering, and agricultural machinery works retained an important place; paper, chemicals, and in the 1920s, motor vehicle assembly also became important. Melbourne remained the financial capital of the nation; in 1940 it was still the headquarters of twice as many of the major companies as was Sydney.

As elsewhere in Australia, Victoria developed a dual system of primary education; by 1900 the Catholic church was providing almost entirely for its adherents outside the State system. Compared to New South Wales, Victoria was slow to develop State secondary schools; Melbourne High School was founded in 1905 and legislation in 1910 cleared the way for other high schools. However, from late in the nineteenth century Victoria had taken the lead in encouragement of technical education. Church secondary schools have been important historically and of a high quality in

Victoria. Their products, at least until recent years, have dominated the professions and the high executive posts in the business world. Six of the seven Australian Prime Ministers educated in Victoria attended the major "public schools".

After a long history of peace, the First World War exposed Australia to its first major international conflict. With negligible exceptions the community accepted the obligation to fight, but as the war continued, deep divisions grew over the attempts to introduce conscription, the methods of suppression of the 1916 rebellion in Ireland, and the wisdom of fighting the war to a finish. The bulk of the Catholics, led by Archbishop Daniel Mannix, and the Labor movement combined to defeat both conscription referenda narrowly. The people of Victoria voted for the first attempt and against the second. The split in the Labor Party on the issue wrecked it as a political force for a decade, while Protestant-Catholic hostility was given a new lease of life. But perhaps the chief result of the war was the development of a sense of nationality which incidentally gave the Commonwealth new authority over the States.

The 1920s developed into a minor boom period with marked industrial growth, a further relative shift of the population to Melbourne, and resumption of large scale immigration from Britain. Unemployment, however, remained a constant problem, as it had been since 1890 except during the war period. When the world-wide depression struck, the Australian economy was highly exposed, for it still depended largely on world prices for primary exports. In 1933 the number of those unemployed rose to about one third of the total work force and remained high for the rest of the decade. The Second World War followed as the third major crisis of those whose life-span covered the first half of the century. Casualties were lower than in the First World War, but in many ways the impact on the community was greater for Australia was directly threatened and the apparatus of total war had to be adopted. For the first time, as a consequence of becoming an American base, Australia had a temporary mass influx of overseas troops. As during the First World War, some of the lasting major consequences of the war were a boost to industrial development and the further entry of women into the work force.

The development of public health services by the Department of Health has perhaps been the most notable advance in the field of public welfare under State control. The Pure Food Act of 1905 and the inauguration of school medical services in 1909, of infant welfare services in 1917, and of school dental services in 1921 were notable landmarks. The formation of the Hospitals and Charities Commission in 1948, the Tuberculosis Branch of the Health Department in 1949, and the Mental Hygiene Authority in 1950 marked new stages of development.

In the first century of its self-governing constitution, Victoria had sixty-one governments. The advent of the Country Party in 1920 after 40 years of incipient predecessors signalled perhaps the most unstable of all periods of government. The farmers, the "middle class", and the "working class" now had roughly equal numbers of representatives in the Legislative Assembly, in which no party had a majority between 1924 and 1952, let alone control of the Council as well. Inevitably the period was one of compromise government. Following the premiership of Sir Harry Lawson between 1918 and 1924, the only other period of comparatively stable govern-

ment was provided by Sir Albert Dunstan of the Country Party who ruled with varying support from the other parties from 1935 to 1943; the Country Party was aided by electoral distribution which made the country vote worth twice as much, and at some periods almost three times as much, as the city vote. The Labor Party's voting power was as great as in other States, but it was more concentrated in the industrial metropolis and any hopes of success were ruled out by the nature of electoral distribution, until divisions in the Liberal Party in 1952 enabled the formation of the first Labor ministry with a majority in the Assembly. The "two for one" redistribution, based on Federal electorates, was then carried out and country and city votes were restored to rough parity. However, the preferences of the new Democratic Labor Party have ensured the return to power of the Liberal Party since 1955. Sir Henry Bolte had the longest record for an individual term as Premier and his ministries provided by far the longest term of stable government which Victoria has experienced. The introduction of adult franchise for the Legislative Council in 1950 has also tended to bring the two Houses into closer political sympathy.

Despite all incentives to decentralise, Melbourne's population has continued to grow beyond two millions to more than two thirds of the State's population. Throughout the quarter century since the Second World War it has sprawled out into farmland, orchards, and bush. By the 1960s, however, the density of population of some of the inner suburbs was increasing as flats extensively replaced houses; only about 1,000 flats were built in Victoria during 1955, but the 1968 figure was 13,000. Long overdue city planning began after the enactment of the Town and Country Planning Act in 1944 and legislation in 1949 which enabled the Melbourne and Metropolitan Board of Works to draw up a scheme for the metropolitan area. This interim Metropolitan Planning Scheme of 1954 was not finally approved until 1968, but in the meantime its proposals had largely been followed by industry and public authorities before it was amended in 1971. Major developments have included the growth of new outer suburban industrial complexes and regional shopping centres, and new bridges and the first freeways to meet rapidly increasing traffic problems. Meanwhile, Melbourne city had been extensively rebuilt. The sixteenth Olympiad of 1956 saw the greatest festival and largest influx of foreign visitors in Melbourne's history. Geelong has grown markedly since 1945 to over 100,000. Ballarat has also revived, while Shepparton, Swan Hill, Traralgon, Horsham, and Portland are among the faster growing rural centres, and Dandenong has become part of the Melbourne industrial conurbation.

The 1950s and 1960s saw massive qualitative changes in the development of Australia and Victoria. Wider prosperity, full employment, and more welfare benefits succeeded the mass poverty, industrial unrest, and social conflicts which had been endemic since 1890. New wealth has been more widely distributed, although industrial tensions and pockets of poverty remain. General rural prosperity prevailed until the late 1960s when world-wide rural markets became restive. Developments of recent years have included the discoveries of oil and natural gas; ironically, however, Victoria is now an unfavoured minerals producer. The population has been basically diversified by the influx, for the first time in large numbers,

of non-British Europeans with their various heritages. Consciousness of Australian national identity has grown, and dependence on, and sense of identification with, Great Britain has markedly declined, while American influence has increased. The long standing political balance has been upset by the split in the Australian Labor Party and the emergence of the Victorian based Democratic Labor Party. Class tensions have nevertheless lessened as the class structure has become more complicated with the growth of managerial and new skilled and semi-skilled occupational groups. Religious sentiment and formal affiliations with the churches have declined, while traditional puritanical strength has been eroded by permissiveness; Tattersall's sweeps, the Totalisator Agency Board, Sunday newspapers, and late closing of hotels (after almost half a century of six o'clock closing) are evidence of changing views. Prosperity has produced an educational revolution, for a large proportion of children remain at school for several more years than previously; the new Monash and La Trobe Universities and the Victoria Institute of Colleges help to cater for the swelling demand for tertiary education. In 1970 the Government appointed a committee to investigate the establishment of a fourth university. Another far-reaching social change of the last generation has been the employment in large numbers of married women. Growing cultural sophistication has been reflected in the new Arts Centre in St Kilda Road.

Behind many of these developments lay the changing balance of Commonwealth and State financial obligations, a factor whose ramifications would become more clearly apparent in the late 1970s.

#### PARLIAMENTARY DEVELOPMENT AND FRANCHISE

Regular administration of the Port Phillip District, then part of the Colony of New South Wales, began in 1836 with the appointment of Captain William Lonsdale as the first resident Police Magistrate. The growing settlement soon needed a more adequate system of administration, and in 1839 Charles Joseph La Trobe was appointed Superintendent of the District with the powers of a Lieutenant-Governor.

As early as 1840, the settlers of the Port Phillip District began public agitation for a separate representative government, and addressed memorials embodying their demands both to the New South Wales authorities and to the House of Commons. The District was granted a small measure of representation when the Legislative Council of New South Wales was enlarged under an Imperial Act of 1842. An Act of the New South Wales Legislative Council gave the District six elected members (including one for the Town of Melbourne) in a Council consisting of twenty-four elected and twelve nominated members. The election of the six members in June 1843 was the first held in the District. Both electors and candidates had to possess certain prescribed property qualifications. Of the six members only Henry Condell was a Melbourne resident, and he was elected for the Town of Melbourne. The Legislative Council met for the first time on 1 August 1843 in Sydney.

Agitation for Separation continued until an Imperial Act of 1850 created the Colony of Victoria, which was then given a Legislative Council of thirty members—ten appointed and twenty elected. Victoria was divided into sixteen electoral districts, each returning one member except the City of Melbourne (three members), the Town of Geelong (two members),

and the Northern Division of the County of Bourke (two members). Writs for the election were issued in July 1851 ; this marked the separation of Victoria from New South Wales. Polling took place from 10 to 18 September. Only men over 21 with a stipulated property qualification could vote, and the voting procedure was simple. On nomination day the returning officer called a public meeting, and if the election was contested he called for a show of hands for each candidate and then declared the winning candidate elected. If, however, any candidate or six electors demanded a poll, a written poll was held on the appointed day, when the voter had to deliver to the returning officer or his deputy a ballot paper showing the name of the candidate of his choice, his own name, and the location of the property appearing in his name on the roll. Charles Joseph La Trobe was installed as Lieutenant-Governor on 15 July 1851. The Council held its first meeting in St Patrick's Hall, Bourke Street, on 11 November 1851.

The Act of 1850 gave the Legislative Council the power to draft a new constitution for the Colony, subject to the Royal Assent. A Select Committee of twelve members of the Council was set up to prepare a draft Bill ; the Report of the Committee and its draft Bill were presented on 9 December 1853, and the Bill passed its third reading on 24 March 1854. The Bill, with some amendments required by the Imperial Government, received the Royal Assent on 21 July 1855. Proclaimed in Victoria by the Governor on 23 November 1855 and known as The Constitution Act, it gave the people of Victoria responsible self-government. This took the form of a Parliament comprising a Legislative Council or Upper House of thirty members and a Legislative Assembly or Lower House of sixty members, with a Ministry responsible through Parliament to the people. Membership of the Houses was elective, but property qualifications were prescribed for both members and electors. Also, persons possessing certain educational or professional qualifications were eligible to vote for the Legislative Council. The first step towards self-determination had been taken.

The *Electoral Act* 1856 set out detailed procedures for the conduct of the elections under the new constitution. It provided for voting by secret ballot, and in the elections to the two Houses held between August and October 1856 the first secret ballot was held in the history of British communities. Candidates' names were listed alphabetically on the ballot paper and the voter struck out the name or names of candidates for whom he did not wish to vote. The polling official inserted on the ballot paper the voter's roll number, and it was made an offence for any such official or any scrutineer to attempt to discover how any person voted or to disclose this information if it came to his knowledge in the course of his duties. There were 60,021 electors on the rolls for Legislative Assembly districts, and 134 candidates for the sixty Assembly seats.

The new Parliament met for the first time on 21 November 1856 in the partially constructed Chambers in Spring Street. The first Act passed by both Houses was the *Privileges Act* 1857, which defined the privileges, immunities, and powers of the Legislative Council, of the Legislative Assembly, of committees, and of members ; these were to be the same as those enjoyed and exercised at that time by the House of

Commons. The provisions of the *Privileges Act* 1857 were re-enacted, with slight alteration in form only, in consolidations of constitutional law; the current consolidation is now enacted as *The Constitution Act Amendment Act* 1958, which consolidates all constitutional and electoral legislation passed by the Victorian Parliament. Perhaps the two most important privileges enjoyed by members of Parliament are freedom of speech and freedom from arrest on civil process. Among the privileges of Parliament collectively are the power to deal with acts constituting a contempt of its authority and to punish offenders, and the right to determine its own code of procedure without being responsible to any external authority for its rules.

The restrictive qualifications for electors and members were universally criticised, and nowhere more vehemently than on the goldfields where the miners' demands included manhood suffrage, the abolition of property qualifications for members and electors, and the payment of members. The rapid increase of population following the discovery of gold in 1851 necessitated an increase in the number of members of the Council to fifty-four in 1853 and to sixty-six in 1855, the proportion of appointed to elected members being maintained at one to two. The provisions of The Constitution Act, with regard to the Legislative Council and to electoral qualifications, allowed a disproportionate influence to landed interests and left about 80,000 diggers unrepresented there. An Act of November 1856 approved by the Legislative Council provided for universal manhood suffrage for electors for the Assembly, (though tempered by requirements regarding residential qualification); and in August 1857 the property qualification for membership of the Assembly was abolished. Plural voting (namely, the grant of votes to owners of property in every electorate where their property was located) was not abolished until 1899. For the Legislative Council the process of reform was more gradual. In 1869 and in 1881 the property qualifications for members and electors were reduced.

The years which followed the establishment of parliamentary government were a period of great prosperity for Victoria, and the population continued to increase rapidly. Between 1856 and 1871 the population almost doubled, increasing from 380,000 to nearly 740,000. This growth was reflected in some measure in increasing parliamentary representation. In 1858 the number of members of the Assembly was increased from sixty to seventy-eight (while tenure of office was reduced from 5 to 3 years in 1859) and the number of Electoral Districts was increased from thirty-seven to forty-nine. In 1878 the number of members rose to eighty-six and that of Electoral Districts to fifty-five, while in 1888 the number of members was increased to ninety-five and that of districts to eighty-four. There was similar expansion of the Council though the changes came more slowly. In 1881 the number of members was increased to forty-two from the original thirty, and Provinces increased to fourteen (at the same time, tenure was reduced from 10 years to 6 years). In 1888 the number of members was increased to forty-eight.

Payment of members of Parliament was the subject of fierce debate from 1862 onwards. Members of the Assembly received payment from 1871 to 1880. Payment then ceased until 22 July 1886, when it was revived permanently. Payment to members of the Council did not begin until 1922. Other recipients of official salaries had been the Speaker and the Chairman



of Committees of the Council (from 1851 to 1856), and from 1856 the President of the Council, the Speaker of the Assembly, and the Chairman of Committees of each House. On the formation of a two-House Parliament, the Speaker of the Legislative Council assumed the title of President of the Legislative Council, whilst the Presiding Officer of the Legislative Assembly became known as the Speaker. Party leaders, Deputy Leaders, and Party Whips also received special payment because of their positions.

The formation of a Federation of Australian States had profound and lasting effects on the history and development of all the Australian colonies. As early as 1847 Earl Grey had remarked on the need for some method by which the various legislatures could co-operate in enacting laws necessary to regulate the common interests of the territories, and the Privy Council committee, which in 1849 recommended the separation of the Port Phillip District, also advocated the formation of a "General Assembly of Australia" to deal with these common interests. Discussions during the next half-century were few, sporadic, poorly supported, and generally unproductive. Yet one fact stands out clearly: Victoria, though indifferent in 1849, was later always the leader in the process of achieving union. From 1870 onwards, from Duffy to Deakin, there was always some political leader in Victoria advocating Federation. Victorians played a prominent part in the Federal Conventions of 1891 and 1897-98 and it was in fact a Victorian Premier, James Service, who called for a convention to discuss this subject as early as 1883; this led to the creation of the Federal Council. On 9 July 1900 Royal Assent was given to an Act of the Parliament at Westminster declaring that on and after 1 January 1901 the Colonies of Australia should be united in a Federal Commonwealth. Melbourne was selected as the temporary seat of government and continued to be so until 1927, when some buildings had been erected for a Federal capital at Canberra.

After Federation, which gave Victoria representation in the bicameral Federal Parliament and transferred a number of functions from the State to the Commonwealth Government, it became necessary to reform the Victorian Constitution. *The Constitution Act* 1903 reduced the numbers of the Assembly to sixty-eight and of the Council to thirty-five. For the Assembly, Victoria was divided into sixty-five Electoral Districts, each electing one member. In addition, public officers and railway officers were granted separate representation, the former electing one member and the latter two members. For the Council, there was an increase in the number of Provinces to seventeen, each electing two members. One additional member representing public and railway officers was also provided for. In 1907 the separate representation of public and railway officers was abolished, and the membership of the Council and of the Assembly was reduced to thirty-four and sixty-five, respectively, until 1955 when the membership of the Assembly was increased to sixty-six. In 1967 this was increased to seventy-three, while the membership of the Council was increased to thirty-five in 1967 and to thirty-six in 1970.

In 1908 the Adult Suffrage Act gave women over 21 the vote for the Assembly and Council elections on the same conditions as were then applicable to men, and by 1923 they were eligible to be candidates of either House. Full adult suffrage for the Assembly was introduced by the *Electoral Act* 1910, which abolished the "elector's right", a qualification electors

previously had to acquire before they could vote ; it also gave permanent form to the postal voting provisions, initially introduced in 1900 for a three year period. In 1911 the system of preferential voting was adopted for elections to the Assembly, and was later extended to Council elections. The *Compulsory Voting Act* 1926 made it compulsory for electors to vote at every election for the Assembly. This was extended to elections for the Council in 1935. Finally in 1950 the Legislative Council Reform Act provided adult suffrage for elections to the Council and the same qualifications for membership as for the Assembly. In 1935 an Act gave public servants and railway officers the right to contest any Victorian State parliamentary election without having first to resign from their employment, and in 1953 reinstatement in the government service was authorised for former State servants who ceased to be members of the State Parliament ; in 1955 the provisions of the 1953 legislation were extended to authorise reinstatement of those former State employees who had ceased to be members of the Commonwealth Parliament. In 1958 there was a consolidation of constitutional and electoral legislation in the form of *The Constitution Act Amendment Act* 1958. Between 1958 and 1969 more than forty Acts were passed bearing on some aspect or other of the 1958 Act.

The post-Federation increase in membership of the Victorian Parliament has been much slower than before Federation. For a population of approximately three and a half million, Victoria in 1971 had only 109 members as compared with 103 in 1904 when the population of the State was less than one and a quarter million.

#### EXECUTIVE COUNCIL AND CABINET GOVERNMENT

The Imperial Government appointed a Governor as the Monarch's official representative in each Australian Colony when it was founded. Provision was also made for an Executive Council of four or five members whom the Governor could consult on important matters. The highest and most important officials were usually appointed members. The first Executive Council of the Colony of New South Wales was established in 1825. Governor Darling received instructions notifying him of this decision and of the appointment of the Lieutenant-Governor, the Chief Justice, the Archdeacon, and the Colonial Secretary as members. The instructions further set out the relationship between Governor and Council as well as matters of procedure.

The Port Phillip District, from its foundation until Separation, came within the sphere of the Executive Council of New South Wales. Victoria was established as a separate colony in 1851, and La Trobe was appointed as Lieutenant-Governor. La Trobe's instructions then informed him of the establishment of an Executive Council with a maximum of four members, of whom the Crown had appointed three ; the Crown Prosecutor or Principal Law Officer, the Sub-Treasurer or Treasurer, and the Collector of Customs or Principal Collector of Customs. La Trobe made the provisional appointment of the Colonial Secretary as the fourth member. Whereas in New South Wales the establishment of an Executive Council preceded a partly elected legislature by 18 years, in Victoria the two came simultaneously in 1851. Thus the Executive Council in Victoria came into being under less autonomous circumstances than its predecessor in New South Wales. In October 1851, when nominating the ten non-elective members of

the new Legislative Council (five official and five non-official), La Trobe nominated the Colonial Secretary, the Attorney General, the Surveyor General, and the Master in Equity. Of these officials, the Colonial Secretary and the Attorney General were already Executive Council members. The five officials constituted a kind of Ministry, but one responsible to the Governor and not to the Legislative Council. Real power lay with the Governor and his Executive Council. In April 1854 membership of the Executive Council was increased to six on the recommendation of La Trobe, who had impressed on the Secretary of State the advantage of having the heads of the Finance and Police Departments on the Council.

When Hotham was appointed Lieutenant-Governor in 1854 his Commission authorised him to appoint an Executive Council of six members including the Senior Military Officer. Hotham's second Commission on his appointment as Governor in 1855 gave him authority to appoint the Executive Council and simply required him to transmit the names to the Colonial Office. His authority under the earlier Commission had been limited to making temporary appointments until the pleasure of the Imperial Government was known. The new Commission also removed the limitations on the number of members and their term of office. *The Constitution Act 1855* was proclaimed on 23 September 1855. On 12 December 1855 Hotham appointed a new Executive Council of eight members, one being the Senior Military Officer and the other seven being officials whom the Governor had already nominated as *ex officio* members of the Legislative Council. Excluding the Governor and the Senior Military Officer, the Executive Council (or Cabinet, as it might be regarded) was now identical with the Ministry (or group of official members of the Legislative Council). It would be a natural step forward for the latter, under responsible government, to be transformed into a real Cabinet.

On the introduction of responsible government under the new Constitution in 1856 the Governor appointed the members of the first Ministry to be Executive Councillors. When changes of Ministry began to occur, the question arose as to the status of Executive Councillors on their ceasing to belong to the Ministry in office. It had been the understanding that in such circumstances they would resign their seats in the Executive Council, but resignations were not forthcoming (even when requested by the Governor, e.g., late in 1859). This question and its implications became the subject of lengthy discussion between the Governor and the Secretary of State in dispatches exchanged from 1857. A similar question had arisen in New South Wales, and the Governor of that Colony, while adopting as an interim measure the practice of summoning to his Council only those Councillors who belonged to the Ministry in office (as the Governor of Victoria had also begun to do), impressed on the Secretary of State the view that Governors be given the power of withdrawing appointments to the Executive Council. In 1858 new Royal Instructions were issued which gave Governors this power, but for reasons of expediency the power was never exercised in Victoria in connection with changes of Ministry. Ministries, whatever their political complexion, were unanimous in the view that the tenure of the office and the title of Executive Councillor were permanent.

Governor Barkly was of the view that the "honorary connection" between the Governor and former holders of important offices of State was of value, and was anxious to retain as Executive Councillors former Ministers who had given long and distinguished service and whom he considered a source of stability in a period of frequent change of government. He further visualised a larger and permanent body composed of Executive Councillors and analogous to the Privy Council, to be summoned in emergencies and to which, or to committees of which, specific functions might be assigned, such as advice on appointments to the magistracy and on capital sentences. The Secretary of State, while insisting that only members of the Ministry in office should form the Executive Council, had no objection to the retention of the nominal rank of Executive Councillor and the title "Honourable", but saw little practical value in this proposal. In his view, questions about the constitution of the Executive Council and its functions were matters for the public opinion of the Colony, which the Governor should therefore settle in consultation with his responsible advisors, and if necessary, the Legislature of the Colony. Meanwhile, certain practices had become established in Victoria and were accepted by the British Government. These were :

1. Only Executive Councillors who were members of the Ministry in office were summoned to meetings of the Executive Council.
2. Members of an outgoing Ministry retained the title "Honourable" and the nominal rank of Executive Councillor.
3. Former Ministers who returned to a Ministry did not need to be sworn in to resume their seats in the Executive Council.
4. Former members of the Government who were Executive Councillors took precedence after Executive Councillors of the Ministry in office.

Section 15 of *The Constitution Act Amendment Act 1958* provides that officers appointed as responsible Ministers of the Crown shall also be members of the Executive Council, and provision for their appointment appears in the Letters Patent constituting the office of Governor. The quorum of three, usually meeting weekly, comprises the Governor and at least two Ministers. Where it is provided in statutes that the Governor in Council may make proclamations, orders, regulations, appointments to public offices, etc., the Governor acts with the advice of the Executive Council.

Victoria has followed the system of cabinet government evolved in Britain. The Queen's representative in Victoria, the Governor, acts, by convention, upon the advice of a Cabinet of Ministers, the leader of whom is called the Premier. Although there is no mention of Cabinet, as such, in Victorian statutes, section 15 of *The Constitution Act Amendment Act 1958* as amended by the *Constitution Act Amendment (Responsible Ministers) Act 1970* provides that the Governor may from time to time appoint up to sixteen officers, who are either members, or capable of being elected members, of either House of Parliament to be Ministers ; no Minister shall hold office for a longer period than three months unless he is, or becomes, a member of the Legislative Council or the Legislative Assembly. This Act further provides that not more than five such officers shall at any one time be members of the Legislative Council, and not more than twelve shall be members of the Legislative Assembly. In practice a

Ministry remains in office only while it has the support of a majority in the Legislative Assembly, and when a change of Government occurs and a new Ministry is to be appointed, the Governor "sends for" that member of the Legislative Assembly who he thinks would be supported by a majority in that House, and asks him whether he is able and willing to form a new Government with himself as leader. If that member can assure the Governor accordingly, he may then be commissioned by the Governor to form a Ministry. The names of those persons who are chosen to serve in his Ministry are then submitted by the Premier-elect to the Governor for appointment by him as responsible Ministers of the Crown. In commissioning a Ministry, the Governor acts on his own initiative, and not on the advice of the Executive Council then in office.

The Cabinet is responsible politically for the administrative acts of the Government. As such it has no corporate powers. Government administration includes departments under direct ministerial control as well as certain public statutory corporations which are subject to varying degrees of ministerial direction. Ministers are sworn in with appropriate portfolios, which indicate their particular responsibilities. Cabinet normally meets weekly or as the occasion requires, in secret and apart from the Governor, to consider an agenda made up of matters submitted by the Premier and other Ministers. The Premier's Department prepares a draft agenda for each meeting, but the Premier himself is responsible for the final agenda and the order of items. There is, in practice, no Cabinet secretariat, but *The Constitution Act Amendment Act 1958* provides for the payment of a salary to any member of the Council or Assembly who is recognised as the Parliamentary Secretary of the Cabinet. The recording of decisions is primarily the responsibility of the Parliamentary Secretary of the Cabinet. There is no special machinery for circulating Cabinet minutes. In general Cabinet decisions are given legal effect by the appropriate Minister.

The constitutional powers as set out in The Constitution Act and other Acts are vested in the individual Ministers and the Governor in Council, namely, the Governor acting with the advice of the Executive Council. The Executive thus provides a final check on the accuracy and legality of the Draft Orders submitted by the Minister concerned.

#### GOVERNMENT ADMINISTRATION

During the first few years of settlement in the Port Phillip District of New South Wales there was no marked official activity other than such necessary governmental activity as the maintenance of order, land surveys of various kinds, and the demarcation of land areas to be occupied under various forms of settlement. When Captain William Lonsdale arrived as the Resident Magistrate in 1836 several officers of departments whose head offices were in Sydney followed him. They received their orders from Sydney; Lonsdale had no direct jurisdiction over them, but was instructed to make confidential monthly reports on the condition of the settlement. Charles Joseph La Trobe, on arrival as Superintendent in 1839, exercised more direct control of the administration, since all those whose appointments were purely local were responsible to him; those whose orders came from Sydney were obliged to keep him informed of their instructions and the means they intended to use to carry them out. The establishment of a Sub-

treasury in July 1839 gave him some financial resources, but there was no local control of "territorial" revenue which was the main source of money; it consisted chiefly of rentals of pastoral runs and proceeds of sales of land. The establishment of the Sub-treasury was typical of a number of offices, each dealing with a separate phase of administration within the Superintendent's organisation; these contained the seeds of many of the later departments.

Changes in the administration of New South Wales were often reflected in the Port Phillip District: when the Colonial Architect's Office in Sydney accepted responsibility for roads, bridges, and ports in 1844 its local representative in Melbourne also undertook those duties; and the formation of the Denominational and National Schools Boards in New South Wales in 1848 was quickly followed in Port Phillip by an extension of their activities in encouraging the establishment of schools. Municipal government developed early; Melbourne was incorporated as a town in 1842, and Geelong in 1849, but the scattered population prevented a planned formation of district councils. A judicial system was also found necessary, and the first needs of 1836 were met by a petty sessions court followed soon after by quarter sessions, and in 1841 by the appointment of a resident Supreme Court Judge.

With the passing of an Imperial Act "for the better Government of the Australian Colonies" in 1850 came the separation of Port Phillip from New South Wales and the creation of the Colony of Victoria; this brought an immediate major change in administration. La Trobe became Lieutenant-Governor and was no longer personally responsible for the details of day to day business. The Superintendent's Office was abolished, and its work was taken over by the Colonial Secretary, who became the head of the administration. An Executive Council was appointed to assist and advise La Trobe, and heads of particular sections of the administration subordinate to the Colonial Secretary became its members. "Territorial" revenues remained subject to the Imperial prerogative, and the Lieutenant-Governor used them according to the directions of the Colonial Office. There was also a Legislative Council of nominated and elected members. As members of the Executive Council were members *ex officio*, they formed virtually a Cabinet, but they were responsible to the Governor, not to the Legislative Council, which had the power to refuse to pass legislation submitted by the Governor or the Executive Council, but which had no other check on the administration.

A number of offices such as Treasurer, Attorney-General, Solicitor-General, and Colonial Architect became necessary because of the newly received Constitution. The offices of Colonial Architect and Colonial Engineer were merged as the Colonial Engineer's Department to carry out urgently needed public works, and a Director of Public Works was appointed. A Supreme Court was set up in 1852; it replaced the earlier arrangement of having a resident Judge in the Colony. The following year the Colonial Engineer was appointed to the control of the Central Road Board. This worked largely through a new set of local government bodies known as District Road Boards which were financed partly by tolls with assistance from local rates and partly by grants from the Central Road Board. In 1854 a Central Board of Health was formed and permanent quarantine facilities

established ; but for its other duties relating to sanitation, and the supervision of food standards and noxious trades, the Board of Health followed the pattern of the Road Board and relied on local groups, each known as a local board of health. When gold was discovered in 1851 the administration of the goldfields was carried out by the Colonial Secretary acting through Gold Commissioners on the pattern of administration which had supervised the activities of the squatters since the earliest days of settlement. The series of disturbances leading up to the Eureka affray in December 1854 convinced the Government that a new form of control was necessary, and the Commissioners were replaced by Wardens who, acting with elected Mining Boards, decided the conditions of claims, adjudicated on disputes, and allotted claims according to a firm set of rules.

These changes were a preliminary to the granting of responsible government with two legislative bodies, elected on different electoral qualifications. Almost all men in the Colony had the right to vote for the Lower House ; the *ex officio* members of the Executive Council ceased to be members, returning to the position of heads of their respective departments ; and a Cabinet was formed of Ministers responsible to Parliament for the policies of their own departments. Legislation safeguarding the miners and legislation reflecting the change from surface alluvial to deep lead and quartz mining by companies was also enacted. Other important changes related to land revenue and administration. The Crown Lands Commissioners, previously responsible to the Governor only, were placed within the jurisdiction of the Surveyor-General, and all "territorial" revenue was paid into the Treasury. A minor change was made in the title of the Colonial Secretary, who became the Chief Secretary. He still exercised a very wide authority, but other members of the Ministry were on equal terms with him.

The 1860s saw a period of administrative experiment. The work of the Surveyor-General and the Director of Public Works had been co-ordinated by the creation of a Board of Land and Works in 1857, and the Post Office was transferred from the Chief Secretary to the Treasury and thence to a separate Minister. The Board of Land and Works was soon found to be unwieldy and the two components reverted to independent existence, but the Board remained the formal statutory authority for more than 100 years. It was also thought desirable that the Government should actively encourage and direct other activities, and a Board of Agriculture was created in 1859 with the main functions of distributing grants to local agricultural societies and conducting an experimental farm ; after eleven years it was abolished. In 1860 the first Commissioners for Mines and for Railways were appointed, a belated appointment in the case of mining but timely for the rapidly expanding railways. In the same year a series of experiments began to determine how best to settle small to moderate sized farms under various forms of "selection"; this led to a change in the organisation of the department which ultimately became Crown Lands and Survey. In 1862 there was an attempt at co-ordination of works through the appointment of a Commissioner for Railways and Roads. His responsibility extended from railway and road construction to sewerage and water supply, with a general oversight of local government as well; there was still some confusion, as water supply and drainage schemes were also carried out by

the Mines Department and by some local municipalities. On the other hand, there was more unified control of education. The rivalries between the National and Denominational Schools Boards and the proliferation of small and inefficient schools led to the merging of the two Boards into the Board of Education. All schools were then called "Common Schools", and they still depended on local initiative for their formation and maintenance, but there was a steadily increasing pressure for efficient teaching and better standards of education. In 1863 steps were taken to improve the standing of local government by raising road boards to shires as they developed financial strength, and boroughs were formed in country towns, with the prospect of a higher status as their population and wealth increased. The importance of mining was also further recognised by the appointment of the first Minister of Mines.

A new pattern of social services and conservation of resources also emerged in this period of administrative experiment. Social services received some attention in 1864 when the relations between the Government and privately established hospitals and charities, which were continually asking for finance and land grants, were placed on a regular basis by the Act to regulate their management. This ultimately resulted in the establishment of the present day Hospitals and Charities Commission. As the impact of settlement, whether in the form of pastoral occupation or of mining, became obvious in drastic changes in the landscape, some of the conditions created by it had to be checked, regulated, or reversed. The Department of Crown Lands and Survey took the initiative in 1865 by establishing a Forests Branch to preserve State forests as a source of timber supply. For some time subsequently forest control was administered by the Mines Department because of the need for large timber supplies in mining districts; the Agriculture and Lands Departments have also had charge of it at different periods. The growing need for better water supplies led to authority being given for the appointment of local Commissioners for Water Supply, under a large measure of municipal control, in country districts; this followed the pattern set earlier of seeking the greatest possible local initiative and co-operation.

Many of the rather loose arrangements surviving from the early days, and the multifarious duties laid on single offices or departments, had to be re-arranged as the Government took on a greater responsibility for the direction of activities within the State. Education was one of the first fields to experience this new direction. In 1872 it became "free, secular and compulsory", and the State took complete responsibility for establishing and maintaining its schools. In the same year a branch of the Royal Mint, financed by the Victorian Treasury, was opened; protective tariffs, first developed from the 1860s, further consolidated the position of the Treasury. An attempt was also made to control conditions of employment, wages, and hours (at first in the 1873 Factories Act only for women and children, but later in the 1885 Act for all employees), and as there was no organisation specifically directed toward such regulation, the Central Board of Health was charged with this responsibility; this function has gradually developed into the present Department of Labour and Industry. The Melbourne Harbor Trust was formed in 1877 to give greater drive and impetus to the establishment of good port facilities for Melbourne.



Much had been done in the earlier period in snagging, widening, and dredging the river and in building wharves, but the total commerce passing through the port was increasing too rapidly for intermittent attention to be effective. An extensive programme of port construction was carried out within the next few years, and the development of facilities still continues.

The Commissioner for Railways and Roads transferred his responsibilities for roads, water supply, sewerage, and local government to the Roads and Bridges Branch which was formed within the Public Works Department in 1877. The provision of water for domestic purposes, mining, and irrigation, with attendant problems of sewerage and drainage, was becoming more important, and by 1880 warranted the attention of the first Commissioner of Water Supply; this post later became a Ministry. The powers of local municipalities were strengthened by the formation in various districts of waterworks trusts with their own borrowing powers; in most cases they were closely linked with the local municipality. In 1883 irrigation trusts were set up on a similar basis. In the same year the ambivalence of the Chief Secretary being also the Premier or First Minister (though not always *vice versa*) led to the establishment of a Premier's Department. This was to deal with matters distinctly the province of the head of the Government, such as representing the Government externally to other colonies and other governments (a matter of rising importance), and dealing with matters submitted by the Council or with rulings by other Ministers. Until then the distinction between the two offices of Premier and Chief Secretary had often been administratively blurred; the modern Premier's Department was not fully established until 1936. The Department was also to deal with any matter which may relate to the Public Service as a whole, not merely to a particular division or department, and to issue Cabinet circulars and generally attend upon the Cabinet and "any matter which, on future experience, it may be decided that it is desirable to attach to the Premier's Office".

In several sections of the administration it was becoming increasingly necessary to separate the Parliamentary heads of departments from the day to day conduct of their business so as to leave them free to concentrate on policy, as well as decrease the dangers of political patronage in appointment. The railways were the first to achieve this separation in 1886 by the elevation of the Commissioner for Railways to the rank of Minister. A Minister for Health was appointed in 1890. Another aspect of re-organisation was the transfer of registration of land from the Department of Crown Lands and Survey to the Law Department's Titles Office in 1887. In 1890 the Agricultural Branch of the Crown Lands and Survey Department was elevated to its own departmental status and concentrated on research and advice to farmers. In the following year the administration of the Public Service Act became the responsibility of the Premier's Department; three years later it returned to the Chief Secretary's Department when the Premier's Department became an office within the Chief Secretary's Department. Following severe industrial strife, labour questions came under review, and Wages Boards were authorised for a number of industries in 1896. A Minister of Labour was appointed in 1900, relieving the Central Board of Health of a number of marginal responsibilities.

With the establishment of the Commonwealth of Australia in 1901,



An opening of the Victorian Parliament by the Governor in the Legislative Council Chamber in the 1960s.

*Gordon De'Lisle*



Procession in Geelong to celebrate the relief of Mafeking, South Africa, on 17 May 1900.

*La Trobe Collection, State Library of Victoria*

Members of the Federation Conference held in Melbourne in 1890.

Standing: A. J. Clark (Vic.), Captain Russell (N.Z.), Sir Samuel Griffith (Que.), Sir Henry Parkes (N.S.W.), T. Playford (N.S.W.), A. Deakin (Vic.), D. S. Bird (Tas.), and G. H. Jenkins (Conference secretary). Sitting: W. Macmillan (N.S.W.), Sir John Hall (N.Z.), J. M. Macrossan (Qld), Duncan Gillies (Vic.), H. A. Cockburn (S.A.), and Sir James Lee-Storer (W.A.).

*Australian News and Information Bureau*



**V**  **R**  
 THE MELBOURNE  
**MORNING HERALD**  
 EXTRAORDINARY.

**GLORIOUS NEWS!**  
**SEPARATION**  
**AT LAST!!**

**SEPARATION HAS COME AT LAST!!**  
 The Australian Colonies' Bill,  
 WAS AGREED TO IN THE COMMONS ON THE 1ST AUG.,  
**THE LAW OF THE LAND,**  
**INDEPENDENT COLONY.**  
**GENERAL JUBILEE.**

***New-born Colony!***

**God Bless the Queen!!!**

A poster acclaiming the constitution of Victoria as a Colony independent of New South Wales.

*La Trobe Collection, State Library of Victoria*

Vote's certificate issued to commemorate the referendum on the Federation of the Australian Colonies in 1899.

*Mrs M. McCormack*



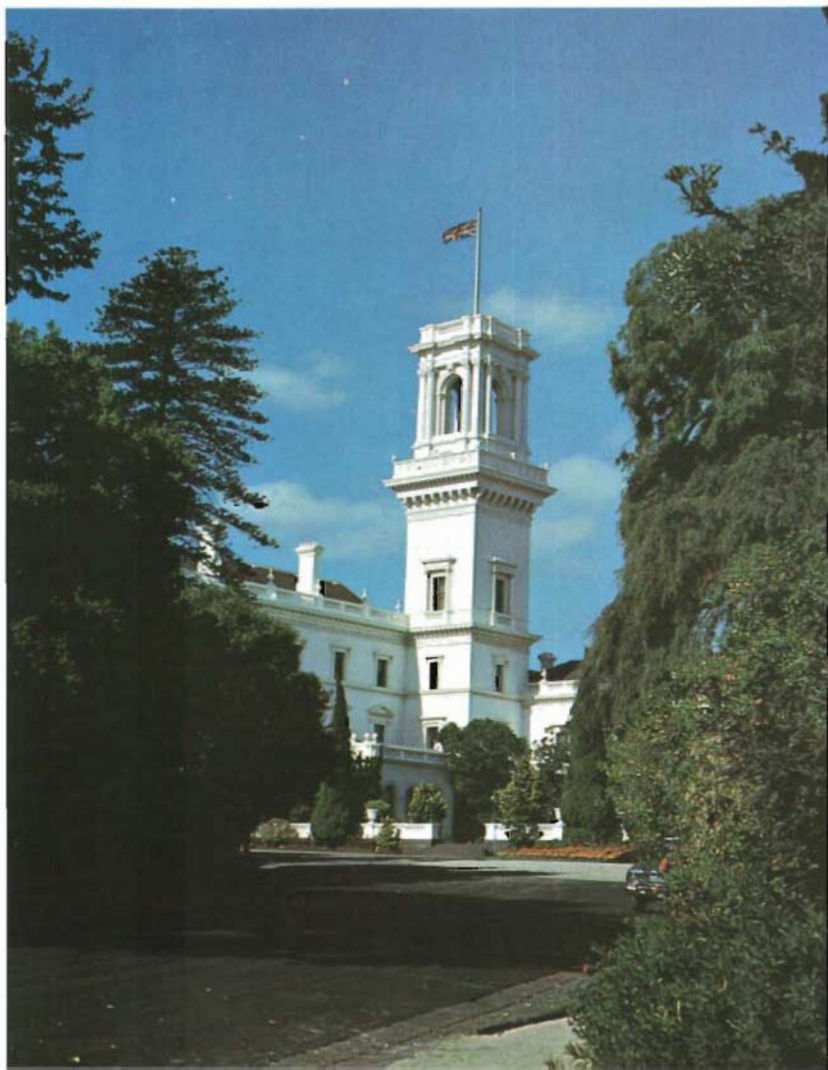
The Old Treasury Building in  
Spring Street, designed by John  
Clark.

*Gordon De'Liste*



Government House, designed by  
William Wardell and set in the  
Domain, Melbourne.

*Commonwealth Bureau of Census and  
Statistics*





The Exhibition Building, designed by Joseph Reed to house the 1880 Exhibition, and since then the scene of many brilliant occasions, including the opening of the first Commonwealth Parliament.

*Australian Council of National Trusts*



The Supreme Court Library, designed by Alfred Smith.

*Australian Council of National Trusts*



The original Brighton Borough Offices during the 1860s  
*Brighton Historical Society*

The modern council chamber of the City of Altona  
*City of Altona*





Examining M M B W. planning proposals for the Melbourne metropolitan region.

*Melbourne and Metropolitan Board of Works*



Local government authorities co-operate with statutory authorities in protecting the natural environment, such as the planting of Marram grass to help prevent wind erosion.

*Land Conservation Authority*

Police search and rescue squad in action at the Wannon falls in western Victoria.

*Victoria Police*







Troopship leaving Melbourne during the First World War.  
*La Trobe Collection, State Library of Victoria*



Buglers sound the *Last Post* at the first Anzac Day commemoration service to be held at the Shrine of Remembrance during the Second World War.

*J. J. Nicolson*

Troops embarking for service overseas during the Second World War.

*La Trobe Collection, State Library of Victoria*



certain powers such as external affairs, customs, post office, and defence were transferred to the Commonwealth ; residual powers, mostly concerning internal affairs, remained with the State. Working in a more restricted field the State Government turned its earliest attention to education. A commission into education had made a wide range of proposals for improvement, and an extensive reorganisation occurred in 1901. Mining, which had changed greatly from the days of prospectors panning for gold and even from companies sinking shafts, was in need of a new style of administration, and the elected Mining Boards were reconstituted in 1904 to make them more suitable for changed conditions. Land settlement was also changing in character ; the emphasis was on the more intensive use of land, and this involved either the voluntary subdivision by owners of large areas of freehold or the purchase of such areas by the Government, and their later subdivision. A Lands Purchase and Management Board formed in 1904 to carry out this policy of repurchase and subdivision eventually became the Closer Settlement Commission.

In 1904 responsibility for patents, trade marks, and copyright passed from the State Treasury to the Commonwealth. In 1905 the State Rivers and Water Supply Commission was constituted to develop water supply schemes in country areas, and a Council of Public Education was formed to register private schools and their teachers, and to advise the Education Department on developments in teaching. Children's courts were established in 1906 and in the following year a State Forests Department was created. In 1909 the responsibility for almost all rural water supply finally passed to the State Rivers and Water Supply Commission ; it was to administer all legislation relating to the Department of Water Supply. Two years later flood protection was added to its responsibilities, and in 1948 came responsibility for river improvement. All these duties were usually carried out in co-operation with local trusts. Increasing road transport and unsatisfactory conditions of many main roads made it necessary to establish the Country Roads Board in 1913 ; it was to improve roads and exercise some control over road transport. On the other hand, mining had diminished so much that the Mining Boards were abolished in 1914 as unnecessary.

When the First World War ended there was much activity in establishing statutory authorities. The State Electricity and Forests Commissions date from 1919, and the Commission of Public Health replaced the Central Board of Health in 1919. The establishment of Commissions represented a more technical and specialised approach to the particular subject. In 1928 the Crown Law Department was relieved of responsibility for insolvency when this jurisdiction was transferred to Commonwealth control, and in the same period political ramifications led to the Premier's Office being transferred from the Chief Secretary to the Treasury since the Premier then usually also occupied the position of Treasurer ; this reflected the central importance of finance to all sections of administration. The depression years caused some aspects of administration to take a new direction. A board to adjust debts of farmers, many of whom owed large amounts for land being purchased through the Closer Settlement Commission, was set up in 1931, and in 1933 the Minister for Labour was made responsible for unemployment relief. This economic recession checked the impetus towards closer settlement, and within a few years the Closer Settlement

Commission was abolished, the residue of its business being taken over by the Department of Crown Lands and Survey. When similar schemes were revived after the Second World War they were carried out through the Soldier Settlement Commission, later amalgamated with the Rural Finance Corporation to become the Rural Finance and Settlement Commission.

Road transport was increasing so rapidly by 1932 that a Board was appointed to report on the co-ordination of all forms of transport; after it had presented its report it was reorganised in 1933 as the Transport Regulation Board. Its work was mainly concerned with the regulation of commercial road transport, but it also had powers of advice regarding the opening and closing of railway lines, and of co-ordination of all forms of transport including that by air. Mining was reviving in a new form as the search for oil intensified, and in 1935 the authority of the Department of Mines was extended to deal with this development. After 50 years of uncertainty the Premier's Department finally became independent in 1936. Since then the trend has been for new activities of government to originate within it, rather than with the Chief Secretary. An example is the Division of State Development of the Premier's Department which was formed in 1950 to deal with the decentralisation of industry and eventually became the separate Department of State Development in 1971. Slum clearance and building of low-cost housing became the responsibility of the Housing Commission which was established in 1937; its activities have extended over most of the larger towns of the State and have involved major demolitions and re-building programmes in areas close to the city centre of Melbourne during recent years. After the Second World War the Ministry of Electrical Undertakings was set up; as conditions changed within the power and fuel production industries, this became the Ministry of Fuel and Power in 1965. Increased interest in mental health and projected large scale developments in gas production led to the establishment of the Mental Hygiene Authority and of the Gas and Fuel Corporation in 1950, and new Ministries of Transport and of Labour and Industry were set up in 1951 and 1953. The Departments of Health and of Local Government (formerly a branch of the Public Works Department) were established in 1956 and 1958, respectively. In 1951 the *Solicitor-General Act* 1951 provided for the appointment of the first Solicitor-General who was not a responsible Minister of the Crown, and in 1964 the Board of Lands and Works was abolished. More recently a Ministry for Aboriginal Affairs and a Ministry of Social Welfare have been created.

#### LOCAL GOVERNMENT

Local government in Australia is founded on the traditional English municipal system, but is much more limited in scope; many responsibilities of English municipalities are, in Australia, the responsibility of the central governments. In England, the local governing authorities had regulated in all aspects the everyday life of the people in their respective districts for centuries before the central government became interested in such matters. In Australia the position was reversed. Outside of what is now Sydney the population was too scattered and transitory to maintain any local government organisation; the rural population itself considered that the central government should develop the country with revenue received from land sales, and

at first tended to oppose any system of levying local rates and charges.

In Victoria some local government institutions have existed since before Separation as elective statutory bodies charged with the performance of general or specialised governmental functions on a local basis. Such bodies have been elective by constitution, and their aims of providing local services have been partly or wholly financed by funds raised in their local areas. Specialised local government bodies have operated to provide services, including roads, markets, water supply, sewerage, cemeteries, tramways, and electricity. Sometimes these specialised functions have been absorbed by general local government bodies, and sometimes by the central administration. The relationship between general local government bodies and the specialised local government bodies or the State Government must be noted. Indeed, most Victorian municipalities were preceded by specialised bodies created to maintain roads. Nevertheless, the constitutional development of municipalities has been determined by enactments of the State legislature.

In 1841 the Melbourne Market Commissioners and the Heidelberg Road Trust were established, and these two specialised bodies were the first local government institutions in the Port Phillip District. For the election of eight market commissioners, Melbourne was divided into four wards after a public meeting under the provisions of a New South Wales Act of Council. The Commissioners, Victoria's first local government body, were elected, and recommended that general, hay, and cattle markets be established on separate sites. Within twelve months the Melbourne Corporation had been established, and it took over control of markets. A New South Wales Act of 1840 had provided for the creation of elected trusts, to receive revenue and repair and maintain a parish road in their area where local landowners so desired. One such trust was set up in 1841 for the Heidelberg road, and during the period from 1846 to 1851 about eight miles of road were improved. The two members of this trust, who appeared before the Select Committee on Roads and Bridges in late 1851, both looked to central government finance for future road development. Although the Heidelberg trust seems to have been the only such body set up in Port Phillip under the 1840 Act, about ten similar committees were operating, evidently on an *ad hoc* basis, when the Central Road Board was founded in early 1853. The Central Board used these bodies as agents for the repair of local roads by assisting them financially; the Board also authorised and financed local road construction by a police magistrate in one area, by a goldfields commissioner in another, and even by private individuals in others. But the local road committees were important, because both institutionally and functionally they were precursors of later local government bodies.

The Act incorporating the Town of Melbourne provided for the election by the "burgesses" of three councillors from each of four wards, with an executive comprising a mayor and four aldermen elected by the council. The council was empowered to raise revenue from rates and other sources, and was given wide functions: police; town lighting; the formation and repair of streets, drains, and sewers; the construction of waterworks; and the regulation or control of offensive trades, prostitution, bathing, street trading, gambling, and waterways. The council first met in December

1842. The Town of Geelong was incorporated about seven years later, using almost identical legislation. The first attempt at rural local government in the Port Phillip District occurred in 1843 when district councils were set up for areas based on the counties of Bourke and Grant, which included Melbourne and Geelong, respectively. The same Imperial Act which enlarged the Legislative Council in New South Wales in 1842 also allowed the Governor to incorporate the inhabitants of counties into districts within which councils were to be elected according to a formula which linked district populations with the number of seats on the councils, and several of these were established in various parts of New South Wales including the two in Port Phillip. Their powers were quite wide and covered roads and bridges, public buildings, finance, judiciary, police, and the financing of schools. They were subject to central control, and the Governor and Executive Council could disallow any by-law which a council might make. The areas covered by the councils of Bourke and Grant were larger than the respective counties. For this and other reasons the councils were not a success, and met irregularly. The 1850 Act which separated Victoria from New South Wales permitted the district councils to continue, though those in Victoria were now to be subject to the Victorian Governor and Legislative Council, and the obligation of district councils to contribute towards the cost of police was abrogated. Two years later a Legislative Council Select Committee was appointed to investigate the councils; among the reasons assigned for their failure were inadequacies in the financial provisions of their charters, and the fact that they had been given duties far more comprehensive than they could manage. But the Report reasserted the principle of local control of public works, and indeed advocated the extension of the council system, but on the basis of much smaller administrative areas, and without added duties such as the support of education and the police. The system of road districts established a year later in 1853 was a step towards the fulfilment of the recommendations.

As well as establishing a Central Road Board of government nominees, an Act of Council in 1853 allowed landowners in any locality to elect from five to nine of their number as a District Road Board. This was the first local government legislation passed by a Victorian Parliament, but it was no innovation, for the 1849 Main Roads Act of South Australia had established a similar structure in that Colony. In Victoria the District Road Boards were to have authority to raise money by tolls and rates, to own property and materials, to employ officers, and to survey, construct, and maintain roads and bridges within their proclaimed road districts. Nevertheless, the Central Road Board was to have overall control. Less than a month after it began operations in March 1853, the Belfast road committee inquired about the establishment of a road district and board in their area, and the Belfast Road District was proclaimed three months later; it was the first to be established. The scheme was slow in its early growth, however, for only nine further districts had been proclaimed by the end of 1855, mainly in the Western District or in the vicinity of Melbourne. But this early reluctance was soon overcome, and by 1863, when the legislation was altered, over one hundred additional road districts had been set up in many parts of Victoria, and the foundations of rural local government firmly established.

By 1854 a number of Melbourne suburbs and the goldfields towns and country seaports had grown to a size where local government authorities could be expected to succeed although the district councils may have previously failed. The Act for the establishment of municipal institutions in Victoria (1854) permitted the incorporation of any area not exceeding 9 square miles and having a population of at least 300, upon the petition of 150 resident householders. Provision was made for increases in area, and the usual powers and duties of municipalities were set down. This Act, rather than the special incorporation of Melbourne and Geelong, may be regarded as the beginning of urban self-government in Victoria. In 1863 two Acts further developed municipal institutions and distinguished in name between urban and rural municipalities. The urban municipal districts were now to be known as boroughs, while the rural road districts could continue or be elevated to the status of shires. The jurisdiction of boroughs was increased in affairs such as markets, slaughter-houses, baths, and refreshment licences. A subsequent feature of this legislation was the introduction of a property qualification for electors, and with it, plural voting. A road district was now required to have an area of over 40 square miles, and rateable property of an annual value of at least £5,000. The powers of the road districts were confined to road-making, financed by rates, tolls, and government grants. However, there was now to be scope for greater municipal development in rural areas. Any road district of at least 100 square miles which had a paid sum of £1,000 under its last general rates could be proclaimed a shire. Shires were to be governed by an elected council with a shire president, and they were to have extended powers and duties, including the power to borrow for permanent works. The distinction between road districts and shires disappeared between 1869 and 1875: first, an Act of 1869 allowed ratepayers in road districts to petition for their district to be proclaimed a shire; an amendment of 1870 allowed the Governor to make this proclamation without waiting for a petition; and the few road districts which lingered on when the *Local Government Act* 1874 was passed were, by absorption or elevation into shires, eliminated. In this way the basic distinction between two forms of local government authority began, and it is the same today. Constitutionally, there are two forms: the rural shire with its president, and the urban municipality (a borough, town, or city, depending on size) with its mayor. Another feature of the 1869 Act was that subsidies from the central government were to be made available to both existing and new shires for a period of five years. As the 1869 Act extended to shires many powers previously reserved to boroughs, this extra financial provision was much needed.

All existing laws for local government, except those to do with Melbourne and Geelong, were consolidated in the *Local Government Act* 1874. Districts were classified into boroughs and shires, both being termed municipalities. Under this Act cities and towns were deemed to be boroughs and the remaining road districts were eliminated. Provision was made for the main town of a shire to become a borough when 300 householders occupied fewer than 9 square miles, for boroughs to become towns when the annual revenue reached £10,000, and for towns to become cities when revenue reached £20,000. Since the passing of the 1874 Act there have

been numerous amendments and consolidations. The *Local Government Department Act* 1958 set up a Local Government Department responsible for the administration of legislation covering municipalities, town planning, the Melbourne and Metropolitan Board of Works, and many minor statutes.

The establishment of the Local Government Department in 1958 further strengthened the oversight and co-ordination of local authorities which began when the Central Road Board was set up in 1853. The Central Road Board was abolished in 1857 when the Board of Land and Works was created and vested with the powers of the Commissioner of Public Works (an office created with responsible government in 1855) and of the Surveyor-General. From 1862 until 1877 the Commissioner of Railways and Roads, who was also Vice-president of the Board of Land and Works, administered local government legislation. In 1877 the Roads and Bridges Branch was formed in the Public Works Department, and through this the Commissioner of Public Works was responsible for the Board of Land and Works and local government legislation. This continued until 1958, although the responsibility for main roads and bridges had passed to the Country Roads Board on its creation in 1913. The local government section of the Public Works Department was separated from that Department in 1958 and became the Local Government Department. The Department administers the Local Government Act, the Melbourne and Metropolitan Board of Works Act, the Town and Country Planning Act, and numerous others which affect local government authorities. The Governor in Council on the recommendation of the Minister for Local Government has power to constitute new municipalities, to sever parts of one municipality and annex them to another municipality, to subdivide municipalities into wards or ridings, and to declare municipalities to be boroughs, towns, or cities. An advisory board of three persons investigates these matters and advises the Minister on them. Action must, however, be initiated by the council or ratepayers except where revenue falls below a specified figure. As well as providing for the creation of new municipalities, local government legislation allows for the dissolution of existing bodies. A municipality may be united with an adjoining municipality or divided into portions, which are then annexed to adjoining municipalities. Over the period, thirty boroughs, two towns, and several shires have lost their status. Most of these were in areas where the population decreased greatly with the decline in mining; others were in areas where rural depopulation has followed increases in farm size or the disuse of uneconomic lands. All of the former boroughs and towns were situated in the gold mining areas of central Victoria, the north-east, and western Gippsland, except for the Borough of Flemington and Kensington and the Town of North Melbourne, which were absorbed by the City of Melbourne. A former goldfields borough in the present Shire of McIvor, Graytown, now has only a dozen inhabitants. Most of the vanished shires were also in central Victoria, though two, Howqua and Walhalla, were in eastern Victoria. Several former shires on the edge of the Melbourne metropolitan area have also disappeared due to the expansion of the suburbs and the creation of new municipalities to cater for them.

## ARMED FORCES

*Before Federation*

So long as the presence of the Royal Navy in Australian waters discouraged foreign intruders the colonies had little need to provide their own defence. Following the discovery of Port Phillip Bay by Lieutenant Murray, R.N., early in 1802, a convict settlement under Colonel David Collins of the Royal Marines was established near the present site of Sorrento in October 1803 to forestall the French founding a colony. The guard of Royal Marines constituted the earliest garrison in this part of the Colony of New South Wales, but the settlement was subsequently transferred to the Derwent in 1804. In 1826 Governor Darling attempted to found a settlement at Western Port, ordering a company of "The Buffs" under Captain Wright to man Fort Dumaresq on Phillip Island, but later moving them to a site near present-day Corinella. This settlement was abandoned in 1828 and the party returned to Sydney. With the establishment of permanent settlements, detachments of the British Army in Australia were stationed continuously in the Port Phillip District, the earliest being from the 4th King's Own Regiment in January 1839 at Melbourne and Geelong.

During the half century between Separation and Federation the Colony developed from total dependence for defence on Great Britain to active participation in Britain's wars. The cause and effect of this development are clearly seen in the series of events during this period. The Victorian colonists provided their own navy and army, and enthusiasm flared and waned in sympathy with the international crises and the economic climate. Following the rise in importance of Melbourne after the gold discoveries in the early 1850s, and because of its more central location, the British Government decided that the headquarters of the General Officer Commanding the British land forces in the Australian Colonies be transferred from Sydney to Melbourne, and in August 1854 Major-General Sir Robert Nickle arrived with his staff and established his headquarters in Collins Street. The building of Victoria Barracks commenced in St Kilda Road, and the construction of two coastal artillery batteries was begun at Sandridge (Port Melbourne) and Williamstown. The British regiments were employed mainly on guard duties, operations against bushrangers, and in the escort of gold to the Treasury in Melbourne. In 1854, the year of the miners' insurrection at Ballarat which was defeated by troops and police, the 12th and 40th Regiments were stationed in Victoria, with detachments at Ballarat, Castlemaine, Sandhurst (Bendigo), and Geelong.

The Ballarat miners' grievances about gold licences had led to exasperation; they raised their flag above the crude defensive breastwork known as the Eureka Stockade, and prepared to fight. Within were fewer than two hundred miners armed with rifles, revolvers, and pikes, and many were asleep when at 4.30 a.m. on 3 December 1854 a force of two hundred and seventy-six soldiers and police marched to the Stockade, which was rushed by a storming party of sixty-four men. In the first volley several fell on both sides, but the miners were soon forced to surrender. Captain Wise and four soldiers were killed and about a dozen others wounded; sixteen



miners were killed, at least eight died of wounds, and over a hundred were taken prisoner (including their leader, Peter Lalor). Ballarat was placed under martial law, and thirteen miners were held for trial for high treason but were acquitted in 1855.

The news of the outbreak of the Crimean War led to the raising of local units under the Volunteer Act of 1854—the Melbourne Volunteer Rifle Regiment, the Geelong Volunteer Rifle Corps, and a mounted unit, the Victorian Volunteer Yeomanry Corps. In 1859 thirteen new rifle companies were authorised in the metropolitan area and at Portland, Belfast (Port Fairy), and Warrnambool, with naval volunteers at Williamstown. There was little to fear from hostile natives and the main threat was an attack from hostile naval forces. Additional coastal batteries were constructed around Hobsons Bay and at Queenscliff; the isolation of Victoria from the main British concentration of warships based at Sydney caused the colonists to provide their own local naval defence. In January 1854 a Select Committee of Parliament recommended that the British Government provide a ship of war, and the first vessel of the Victorian Navy, H.M.V.S. *Victoria*, arrived on 31 May 1856.

In 1860 the Second Maori War was in progress, and British troops were called from their Australian stations to fight in New Zealand, their places being taken by the locally raised volunteer units. In 1862 various cavalry troops, with names such as the Castlemaine Dragoons, were amalgamated into the Victorian Volunteer Light Horse (Hussars) and detachments located in Melbourne and at country centres. Settlers were also enrolled in Victoria for service with British forces in New Zealand, seeing action as part of the Waikato Regiments. There were no official Victorian military units, but men in an Australian colonial uniform saw action for the first time in this campaign when *Victoria* was accepted for service off the New Zealand coast, a quarter of a century before the New South Wales contingent was dispatched to the Sudan. *Victoria* transported troops and stores, carried dispatches, and landed a party which manned a blockhouse and stormed a Maori pa.

The need for stronger harbour defences in Victoria became apparent when in January 1865 the American Confederate raider *Shenandoah* appeared in Hobsons Bay. It was in need of repairs and was slipped at the dockyard at Williamstown. After protests from the United States Consul, the Governor ordered work to be suspended and a composite police and military force was sent to prevent launching. The ship's captain threatened to fight his ship from the slip if need be, but the officers and crew were generally fêted and the ship was eventually relaunched. It had recruited several local volunteers in Melbourne and, heading northwards, sank American vessels in the North Pacific after the end of the Civil War. In 1872 the "Alabama claims" (as the American grievances against the Confederate raiders were known) were heard at Geneva; the Victorian Government was declared negligent and Great Britain was declared liable for all acts committed by the *Shenandoah* after its departure from Melbourne.

In May 1866 G. F. (later Sir George) Verdon, the Treasurer, was sent to England to discuss defence problems among other matters, and obtained permission to acquire an ironclad vessel and a wooden training ship. The latter was the old man-of-war *Nelson* and the ironclad was

H.M.V.S. *Cerberus*, considered to be the most powerful ship in the southern hemisphere on its arrival in April 1871. A new Victorian flag was adopted to distinguish vessels of the Colonial Navy—a Blue Ensign with the five white stars of the Southern Cross in the fly. Although *Cerberus* acted as guardship for the port, its guns were never fired in action.

The Victorian Government's reaction to the British Government's possible removal of British troops in time of war was to raise and maintain a military force, preferably artillery, under its own control. After discussions and correspondence between the Victorian and British Governments about costs of maintaining British regiments in Victoria, Britain decided to withdraw its troops and to allow the Colony to provide for its own land defence. On 2 August 1870 the last British garrison in Victoria, troops of the 18th Royal Irish Regiment, marched out from Victoria Barracks to Port Melbourne where they embarked for England. From then on Victoria relied on volunteers and a small disciplined force—garrison and field artillery, infantry, and engineers, and alone among the colonies Victoria established, in November 1883, a separate Ministry of Defence. In June 1877 Colonel Sir William Jervois and Lt Col P. H. Scratchley, both officers of the Royal Engineers, had recommended that Port Phillip be protected at the Heads by a fort at Point Nepean, a battery and keep at Queenscliff, and batteries at Swan Island and elsewhere; these became effective in about 1885, making this the most heavily fortified British area south of the equator.

The fear of war with Russia in 1877 had stimulated recruiting for the volunteer force, but a scheme drafted later by Lt Col Sir Frederick Sargood, who was the Colony's first Minister for Defence, resulted in the disbandment of the volunteer forces and the substitution of a paid militia under the new regulations of the Discipline Act of 1870, the Victorian Mounted Rifles being formed in 1885 and the Victorian Rangers in 1888. The Victorian Horse Artillery (commonly known as The Rupertswood Battery) was partly privately maintained from 1885 to 1897; rifle clubs were formed on the Swiss model; and Easter camps of continuous training were held more frequently from 1884 onwards. When the Sudan campaign stirred national feelings in the 1880s Victoria offered a contingent, but this offer was declined by the British Government.

The Victorian Navy in 1884 consisted of the flagship *Nelson*, the ironclad *Cerberus*, the gunboats *Victoria* (second of the name) and *Albert*, the torpedo boats *Childers*, *Nepean*, and *Lonsdale*, the torpedo launches *Customs* and *Commissioner*, and the Harbor Trust steamers *Batman*, *Fawkner*, and *Gannet*. Together with the Naval Brigade the force had a total of seventy-two guns extending in calibre up to the 10 inch muzzle loading guns of *Cerberus*. *Victoria*, *Albert*, and *Childers* had arrived from England in June 1884. On their voyage to Victoria they had been lent to the British Naval Forces at Suakin (near Port Sudan on the Red Sea), but as there was little activity they had continued their voyage to Melbourne. Another torpedo boat, *Countess of Hopetoun*, was added in 1892. In the 1890s some land forces were enlarged, including the formation of the Hastings 40 Pounder Battery Victoria Rangers (drawn by bullocks), but retrenchment of the Armed Forces became necessary during the economic crisis early in the decade. The *Nelson* was sold out of the service and *Victoria* and *Albert* laid up. The Victorian Mounted Rifles were called out

during the maritime strike of 1890 to maintain order.

In 1891, with the changing nature of warfare, the scarlet and blue uniforms were replaced with khaki. The Victorian Mounted Rifles had adopted the slouch hat, although looped up to the right. Units of Army Service, Army Medical, and Veterinary Corps details augmented the combatant units. There was a revival of interest in military affairs in Victoria in the late 1890s, but defence recommendations were delayed pending Federation, although the Victorian Scottish Regiment was formed in August 1898. The deteriorating situation in South Africa was watched by the colonists and offers of assistance were made some months before hostilities began. All colonial military commandants met in Melbourne in September–October 1899 to decide whether to dispatch an Australian force, including mounted troops.

Five contingents were sent from Victoria, the first departing on 28 October 1899 and comprising one company of Victorian Mounted Rifles and one of Victorian Infantry which was later mounted. The colonial units had been restricted by the War Office to one hundred and twenty-five men each with a preference for infantry, and this was regarded in the colonies as acceptance of the fact that token forces would not impede the British Army in what was expected to be a short war. The need for skilled mounted irregulars soon became apparent and the larger 2nd contingent, the 3rd “Bushmen” and the 4th “Imperial Bushmen” contingents, all mounted, were dispatched in 1900, and the 5th Victorian Mounted Rifles relieved the early units in 1901. About two hundred Victorian officers and three thousand four hundred men served in this campaign; thirteen officers and one hundred and thirteen men were killed or died on service; and over one hundred decorations were won, including two Victoria Crosses. Victorians distinguished themselves at places such as Colesberg, Diamond Hill, and Elands River, and harassed the enemy in the guerilla operations from the Western Cape to Zululand. After Federation, calls for more men resulted in the dispatch of Victorian companies or squadrons of the 2nd (part), 4th (part), and 6th battalions of what became the Australian Commonwealth Horse.

Meanwhile in 1900 a naval unit of two hundred men drawn from *Cerberus* and the Victorian Naval Brigade were sent with a similar New South Wales contingent and the South Australian vessel *Protector* to China to form part of an international force to suppress the Boxer Rebellion. It arrived at Tientsin in September after the British garrison had been relieved; it remained to perform police duties. A company of Victorians was chosen as part of a punitive expedition to Pao-ting, destroying arms and ammunition and causing virtual cessation of military operations in northern China. The contingent returned in April 1901.

#### *After Federation*

After Federation, defence ceased to be a State responsibility and the history of the Armed Forces in Victoria necessarily follows the pattern throughout Australia, although the early history of all three services has close links with developments in Victoria. Federal Parliament sat in Melbourne from 1901 until 1927, and from 1901 Victoria Barracks, Melbourne, was headquarters for the Commonwealth Military Forces as well as for the central administration of the Department of Defence until these transferred to

Canberra in the late 1950s. After Federation, Major General Sir Edward Hutton of the British Army was given the task of reorganising the State military forces into a unified Commonwealth Military Force; he was appointed General Officer Commanding late in 1901. The *Defence Act* 1903–1904 provided for voluntary enlistment in peacetime with power to call out all males aged between 18 and 60 years in time of war. Military Districts were established and they corresponded roughly with State boundaries, Victoria eventually becoming the 3rd Military District; in 1939 it became Southern Command. By 1909 the diplomatic attitude of Germany was arousing concern. Acts were passed to require universal training but not universal service, and in 1910 Lord Kitchener reported on Australia's military defence scheme. In August 1914 the Australian Imperial Force was raised, ultimately comprising seven divisions, including the equivalent of two divisions of Light Horse.

Naval developments after Federation involved the transfer to the Commonwealth of vessels of the former colonial navies, including *Cerberus*, *Countess of Hopetoun*, *Childers*, *Lonsdale*, and *Nepean*. The system of Royal Naval subsidy had been unpopular with the colonies, and finally the Imperial Conference on Naval Defence in 1909 recommended establishment of an Australian fleet unit paid for and controlled by Australia. After much discussion and revision of plans by the Australian and British Governments, the ships of the Royal Navy on the Australia Station were replaced with Australian ships, the first torpedo boat destroyers *Yarra* and *Parramatta* arriving in Australia in December 1910, joined later by other vessels including *Australia*, *Melbourne*, and *Sydney*. The title Royal Australian Navy (R.A.N.) was granted on 10 July 1911. In 1912 Flinders Naval Base was established, and in 1913 the Royal Australian Naval College was officially opened in temporary premises at Geelong, but was transferred to Jervis Bay in 1915.

In 1914 military aviation in Australia began with the opening of the Central Flying School at what later became Point Cook. The Australian Flying Corps, then an arm of the Australian Imperial Forces (A.I.F.), went overseas on active service in 1915. It was the only Dominion air force of the First World War.

The Victorian infantry battalions in the First A.I.F. were numbered 5 to 8, 14, 21 to 24, 29, 31 (part), 37 to 39, 46, and 57 to 60; the Victorian Light Horse regiments were 4, 8, 9 (part), and 13; and training camps were established first at Broadmeadows, and later at Seymour and elsewhere. The first British shot of the war was fired by the Royal Australian Garrison Artillery from a 6 inch gun at Fort Nepean to prevent the escape of the German steamer *Pfalz*. Victorians fought in New Guinea, at Gallipoli (where, combined with the New Zealanders, Australian troops earned the famed name "Anzac"), in France and Belgium, Sinai and Palestine, and at sea, winning five Victoria Crosses at Gallipoli, ten on the Western Front, and one in the Middle East. Of the Victorian leaders produced during the war, General Sir John Monash was outstanding.

Between the wars, reorganisation led to the adoption of battalion numbers of the A.I.F. by militia units to attempt to retain A.I.F. traditions. The strength of the militia fell during the depression but began to recover in the late 1930s because of recruitment drives. With disarmament policies, the battle-cruiser *Australia* and some older ships were scrapped, *Cerberus* acting

since 1926 as a breakwater at Half Moon Bay ; but new cruisers were added in the years before the Second World War. The R.A.N. College was transferred from Jervis Bay to Flinders in 1930 as an economy measure. The Royal Australian Air Force became a separate service on 31 March 1921 although no new units were formed until two squadrons were established at Point Cook in 1925. By 1939 there were ten Royal Australian Air Force (R.A.A.F.) squadrons throughout Australia.

In the Second World War the Second A.I.F., a specially raised expeditionary force, served in Great Britain, the Middle East, northern Africa, Greece and Crete, Malaya and south-east Asia, and with militia units, in the South-West Pacific Area. Some traditional units were formed in Victoria, training at Puckapunyal, Bonegilla, and elsewhere, but State affiliations were less clear by the end of the war. Personnel of the R.A.N. and R.A.A.F. served throughout in the major theatres of war ; Victoria Crosses were won by two Victorian soldiers and one airman in Papua and New Guinea. Fort Nepean again fired the first British shot of this war, this time at an unidentified vessel approaching Port Phillip Heads. German minelayers operated off the Victorian coast, and their mines, and torpedoes fired from Japanese submarines destroyed Allied shipping off Cape Otway, Wilsons Promontory, and Gabo Island. Following his escape from the Philippines, General Douglas MacArthur of the U.S. Army established his headquarters as Commander-in-Chief of Allied Forces in the South-West Pacific Area in Melbourne on 21 March 1942.

From March 1942 the Commander-in-Chief of the Australian Military Forces was General Sir Thomas Blamey, who was born in New South Wales but lived most of his life in Victoria ; he was to become Australia's only officer of General rank to be promoted to Field Marshal, an event which took place in 1950, a few months before his death.

Since 1945 the Australian Regular Army has gradually been expanded as a field army and has taken over this role from the Citizen Military Forces. The three Armed Services have served with the British Commonwealth Occupation Force in Japan and have taken over from Britain an increasing role in assisting Commonwealth and allied countries in south-east Asia. The service has involved active participation in hostilities in Korea, Malaya, Borneo, and Vietnam by Regular and National Service personnel. The R.A.N. College has returned to Jervis Bay, the Army Staff College is now located at Queenscliff, and the Officer Cadet School at Portsea. The R.A.A.F. College was founded at Point Cook in 1947, to become the R.A.A.F. Academy in 1961, affiliated with the University of Melbourne. At present Australia's foreign policy requires the acceptance of international responsibilities far removed from parochial loyalties, but if traditions hold their place in history, they owe much to the early developments in Victoria.

## LAW AND JUSTICE

## LEGAL DEVELOPMENT

When Governor Bourke proclaimed the new territory of Port Phillip open for settlement in September 1836, the settlers were subject to laws emanating from various sources. Port Phillip, being part of New South Wales, was within the area in which the Legislative Council of New South Wales could exercise its limited law-making powers. In addition, the Parliament at Westminster could enact measures extending to the infant settlement as part of the Colony of New South Wales. The settlers in Port Phillip were also subject to so much of the English common law and statutes passed before 25 July 1828 as could reasonably have been applied at that date to New South Wales. On 25 July 1828 the Australian Courts Act of the Imperial Parliament had come into force to indicate those parts of the English common law and statutes which were applicable to New South Wales and Van Diemen's Land. Questions can still arise concerning particular pre-1828 English statutes, and whether they had been "received" as part of the law of New South Wales in 1828 and so became part of Victorian law. The work of Sir Leo Cussen in drafting the *Imperial Acts Application Act* 1922 did much to reduce the uncertainty on this subject. He isolated those pre-1828 Acts which had not been impliedly or expressly repealed by the legislature of New South Wales before 1851 (the date of Victoria's separation from New South Wales), and by the legislature of Victoria after that date. Some were enacted as part of Victorian legislation; others were transcribed or enumerated; and the question of whether they had been received was left for judicial determination if and when it arose. All pre-1828 Acts not otherwise dealt with were repealed.

The common law as declared by English courts from the thirteenth century provided the settlers with a coherent body of legal principle which was basic to the patch-work of enacted law. Despite the increased activity of legislatures in the period under review, it remains true in Victoria that case law is the basis of the legal system. There has been only one attempt to introduce a code of law for Victoria. A code drafted by W. E. Hearn, Dean of the Faculty of Law in the University of Melbourne, was introduced in Parliament in 1885, but it did not get beyond the first reading. Consolidation of statute law has, however, been a feature of Victorian legislation. Victoria had complete consolidations in 1865, 1890, 1915, 1928, and 1958. As the volume of statute law grows it is unlikely that another general consolidation will ever be attempted. The practice of reprinting a particular Act with the

incorporation of any amending provisions has been recently adopted under the authority of the *Amendments Incorporation Act 1958* and these reprints provide a useful alternative to consolidation.

Although after 1828 no decision of a court in the hierarchy of English courts had imperative authority in Australia, a long continued desire to keep common law decisions uniform with those of England gave English decisions persuasive authority. The opinions of the Judicial Committee of the Privy Council have been, and remain, imperatively binding, since it is the highest appellate tribunal for a large range of litigation begun in the Victorian courts, although its jurisdiction to hear appeals in Federal matters has recently been reduced. As recently as 1943 the disposition to keep the unenacted law of Australia uniform with English law was so strong that Sir John Latham, Chief Justice of the High Court of Australia, could say that in cases of clear conflict between a decision of the House of Lords and a decision of the High Court, the latter and all other Australian Courts should follow the House of Lords upon a matter of general legal principle. More recently, however, a trend towards greater independence has become evident. In 1963 the High Court indicated that when a decision of the House of Lords was thought to be misconceived the High Court would not follow it, and since then several decisions of the House of Lords have been rejected as not representing the manner in which the common law has developed in Australia since 1828.

The dependence of Victorian law on English decisions has its counterpart, but to a lesser degree, in the development of Victorian statute law. During the nineteenth century in England some parts of the common law were recast in statutory form and the Victorian legislature followed suit: the Goods Act and the Partnership Act are two examples in the field of commercial law. Similarly, the Victorian legislation on companies for a long time closely followed the legislation enacted in England, although the pre-eminence of mining in Victoria's nineteenth century economy called for the creation of a new form of no liability company. The distinctive feature of a no liability company is that the acceptance of shares in the company is not to be deemed a contract on the part of the shareholder to pay calls, and, though his shares may be forfeited, he is under no liability to pay calls or to contribute to the company's debts. The Victorian *Companies Act 1958* contained a number of new provisions which put it in advance of English and other Australian legislation; when later the other States resolved to pass uniform company legislation, the Victorian measure provided an up-to-date model. This uniform legislation was also to be substantially adopted in Malaysia and Singapore.

Victorian legislation concerning chattel securities for credit followed in broad outline the English law about bills of sale, but local farming conditions required the development of new types of security in the form of statutory liens on crops and wool, and stock mortgages. Hire purchase transactions demanded regulatory legislation which differs in important respects from its English counterpart. Some parts of commercial law are now governed by Commonwealth legislation which prevails over any inconsistent State legislation. For example, promissory notes, cheques, and bills of exchange used to be governed by the Victorian Instruments Act which contained provisions based on the English Bills of Exchange Act 1882. From 1910 the

Commonwealth Bills of Exchange Act has occupied this field. The subjects of life insurance and insolvency have similarly been taken under Federal cognisance.

In land law the adoption of the Torrens system of title registration in 1862 provided Victoria with a system of land conveyancing which assures the landowner of reasonable certainty of title with a minimum of delay in obtaining registration. The law governing wills is still largely based on the English legislation of 1837, and there are parallels in the Victorian and English laws of intestate succession. Following New Zealand's example, Victoria found it necessary in 1906 to limit a testator's power of testamentary disposition, by making his dispositions subject to the power of the Supreme Court which could order provision, out of the estate, for the widow, widower, or children, if the testator had failed to make adequate provision for their maintenance and support.

Victoria made a notable contribution to the law of industrial relations with the passing of the *Factories and Shops Act* 1896; this Act instituted the system of Wages Boards, following an investigation of poor working conditions in a number of industries. Wages Boards have functioned efficiently in laying down minimum rates of remuneration and working conditions for workers in trades which are not covered by Federal awards. They work with a speedy procedure from which legal technicalities are absent. The larger issues of basic wage rates and standard hours are, however, worked out by the Commonwealth Conciliation and Arbitration Commission. In 1948 a committee appointed by the Victorian Government to investigate industrial arbitration systems recommended, by a large majority, that the Wages Board system be retained.

In divorce, Victoria followed the changes made in England in 1857 by enacting in 1861 the *Divorce and Matrimonial Causes Act*. State law alone continued to regulate this subject until the Commonwealth Parliament in 1945 exercised its concurrent power with respect to divorce and matrimonial causes and provided for the institution of matrimonial causes by persons domiciled in Australia. The Commonwealth has since passed further legislation, so that the law covers marriage and matrimonial causes to the exclusion of State law.

In the 1960s there has been a quickening of law reform in England and Australia. Victoria has been served by two bodies which ensure that the law is kept up to date, namely, the Chief Justice's Law Reform Committee and the Statute Law Revision Committee. The former body, composed of members of the judiciary, together with representatives of the Bar, the solicitors, and the University law schools, has promoted many changes; the other committee, a group of parliamentarians, has carried out investigations of various parts of the law and has secured legislative changes from time to time.

#### SOCIAL FACTORS AFFECTING LEGAL DEVELOPMENT

The differences between Victorian and English law are not fundamental, but largely peripheral, and have been conditioned mainly by economic and social factors. In the early period of settlement, the infant community in Victoria could not create a completely new legal system, and, generally, when new colonies were settled colonists from Britain took the common law



with them. Victoria, on separation from New South Wales, adopted English law as at 1828, and the law of New South Wales as at 1851.

In the development of the common law, Australian courts have been bound by the Judicial Committee of the Privy Council, although they are not technically bound by decisions of the House of Lords and the English Court of Appeal. Nevertheless, it was emphasised repeatedly that, in the interests of uniformity, decisions of the House of Lords should be regarded as binding, and those of the Court of Appeal should be given due consideration. Hence, whatever the social factors influencing the law, the professional attitude of the lawyer tended to keep the decisions of the courts in line with English authority. There have, however, been exceptions: the High Court in the 1960s, for example, refused to follow a House of Lords decision dealing with murder. With the development of maturity, it is possible for a more independent approach to be taken, but the desire to retain uniformity still exists, except where an English decision is regarded as erroneous. One interesting development has been the increasing citation of Australian cases (especially those of the High Court) in English reports, and it has happened that an English decision of a lower court has been over-ruled by the House of Lords after an analysis of a High Court decision. But in general, while there are interesting differences in some lines of authority, it is not possible to find entirely new areas in the development of the common law. It is in statute law that the effects of social pressure are clearly seen.

Victoria, as a State within a Federation, wished to surrender as little power as possible to the Commonwealth, but financial power has made the Commonwealth the dominant partner. At the beginning of this century Australia showed great legislative initiative in this area (e.g., secret ballot and universal suffrage), but more recently has sometimes been slow in adopting legislative amendments which have been passed in England: Victoria was, for example, the last State in the Commonwealth to impose liability on the Crown for tort, and although in 1889 Victoria secured what was, for the nineteenth century, a liberalisation of the grounds for divorce, subsequent reform of this law was long delayed. The most significant developments due to social pressures relate to land tenure, protection of farmers' interests, and industrial law. The opportunity was available for Australia to create a new system of land law, but the tendency was to apply English law as far as possible. The law of copyholds was not adopted, however, and marriage settlements were rare. One great advance was the development of the Torrens system, which, by the use of registration of title, made proof of ownership a relatively easy matter compared with the complex rules of English conveyancing. Whenever a Crown grant was made after 1892 minerals were reserved to the Crown. Victorian law naturally did not concern itself greatly with "poaching" rules.

The importance of water led to special legislation: instead of riparian owners holding title to their half of the bed of a river, as in England, the river bed was vested in the Crown by the *Water Act* 1905. There are relatively few laws relating to fishing rights. The State Rivers and Water Supply Commission has the power of controlling the use of streams. Crown leasehold was an interesting development, whereby those farmers who could not afford to buy land were allowed to make improvements on their leaseholds. The

proportion of land held in this manner has at times risen to 40 per cent. The conditional purchase lease is perhaps realistically a sale on long terms, but there are conditions attached which attempt to secure the adequate development of the land. The so-called "perpetual leasehold" is formally a contradiction in terms, but here again various conditions must be met or the lease may be forfeited. Legislation to protect the interest of farmers exists in relation to the prevention of erosion, the destruction of vermin, and the eradication of noxious weeds. As the country is subject to droughts, bush fires, and floods, and as fluctuating world prices may mean financial hardship for primary producers, legislation to protect the economic asset of the farm has developed. Closer settlement schemes have encouraged the full exploitation of the land; a depression or a poor crop may lead to a moratorium on farmers' debts; and marketing boards have been created to render the primary producer less vulnerable in international markets. New forms of security such as liens on growing crops and wool and stock mortgages have been created, even though the Secretary of State in Britain attacked them in 1843 as being opposed to the fundamental principles of the common law.

The economic conditions in the early days of Victorian development did not encourage private enterprise to provide capital for railways which would not be reasonably profitable for many years, and, therefore, in common with the other States, government instrumentalities were established to administer services such as the railways.

## THE COURTS

### *Supreme Court*

The Supreme Court was established in 1852 by the Victorian Parliament under powers believed to have been conferred by the Separation Act and following a Commissioner's report on the judiciary. The Court was given the common law jurisdictions of the three superior courts at Westminster: the criminal jurisdiction of the Court of Queen's Bench and of the Central Criminal Court in London; the equitable, common law, and domiciliary jurisdiction of the Lord High Chancellor; and ecclesiastical jurisdiction, including the power to grant, in effect, probate and letters of administration, in accordance with the Prerogative Court of Canterbury, but with somewhat wider powers. However, there were grave doubts about the Court's validity. The Separation Act had reserved establishing powers for the Imperial Parliament, although it appeared that the Home Government did not intend to use them. The Victorian Government's initiative was ratified in 1865 by the Colonial Laws Validity Act which provided, *inter alia*, that every colonial legislature should have, and be deemed at all times to have had, the power within its jurisdiction to establish courts of judicature.

The Court commenced with a Chief Justice and a puisne Judge who were appointed in January 1852. A third Judge was appointed six months later, and gradually from 1856 to 1945 the number was increased to seven. Since then, the number of members of the bench has been increased from time to time, and in 1972 it comprised the Chief Justice and sixteen puisne Judges. The first Judges were appointed during the Royal pleasure, but the English Parliament, in passing *The Constitution Act* 1855, changed the tenure to one of good behaviour; this has continued since. In 1861 authority in divorce

and matrimonial causes increased the Court's jurisdiction following the English Act of 1857, and enabled the Full Court to grant decrees for dissolution of marriage on certain grounds. This power was transmitted to a single judge in 1883. It remained a matter of State legislation until 1961 when the Commonwealth *Matrimonial Causes Act* 1959 came into force and made divorce a Federal matter but enabled the Supreme Court to administer the jurisdiction in Victoria. In 1915 a Full Court of the Supreme Court was given a general appellate jurisdiction in criminal matters.

The High Court of Australia was set up in 1903, and became a new appellate court, in addition to the Privy Council, from judgments of the Supreme Court. At first envisaged as an "abode of learned leisure", its activity has so far increased that it has largely encroached on the Supreme Court as the ultimate interpreter of State law in Australia.

Changes in Supreme Court procedure mostly took place in the earlier years. In 1856 modifications were made in the arrangement of judicial business. The *Judicature Act* 1872 vested the Court's criminal jurisdiction in the new Central Criminal Court, but this was short-lived, and in the sweeping administrative reforms effected by the *Judicature Act* 1883 criminal jurisdiction was restored to the Supreme Court. That Act followed the English Judicature Act of 1873, but stopped short of creating divisions of different jurisdictions within the Court. In technical matters of litigation in the broadest sense, rules of Court have, from time to time, effected minor modifications in legal procedure, but the Court is still functioning mainly upon procedural lines laid down in 1883.

#### *County Court*

County Courts were instituted in England in 1846, and the establishment of similar courts for New South Wales and its dependencies was considered by a Commission set up with extensive powers in 1849 to report on law court practice. Although the Commission did not favour their creation, the new Victorian Parliament did, and by an Act of 1852 Courts of Requests were abolished and superseded by the new County Courts, a name peculiar to Victoria in the Australian States. These courts were local and civil and had a limited jurisdiction. However, the influence of the Courts of Request remained, for in all cases below £10 the judge was the sole judge in the issue on questions of law as well as fact, and in cases above £10 the office of assessors survived. Encouraged by the success of these courts, the legislature extended their jurisdiction in 1854 and gave a right of appeal to the Supreme Court. Today their monetary jurisdiction includes up to \$6,000 in ordinary civil matters and \$12,000 in "running down cases". Since 1865 it has also received additional but limited jurisdiction in other matters. In 1869 assessors were abolished, a jury was introduced for trial in certain issues, and a limited equitable jurisdiction was conferred. In certain miscellaneous matters it acts as an original court from which a right of appeal exists to the Supreme Court, and, when exercising Federal jurisdiction, to the High Court.

In 1968 local County Courts were abolished and one County Court for the whole of Victoria was established. In the same year, Courts of General Sessions, which exercised a purely criminal jurisdiction, were abolished, and their jurisdiction was vested in the County Court. The County Court

has therefore become a general court, exercising civil, criminal, and special jurisdictions, and in fact carries out the greater part of State judicial business.

#### *Courts of Petty Sessions and Magistrates' Courts*

The history of Courts of Petty Sessions is inextricably bound up with the office of justice of the peace. Courts of Petty Sessions were first mentioned by name in the New South Wales Act of 1832 in relation to penal jurisdiction. Small civil claims were then contested in the Courts of Requests, but as settlement increased this system became inadequate, and in 1846 the legislature established Courts of Petty Sessions to aid Courts of Requests in the settlement of small claims. In 1851, immediately after Separation and pending local re-organisation, existing Victorian commissions and appointments were confirmed. The following year Courts of Requests were abolished, and County Courts set up. The same Act also recognised Courts of Petty Sessions which were, however, to cease jurisdiction as soon as a County Court was established in any area. The situation remained unaltered until 1857 when a County Court Act raised the jurisdictional limit of those courts to £250. As this far exceeded the amount then justiciable in any small debt court, a limited jurisdiction was given to justices as such. Since then the jurisdiction of Courts of Petty Sessions has increased continuously. In 1928 an important extension conferred a general but restricted jurisdiction in contract and in tort. There have been no further developments, except for occasional monetary increases in justiciable matters, and a change of name in 1970 to Magistrates' Courts.

#### *Miscellaneous courts*

Courts of General Sessions were instituted in 1852. In substance they took over from the older Courts of Quarter Sessions which had operated in New South Wales and had been established in the District of Port Phillip in 1840. By the time the Courts of General Sessions were abolished their jurisdiction had been increased to include all but a few kinds of criminal offences. The first nominate Court of Insolvency was set up in New South Wales in 1841. Previously the Supreme Court had exercised some insolvency functions, and Commissioners were appointed for individual districts. In 1869, however, a Court of Insolvency was established, and this remained the basis of insolvency law for over fifty years. In 1924 the Commonwealth Parliament passed a Bankruptcy Act which made uniform provisions for the whole of the Commonwealth, and the State Court administered the Act as a Federal Court. In 1930, however, a new Federal Court of Bankruptcy was created, virtually terminating the old Court of Insolvency. The mining courts of Australia are unique and practically autochthonous\*, having been established when gold was first discovered in New South Wales. A proclamation by Lieutenant-Governor La Trobe in 1851 initiated a system of Victorian mining law, from which developed a hierarchy of minor courts with their own special procedures, the highest being a Court of Mines. They still continue.

#### LAW DEPARTMENT

Although the Law Department was not created until the separation of Port Phillip from New South Wales, the foundations of law enforcement

\* Original, indigenous (C.O.D.).

upon which it is based were laid as early as 1836 when the Port Phillip settlement was established. In 1836 disputes between John Pascoe Fawkner and Henry Batman were decided by three arbitrators, and by 1851, the year of Separation, a judicial system had been in operation for some years. Its administration had been one of the functions of the Superintendent of the Port Phillip District, Charles Joseph La Trobe, from his arrival in 1839 until he took up duty as the first Lieutenant-Governor of the new Colony of Victoria in 1851. Captain William Lonsdale, who had governed the settlement until the arrival of La Trobe and who afterwards continued in the office of Police Magistrate, was appointed the first Colonial Secretary for the new Colony when La Trobe was appointed Lieutenant-Governor. He had conducted the administration of the judicial system until Separation, when the departments of the public service became separately responsible and answerable, through a permanent head, to a Minister.

In 1851 two Ministers were appointed to administer the Law Department, William F. Stawell as Attorney-General and Redmond Barry as Solicitor-General, and the Department began to function three years later. Although, for the period from 1861 to 1890, a third Minister of the Crown under the title of Minister of Justice assisted in the administration of the Law Department, it continued under dual administration until the passing of the *Solicitor-General Act* 1951, which provided for the appointment of the first Solicitor-General who was not a Minister of the Crown. Since then the Department has been administered solely by the Attorney-General. By the late 1880s the Law Department, in addition to the staffs of the Supreme, County, General Sessions, Insolvency, and Petty Sessions Courts, also included the branches of the Registrar-General (with sub-branches concerned with matters relating to Companies; Registration of Births, Deaths, and Marriages; and Patents, Trade Marks, and Copyrights) and the Titles Office.

Many changes in the composition of the Department have since taken place, the following being the most notable:

1893. The Registrar of Births, Deaths, and Marriages sub-branch was transferred from the Office of Registrar-General to the Office of the Government Statist.

1904. The Patents, Trade Marks, and Copyrights sub-branch of the Office of Registrar-General was transferred to the Commonwealth.

1906. The first children's courts were created under the *Children's Court Act* 1906.

1927. The office of Public Solicitor was created under the *Poor Persons Legal Assistance Act* 1927.

1931. The office of Curator of Estates of Deceased Persons was transferred from the Treasury to the Law Department.

1930 to 1932. The office and functions of Collector of Imposts were transferred from the Registrar-General's Office to the Treasury.

1939 and 1940. The office of Curator of Estates of Deceased Persons was absorbed by the newly created office of Public Trustee.

1940. The functions of Master in Lunacy were transferred to the Public Trustee.

1948. The office of Master of the Supreme Court was created under the *Master of the Supreme Court Act* 1948.

1950. The Raffles Advisory Board was created. The Discharged Service-

men's Preference Board, the Discharged Servicemen's Employment Board, and the Patriotic Funds Council were transferred from the Premier's Department to the Law Department.

1962. The Companies Branch, formerly a sub-branch of the Registrar-General's Office, became a branch of the Law Department.

1964. The Legal Aid Committee began to operate a legal aid scheme to supplement the assistance provided by the Public Solicitor for persons unable to afford private legal assistance. While not a branch of the Law Department, the Committee is within the area of the Attorney-General's administration. The Appeal Costs Board was created to provide financial aid where extra legal costs are incurred in special circumstances.

1965. The Consumers Protection Council was created.

1968. The administrative control of the Consumers Protection Council was transferred to the Department of Labour and Industry.

#### REGULATORY FUNCTIONS OF THE CHIEF SECRETARY'S DEPARTMENT

It is common to distinguish between several classes of government functions, namely regulation, conservation, development, social welfare, and other services both to the government and to the public. Many departments, corporations, or other government agencies exist solely to perform one function or perhaps several closely related functions. However, this is not true of the three "omnibus" departments, the Chief Secretary's, the Treasurer's, and the Premier's. This diversity of activities under one portfolio is particularly noticeable in the case of the Chief Secretary's Department, which has always comprised many widely differing branches and has the responsibility of administering an unusually large number of statutes. The reason for this diversity is historical : the Chief Secretary's Department grew from the Superintendent's Office which existed before Separation and the advent of representative government, and at that time was responsible for nearly all government activity at Port Phillip. Separation, closely followed by the gold rush period, led to an increase in government activity and new departments and branches were set up to meet the Colony's needs.

Thus, by 1857 the Chief Secretary's Department was, as it is now, one of a number of departments, but one having a "residual" role, being responsible for those governmental activities not allocated to other specialised departments. The basic pattern of the Department's activities was already established, and among these the regulatory functions were most obvious, absorbing the largest share of the staff and budget of the Department. Apart from the police and gaols, the goldfields commissioners and wardens of mining districts at first came within the Chief Secretary's portfolio. In addition, the Chief Secretary's Department was responsible for a number of non-regulatory offices, functions, or services including the Registrar-General, the botanic gardens, geological and meteorological investigations, the public library, the protection of Chinese and Aborigines, Parliament buildings, and official shorthand writers. These areas of responsibility are recognisable as the core of the activity of the Chief Secretary's Department today. Of the trends which can be isolated one is the growth of social welfare activities, and within this area a transformation of activities from the regulatory to the social welfare sphere has occurred. Where once the role of the Chief Secretary's officers may have been to punish "criminal children", their role has gradually changed to that of

providing child and youth welfare services. In 1960 these activities were incorporated into the Social Welfare Department, a branch within the Chief Secretary's Department. In 1970 a separate Ministry of Social Welfare was established to carry out these functions.

Some regulatory agencies have passed out of the control of the Chief Secretary's Department; for instance, the Factory Inspectorate which operated in the late nineteenth century later grew into the Department of Labour and Industry, the Weights and Measures Branch came under the Local Government Department, and the Gas and Explosives Branch under the Mines Department. The enforcement by the Police Department of the Crimes Act and associated Acts and the Motor Car and Road Traffic Acts stands out as its chief regulatory activity, but the Chief Secretary's Department also administers approximately eighty Acts covering such widespread activities as elections, insurance, and liquor licensing.

#### VICTORIA POLICE

At the time of the first settlement of Victoria there was no centrally organised police force to serve the scattered population. Government administration was in the hands of a number of officials each of whom held the rank of police magistrate, and each having his own police whose jurisdiction was confined to the area of the magistrate's authority. Melbourne's police force was established in 1836, when Robert Day was appointed District Constable. He was succeeded the following year by Henry Batman, who was promoted to Chief Constable. Geelong established its police in 1837 when a magistrate and three constables were appointed from Sydney. In 1837 an attempt was made to form a native police force to maintain order between white settlers and Aborigines. This force lapsed, was revived in 1842, and continued until 1852, when it was finally dissolved as the need for it had passed and its recruitment had been unsuccessful. Crown Lands Commissioners controlling the occupation of Crown lands started a force of Border Police in 1838, and in the same year a detachment of the Mounted Police, a semi-military organisation, was stationed at Benalla on the overland route from New South Wales. In 1841 a Water Police force was established under the control of the Harbour Master to check desertion and improper conduct by seamen. The first step towards centralisation of control was taken in 1850 with the appointment of a Superintendent in charge of police in Melbourne and the County of Bourke. Immediately after the separation of Victoria from New South Wales, two other police forces were organised—the Goldfields Police, under the direction of the Gold Commissioners, and a Gold Escort. In addition, to meet the increase in rural population, a Rural Bench Constabulary was established. This was an unsatisfactory arrangement, especially as many police had resigned to search for gold, and La Trobe had to use enrolled pensioners from Van Diemen's Land in order to have enough men to carry out a minimum of the duties necessary. He also recruited, particularly for the Mounted Police, "cadets", men of some education and good connections who were virtually officer trainees.

In 1852 the Legislative Council appointed a Select Committee to inquire into the operations of the various groups of police. It recommended that the separate forces be combined into one, that a depot be established near Melbourne to receive recruits and attend to police horses, that 200 men

should be obtained from England under contract, that a cadet organisation be formed, that there should be a police barracks and regularly spaced stations, and that a Reward and Superannuation Fund should be established to pay awards for meritorious service instead of paying informing constables half the amounts of fines. The *Police Regulation Act* 1853 adopted most of these recommendations, abolished the office of Chief Constable, combined all the forces under a Chief Commissioner, and removed them from the authority of magistrates. William Henry Fancourt Mitchell was appointed the first Chief Commissioner, and in May 1853 Inspector Samuel Freeman, of the London Police, arrived with three sergeants and fifty men on ten year contracts to form the nucleus of a British civilian-type police force. Victoria was divided into a number of police districts, each under a Superintendent. As well there were several special branches, such as the detectives, first formed in 1848, which were also under the control of a Superintendent. This organisation is substantially the same today. There have been frequent changes in boundaries of districts and new branches have been formed, but most developments have stemmed from efforts to achieve better internal discipline and efficiency.

Mitchell was succeeded within a short time by Captain McMahon who in 1858 produced a police code for the guidance of members of the force. A police depot was established in the police paddock surrounding the present Melbourne Cricket Ground, and when this site became inadequate, the depot was transferred to St Kilda Road. In 1858 the Detective Branch was reorganised and the first Russell Street police station and barracks were built in 1859. Fluctuating populations, the large areas to be covered, and the ease with which lawbreakers could reach areas remote from police supervision, frequently made police work very difficult, especially as the growth of the force lagged very seriously behind that of the population. Even though a Royal Commission in 1882 was very critical of some aspects of police work and of a number of individual officers, no new Police Regulation Acts were passed until 1890. The police strike of November 1923 was followed by action within the Department to remove causes of discontent, but there was no new legislation until 1928. A Superannuation Board was formed in 1928 and a Police Classification Board in 1946. Long service leave provisions were also introduced in 1946.

A comprehensive course of training was introduced in 1920. Previously, except for a few lectures, training had consisted of a course of drill. This newer course was widened in 1926. In 1936 the Government asked the Chief Inspector of the London Metropolitan Police, A. M. Duncan, to make an investigation of police organisation in Victoria. He set out a number of reforms he considered necessary, and was appointed Chief Commissioner in the following year.

Several interesting features of police work have been developed within recent decades. Among them have been the introduction of women police, wireless patrols, a communications centre, traffic control patrols, and a junior police corps. Since the first two women were appointed as police agents in 1918, the activity of women police has gradually increased; in 1924 the first women were sworn in as constables, and by 1971 there were 109 women police in a total force of 4,945. Wireless patrols were first used successfully in 1923, and their use has steadily increased



until now many patrol cars are in constant communication with headquarters. The communications centre has grown from a small 2 kW transmitter to the present D24, which connects with all parts of Victoria. Road patrol activity is designed to detect traffic offences, to check the roadworthiness of vehicles, to educate drivers, and, particularly by means of "courtesy" cars, to control traffic problem areas. The junior police corps was formed in 1955 with the aim of raising police strength by ensuring a steady flow of recruits. Trainees have no police powers and are not bound to serve in the force. In 1971 the Government received a report on the Victoria Police from Sir Eric St Johnston, whom it had commissioned to assess the role of the force amid changing social conditions.

The Police Department has always been a branch of the Chief Secretary's Department and is responsible for the administration of the following Acts : the Police Offences Act, Police Regulation Act, Road Traffic Acts, Second-hand Dealers Acts, Motor Car and Motor Omnibus Acts, the Firearms Act of 1951, Hawkers and Pedlars Acts, Licensing Acts (in part), the Marine Stores Act of 1928, and the Pawnbrokers Act of 1928. Statutory bodies within the Department having reference to the Police Department are : The Police Classification Board and Police Discipline Board, both constituted by the *Police Regulation Act* 1946 ; the Traffic Advisory Committee, constituted by the *Road Traffic Act* 1935 ; and the Liquor Control Commission constituted by the Licensing Acts.

#### SOLICITOR-GENERAL

Until 1951 the office of Solicitor-General was a Ministerial office held by a member of Cabinet. The Attorney-General and the Solicitor-General, in addition to carrying out the traditional advisory functions of the law officers of the Crown, were jointly responsible for the administration of justice in Victoria and for the functions of the Law Department. In some years the office remained vacant, and between 1943 and 1951 the offices of Attorney-General and Solicitor-General were both held by the one Minister. In 1951 the office of Solicitor-General underwent a radical change with the passing of the Solicitor-General Act. That Act provided that the Solicitor-General should no longer be a Minister of the Crown and provided for the appointment by the Governor in Council of one of Her Majesty's counsel to the position. The Act made consequential amendments to other statutes, with the object of relieving the Solicitor-General of political responsibility. The duties of the holder of the office were prescribed as acting as counsel for the Crown and of performing such other duties, as counsel, as the Attorney-General should direct. The role of the Solicitor-General is, therefore, that of counsel and not solicitor ; he takes precedence among legal practitioners next after the Attorney-General. He has no right of private practice.

The Solicitor-General appears for the Crown in important constitutional, civil, and criminal cases, and advises the Government on legal matters referred to him by the Attorney-General. In addition, he has the important function in the administration of the criminal law of advising the Attorney-General in all cases regarding the discontinuance of criminal proceedings on indictment. The Solicitor-General also directs the activities of the permanent prosecutors for the Queen and authorises, in appropriate cases, the accept-

ance by the Crown of pleas of guilty to offences other than the principal offence charged on indictment. The Solicitor-General advises the Government on matters of law reform and is an *ex officio* member of a number of committees and other bodies connected with law reform and legal education. These include the Chief Justice's Law Reform Committee, the Council of Legal Education, the Board of Examiners, the Supreme Court Library Committee, and the Council of Law Reporting in Victoria.

#### LEGAL PROFESSION

Lawyers made their first appearance in the District of Port Phillip some three years after the arrival of the first settlers ; the first attorney or solicitor, William Meek, came in 1838, and the first barrister, E. J. Brewster, in 1839. The original rolls of barristers and of attorneys, still kept at the Supreme Court, show that by 1851 when the Colony of Victoria began its separate existence, thirteen barristers and fifty-seven attorneys had been admitted to practice. A judicial system had been created between 1839 and 1841. One of the earliest acts of the newly created Council of the Colony of Victoria was to set up a Supreme Court and a County Court in 1852. At Separation in 1851 only a few barristers were actually practising at Port Phillip. When the Supreme Court of Victoria was created, à Beckett, who had been Resident Judge in Melbourne of the Supreme Court of New South Wales, became its first Chief Justice. With the appointment of two barristers (Barry and Williams) to the Supreme Court and one (Pohlman) to the County Court, and with the filling of the posts of Attorney-General and Solicitor-General from the Bar (Stawell and Barry), the Bar was entirely denuded of barristers. However, with the discovery of gold in 1851 the population soared, and one result was to attract many lawyers, some of whom no doubt cherished the hope of finding fortunes on the goldfields. Between 1851 and 1860 just over 100 arrived in Victoria and were admitted to practice here, though not all practised. By 1863 the number of practising barristers according to the Law List was about fifty. The number of attorneys also increased rapidly in the ten years following Separation. The number admitted between 1850 and 1860 is given as 343, though again not all went into practice in the Colony. The earliest volume of the Law List, published in 1863, gives the names of about 270 attorneys in practice, almost equally divided between the city and the country towns.

In 1854 the Supreme Court enacted its first rules. These preserved the distinction which had existed in New South Wales (and still does today) between barristers and attorneys. They provided that persons admitted to practice in either capacity in England, Scotland, or Ireland might be admitted in a like capacity here, and set up two Boards of Examiners to deal with those who had no such qualification and had to qualify by examination. One of these Boards was concerned with the admission of barristers and the other with the admission of attorneys. The rules also contained a prohibition against acting in a capacity other than that in which the practitioner was admitted, a prohibition largely disregarded by barristers who set up in practice outside Melbourne. Although the organisation of the Bar was often proposed, nothing was done until 1884, when, under the threat of amalgamation, a set of rules was drawn up ; these appear to have ceased to operate within two or three years. Similar attempts had been made

several times between 1843 and 1859 for attorneys, but it was not until the latter year that the present Law Institute was founded. It had only forty-six members in 1859, and in 1863, fifty-seven city and fifteen country members.

From 1851 many proposals were put forward for the amalgamation of the two branches. Between 1870 and 1891 a Bill with this object in view had been introduced into the Legislative Assembly on many occasions and invariably passed, but had always been rejected by the Legislative Council. In 1884 the Council heard evidence on the proposal, but barristers and solicitors alike were most fearful of the consequences. However, in 1891 the Legal Profession Practice Act was passed making every past and future barrister also a solicitor, and every past and future solicitor also a barrister; each was legally entitled to practise in both capacities. The word "solicitor" replaced the word "attorney" in ordinary use and there was a common qualification for admission of barristers and solicitors, irrespective of which branch of the profession they might pursue. Those who thought, as many did, that the Act had abolished the Bar, proved to be wrong. Immediately after the passing of the Act, many members of the Bar formed a Bar Association, intended to preserve the Bar as before, but in face of strong public and political hostility the Association was abolished. However, except that a few solicitors also did court work, everybody continued to practise as before. It is worthy of note that in 1896 a barrister was president of the Law Institute and that another barrister was for some years its honorary secretary. In 1900 the Bar set about the task of becoming properly organised; rules were made, a committee appointed, and a Bar Roll established to be signed by all who wished to join. By signing the Roll, barristers undertook to practise exclusively as barristers, and not to hold a brief with any person who had not signed the Roll. By these means a *de facto* Bar was established which has lasted ever since. At first some resentment was felt by the solicitors at the refusal of barristers to appear with solicitors in court, where the solicitors were legally entitled to appear, but these and other complaints were eventually forgotten.

The achievement of Federation in 1901 was most important for the legal profession, which was asked to interpret the new political instrument. There were far-reaching consequences. Almost half a century was to pass before the volume of litigation returned to the high level of the late 1890s, as the economic depression of the 1930s, together with two world wars, affected the profession. When in the 1950s and 1960s the amount of litigation rose, it reached unprecedented heights, largely because of the greatly increased claims for damages for injuries sustained in traffic accidents. Work in other spheres also expanded, and led to more students seeking to enter the profession. The growth of the Bar in recent years has been quite remarkable. In 1902 there were eighty-two barristers on the Bar Roll, and it remained fairly constant until after the First World War. It reached 166 in 1931, 271 in 1954, and over 370 in 1971. The membership of the Law Institute grew to 995 in 1948, when it became compulsory for solicitors to obtain each year a practising certificate, the fee for which is applied also in payment of the subscription for membership of the Institute. Membership in 1971 exceeded 2,200, and practically all solicitors are members.

Both the Bar and the Law Institute have in recent times acquired

premises of their own. After 1852 the Bar began to come together in Temple Court where most members had chambers. In 1882 most of the Bar moved into the newly built Selborne Chambers at 462 Chancery Lane, and remained there or in adjacent buildings until 1961 when Selborne Chambers was sold and a new building was erected in William Street and named Owen Dixon Chambers. This now houses most of the Bar and associated services ; four storeys were added to the original nine in 1964. In 1923 the Law Institute acquired a building in McKillop Street to house its secretary and the Institute library. In 1961 it erected a new building in Little Bourke Street opposite the Law Courts. The Bar and the Law Institute have not only furthered the interests of their members but have also protected the clients of their members and have taken an interest in law reform beneficial to the community ; their views on specific matters are often sought by the Attorney-General ; they have been active in legal education ; and they have been very interested in providing legal assistance to poor persons.

#### LEGAL EDUCATION

The first Rules for "colonial admissions" to practise in Victoria as barristers, attorneys, solicitors, proctors, and conveyancers were made in 1854 by the Supreme Court. They provided for two Boards of Examiners, one for barristers and one for attorneys, etc., and prescribed certain law subjects for each, all practitioners except barristers being required to serve five years' practical training under Articles. Although the University of Melbourne was established in 1853, law subjects were not offered there until 1857. In 1854 all members of the profession in Victoria had been admitted in the United Kingdom, where reforms were being effected in legal education, then largely provided by the Inns of Court and the Law Society. Despite British influence in Victoria the University of Melbourne was encouraged to provide law teaching for all candidates ; part-time lecturers were made available from the profession, and until 1950 they taught the majority of law subjects required for both degree and non-degree qualifications. In 1860 the University established a degree of Bachelor of Laws (LL. B.), and since then Rules of the Supreme Court have exempted applicants with a degree from being examined in the prescribed subjects by the appropriate Board of Examiners ; no separate academic requirements for LL.B. graduates seeking admission as barristers or solicitors exist, although the Supreme Court Rules prescribed slightly different examinations for each non-degree applicant until 1892.

In 1865 the Rules of the Supreme Court were altered : a LL.B. applicant to the Bar was required to serve as a "student-at-law" for one year, and other applicants to the Bar were to serve for two years ; and all applicants for admission, whether as barrister or solicitor, were to matriculate at an acceptable university. This principle, except in the case of managing clerks, has continued in Victoria without change. In 1873 the Faculty of Law at the University of Melbourne was established, in anticipation of which the Supreme Court Rules of 1872 required all candidates for admission to the Bar to obtain a LL.B. degree at an acceptable university. This requirement continued until 1892. The 1872 Rules required LL.B. applicants for admission as solicitors to be admitted on serving three years' Articles, and other applicants

on serving five years' Articles, as before. The *Legal Profession Practice Act* 1891 amalgamated the practice of both barristers and solicitors, and there has since been one form of admission, although both branches have continued to be practised separately. Intending barristers were, therefore, required to serve Articles, and, in deference to the previous higher standard of Bar requirements, intending non-degree solicitors were required to pass certain non-legal university subjects. Provision was also made for admission of managing clerks, whose secondary educational standard did not reach matriculation level.

The *Legal Practitioners Reciprocity Act* 1903 established a Council of Legal Education which represented the profession and, in place of the Supreme Court, accepted responsibility for all academic and practical legal training. The Council's first Rules, which have undergone only minor changes since 1905, provided for admission of LL.B. graduates with one year's Articles, and of four years' articulated clerks. In 1932 it was prescribed that all applicants should pass all the substantive law subjects of the LL.B. course at the University of Melbourne, and since then the only difference between LL.B. graduates and articulated clerks has been the non-legal or non-substantive subjects in the degree course. Until 1947 degree students and articulated clerks were required to pass Latin at matriculation level, but since then there have been no pre-requisite subjects for law students. Since 1965 a LL.B. degree from Monash University has been recognised. There has been considerable variation between the examination subjects prescribed by the Boards, the University of Melbourne, and later the two universities, although all courses have taught the fundamental principles of law at standards comparable with those in Britain.

In 1945, as a result of suggestions from the Law Institute of Victoria, the Council of Legal Education first prescribed certain practical subjects important in professional practice, some of which, although taught in the University Law School, were not compulsory for a LL.B. degree. Since then there has been a steady enlargement of legal subjects, owing to the increased administrative complexities of the law. Since 1946 the student-teacher ratio has improved and the number of full-time teachers in Victorian law schools has increased from one in 1930 to two in 1940 and sixty-eight in 1971. Contact with overseas universities has been encouraged and law teaching methods have been influenced particularly by American schools.

In 1962 the University of Melbourne imposed a quota of 330 on the number of first year law students, and the rules were therefore changed so that matriculants excluded by the quota could attend a course, comparable with that provided by the University for articulated clerks, but administered by the Royal Melbourne Institute of Technology. Lecturers, tutors, and examiners are appointed by the Council of Legal Education, which also supervises examinations. Apart from the system of Articles little organised education in professional skills of legal practice has ever existed in Victoria. From 1941 until 1966 the University of Melbourne provided drafting tutorials for degree students, and in 1958 established an organised Moot Court. The Law Institute of Victoria and the Victorian Bar made submissions in 1968 to establish a school to provide training in professional skills, and a limited scheme was approved in principle by the Council of Legal Education, but awaits implementation.

# 3

## EDUCATION

---

### INTRODUCTION

At Separation Victoria inherited from New South Wales a dual system of educational administration whereby all church schools receiving financial assistance from government sources were administered by a Denominational Schools Board, and all schools owned and operated by the Government were administered by a National Schools Board. This cumbersome and inefficient system represented two compromises the Government had had to make in order to reconcile the conflicting claims of church bodies, and at the same time to reconcile the principle of local responsibility with the reality of local incapacity in the Australian colonial environment. From 1833 on, successive governors had been forced to the first compromise as they realised that the churches, hampered by poverty and further weakened by rivalry, could not be expected to provide a network of schools to cover the Colony's thinly scattered, partly nomadic population of mixed religious affiliations. The governors' final answer was to supplement the church schools with a system of schools (based on the Irish National System) which provided moral and secular instruction for all pupils in common, and separate denominational instruction, for those whose parents requested it, at specified times in the school week. In the same period the governors had been forced to the second compromise as they came to realise that in the country areas it was impossible to expect an uneducated, working-class population to provide either the money or the administrative competence to establish and maintain schools. The Government therefore agreed to initiate schools by providing part of the money and most of the administrative machinery, but paid lip-service to the principle of local authority by leaving some administrative responsibility with the local boards of patrons established for each National School.

The disappointing outcome of these compromises was, as several select committees and commissions of inquiry showed, an insufficient number of schools irrationally located, frequently ill-sited and badly built, and in general inefficiently conducted by incompetent and unsupervised teachers. This had become apparent almost from the day the dual system had begun in 1848, but with the discovery of gold in Victoria and the consequent great increase in population the system proved completely inadequate, and the 1850s were filled with partisan attempts (frequently at the parliamentary level) to destroy one school board in order to aggrandise another. The same decade also witnessed a substantial growth of secular feeling and a

consequent decline in sympathy for the church bodies which, by insisting on a dogmatic denominationalism in their schools, were preventing the establishment of a system of universal elementary education. In this mood the Victorian Parliament passed the Common Schools Act in 1862, designed to bring all government subsidised schools under the one authority; but it was essentially only a compromise, for the Act was only as secular as the Government dared make it in the face of a declining but still powerful denominationalism. Thus, while the Act provided for the amalgamation of schools in districts where rivalry had established too many, the powers left with the churches enabled them to delay or circumvent this intention by resort to legal and administrative obstruction. In 1867 Victoria's Attorney-General found, after a Royal Commission, that "the present system of education is inadequate in its scope and extent . . . inefficient in kind . . . enormously and disgracefully expensive". Two years later, dismayed by the churches' response to his appeal for further compromise and co-operation, he swung over to a secularist viewpoint, and in a memorable resolution called upon the Victorian Government to end all compromise. In the light of the current "ecclesiastical rivalry and dissensions" he declared, ". . . the establishment of a public system of secular instruction, free from the interference of the religious sects, and under the direction of a Minister of the Crown, responsible to Parliament, is urgently demanded by the highest national interests, and calls for the immediate attention of the Legislature".

This mood of over-reaction which inspired the Education Act of 1872 has, in all essentials, informed and influenced every later Act. It did not follow that in order to remove the churches from their obstructive rôle the State had to commit itself to a rigid neutrality in denominational matters, nor did it follow that local or institutional groups had to be removed from all administrative responsibility for education because the churches had been obstructive. However, this was what was enacted. A few trivial chores rather than responsibilities were left with local school committees, but in everything that mattered—finance, curriculum, textbooks, and the supply and training of teachers—the newly-created Department of Education was given complete responsibility. Within a very few years it was obvious that there were dangers inherent in this centralised system, and as a Royal Commissioner pointed out in 1877, "the leading principle . . . has been to substitute supervision from Melbourne for local co-operation . . . The Department has been over-trustful in itself". However, even when complacency, inefficiency, and economic retrenchment during the 1890s had combined to make the Department a public scandal, the members of the very powerful Royal Commission established in Victoria (the Fink Royal Commission, 1899 to 1901) determined to strengthen the Department's hand, believing apparently that greater efficiency would come from greater authority. The administration of public education in Victoria for many years after 1901, especially in primary and secondary schools, remained remarkably unchanged. However, due to various demographic, social, and educational developments, especially since 1945, there have been important changes in tertiary education (described elsewhere in this chapter) and a more gradual re-appraisal of primary and secondary educational needs since the mid-1960s, which are noted in the following sections.

## PRE-SCHOOL EDUCATION

In 1908, when the first organisation for pre-school education in Victoria was established, four free kindergartens existed and were maintained by voluntary effort. In 1971 over 600 kindergartens were recognised for subsidy by the State Department of Health. This development in facilities was accompanied by changes in the educational emphasis in programmes and by a marked expansion in teacher training.

In the late 1890s only a few private kindergartens existed in Melbourne. Free kindergartens originated in the crowded inner suburbs. The first was opened in Carlton in 1901. Seven years later the Burnley, Carlton, Collingwood, and North Melbourne kindergartens united to form the Free Kindergarten Union which, together with several church organisations administering their own kindergartens, pioneered Victorian pre-school education.

From their inception, kindergarten programmes gave attention to all major aspects of children's development, approaching education in line with Froebel methods, through play rather than formal instruction. Responding to community needs at that time, they stressed improved physical care and the need for affection, and provided a variety of educational play materials, interesting surroundings, and the stimulation of contact with other children and trained teachers. Early programmes were rather formal in organisation, following a set routine for the day.

The first course for pre-school teachers (one year) was started by the Free Kindergarten Union in 1916. Previously, the State Education Department had collaborated with the Union in training students. The Kew site of the Kindergarten Training College (K.T.C.) was purchased in 1921 and the College opened in 1922, and in 1925 a three year course was instituted. In 1965 the name was changed to the Melbourne Kindergarten Teachers' College.

Voluntary committees gradually opened new centres with the help of the Free Kindergarten Union and other organisations. In 1910 the Union received its first State Government grant of £1,000 for one year. This grant was renewed and gradually increased. Parents were encouraged to make small donations, but attendance was otherwise free and voluntary groups took major responsibility for providing buildings, equipment, and salaries. From 1931 younger children, from two years of age, were enrolled. Many attended for three or four years, and an after-school guild was sometimes instigated for children who had left for primary school. By 1943 there were 33 kindergartens affiliated with the Free Kindergarten Union. Union policy was expanding and the separation of responsibility for teacher training from that of the development of field work became necessary. Pre-school services provided by church organisations also increased and in 1939 the Nursery Kindergarten Extension Board was formed to advise groups in the more prosperous suburbs where kindergartens were spreading about buildings, equipment, and programmes and to provide a supervisory service. (This work now forms part of the pre-school responsibilities of the Department of Health.)

A combination of events brought national support to State efforts. In 1937 a report on the care of pre-school children in Victoria, submitted through the Department of Health, was considered at the first meeting



of the National Health and Medical Research Council. The Commonwealth financed a demonstration pre-school centre in each capital city and the Melbourne Lady Gowrie Child Centre was opened in 1940, influencing the standard of building and staffing of other kindergartens. In 1939 the formation of the Australian Association for Pre-School Child Development (now the Australian Pre-School Association) united voluntary and professional workers on a national level. In 1944 the position of Chief Pre-School Educational Supervisor was created within the Infant Welfare Department of the State Department of Health, and State Government subsidy on a *per capita* basis was introduced ; it was £4 per annum. Capital grants were made available in 1948 and by 1950 were on a £2 for £1 basis up to £2,250. Centres affiliated with voluntary bodies such as the Free Kindergarten Union and church or municipal councils received their government subsidy and additional professional supervision through these organisations.

By 1970 there were 399 metropolitan and 291 country subsidised kindergartens, an increase which had created a serious shortage of qualified pre-school teachers. State Government bursaries for training of teachers since 1948 and the appointment in 1959 of a Wages Board for kindergarten teachers helped to some extent with recruitment.

As preference in pre-school admissions is often given to children nearest school age, attendance at a pre-school centre is reduced to about one year for most.

Committees of parents, rather than interested people outside the district concerned, have now taken the initiative for establishing pre-school centres; therefore, in areas where most families lack educational and economic advantages, children are less likely to be able to attend a kindergarten. More recently, however, government departments, universities, pre-school organisations, and foundations have co-operated in initial efforts to provide pre-school services in some of these areas, as well as in giving attention to the educational needs of particular groups such as Aboriginal children.

State Government subsidies now cover the salary of a trained teacher. In June 1971 the basic salary for a teacher in charge of a single unit centre ranged from \$64.90 weekly to \$93.20 in the eleventh year of experience. In each subsidised centre, a minimum of 40 children per full-time teacher is required. The average teacher-child ratio is approximately one teacher to fifty children who attend in two groups for morning or afternoon sessions. A non-professional assistant, and frequently parents, help the teacher. Subsidies are also subject to certain conditions concerning buildings and programmes.

Capital grants now stand at a maximum of \$6,000 (on a \$2 to \$1 basis) for single unit centres with an additional maximum of \$4,000 (on a \$1 to \$1 basis) for a second unit.

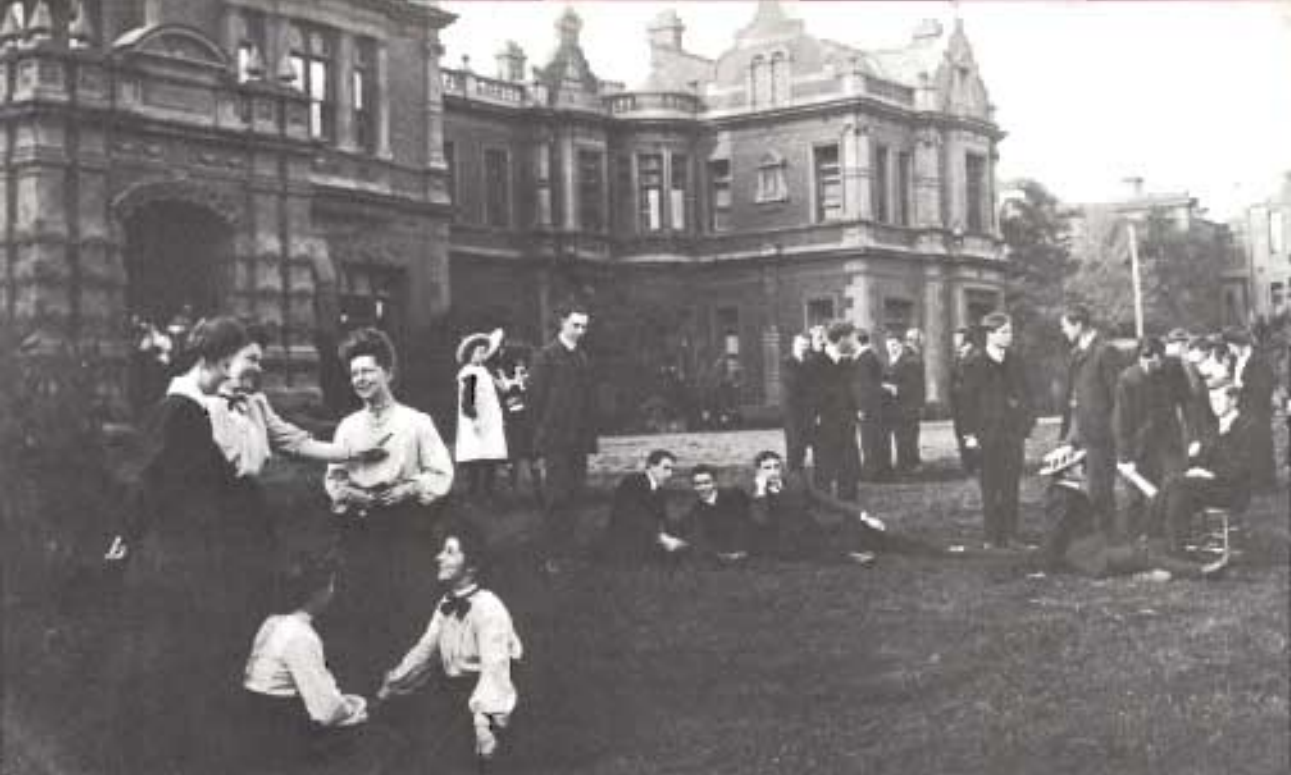
In 1965 the Free Kindergarten Union granted autonomy to the Training College which then became the Melbourne Kindergarten Teachers' College. Capital grants through the Education Department totalling \$574,000, supplemented in 1968 by a Commonwealth capital grant of \$210,000 (pending a building permit), by personal donations, and by donations by trusts, provided greatly increased training facilities for students. Estimates indicate, however, that even full use of these will do no more than keep pace with the current rate of expansion of pre-school centres rather than reduce the



A rural primary school and teacher's residence of the type built in the 1880s.  
*Education Department*

Interior of an early primary school.  
*Education Department*





An early photograph of the Melbourne Teachers College.  
*Education Department*

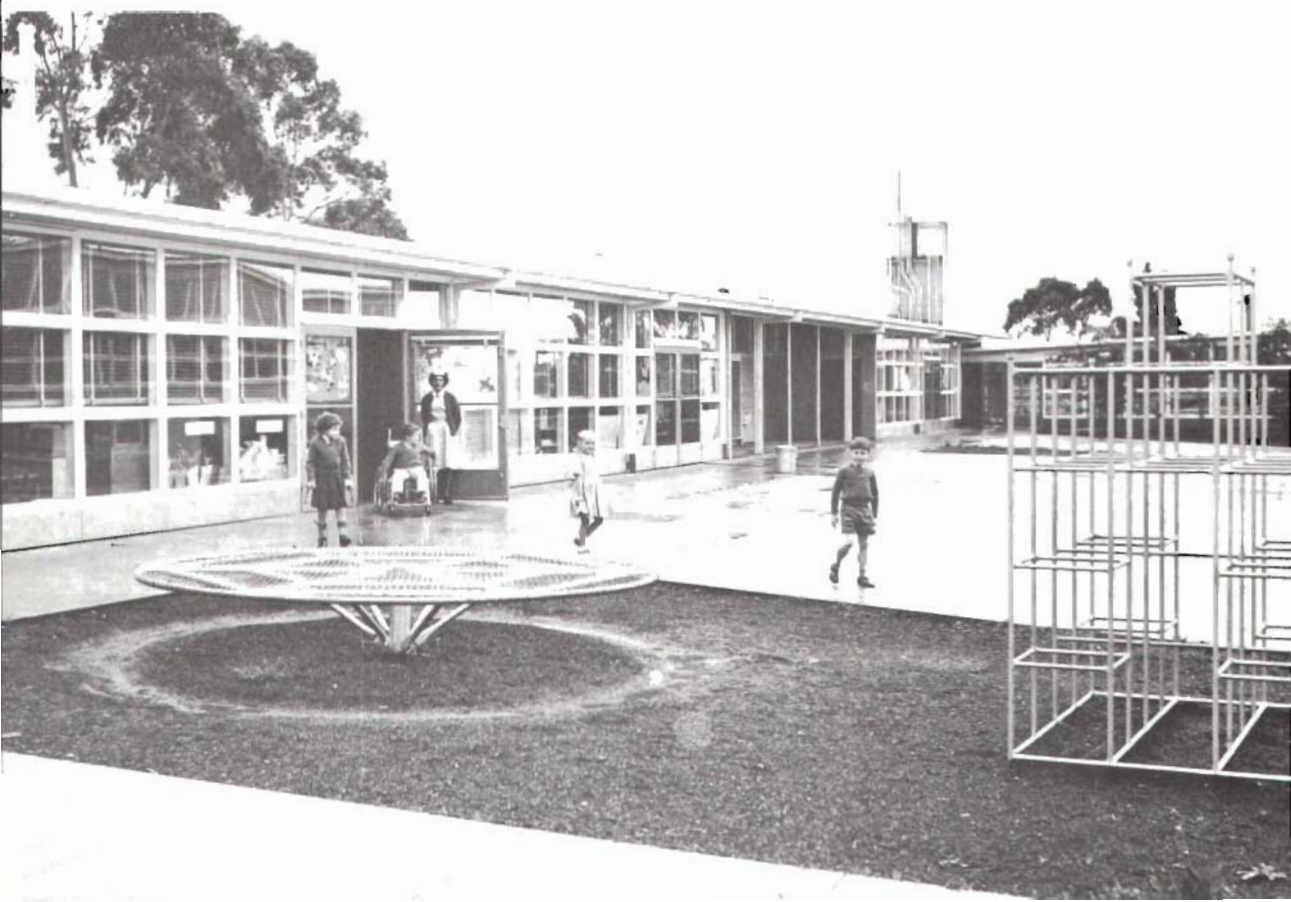
Visual aids now being used in primary education.  
*Education Department*





Music group at the Glendonald School for the Deaf.  
*Education Department*

Yooralla Hospital School for Crippled Children, with playground equipment.  
*Education Department*





The Presbyterian Ladies College, East Melbourne, prior to demolition.

*La Trobe Collection, State Library of Victoria*



An art lecture at Mount Scopus College is telecast to four other classes by closed circuit television.

*Australian News and Information Bureau*

Students playing cricket in the grounds of Melbourne Grammar School.

*Gordon De Lisle*





Manual arts training at a secondary technical school conducted by the Christian Brothers.

*Advocate Press*

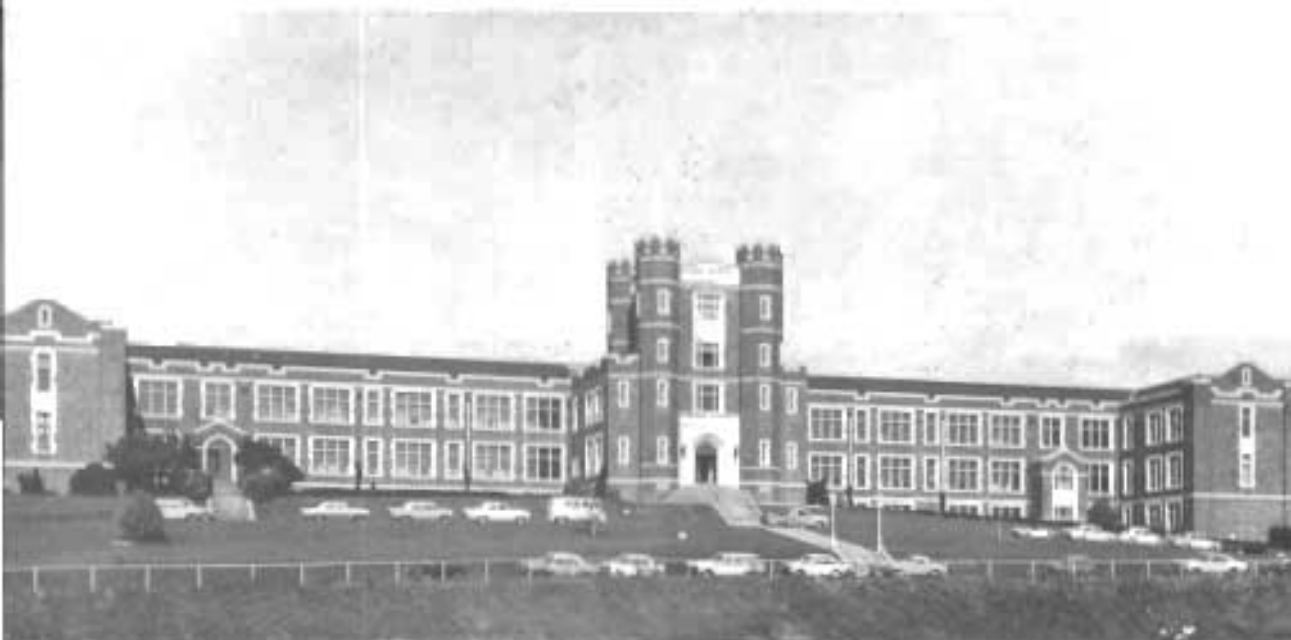


Typing class at a State secondary technical school

*Education Department*

Melbourne High School in South Yarra.

*Education Department*





Electrical engineering laboratory at the Royal Melbourne Institute of Technology.

*Victoria Institute of Colleges*

An early surveying field class at the Working Men's College.

*Royal Melbourne Institute of Technology*

The main building of the Ballarat School of Mines and Industries, built in 1899

*Ballarat School of Mines and Industries*





Secondary students sitting for examinations at the Exhibition Building in the late 1950s.

*Australian News and Information Bureau*

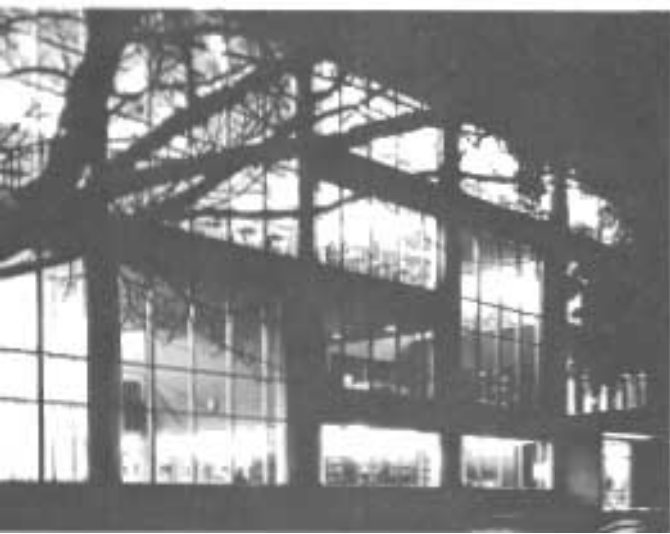


The old Wilson Hall at the University of Melbourne. It was destroyed by fire in January 1952.

*University of Melbourne*

The Basileu Library, the main library at the University of Melbourne.

*University of Melbourne*







Students outside Glenn College at La Trobe University, with Menzies College in the background.

*La Trobe University*

A view of the Mohawk Forum from the Bio-medical Library.

*Mohawk University*



severe shortage of qualified pre-school teachers. State Health Department student bursaries in 1971 provided a yearly living allowance of \$1,100 (country students) and \$550 (metropolitan), and an additional amount for tuition fees. A small number of additional bursaries is provided by municipal councils, church organisations, and other local groups. The full course is approved for Commonwealth Open Entrance and Later Year Advanced Education Scholarships. From 1965 a full-time post-diploma course of one year has been offered by the College to teachers holding a K.T.C. diploma and who have at least four years of teaching experience with young children. Those completing the course receive the Diploma of Advanced Studies in Education.

Programmes within the kindergartens are flexible to provide for local needs and for the educational needs of the particular children attending. Continuing contact between the home and the centre is therefore necessary, and programmes reflect developments in the community in general. They also take into account the results of research in child development. In the 1940s, when studies of physical maturation led to an emphasis on physical readiness for learning, programmes catered for the needs and interests attributed to different age groups.

As psychology became more concerned with mental health, practices thought to increase stress in children, such as eating and sleeping in groups away from home, were discontinued. More thought was given to procedures for the initial separation of children from parents, and to the ease with which children mixed; also to understanding children's feelings and to some therapeutic aspects of play.

Research is now directed more towards intellectual development. While resisting exclusive concern with this, which would ignore knowledge previously found to be significant, pre-school teachers have been challenged to revise the generalisation that play necessarily results in positive learning. More direct adult stimulation is now given to help children organise knowledge and develop language and thinking processes. This is mostly done, however, in the course of purposeful activity rather than in periods of formal instruction, and the freedom which play provides for the creative use of what has been learned has been preserved. Scientific studies which have shown clearly the impact of environment on development have influenced awareness of teaching opportunities. Behaviour and intelligence are now seen to be more open to influence; knowledge previously used to understand behaviour is now used more actively to facilitate positive change.

The contemporary scene is one of much controversy and increasing diversity in the types of programmes offered and in the cultural background of families involved. There is greater concern with learning right from birth and with understanding the shared responsibilities of parents and teachers. Attention is also being directed to the educational needs of children who are cared for while their mothers work. Greater public awareness of the importance of early education has brought not only support but also a rapid increase in the educational responsibilities to be met. This is severely straining existing resources. Therefore, in April 1971 the Australian Pre-School Association, Victorian Branch, requested, through the Minister of Health, that a Committee of Inquiry be set up by the Government of Victoria to examine questions of organisation, finance, and future policy

for the development of pre-school education throughout the State. Later in the year the Government decided to appoint such a committee.

#### PRIMARY EDUCATION

One of the first public buildings in Melbourne was a small wooden school erected not far from the corner of William Street and Little Collins Street in 1837. Though not the first school in the Port Phillip District it was perhaps the most important of the early schools for it demonstrated that education was to be a matter of public concern.

Education became a matter of public dispute as the churches struggled to establish their rights and the National Board tried to gain a foothold. The disputes, particularly those involving denominational schools and religious instruction, might not have been so bitter if the protagonists had not agreed that some form of elementary education was essential. Had the school been thought of little importance, governors, politicians, and clergy, who already had enough to divide them, would have avoided raising the problems at all. But the young settlement, struggling to build houses and to feed itself, did trouble itself over schools, even when it became evident that many of those for whom the schools were intended were not interested and that parents would have to be compelled to send their children to school. Those who, in the years before the passing of the 1872 Act, spoke or wrote on educational issues or played an active part in organising local schools came from the ranks of doctors, lawyers, clergymen, journalists, merchants or smaller businessmen, civil servants, or members of parliament, that is, from the ranks of those with influence in the community and with some (though not necessarily great) wealth. The less wealthy, for whom the schools were primarily intended, do not seem to have played a very vigorous part in obtaining them.

The early colonial schoolmaster, whatever his views on the religious question and whether he taught in a church or a government school, emphasised order, tidiness, obedience, and respect for authority, often to the neglect of the "sterner" intellectual virtues. He taught the "three Rs", very narrowly defined: sufficient reading to ensure that a newspaper could be read; writing, which often meant penmanship or "handwriting", and all too rarely was extended to cover composition; and arithmetic, the fairly rigid, almost ritualistic performance of the basic processes of addition, subtraction, multiplication, and division, with, since it was important in office work, a little elementary book-keeping. The colonial schoolmaster gave what was, in fact, a basic education or, to use the term by which the primary school was then called, an elementary education. From its inception the Victorian primary school was given a task of developing mental skills and influencing behaviour and, when in accordance with the 1872 Act the State developed its own Education Department, this tradition continued. The narrow basic curriculum continued as did the assumption, practically universal before 1872, that those who attended the elementary school (whether it was run by the State or by a church) would receive no other schooling. The belief continued that teachers could be adequately trained by a system of apprenticeship where, after completing primary schooling, the future teacher was attached to a "master" teacher from whom he learned the techniques of the teaching profession during the day; at night

he studied for what passed for his secondary education. The system of payment by results, introduced in 1863 from England where it had been established the previous year, was also to remain. Under it a teacher's salary was dependent in part on the results his pupils obtained in an examination which was confined principally to the three Rs. The mistrust this system fostered remained for many years, teachers trying (with their financial future at stake) to outwit inspectors who, believing that the Education Department faced problems which could best be solved by hard work, watched to ensure that the classrooms of the State were scenes of stern endeavour.

By 1890 most of the fervour which had marked the attempt to expand Victorian elementary education had passed. Schools were now accessible to all children; a central administration had been established and had developed procedures which, though rigid, had resulted in improvements; the religious question had been resolved, if not to the satisfaction of all parties at least to a degree which had reduced controversy. With the advance, there was still much that was depressing: teachers were poorly trained and defectively educated, the curriculum was narrow, methods of teaching were stereotyped, and the Education Department either suppressed or ignored criticism. The state of primary education became worse during the depression of the 1890s. The Teachers College in Melbourne, the only training institution in the State, was closed; senior teachers were demoted or compulsorily retired; schools were amalgamated and class sizes increased; the few tentative experiments which had been begun were ended; and the dissatisfied teachers became more disheartened and their distrust of the Department increased. However, the very depths to which the system had sunk by the mid-1890s increased the vigour with which it was attacked by critics, of whom the most prominent representative was Frank Tate—inspector, then Teachers College principal, and from March 1902, Director of Education. Their efforts, and those of others, contributed to the setting up of the Fink Commission, which first widened its warrant so that it covered all aspects of education (and not just technical education as was originally intended), and then produced a report which criticised severely the administration and general efficiency of the Education Department.

Using the report's recommendations as a guideline, a thorough overhaul was begun of the primary school system, and in fact of the whole Department. The pupil-teacher system, though not abolished completely, was largely reformed, and the Teachers College was made an integral part of a primary teacher's professional preparation so that, when secondary schools were gradually expanded, it became possible to recruit trainees with a reasonable general education. Payment by results ceased, teachers were encouraged to experiment with new techniques, and the curriculum was extended. The three Rs, for example, were liberalised until they came close to what would be expected in a primary school today; history and geography were given greater prominence; nature study and manual training were established as ordinary subjects and not as "frills"; and physical education was encouraged. Tate worked on these and allied changes particularly vigorously in the early years of his directorate, and introduced into Victorian primary schools the theories and methodology which, in England and the United States, had been called the New Education. Confusions and ambiguities in the theory and

practice of the New Education were not articulated, but Tate faced these problems with enthusiasm, administrative skill, and political adroitness to accomplish his task. By the time of his retirement in 1928 he had succeeded in remodelling the primary school system.

For the next decade there was little change in the attitudes and methodology of the primary schools. The curriculum was revised, most noticeably in 1934, and the improvement in teacher training which had been begun was carried further. The New Education had run its course and the curriculum and methodology it introduced tended to become progressively more rigid. On the whole it was a time of stagnation. The most significant change was administrative. As the State secondary schools slowly expanded after the passing of the 1910 Act, they forced a reconsideration of the function of the primary school; in fact it became, for the first time, a primary school as such. Only a minority of primary school students went on to the State high schools, but by 1934 the primary school had reached a discernable stage in the educational process; previously primary education (or, to use the more correct term, elementary education) had been terminal.

The dramatic expansion of Victorian primary education after the Second World War caused considerable strain. Insufficient teachers, meagre accommodation, and the stretching of scarce resources so preoccupied the administrators that school activities received scant attention; the reforms which the New Educationists initiated early in the century and slightly modified later continued to provide the basic procedures. Overseas visitors found the Victorian primary school of the 1940s and 1950s conservative, stiff, formal, offering a narrow curriculum, and over-concerned with that maintenance of order, neatness, and respectability which had been a preoccupation of the Victorian primary schools in the 1850s. Inspectors, though no longer examining for payment by results were still (correctly) regarded by teachers more as assessors than as advisers. The interest in experimentation, which had followed the New Education and was evident again for a short time in the 1930s, had disappeared, and there was little difference between the curriculum and methodology of 1950 and those of 1920. Since the early 1950s, however, the curriculum has lost some of its rigid stratification; handwork has turned into art; history and geography have been amalgamated to form social studies; the teaching of science has replaced nature study; and arithmetic has changed gradually into mathematics. Methods have also become more flexible, and more effort has been made to cater for the differences between children, and alternatives to the class lesson have been sought. It has proved possible to expand teachers colleges so that a three year course is now universal. One hundred years after the 1872 Act the Victorian primary school is in a process of change; dissatisfied with what it has achieved, it has, in the last twenty years particularly, begun a search for a new role.

#### SECONDARY EDUCATION

On 3 March 1841 Thomas Henry Braim, Victoria's first secondary school headmaster of any significance, landed at Melbourne with his wife and three children. He had come from Hobart, where he had previously opened the Hobart Town Grammar School, but irked by the somewhat

exclusive policy of the trustees, had resigned after three frustrating years to teach for a further three years in other schools. He then opened a private school, only to be faced with strong competition from a government school established by Governor Arthur. In 1839 he took charge of a proprietary school, and was making progress when Governor Franklin announced the establishment of the Queen's School. With an educational outlook formed from the ideas of Pestalozzi, of Thomas Arnold of Rugby, and of the headmasters of English middle class schools such as Cheltenham and Wellington, he tried to attract pupils to a superior school in the Wesleyan Chapel, Swanston Street, after his arrival in Melbourne. The attempt failed and he departed for Sydney, where he became headmaster of Sydney College. Enrolments fell off seriously with the economic depression, and in 1844 he resigned and went to England. Returning in 1846, he accepted the invitation of William Rutledge, a large landowner of Belfast (Port Fairy), to open a superior school with the aid of a State subsidy. The school progressed; in 1848 he was ordained deacon by Bishop Perry (and priest in 1849), and continued to establish schools in the Belfast area until his collation as Archdeacon of Portland.

The lessons of Braim's frustrating experiences as a private school master, and those of others such as he, were not lost upon the Government and the educational leaders in Victoria in the 1850s and 1860s. Realising that the private school was likely at best to eke out a precarious existence, the Government between 1853 and 1856 set aside a sum of £40,000 for the use of the churches in founding secondary schools. Scotch College (1851), St Patrick's College, East Melbourne (1854), Geelong Grammar School (1857), Melbourne Grammar School (1858), Geelong College (1861), and Wesley College (1867), received grants of land, and finance from the government fund. There were hesitations in some quarters, notably among the Presbyterians who were divided on the question of State patronage, but after 1851 the opposition to the acceptance of grants declined. By 1872, when the Education Act made elementary education a responsibility of the State, the secondary schools had developed a decidedly public character. They had moved away from any kind of exclusive policy and had admitted pupils without regard for the religious affiliation of their parents. They had become the recognised institutions for preparing students for the Colony's two notable public examinations, the Civil Service examination, and the Matriculation examination of the University of Melbourne. In 1871 the Government empowered the Department of Public Instruction to award annually eight exhibitions tenable at the secondary schools to selected State scholars; in 1881 the number was raised to eleven; and by 1900 more than 260 in all had been awarded. There were good reasons why the leading secondary schools should have earned the appellation of "public schools".

The Act of 1872 in Victoria, unlike the 1880 Act in New South Wales, did not mention State secondary schools. A recommendation for State high schools was made some five years later by C. H. Pearson in his capacity as a Royal Commissioner inquiring into the state of public education in Victoria, but it drew no marked response from the Government or the community. Secondary education remained a field for public and private initiative. The churches, especially the Catholic Church, took advantage

of the rising population and continuing prosperity to found more schools. The Jesuits founded Xavier College, Kew, in 1878; the Christian Brothers, who had earlier opened a school in Victoria Parade in 1868, founded a second school in St Kilda in 1878; in 1889 the Holy Ghost Fathers founded the school in Ballarat which became St Patrick's College, controlled after 1893 by the Christian Brothers; and in 1893 the Marist Brothers founded schools at Kilmore and Bendigo. Secondary schools for girls were also founded. The first to prepare girls for Matriculation were the Presbyterian Ladies College, East Melbourne, and Mary's Mount, Ballarat, both founded in 1875. Then followed the Methodist Ladies College, Kew, in 1882, and the Catholic Ladies College, East Melbourne, in 1889. By the turn of the century the Presentation, Mercy, and Brigidine orders of the Catholic Church had established schools in the country as well as in the metropolitan area to prepare pupils for secondary school examinations.

It was rare for local government bodies to show initiative in the founding of secondary schools. There was one outstanding example, however, shown by the Sandhurst (Bendigo) Borough Council. In 1870 it established the Sandhurst Corporate High School with a former vice-principal of Scotch College as headmaster. Although the Council severed its formal connection with it in 1873, the school carried on; it remained in existence until 1912, when the Education Department, taking advantage of a special transfer clause in the Education Act of 1910, took over the lease of the school from the two headmasters. The driving force behind the Bendigo venture was a Scottish chemist who was familiar with the practice of municipal support for town grammar schools in Scotland. Private initiative manifested itself wherever there was a promising concentration of population not already served by a church school, and provided for the foundation of schools which were later to be incorporated and to develop into substantial institutions. Among these were Caulfield Grammar School, Camberwell Grammar School, Brighton Grammar School, Haileybury College, Hamilton College, Clarendon College, Ballarat, Fintona College, Melbourne, Girton College, Bendigo, Queen's College, Ballarat, and Ruyton and Tintern in Melbourne. Other schools, like Ararat Grammar School, Bairnsdale College, and Williamstown Grammar School were the forerunners of State high schools. There were over 100 private schools presenting students at the University's Matriculation examination in 1900, and some 340 such schools have been identified in Victoria in the period 1890 to 1910; the largest was South Melbourne College.

The State entered the field of secondary education with the establishment of continuation schools. The first to be established was in Melbourne in 1905; it was followed in 1907 by similar schools in Ballarat, Bendigo, Warrnambool, and Sale, and in 1909 by schools in Shepparton and Wangaratta. The Director of Education, Frank Tate, represented the continuation schools as the means whereby the State primary schools would be provided with junior teachers. However, following a visit to Europe and America in 1907 he began to see them, at least those in country areas, as agricultural high schools, providing "such an education as will enable a boy ultimately to become an educated, intelligent, practical farmer". His observation of the part played by the schools of Europe in the development of scientific agriculture and of the impact of the belief in the virtues

of rural living on educational thought in America, and his experience of the drift of population from the country to the city during his seven years as an inspector of schools in the Charlton district, had united to produce a vision of the State high school as the prime means for the reconstruction of country life. The Act of 1910, which empowered the Education Department to establish high schools and higher elementary schools, therefore contained a specific provision for courses in experimental agriculture at a school farm and in such industrial subjects as had a bearing on the industrial requirements of the districts in which the schools were located. By 1925 Victoria had thirty-three high schools, thirty of them in country areas.

Tate made a bold attempt to find a truly national purpose for schools, which he regarded as national institutions, and he succeeded in building a system of State high schools and higher elementary schools, but he failed to develop the rural and local elements in the curriculum. His most difficult problem was to modify the traditional idea of the nature of secondary education. Since 1855 the curriculum of the schools had been largely, though not wholly, governed by the University's Matriculation examination, which had exercised a markedly conservative influence in education. Most of the changes which had taken place had flowed from the efforts of schoolmasters. Dr Alexander Morrison of Scotch College played a leading part in having French and German added to the list of matriculation subjects in 1862; the study of literature was prescribed in the matriculation course in English only after Ballarat College (1864) and Scotch College had demonstrated for some years that it could be taught successfully; and the heads of the leading schools in Melbourne and Geelong battled for ten years to have the physical sciences made matriculation subjects, finally succeeding in 1881. At the turn of the century the schools were still conscious of a gap between matriculation requirements and the insistent educational needs of the schools. The University persisted, for example, in prescribing Euclid instead of a modern geometry text, and it held out against proposals to make Agriculture a matriculation subject. The establishment in 1906 of public examinations distinct from the Matriculation examination was of some help in modifying the school curriculum, but Tate believed that the solution to his problem was to obtain effective participation in the formulation of university policy on Matriculation and public examinations. This was achieved in 1912 when the University established the Victorian Schools Board to control its public examinations. This Board was representative of the Education Department, the Registered Schools, the University, and the business community. The new Board, which was to control public examinations until 1964, proved itself reasonably responsive to suggestions coming from the schools, both State and Registered, and steadily increased the opportunities for individual pupils to pursue their special interests. It was responsive, first to the demand for the teaching of the commercial skills, then to the demands for technical subjects such as domestic science and mechanical drawing, and then to the movement which was pressing for art, musical appreciation, general mathematics, general science, and social studies. The number of Leaving Certificate examination subjects rose to thirty-one.

In 1964 the Schools Board was superseded by the Victorian Universities and Schools Examinations Board. The opening of Monash University in



1961 and the establishment of La Trobe University in 1967 had made it necessary to reconstitute the Board. The representation of interests on the new Board is remarkably similar to that of its predecessor. The universities' representation is proportionately slightly larger; that of the State education authorities, the Registered schools, and business interests much the same. The absence of change in the proportionate representation of the State and Registered schools is interesting in view of the tremendous growth in the number of State high schools after the Second World War; they numbered 190 when the new Board was constituted. The Registered schools, however, sent up a disproportionately large number of candidates to the public and Matriculation examinations and to the universities. The State and Registered representation is, consequently, less remarkable than the great increase in the number of State high schools might suggest. Since 1964, however, the number of State high schools has risen to over 250; these together with higher elementary schools, central schools, and others brings the total number of State secondary schools to more than 270.

The new Board has been responsive to the needs of the schools. In 1967 it abolished the School Intermediate Certificate examination, which had been made obsolete by a marked increase in the numbers of pupils staying on at school to complete five or six years of secondary education. This action presented the schools with the problem of organising a new curriculum for the junior secondary years. The Education Department appointed a representative Curriculum Advisory Board to provide information and advice, and in 1968 took the further step of throwing responsibility for devising new curricula and courses of study on headmasters and staff. While these moves were under consideration special attention was paid to the problems of the senior secondary school. In 1966 the Department evolved a plan for two-year regional senior high schools organised to meet the special instructional needs of senior pupils and guided in their corporate practice by a recognition of the fact that Australian adolescents were maturing earlier into young adults. Though the plan was opposed by secondary school teachers and subsequently shelved, departmental study of the reorganisation of secondary schooling has continued; high schools have been encouraged to introduce experimental courses in science brought from America and general studies courses along lines pioneered by English grammar schools. After 1968 the Examinations Board extended the benefits of examination by classroom teachers for the School Leaving Certificate to a larger number of pupils. In 1970 the Board replaced the Matriculation examination by a Higher School Certificate examination. The liberating effect of the changes made since 1966 has been considerable, but the problem of reconciling the legitimate demands of higher education and those of the general run of secondary school pupils was no less acute in 1972 than it was in the 1850s, when Melbourne headmasters decided that they would accept gladly the discipline of the Matriculation examination but would refuse to be limited by it.

#### TECHNICAL EDUCATION

Colonial society was very conscious of the various uncultured elements of origin and behaviour to be found in the young Australian community, and the mechanics institute movement of Britain was quickly adopted

in Australia. Only three years after the establishment of the London Mechanics Institute in 1823 a move was launched for the formation of similar bodies in the Australian colonies, and institutes were formed in Hobart in 1827, Sydney in 1833, and Melbourne in 1839. The Melbourne Mechanics Institute was launched under the auspices of the master builders of the young city, who called for "the promotion of science in this rising colony; particularly among the young as well as the operative classes". One of the most frequently stated aims of the mechanics institutes was to instruct working people in the "principles of science underlying their trades"; the intention was not to teach trades themselves, as this would have been unpopular both with working men proud of their crafts and with employers jealous of their trade secrets. However, the educational value of the institutes was very limited, and their appeal to working people lay more in their social and broadly cultural functions than in any direct teaching they could do.

After the gold rushes technical education proper started to become a popular theme, partly because mining posed increasingly complex technical problems, partly because it was held that education should be offered to all and that technical education was the only kind likely to be of value to the working class and their children, and partly because of a growing feeling that the separate colonies, and Australia as a whole, were facing a world of increasing trade rivalry in which success would go to the skilled. The result of these concerns in Victoria was the formation of the Technological Commission in 1868. It was not a successful organisation as its activities were largely confined to setting up a number of part-time drawing schools, and it was terminated in 1890. The schools of mines were far more successful than either the mechanics institutes or the Technological Commission. Australia's first technical college, the Ballarat School of Mines, was opened in 1870. This was followed by the Bendigo School of Mines in 1873, and then later in the 1880s by numerous similar institutions; it became a matter of pride for a Victorian country town to have a school of mines or technical college.

The schools of mines were often set up with little forethought, and to their founders one of the disappointing things about them was that they seldom effectively fulfilled the function of training young people for trades and technological work. They were far more successful in their role of poor men's grammar schools, offering a variety of courses, from telegraphy to Latin and from watercolour drawing to book-keeping, to an ambitious young generation leaving the primary schools and seeking the taste of a broader secondary education. They were often criticised for not fulfilling their primary function and after the onset of the depression of the early 1890s fell on hard times. So too did the Working Men's College (now the Royal Melbourne Institute of Technology), which was opened in 1887 with the help of generous donations from philanthropist Francis Ormond. The Working Men's College was far more efficient and effective than most of the other technical institutions scattered throughout Victoria, and it experienced immediate success, both in the trade training it provided and in its broader curriculum. However, the depression of the 1890s stopped its expansion and it did not revive effectively until well into the twentieth century. As a result of the failures and problems of technical education, a Royal Commission was set up

in 1899 under the chairmanship of Theodore Fink. Although no immediate reforms were made in technical education, the Commission's thinking epitomised a change in attitude which had been taking place both about technical education in particular and about working-class education in general ; it was felt that federated Australia needed many workers specifically trained for specific jobs, and the nineteenth century aim of providing general education and the opportunity for cultural and personal advancement through the technical schools died away.

Until 1911, when Donald Clark was appointed the first Chief Inspector of Technical Education, the Victorian technical schools remained unreformed and inflexible. Clark had been director of the Bairnsdale and Bendigo schools of mines, and he felt "something akin to despair" when he investigated the state of technical education after he commenced his work as Chief Inspector. Over the next twenty years Clark transformed the role of technical education and infused it with a new self-respect. He created junior technical schools in 1912 to act, not always successfully, as feeders of the senior technical colleges; he launched for the first time a number of new senior colleges directly under the control of the Education Department; and he fought for high standards and prestige for his institutions and the teachers in them. Despite some advances, such as the passing of the Apprenticeship Act in 1927 and the institution of day-release for apprentices in 1932, technical education remained poorly supported until the Second World War. Equipment and accommodation were frequently unsatisfactory and out of date, and the colleges did not always succeed in meeting the demands of the developing industries which radio and automobiles brought into being. The Second World War brought new challenges to Australian industry and education, and rapidly increasing numbers of students attended technical colleges under war-time and post-war training schemes. This led to expansion in many areas and improvements in staffing, financing, and equipment.

It was not, however, until after the report of the Commonwealth Government's Martin Committee in 1965, that quite new developments occurred in technical education. As a result of the report a division has been made between the tertiary level or "diploma" work of the technical colleges, and the "certificate", trade-training, and secondary school work which has also traditionally been called "technical education". The Victoria Institute of Colleges has been established as an independent authority to co-ordinate and guide the overall development of what is now called the "advanced" sector of higher education. Together with this there has been a great expansion of buildings and courses, the rationalisation of standards and awards, and increases in salaries and prestige. The financing of technical education is no longer the sole responsibility of the State Government, and for the first time technical education shows signs of filling the role in national development which was envisaged by its founders. The section on Non-university Tertiary Education (pages 501-2) describes this.

#### TEACHER EDUCATION

During the 1840s educationists such as the Rev. James Forbes had strongly recommended the establishment of a Normal School or training institution for teachers. At this time the shortage of teachers was alarming

and some who were employed were scarcely literate. There is evidence, however, in a letter of Dr Charles Perry, Bishop of Melbourne, that diocesan training schools existed in 1849. The Commissioners of the National Board appointed in 1852 recommended to Lieutenant-Governor Charles La Trobe that a Normal School should be established. Out of this proposal, and inspired by school inspector Hugh Childers, came the first State-aided system of training teachers in Victoria. In July 1854 Mr and Mrs A. Davitt, who were selected by the Commissioners of National Education, Dublin, Ireland, arrived to take charge of the Model and Normal School situated in East Melbourne. In May 1855 the first teacher training institution in Victoria opened with the admission of twelve students. The National Board established a salary structure and standards for accrediting its teachers, and in January 1856 seventy-one candidates, including fifty-nine teachers from the National Schools in the metropolitan area, submitted themselves for examination and classification. In the same year the first residential students were admitted and regulations were framed for a co-educational institution.

Despite a successful beginning, the National Board in 1859 decided to discontinue the training institution because of government retrenchment, and it also terminated the services of the principal and his wife. At this stage the Denominational Board, under the guidance of Richard Hale Budd, appointed Mr Stephen C. Dixon to be principal of St James' and St Paul's Training Institution which was open to all denominations and provided more than 300 teachers for Victorian schools before its closure in 1869. From 1870 teacher training for the government service returned to its original home in Spring Street under Dixon who, with the passing of the Education Act in 1872, became an officer of the Education Department. The accreditation of teachers trained under the previous authorities, the National and Denominational Boards and the Board of Education, was now rationalised in a schedule which is clearly recognisable as similar to that in operation in the State service today. The course of training was two years in duration, the first being spent in an associated school under the headmaster or associate. Those who qualified were admitted to the training institution for the second year. The associated school system was abandoned in 1893 and its relationship to the pupil-teacher (later, junior-teacher) system, which began in 1854 and continued for 100 years, is clear.

In 1877 Frederick John Gladman, a notable author of pedagogics, succeeded Dixon as principal. The next decade was chiefly characterised by vigorous inquiry into the condition of education and by the recommendations and positive action of C. H. Pearson, Minister of Public Instruction from 1886 to 1890. Although a number of the objectives were not achieved in the immediate years, a new college was built at Carlton, and the minimum college training period was set at two years (later reduced to one year); model rural schools were created for teaching practice; and special training was provided for teachers of infants. Gladman's successors carried out the establishment of the Melbourne Teachers College (now part of the Melbourne College of Education) on the Parkville site in 1889, but in 1893 the Government closed the college under the pressures of the financial crisis. It did not re-open until 1900. Frank Tate, a former student of Gladman, was responsible for a new impetus in education and was a lead-

ing advocate for the re-opening of Melbourne Teachers College ; he became its first principal. The scathing comments on its closure which came from the reports of the Royal Commission on Technical Education, which inquired from 1899 to 1901, strongly supported Tate's cause. In February 1900 when the College re-opened it had fifty-seven students. Within three years Tate took up the new post of Director of Education for Victoria and Dr John Smyth from New Zealand became principal; he remained from 1902 to 1927, and continued what Gladman, Pearson, Tate, and others had begun.

Opportunities were offered for students to specialise in manual training, drawing, kindergarten work, and domestic economy. The provision of university places in 1901 for second year students marked the greatest advance in teacher education until this period. In a few years students were able to complete a first degree and conclude their preparation with a postgraduate year for the Diploma of Education. This latter qualification followed from the appointment of Dr Smyth in 1903 to a university lectureship in pedagogy; his elevation to a chair in 1918 established Education as a faculty of the University of Melbourne. One of the great changes from 1900 was the growth of the corporate spirit fostered by social and extracurricular activities encouraged by Professor Smyth. As much as any other change this quality marked the advance into the new century. Principals who followed Smyth at Melbourne worked under the serious difficulties created by economic recession and later the Second World War. In 1926 two new State teachers colleges were opened, one at Ballarat and the other at Bendigo.

In 1921 the Associated Teachers Training Institution, now generally known as Mercer House, had opened in two rooms in a city building. Its present establishment at Armadale had an enrolment of 157 students in 1971. A three year course for a primary diploma and one year of professional preparation for those who have completed certain courses at a university or technical college are available. Most of these graduates enter private schools. The other independent college was the previously described Melbourne Kindergarten Teachers' College.

For the third time in the history of Victoria, an economic depression at the beginning of the 1930s produced the same government reaction—closure of teachers colleges. Ballarat and Bendigo ceased operations at the end of 1931; Melbourne escaped closure but lack of finance eliminated a number of courses, students' allowances, and university places. Recovery was slow, but by 1939 the re-establishment of Manual Arts, Domestic Arts and Infant Teachers courses began, and T.P.T.C.\* students prepared to pay their own way were granted extensions to study university subjects. Of 378 students in college, 300 were one year primary entrants. Although new buildings were completed in that year, hopes for further development were stifled by the outbreak of war.

Re-opened and new colleges indicate the measures taken to meet the phenomenal rise in school population after the Second World War. The list of these colleges is impressive. The establishment of State teachers colleges occurred in the following order: Bendigo (re-opened 1945); Ballarat (re-opened 1946); Geelong (1950); Secondary (Melbourne) (1950); Domestic Arts (1950); Toorak (1951); Technical (1952); Burwood

\* Trained Primary Teacher's Certificate.

(1954) ; Centre for Training Teachers of the Deaf (1954) ; Coburg (1959) ; Frankston (1959) ; Monash Secondary (1961) ; and La Trobe Secondary (1970). In 1971 the number of students in training was approximately 14,000. In recent years Catholic colleges have been developed to provide for the staffing of Catholic schools. Christ College at Chadstone, Mercy College at Ascot Vale, and the Christian Brothers' Teachers College at Box Hill provide three-year courses of teacher preparation. In the universities Monash has had an expanding Faculty of Education and La Trobe commenced courses in 1970. Melbourne in conjunction with the Secondary Teachers College commenced a B.Sc. (Educ.) course in 1968.

In the 1960s there were decisive developments in the training of teachers : the minimum preparation of a primary teacher was raised from two to three years ; each year an increasing number of secondary students was engaged in concurrent four year courses ; the range of specialist courses was widened ; the objectives of teacher preparation became concerned more with the personal education of the student rather than the production of classroom technicians ; there were new plans for in-service education ; and there was a revival of the teachers colleges building programme and an infusion of Commonwealth funds into this development.

By the beginning of the 1970s teacher education was receiving the benefit of Victoria's high pupil retention rate in secondary schools and the continued high level of investment in facilities. It became the only State where students admitted to all courses had qualified to matriculate. As a result pressures increased for recognition of courses as degrees and the inclusion of colleges within the university framework. The solution to this problem of the place and status of teacher education and its implementation will be the major concern of the 1970s.

#### UNIVERSITY EDUCATION

The University of Melbourne was founded in 1853 when the Colony of Victoria was drawing up a Constitution. The University was established, incorporated, and endowed by an Act of the Legislative Council, with a Council of twenty to govern it. When the University had one hundred graduates with higher degrees a Senate was to be formed to elect members to vacancies on the Council and review the Council's legislation. The Council chose Sir Redmond Barry as Chancellor and Hugh Childers as Vice-Chancellor. Childers, the Auditor-General, had sponsored the University Bill. Barry, a graduate of Trinity College, Dublin, who had been in the Colony since 1839 and was now a Judge of the Supreme Court, remained Chancellor until his death in 1880. He wished for the University both a moral and an intellectual influence and he urged the selection committee in England, when choosing the first four professors, to nominate men of exemplary gentlemanly ways. The University began with an Arts course of three years. Two years of Greek and Latin, and one of geometry and natural philosophy were compulsory. For Barry, a vision of classical civilisations afforded by the study of their literature was the University's best contribution to the refinement of intellect, taste, and manners in the new colonial society.

The first Matriculation examination required six passes among the eight subjects: Greek, Latin, English, arithmetic, Euclid, algebra, history, and

physical geography. Sixteen students enrolled at the opening of the University in April 1855. J. P. Wilson, a senior Wrangler, Fellow of St John's, Cambridge, and Professor of Mathematics at the new Queen's College, Belfast, became Professor of Mathematics. Frederick McCoy, Professor of Mineralogy at Queen's College, Belfast, a palaeontologist who had published important work and had classified much of the Woodwardian Museum, Cambridge, was appointed Professor of Natural Science. W. E. Hearn, a graduate of Trinity College, Dublin, Professor of Greek at Queen's College, Galway, in the Queen's University of Ireland, was Professor of Modern History and Literature and Political Economy. The first Professor of Classics died before the University opened. M. H. Irving, a first class honours graduate in Classics at Oxford, then became Professor of Classical and Comparative Philology and Logic. He arrived in 1856. Professional courses followed rapidly. A Law course of two years, comprising subjects from the Arts course and some subjects given by a part-time lecturer in Law, began in 1857. A course in engineering, the first at an Australian university, leading to a Certificate of Civil Engineering, began in 1860 and consisted of the mathematics, physics, and "natural sciences" of the Arts course, and map drawing and surveying, taught by a part-time lecturer. The English apprenticeship tradition in engineering accepted in Victoria meant that university qualifications were not recognised, and there were few students. It was not so with the Medical School founded in 1862, and soon medical students outnumbered all others in the University. G. B. Halford, a professor at the Grosvenor Place Medical School, London, was the first Professor in the Medical School.

Though the University was metropolitan and professorial, drawing obvious comparisons with the University of London and the Scottish universities, the small numbers of students meant that teaching was tutorial and intimate. The four original professors lived in apartments in the quadrangle with a room set aside in each for lectures. Lecture theatres and a library were on the north side of the quadrangle which was completed in 1856. The grounds were landscaped and became a favoured place of public resort. In 1863 McCoy managed to have the National Museum, of which he was Director, built in the university grounds. It was a new gothic building, with a great hall modelled on the Oxford Museum. Many thousands visited the Museum each year. Gravelled paths led by the lake to the Medical School building with its graceful columned portico. The original Wilson Hall, named after its pastoralist donor, opened in 1880.

The University Senate, constituted in 1867, made possible a parliamentary type of politics for those interested in university reform. In the Senate and the Council a "caucus" composed mainly of schoolmasters constantly challenged Barry's administration. In 1879 admission was gained for women students. In 1882 new chairs in natural philosophy, engineering, pathology, chemistry, and English (which included the French and German languages), and the addition at matriculation level of natural science subjects and an honours standard, marked the culmination of ten years of agitation. A chair in biology was founded in 1887. However, this triumph of university reform in the 1880s was somewhat of an anti-climax. The new subjects proved of little vocational relevance in colonial Melbourne. The first Bachelor of Science degree was awarded in 1887, but a B.Sc. was hardly better as a trade

certificate than a B.A. and only eleven students took examinations at any level for the three-year B.Sc. degree in 1903. Engineering students remained few in number.

The Act of Incorporation of the University of Melbourne provided for "the affiliation to or connexion with the same of any college or educational establishment". Residence, ancillary teaching, religious nurture, and clergy training seemed to have been the assumed functions for the colleges, a solution which had been decided upon at the foundation of Sydney University. The University was to have no religious test for staff or students, no religious teaching or observances, no clergymen among the staff and no more than four on its Council, and it maintained an anxious neutrality in religious and political controversy. The college reserve was divided equally between the Anglican, Presbyterian, Wesleyan Methodist, and Roman Catholic churches in 1860. Anglicans raised funds to open Trinity College in 1872 having achieved, with University help, the desired degree of independence after a governmental attempt to assert control. Other than the land on which they were built the colleges did not receive government assistance. Gifts from pastoralist Francis Ormond enabled the Presbyterians to establish Ormond College in 1881. The Methodists opened Queen's College in 1888. In the last years of the nineteenth century the three colleges under their distinguished heads, Leeper of Trinity, MacFarland of Ormond, and Sugden of Queen's, appeared to a number of professors as dangerous aspirants to the University's role. Attendance at university lectures was not compulsory and college tutorials could be attractive alternatives. There was even speculation that the professors might surrender their examining monopoly to Examination Boards. College heads, men on the spot, were considered to have undue influence on the University Council. It was thought that the colleges diverted alumnus sentiment and private giving from the University. When Professor Strong chose to live in Ormond College in 1881 he was rebuked by the Professorial Board. A more confident University after 1904, however, had lost these misgivings about the colleges. Janet Clarke Hall grew out of a hostel for women students established by Trinity in 1886. The Catholic Newman College and St Mary's Hall, later St Mary's College, were opened in 1918 and the non-denominational Women's College in 1937. St Hilda's, Whitley College, Ridley College, Medley Hall, International House, Graduate House, and the R.A.A.F. Academy have become associated with the University of Melbourne in recent years.

After the boom of the 1880s, when eight large houses for the professors and new medical, biology, and natural philosophy buildings displayed signs of government goodwill, the depression of the 1890s caused the University to suffer from reduced funds. The Arts course was at its lowest ebb; some professors found their classrooms almost deserted. A Royal Commission from 1902 to 1904 under Theodore Fink examined the purpose of the University and tried to indicate its future. The emphasis of the Commission fell on the University's training role for specific occupations. Reorganisation schemes for the engineering, medical, and law courses were provided; recommendations were made for a chair of pedagogy, a degree in education, and the "further recognition . . . by the Education Department to holders of degrees in Science, Arts and Education" to revive the languishing Science and Arts courses as quasi-professional schools; a School of Mining



Engineering, the affiliation of the Dental College and Hospital, and a research role for the University especially in relation to government departments were also advocated. Thomas Bent's Ministry responded in 1904 by doubling the statutory endowment and promised £12,000 if private giving would equal it; this was done within a year. The creation of subgraduate diplomas was a feature of the post-Fink years. By 1912 the University offered diplomas in Agriculture, Analytical Chemistry, Architecture, Education, Metallurgy, Mining, Music, and Public Health. Between the publication of the Fink Report and 1914, the University created Chairs of Botany, Agriculture, Anatomy, and Veterinary Pathology, and developed courses in dentistry and in mechanical and electrical engineering. No chairs were created in Arts between 1886 and 1938, when the Chair of French was created.

The Government became directly involved in university affairs by stipulating expenditure on projects such as agricultural studies and evening lectures and from 1904 had nominees on the Council. The University Act of 1923 reconstituted the Council as representative, by nomination or election, of various interests, and the graduate body no longer had responsibility for choosing the University's governing body. In 1935 R. E. (later Sir Raymond) Priestley became the first permanent salaried Vice-Chancellor, a position whose proposal dated from the 1880s, and the management function of the early chancellors ended.

From 1859 it had been possible for students to enrol and pass examinations without attending lectures but examinations could only be taken in units of a full year's work. From the early years of this century the University undertook to train the part-time student gaining his qualification, often by a subject or two at a time, especially in Arts and Education, and in the Commerce School established in 1923.

The years after 1945 saw a great change in all Australian universities, because a far greater proportion of the community than ever before endeavoured to obtain degrees. An early warning of the coming pressure occurred in the late 1940s when ex-servicemen swelled the student numbers to the highest figure to that time. The University of Melbourne erected many war-time huts and other temporary buildings to meet immediate needs, and for the most crowded three years also used a former Air Force camp at Mildlura where first-year students lived in. A few years of respite followed this post-war rush, but crowding soon reappeared in consequence of both the higher birth rate after the end of the depression of the 1930s, and a greater proportion of boys and girls completing secondary education. The position would have become hopeless without financial help from the Commonwealth. This came in 1958, after the Murray Committee had been invited to survey the scene and had reported and advised the Government on the urgency of the need. New multi-storey buildings transformed the face of the University of Melbourne during the 1960s. At the same time the Committee recognised that the University had not the space to cope with the flood of students, and recommended that a new university should be created. Later the Commonwealth's advisory body, the Australian Universities Commission, recommended a third university. The two new universities were Monash, opened in 1961 and La Trobe, opened in 1967. Both of these have grown with remarkable speed, reaching 11,000 and 3,000 students, respectively, in 1971. Even so, they could not keep abreast of the number of applicants,

and quotas have been established in each university to keep the numbers to a level which can be handled with the available space and staff. By 1970 the Government had appointed a committee to investigate the founding of a fourth university in the State.

Another post-war change was the recognition of postgraduate training as a major part of a university's task. Doctorates of Philosophy were first awarded by the University of Melbourne in 1949, and Ph.D. students are now found in all three universities. Commonwealth scholarships and awards have been extended to a large proportion of students, both undergraduate and postgraduate. At the University of Melbourne numbers have stabilised at about 15,000 (including students for higher degrees). The intention is that the newer universities will reach a similar figure. These newer universities have been built far enough away from the centre of Melbourne (to the south-east and the north, respectively) to ensure ample space on the campus. Both of them aim at covering the bulk of university subjects, but some restrictions are made : for example, medical courses are available only at Melbourne and Monash, and agriculture only at Melbourne and La Trobe.

#### EXAMINATIONS

The first external examination in Victoria was the Matriculation of the University of Melbourne conducted in 1855 and intended primarily then as now as a qualification for entry and to maintain university standards. It also established a relationship between the University and secondary schools, created an authoritative and independent arbiter of secondary school standards, and preceded a school "system". Until 1905 the demands of the University and society upon secondary education were reconciled by changes within the Matriculation examination alone : the range of examinable subjects was increased, alterations were made in university prerequisites, and after 1901 the examination could be taken at either pass or honours level. In 1905 the Primary, Junior and Senior Public, and Junior and Senior Commercial external examinations were established, details being prescribed by the Professorial Board and the Board of Public Examinations on behalf of the University. They were designed to encourage secondary enrolments, to establish school standards, and to certify the educational achievement of school leavers, and they brought the Victorian system into line with existing practice in New South Wales and South Australia. Between 1906 when the separate Matriculation examination was abolished and 1944 when it was re-instituted, matriculation simply meant the registration and admission as a university undergraduate via the public examinations. However, until 1917 students could matriculate without full secondary education, by means of the Senior Public Examination, by the Junior Public with three distinctions, or by a prescribed combination of the two.

In 1910 control of the public examinations was vested in two new boards whose composition and functions were defined a year later. The Schools Inspection and Examinations Board (not to be confused with the Schools Board of later years) consisted of four members elected by Council and four by the Professorial Board. The Board of Public Examinations was responsible for the details of the public examinations : the majority of its members represented the University, but it included five representatives of business interests, five secondary teachers, and two representatives of

technical education, as well as the Director of Education and the Principal of the Melbourne Teachers College. In 1915 the newly established Schools Board, the direct precursor of the present Victorian Universities and Schools Examinations Board, became responsible, subject to approval by the Professorial Board, for school studies, inspections, and examinations. Its twenty-eight members still had a slight university majority, but the growing importance of State primary and secondary education was reflected in the increased representation of the Education Department and secondary teachers, in contrast with the declining representation of business interests. By 1918 the Professor of Education was a member of the Schools Board.

Also, in 1917 the Schools Board abolished the Primary and Commercial Public examinations, and after 62 years ceased conducting public examinations bi-annually. The Junior Public became the Intermediate Certificate, designed for secondary pupils of about 16, and the Senior Public became the Leaving Certificate, to be taken two years after completing the Intermediate. Matriculation was either by the Leaving Certificate, or by any other examination recognised by the Professorial Board on the Schools Board's advice, a practice which arose from the 1917 system of accrediting approved schools for public examinations. In 1919 Schools Board inspectors could recommend remission of external examination requirements still operative on accrediting schools. In the same year the Leaving Certificate was divided into two stages: a Leaving Certificate which constituted Matriculation, taken one year after Intermediate, and Leaving Honours, regarded primarily as a preparation for faculty prerequisites, taken two years after Intermediate. Thus, except for the Proficiency Certificate established by the Education Department in 1938, all secondary examinations from 1908 to 1944 were public examinations and from 1917 were controlled by the Schools Board. Matriculation was obtained by passing the School Leaving Certificate Examination, either by taking the external examination or by taking it internally in a school accredited by the University. This alternative method of gaining Matriculation which obtained until 1944 was a landmark in examinations procedures. In 1944 the Leaving Honours was replaced by a University Matriculation examination for the first time since 1906, thus reverting to the system of 1905, with subjects prescribed by the Professorial Board, although a prescribed pass in the Leaving Certificate was a prerequisite. The 1944 system of two public examinations and one University examination was retained, with minor modifications, until 1967 when the external Intermediate Certificate examination was abolished, permitting schools more freedom with curricula and assessment.

The Education Department has been responsible for secondary education not directly related to university studies, such as commercial, technical, and domestic science courses. The Departmental Proficiency Certificate, established after 1936 and developed as a substitute for the Schools Board's Intermediate Certificate whose usefulness was being questioned, became a Third Form examination when the Intermediate Certificate was retained. Primarily the Department was concerned with assessing elementary education as completion of the compulsory period of schooling and as qualification for entry to State secondary schools. In 1905, when compulsory education ended at the

age of fourteen, the Department provided a certificate for Standard 5, and a Certificate of Merit for Standard 6. In 1912, when the six standards of elementary education were divided into eight grades, the Qualifying Certificate at the end of Grade 6 provided entry to secondary education at Form 1, and the Merit Certificate on completion of Grade 8 gave entry at Form 3. As secondary schools began to accept pupils on the primary headmaster's recommendation, the Qualifying Certificate disappeared by 1937, although the Merit lingered until the raising of the compulsory attendance age and the system of automatic promotion rendered it redundant. Alongside the public examinations system there was the technical schools examinations system. This was limited to the technical schools, but large numbers of pupils in fact went through this particular system, obtaining the Technical Leaving Certificate which could lead on to entrance at a Technical College for diploma studies.

In 1961 Monash University was opened and a third university seemed certain. In June 1964 the Schools Board was abolished. A new examining body was established: the Victorian Universities and Schools Examinations Board, which, being responsible for the public and Matriculation examinations, could also incorporate the requirements of the universities. In 1971 the Board comprised thirty-nine members, of whom thirty-one were appointed annually; eight were members *ex officio* representing the three universities, the Director-General of Education, the two Faculties of Education, and the directors of secondary and technical education. Of the annually appointed representatives, fifteen represented the universities; eleven represented the Education Department, the Registered secondary schools (other than Catholic), and the Catholic secondary schools; two represented industrial and commercial interests; and three, one of whom was the President of the Victoria Institute of Colleges, were appointed by the Board. In 1965 the Board moved its headquarters to St Kilda Road, consolidating its function as an independent forum for teachers, universities, and the Victoria Institute of Colleges.

The Board assumed responsibility for the public and Matriculation examinations established by the Schools Board. Later in 1967 it abolished the external Intermediate Certificate examination. The only public examination it now conducts is the external Leaving Certificate for a decreasing number of non-accrediting schools. In 1970 the sixth form Matriculation examination, originally established in 1944, was renamed the Higher School Certificate, and a letter-grading system was introduced.

In retrospect, the most important long-term trend in the development of Victorian examinations appears to have been the growing emphasis on internal assessment of secondary education to try to keep pace with the changing needs of schools and society.

#### PHYSICAL EDUCATION

After Victoria became a separate Colony in 1851 the Army financed and conducted courses for teachers of physical training in government schools. Drill and Swedish exercises formed the content of courses for both teachers and children. The aim was primarily precision of movement, and the work had little educational or developmental value. Swimming was introduced into schools in 1898; an officer in charge of swimming was appointed in 1909,

and in the following year Frank (later Sir Frank) Beaurepaire was appointed to assist in the development of the swimming programme. In 1915 the State Schools Amateur Athletic Association was formed, and within three years regular inter-school competitions took place at primary and secondary levels in swimming, football, cricket, rounders, and women's basketball (seven to a side).

In 1910 the Education Department appointed a female organiser of physical education, and renewed its arrangement with the Army, which continued to be responsible for the preparation of teachers of physical training; it was at this stage that physical training tended to become physical education. Although the organiser and her assistant were always accompanied by an Army instructor responsible for men's work when they travelled throughout the State to conduct training courses, the emphasis was nevertheless shifting from drill towards movement designed to promote the well-being of the child. In 1931 the Education Department dispensed with Army assistance, and the Organiser of Physical Education for boys and girls became responsible for physical education. In 1934, with a Royal visit approaching, a teacher was seconded to assist in the presentation of a massed physical education display; he also organised and conducted an intensive course at Melbourne Teachers College. In 1946 a syllabus of physical education was published in book form outlining physical education for Victorian schools. In 1964 the title of Organiser of Physical Education was changed to Supervisor of Physical Education.

In the early 1960s great advances were made in physical education; some decentralisation was effected with the creation of divisional advisers, existing posts were up-graded, and new posts were created. The first open-air school was established at Blackburn in 1915, and the first remedial gymnasium was opened in 1944. Victoria now has three remedial gymnasiums (a feature still unique in Australia) where for many years some 900 children have followed courses of remedial treatment, through exercise, each week; these children were referred to the gymnasiums by physicians of the School Medical Service. In 1970, following a change of policy, physicians ceased to refer children for remedial treatment, and the number attending for remedial treatment began to dwindle.

In 1937 the first physical education department in Australia was established at the University of Melbourne, and a two year subgraduate diploma course was established. Specialist teachers of physical education for both government and registered schools in Victoria are trained at the University of Melbourne. A small number of physical education specialists find employment outside education in fields such as rehabilitation, national fitness, and industry. In 1939 a further agency concerned with physical education was created with the establishment of the National Fitness Council of Victoria. Close co-operation exists between the University, the National Fitness Council, and the Education Department. For many years there were no covered activity areas at the University of Melbourne for physical education; in 1954 Sir Frank Beaurepaire's gift of \$400,000 provided facilities for the Department of Physical Education. During the 1960s a gymnasium has come to be recognised by the Education Department as an essential school requirement and a swimming pool as a desirable one.

In recent years there has been a gradual increase in the range of activities

offered in the University of Melbourne diploma course and at schools. The same type of expansion is evident in the work of the National Fitness Council and the universities' sports union clubs. At all levels and in all places fast growing interest in outdoor adventure type activities has also been apparent.

#### NON-UNIVERSITY TERTIARY EDUCATION

In 1868 a Technological Commission was established in Victoria to promote technological and industrial education, but it was not to spend more than £100 a year on technical instruction. Two years later the first technical school, the Ballarat School of Mines, was opened, followed by the Bendigo School of Mines in 1873 ; Ballarat awarded, in 1897, the first engineering diploma granted in Australia. In 1882 a scheme was begun for the founding of the Working Men's College, out of which the Royal Melbourne Institute of Technology developed, and three years later the Gordon Technical College was established, followed in 1908 by the Eastern Suburbs Technical College (later Swinburne), and in 1915 by the Prahran Technical Art School. The Commission was hampered by lack of funds and in 1890 its activities ceased. The Royal Commission set up under Theodore Fink to report on technical education completed its inquiries in 1901, and reported that ten schools of mines, five schools of art, and three other technical colleges were in existence. It considered that government aid had been inadequate and that more technical schools should be established. A period of reform began with the appointment in March 1902 of the first Director of Education, Frank Tate.

The Education Act of 1910 provided the basis for higher State education and made possible the establishment of district high schools, higher elementary schools, and technical schools. All technical schools established after 4 January 1911 were to be controlled by the Education Department, and some of the smaller country technical schools, previously controlled by school councils, were transferred later. The six major senior technical schools and their councils (R.M.I.T., Swinburne, Ballarat, Bendigo, Gordon, and Prahran) remained largely autonomous, although certain controls passed gradually to the Education Department. Substantial progress was made : junior sections were established for both boys and girls; school attendance became compulsory for apprentices ; special trades schools were established ; full-time professional diploma courses were increased in number and content ; a Technical Teachers College was set up ; and Repatriation Training, Youth Employment Training, Defence Training, and Reconstruction Training Schemes took place. In addition, senior technical schools were established by the Education Department at Caulfield, Footscray, Preston, and Yallourn, and at several other country centres as extensions of junior schools, though on a smaller scale. By 1964 there were fifty-two technical schools in the Melbourne metropolitan area and thirty-three in the country; also, one high school had a technical section. There were also five registered technical schools (Catholic), and the Victorian Railways Technical College staffed by the Education Department. While providing a sound general education, these schools were undertaking full-time, part-time, and correspondence tuition in a wide range of technical subjects in art, commerce, science, trade, and professional courses.

Government sponsored investigations into tertiary education led to the Ramsay Report (1963) and the Martin Report (1965) as a result of which the Commonwealth Government introduced matching financial grants to colleges of advanced education and established the Commonwealth Advisory Committee on Advanced Education to recommend the levels of such grants. The Victoria Institute of Colleges, a statutory authority, was established in June 1965 to co-ordinate and develop tertiary education within the framework of those colleges which were affiliated with it. It thus represented an alternative system of tertiary education to that provided by universities. In December 1967 an amended Act extended the powers of the Institute. It became responsible for controlling college staff establishments, and recommending staff salary scales to the Governor in Council, and the approval of major financial and building programmes; the governing councils of the affiliated colleges were also authorised to exercise autonomous control over their daily affairs. Through its Board of Studies the Institute maintains a general oversight of academic standards. The colleges are controlled by independent councils which have the responsibility for enrolment and instruction, the appointment of staffs, the organisation of courses, and financial management within the allocated budgets. The colleges at present award diplomas, and the Institute has the authority to award degrees to students of affiliated colleges if they have completed approved courses. The first degrees, for Bachelor of Pharmacy, were awarded to Institute candidates of the Victorian College of Pharmacy on 5 June 1968. Eighteen degree courses were approved by the Council of the Institute in 1970 for introduction by the colleges in 1971 in engineering, applied sciences, business studies, and architecture. Sixteen colleges were affiliated with the Institute in 1971. The Melbourne metropolitan colleges are: Prahran College of Technology, Royal Melbourne Institute of Technology, Swinburne College of Technology, Victorian College of Pharmacy, Victorian School of Speech Science, Occupational Therapy School of Victoria, the Physiotherapy School of Victoria, the College of Nursing, Australia, and also the Preston, Caulfield, and Footscray Institutes of Technology which were formerly Education Department colleges. The affiliated country colleges are the Ballarat Institute of Advanced Education, the Bendigo Institute of Technology, and the Gordon Institute of Technology (Geelong), together with two others which were also former Education Department colleges, the Warrnambool Institute of Advanced Education and the Gippsland Institute of Advanced Education (Churchill). A total of over 25,000 full-time and part-time students, of whom 12,500 were full-time, were enrolled in 1971 in professional courses at affiliated colleges.

#### LIBRARIES

Apart from the enterprise of individuals such as John Pascoe Fawkner and Redmond Barry, who dispensed books from a hotel and from a private residence, respectively, library development in Victoria began with the opening of the Melbourne Public Library in 1856 after two years of construction work. This institution, which in 1869 was incorporated with the National Gallery and Museum, dominated library services for the public until 1946 when the Free Library Service Board Act was passed. The Melbourne Public Library later became known as the Public Library of

Victoria, but since 1960 has been named the State Library of Victoria. From the beginning the Library was financed by the Colonial Government, and the early trustees attempted to serve the whole of Victoria, not just the city area. Thus, in 1859 Victoria became a pioneer in the use of travelling libraries, whereby cases of books were sent to mechanics institutes and other centres on extended loans. This service was confined to institutions within ten miles of Melbourne until 1867 when this limit was abolished. In 1892, after a deputation from the Trades Hall, a separate lending library was opened for metropolitan residents, and extended to country areas in 1920. The metropolitan section closed in 1971.

In its early years the Library collected books in all fields, but special emphasis was given to general and British history, classical literature, theology, and particularly to science and its applications. At present general and historical bibliography, fine arts, music, history, biography (including genealogy and parish registers), military history, languages, and law are the main subjects covered. There is also a large amount of material relating to Victoria, and, under the "legal deposit" provisions of the Copyright Act of 1869 and subsequent legislation, one copy of all works published in the State must be deposited in the Library. This collection of books, newspapers, maps, pictures, and objects of historical interest, together with other Australiana and material on New Guinea, the South Pacific, New Zealand, and the Antarctic, is now housed in a special wing called the La Trobe Library which was opened in 1965. The same building houses some of the Library's Archives Section which was created in 1955. It holds the State Government departmental and semi-government records, which are selected and accessioned and then organised for administrative and research purposes. The Archives Section is available for government agencies and departments or any person interested, depending upon access instructions.

As in other States, the provision of free libraries by local government bodies was retarded, mainly because of the lack of tradition in local government and the habit of looking to the central government for initiative and funds in educational matters. The Melbourne Mechanics Institute, founded in 1839, provided a library, and gradually mechanics institutes and other subscription libraries were established in most suburbs and country towns. By 1913 there were over 500 of these institutions, but they were never free public lending libraries, and after 1890 their quality declined. However, a few municipalities such as Collingwood, Hawthorn, Fitzroy, Northcote, and South Melbourne did provide a free library service, while Prahran was the first municipality in Australia to establish a children's library.

In the second decade of this century professional organisations of librarians and, later, persons such as the late Sir John Latham, Chief Justice of the High Court of Australia, began a campaign against deficiencies in library service, and the Munn-Pitt Report in 1935 created enough interest for action to be taken. In 1940 the Library Service Board was established, and following its report in 1944 the State Library was separated from its affiliated bodies; in 1947 a separate Free Library Service Board was set up to promote, subsidise, inspect, and organise public library services throughout the State. Lionel McColvin (Librarian of the City of Westminster, London) made detailed recommendations in 1947, and emphasised the need for suitably trained



librarians to staff the new libraries, with the result that in 1948 the Library Training School was established in the State Library. It was being phased out in 1971 when courses became available elsewhere. The Jungwirth Report of August 1964 stressed the need for co-operation and co-ordination to develop library services in Victoria, and accordingly the *Library Council of Victoria Act* 1965 set up a single council—the Library Council of Victoria—to carry out the functions of the Free Library Service Board and those of the State Library Trustees.

With the establishment of the Free Library Service Board a new system of State Government grants had been instituted, which subsidised municipalities' running costs on a dollar for dollar basis. In 1958, however, the subsidy was limited to 40c a head for metropolitan municipalities at which level it remained until the early 1970s. In 1962 the limit for non-metropolitan municipalities was set at 50c a head, but this was raised to 80c a head in 1970. There are no capital subsidies, but there are small annual special grants to children's libraries, country free libraries, and regional library systems. Both official inquiries into library services had stressed the need for regional library systems so that the resources of municipal councils and of the central government could be used to the best advantage. In 1966 the Local Government Act was amended to enable local government authorities to pool their resources and establish regional library committees to administer such systems.

In recent years special attention has been given to the libraries of government departments and State instrumentalities, which since 1958 have been staffed from the State Library. Their improvement and co-ordination have contributed to the activities of the various establishments while adding significantly to the library resources of the State. In 1969 the Library Council of Victoria adopted a State plan for library development which included the establishment of major regional reference libraries, a revised basis of subsidy, and a closer integration of the State Library of Victoria in the public library system of the State.

#### NATIONAL MUSEUM OF VICTORIA

In 1853 the Legislative Council decided to establish the Museum of Natural History, which began its work in the following year. The founders were influenced partly by the prevailing popular interest in natural history in the United Kingdom where voyages of discovery had stimulated private collections, and partly by their desire to discover the natural resources of their new environment. Owing to financial stringency, the Museum was established in the rooms of the Assay Office in La Trobe Street on 1 March 1854. In the same year William Blandowski was appointed Zoologist, and he set out on a field expedition to central Victoria on 27 June. Collections were rapidly accumulated, and in 1856 they were removed to the University under the care of Professor (later Sir) Frederick McCoy who was appointed Director in 1858. A second field expedition was carried out by Blandowski in 1856 to the Murray River, and three years later a taxidermist was appointed, an indication that much zoological material was being collected. Over 30,000 visitors were recorded for 1859.

Professor McCoy augmented local collecting by purchasing specimens and models from Europe. He was also palaeontologist to the Geological

Survey, and had its office transferred to the Museum in 1862. An assistant was appointed in 1864. Costs increased and McCoy had difficulty paying for the collections he had purchased; in 1867 the staff took out writs for their salaries. In spite of these difficulties the number of recorded visitors steadily rose, and in 1868 the Museum was awarded a prize in the Intercolonial Exhibition. The following year, when visitors reached 85,000, it was incorporated in a Public Library, Museum, and National Gallery Act, under which the first Trustees were appointed in 1870. McCoy's chief scientific contributions were the *Prodromus of the palaeontology of Victoria* (first Decade published in 1874), and the *Prodromus of the zoology of Victoria* (first Decade published in 1878). In 1885 visitors numbered over 100,000, and collections made by various expeditions and research workers were being presented. The mineral collection, originally with the Industrial and Technological Museum which was opened in 1870, became a part of the National Museum in 1899, the year McCoy died.

The turn of the century was an important period for the Museum. Professor (later Sir) Baldwin Spencer, who became Professor of Biology at the University of Melbourne in 1887, was appointed a Trustee in 1895, and Honorary Director in 1899, the year in which the Museum was removed from the University to its present location. His notable researches in natural history and ethnology were recognised by his election to the Royal Society in 1900, and he made excellent field collections of biological and ethnological specimens for the Museum. The first edition of *Memoirs*, a publication which still reports research, was published in 1906. In that year also, the new wing on the Russell Street frontage was opened. Conservation has always been a principle of Museum activity, and as early as 1907 Baldwin Spencer suggested a committee for advising the Government on fauna protection and national parks. Basic to the Museum's function has been the acquisition of collections of scientific value on which much of its service of identifications, its research, and its exhibitions depend. In addition to the specimens collected by the staff, large numbers of collections have been received from natural history expeditions (e.g., the Horn Expedition into Central Australia, and several Antarctic expeditions) and from private collectors, for example, bird skins from John Gould in 1858 and H. L. White in 1917, mammals, reptiles, and anthropological artefacts from Spencer and Gillen from 1900 to 1916, sponges and polyzoa from Bracebridge Wilson in 1886, hydrozoa from W. M. Bale in 1923, insects from H. J. Carter in the same year, mollusca from Gatliff in 1935, the Mann collection of Aboriginal artefacts in 1927, the collection of fossils from George Sweet in 1902 and from F. A. Cudmore in 1937, and in 1948 the E. J. Dunn collection of minerals, including diamonds and gold.

During the Second World War many specimens were removed to the country for safe keeping. In 1945 an Act was passed instituting its own Trustees for the Museum, and in 1948 the old Observatory site in the Domain was reserved for the construction of a new Museum which is now being planned. Since 1963 trained teachers attached to the Museum have taught school children in an education service; the service also lends teaching aids. The rapid post-war development of Melbourne together with the development of new sciences such as genetics and ecology have influenced work at the Museum, requiring a larger range of specimens needing greater space.

Dioramas showing species in their natural environments are now standard exhibits.

In 1970 an Act replaced the Trustees with a Council which has the status of a body corporate.

#### SCIENCE MUSEUM OF VICTORIA

In October 1870 the Science Museum of Victoria, then known as the Industrial and Technological Museum, commenced courses of technical education covering the subjects of chemistry, physics, physiology, and geology, and within a year enrolments reached a total of 2,216. These courses continued until the work was taken over by the newly established Working Men's College in 1887. Seventy more years were to pass before any formal educational services were to be resumed in the Museum.

In 1957 a temporary part-time lecturer was appointed to cater for the needs of visiting school groups, and in 1959 a full-time permanent appointment was made. These services proved to be so popular and demanding that an appeal for teacher secondment was made to the Education Department, and in March 1962 the first teacher in the Science Museum took up duty. By 1971 the education officer strength had been increased to seven, three full-time and four half-time. The annual number of school children receiving lectures and demonstrations has increased to about 45,000 from all primary and secondary levels, including a total of 30,000 receiving instruction in astronomy at the H. V. McKay Planetarium.

An important feature of the new education service is the thoroughness of its planning and execution. School parties are pre-booked, and escorting teachers nominate in advance the topics to be covered. The visits are now much more than guided tours, areas being set aside for children to operate and experiment with specially provided technical equipment; also, a wide variety of printed information is available for distribution. These services have proved to be a valuable supplement to classroom study.

#### ADULT EDUCATION

Adult education in Victoria originated in the mechanics institutes, over 500 of which were founded, the first in 1839. Typically, each had a library, subscribed to newspapers and journals, organised lectures, and served as a centre for community decision making. Each one was a separate voluntary organisation, and as only the premises were subsidised, when financial problems arose and policy decisions had to be made, most of the institutes declined. In 1891 the University of Melbourne set up a University Extension Board on the Oxford model at the instigation of men such as Judge Henry Bourne Higgins. Their philanthropic aim was to make available to the less privileged some of the benefits of university learning, and they ignored the mechanics institutes as being insufficiently intellectual. The 1893 depression badly hindered the scheme, which had to be self-financing, and the cost of its university teaching was so high that only a few hundred students could be served. By 1910 the movement had virtually come to an end.

In 1913 Albert Mansbridge visited Australia, and disseminated the ideals of his voluntary Workers' Educational Association, which he suggested should organise working-class students, for whom the University would supply tutorial classes. Subsidies were expected from the State, as popular democracy depended on politically efficient citizens. The First World War hindered the scheme; the Workers' Educational Association lost its early capable and influential leaders; organised labour refused to support it; and the rigours of the tutorial class system proved idealistic. By 1921 this movement, too, had deteriorated. Throughout the 1920s and 1930s a diluted Extension and Tutorial Classes movement continued to help a few thousand students a year but the work was hindered by the depression and uncertain policies. There were three university inquiries into the working of the Extension Board during this period. In 1939, however, the appointment of a Director of Extension who had a leaning towards popular as against academic adult education ensured a new direction of policy which became established by 1945. In 1946 the Minister of Public Instruction set up an advisory committee on adult education. It recommended the formation of a statutory body, and in May 1947 an Act came into force establishing the Council of Adult Education as part of the State educational system. The cost to the taxpayer was to be nominal.

Since that time the Council has developed diverse educational activities and helped other agencies implement adult education. The Council has always adopted a "liberal" and "open" approach, expressed in its metropolitan class programme, its discussion groups, its occasional schools, seminars, and workshops, its community arts activity, and its library services. During the early 1950s with its travelling theatre it brought music, drama, and ballet regularly into over 100 Victorian and border country towns, and later, with the National Gallery, art exhibitions as well. The advent of television, and the Council's encouragement of local voluntary drama groups throughout the State, terminated this policy in 1956.

In the 1960s the Council helped to establish adult continuing education centres in Wangaratta, Benalla, Shepparton, Warragul, and Yallourn in conjunction with the Education Department, using local schools and having local planning and financial autonomy. It has also aided the adult education scheme under the Geelong Regional Library Committee.

A recent and notable development has been the engagement, in the education of adults, of various agencies. The University of Melbourne provides many lectures open to the public, and organises specialist courses for graduates and others. The Adult Education Association of Victoria, working with the C.A.E., arranges conferences, weekend schools, and other activities, and assists many groups concerned with aspects of adult education, such as the Y.W.C.A. and Y.M.C.A., National Fitness Council, National Gallery Association, National Trust of Australia (Victoria), Arts Council of Australia (Victorian Division), Victorian Drama League, and many churches. The Australian Council of Trade Unions has an education officer whose work is largely concerned with adult education.

## THE ARTS

## PAINTING

Painting in Victoria originated before the arrival of John Batman on the Yarra River; apart from the drawings and decorations of the Aboriginal inhabitants, the first pictorial records were made in the service of the sciences of classification by exploratory voyagers. Indeed, between 1750 and 1850 a great deal of artistic talent both professional and amateur was engaged in the recording of botanical, zoological, and topographical information on the new territories. The pattern of development of the visual arts in Australia is typical of that of European colonisation; in Australia and in Victoria one can trace the movement through "Colonial", "Provincial", and "Cosmopolitan" eras and styles. The Colonial period is characterised by its derivation from European models largely British in origin, and is co-existent with the pastoral development of the country. Victoria was settled in the mid-1830s, and by 1850 Melbourne with a population of 23,000 was already evidencing the Australian concentration of population in the capital cities. However, the time was not yet ripe for the emergence of the fine arts. Despite the fact that the pioneers included many men of cultivated taste and intellectual discernment, the rigours of settling the land largely precluded local artistic production. The separation of Victoria from New South Wales in 1851 coincided with the discovery of gold. The subsequent gold rush immigration brought an influx of men of learning from many parts, and physically transformed Melbourne from a township to a city. It is in the 1850s that the history of painting in Victoria really begins.

Artists of this time devoted themselves either to the depiction of the turbulent society of the times or to landscape, though these activities necessarily overlap. Samuel Thomas Gill (1818-1880) is the representative artist of the gold rush. As a young Englishman Gill had come to Adelaide with his parents in 1839. The lure of gold brought him to the Victorian gold diggings in 1851, and in 1852 he published in Melbourne the folio of lithographs, *A series of sketches of the Victorian gold diggings and diggers as they are*; such work was sought after both in Australia and abroad where gold rush migration fever was at its height. In his extensive travels Gill recorded the life of the digger, the pastoralist, and the towns in their period of early growth. He introduced into the repertory of Australian art genre subjects of the everyday life of his times, a theme later taken up by artists of the 1890s and 1940s, notably Tom Roberts (1856-1931), Fred McCubbin (1855-1917), Russell Drysdale (b. 1912), and Sali Herman

(b. 1898). A notable collection of Gill's work is housed in the La Trobe Library. The landscape tradition as a means of pictorial expression is probably the most fruitful in Victoria's history to date. Contemporary with the settlement of Australia, landscape as an independent art form became the dominant mode of expression in Europe. Thus the natural impetus inspired by the novelty of the countryside was reinforced by the prevailing tide of metropolitan art, and it is little wonder that Australian painters have long sought and continue to seek their utterance in landscape painting.

A little known painter of the colonial period is Thomas Clark (1814–1883); it is the scarcity of his work and not its quality which has led to this lack of recognition. He came to Melbourne in 1857 at the age of thirty-nine with a fine reputation as artist and teacher in England, and entered fully into the life of the community; in 1861, the year of the founding of the National Gallery of Victoria, he was urging the Victorian Government to create a National School of Arts. When evening art classes were eventually established at the Artisans' School of Design in 1867 he there taught figure drawing, and artists of the later generations including Tom Roberts owed him much. In the year of his arrival Clark painted *The coast near St Kilda*, a delightful picture with landscape and genre harmoniously wedded.

Nicholas Chevalier (1828–1902), a Swiss who came to Victoria in 1854, and Eugène von Guérard (1811–1901), an Austrian who arrived in 1853, typify the informed taste of this period in Victoria; both were highly trained in the European academic manner of the nineteenth century. Both favoured picturesque views of the still primeval countryside, and they painted these landscapes with a meticulous linear exactitude, embellished with typical aspects of the Antipodean scene, and its flora and fauna; such work appealed to the local pastoral and professional aristocracy. Still largely British in origin, their aim was to recreate in Victoria the social refinements of contemporary metropolitan England. The National Gallery of Victoria, of which Guérard was first curator, has a fine example of his work, the *Valley of the Mitta Mitta, with the Bogong Ranges*, 1866. Marcus Clarke's opinion of Chevalier's prize-winning *The Buffalo Ranges, Victoria*, 1864 is interesting; he called upon the public to notice how the artist had conveyed "in a very brilliant manner the effect of the sylvan sunlight peculiar to our clime". This theme was to occupy the attention of artists in Victoria for the next 50 years; their main objective was to master the art of landscape painting and to create a new visual convention capable of interpreting in artistic terms the original beauty of the newly found country.

In 1865 there arrived Louis Buvelot (1814–1888), an artist whose influence was crucial to this development; it is difficult to overestimate the importance of his work in Victoria. He was an artist of great ability and sensitivity, who introduced a new poetic concept to the emerging landscape tradition. He favoured the simple rural scenes of the French "Barbizon" school, so known from a group of artists who worked at that village in the forest of Fontainebleau during the mid-nineteenth century, their aim being a direct, unadorned rendering of peasant life and scenery. Buvelot's most famous landscape is *Waterpool at Coleraine*, 1869. This is a farming scene of a waterpool reflecting the setting

sun, beneath two great gums which quite fill the central plane of the picture. The twilight hour gives a uniform low tone, a harmony of gold-browns, tans, and russets. It must be remembered that this district did not in itself reflect the wilder aspects of the primeval countryside. Thus in rejecting the exotic, Buvelot found plentiful subjects in the Port Phillip farmlands for his quiet artistry.

Buvelot's achievement influenced the formation of the "Heidelberg School", whose predominant position in the history of painting in Victoria must be considered in relation to a rapidly emerging colonial culture. The 1880s climaxed a period of economic expansion which made possible a local patronage to encourage a native school of painters. During the late 1860s schools of design were founded under the stimulus of the Trades Hall. By 1875 the National Gallery Art School in Melbourne had forty-one students, amongst whom was Tom Roberts (1856-1931). The flowering of the "Heidelberg School" was fostered by the Art School and fathered by Roberts. Mainly native-born or having lived in this country from youth, these artists created that style which is most commonly regarded as Australian landscape. They forged their individual approach to a national style when the Australian States were moving towards Federation.

Tom Roberts was their inspiring leader. After his studies in Melbourne, he visited England and the continent for some four years from 1881. When he returned in 1885 he brought back a doctrine of painting directly from nature, seeking momentary impressions of light and shade. In short, it was with a motif of "truth to nature" that they started to interpret the countryside anew. With Fred McCubbin (1855-1917) Roberts set up a painting camp at Box Hill, then a nearby village and now a suburb of Melbourne. When they were joined shortly afterwards by Arthur Streeton (1867-1943) and Charles Conder (1868-1909), the "Heidelberg School" of Australian impressionists had come into being. Though Roberts was the central figure, it is rewarding to examine the novel qualities of this style, not in the work of Roberts himself, but in a painting by his younger colleague, Arthur Streeton. For it is the manner of Streeton which dominates the painting of landscape in Australia for the ensuing forty years. In 1896 Streeton painted his large picture of the Hawkesbury River, called *The purple noon's transparent might*. Its most striking feature is the high tone key to capture the modifications of local colour under intense sunlight. Another is the broad impressionist brushwork of this canvas which was painted out of doors on a hillside overlooking the river valley in two days during a shade temperature of 108 degrees. This romantic painting with its intense visual excitement sums up the optimistic mood of the period which saw Australia as a pastoral paradise.

The buoyant years of the 1880s were followed by economic depression, which in turn was followed by drought and industrial troubles. In these conditions most of the rising artists looked towards Europe for the fulfilment of their ambition; by the turn of the century Paris had attracted many artists who could afford to travel. During this decade members of the Lindsay family grew up at Creswick and subsequently their careers found expression in water colour, line drawing, book illustration, and other fields. Typical artists of this Edwardian era were Rupert Bunny (1864-

1947) and E. Phillips Fox (1865–1915), both of whom painted scenes of elegant middle class leisure in garden settings in a form of modified impressionism. Fine examples of their work in the National Gallery of Victoria are Bunny's *Les endormies*, 1911 and Phillips Fox's *The arbour*, 1911. Parallel to their crisp light-toned salon impressionism there ran another tradition in the painting of the Edwardian era.

In 1892 an English artist, L. Bernard Hall (1859–1935), became director of the National Gallery of Victoria. Hall favoured the European tradition of tonal illusionism, and under his influence students came to admire most the work of the Spanish painter Velazquez (1599–1660). They reverted to the use of the darker toned palette which their predecessors had discarded, and placed a greater emphasis on portraiture. The two finest artists of this school were Hugh Ramsay (1877–1906) and Max Meldrum (1875–1955). Ramsay, a most gifted artist, died young. On the other hand Meldrum lived to found a school of painting loosely called "Meldrumism", whose influence persists in Victoria to the present day. During his studies in Europe from 1899 to 1913, Meldrum developed a theory of objective vision with an emphasis on the analysis of tonal values. Two fine examples of his work in the National Gallery of Victoria are *Picherit's farm*, 1910 and *Portrait of the artist's mother*, 1913.

The years following the First World War saw the development of a strange situation. The daring innovators of the 1880s and the consolidators of the Edwardian era had returned to Australia from their studies abroad. Upon their return, these erstwhile innovators formed an artistic establishment to maintain the existing traditions, either of impressionism or of tonal illusionism. Consequently the advent of the influence of European "Post-Impressionism" was long delayed in Victoria. However, during these years of social and economic unrest there grew an interest in "modern" art, which to that generation meant largely the art of the Post-Impressionists, Paul Cezanne (1839–1906), Paul Gauguin (1848–1903), and Vincent van Gogh (1853–1890). In Melbourne that interest was crystallised in 1932 by two artists making common cause to found a school of painting, championing the new principles. These artists were George Bell (1878–1966) and Arnold Shore (1897–1963). By their own work both these artists have contributed to the history of painting in Victoria. The impetus their example and that of their colleagues gave to the development of a modern movement was all important. In the years immediately preceding the Second World War, the Melbourne *Herald* brought out the first extensive exhibition of contemporary French and British art to Victoria. The combined tradition of the Shore–Bell school and the controversial influence of this exhibition led to the formation in 1939 of the Contemporary Art Society in Melbourne under the chairmanship of Bell.

The Second World War disrupted the artistic life of the community as had the First. Not merely did this happen during the war, but also in the aftermath of so many lives lost and others spiritually and creatively injured who could not recover the years of youth's endeavour. However, there emerged new tides in painting in Victoria, one school devoting itself to illuminate man in his environment, the other to pursue a new vision of this country in landscape painting. To illustrate these developments only a few artists must suffice. John Brack (b. 1920) depicted with



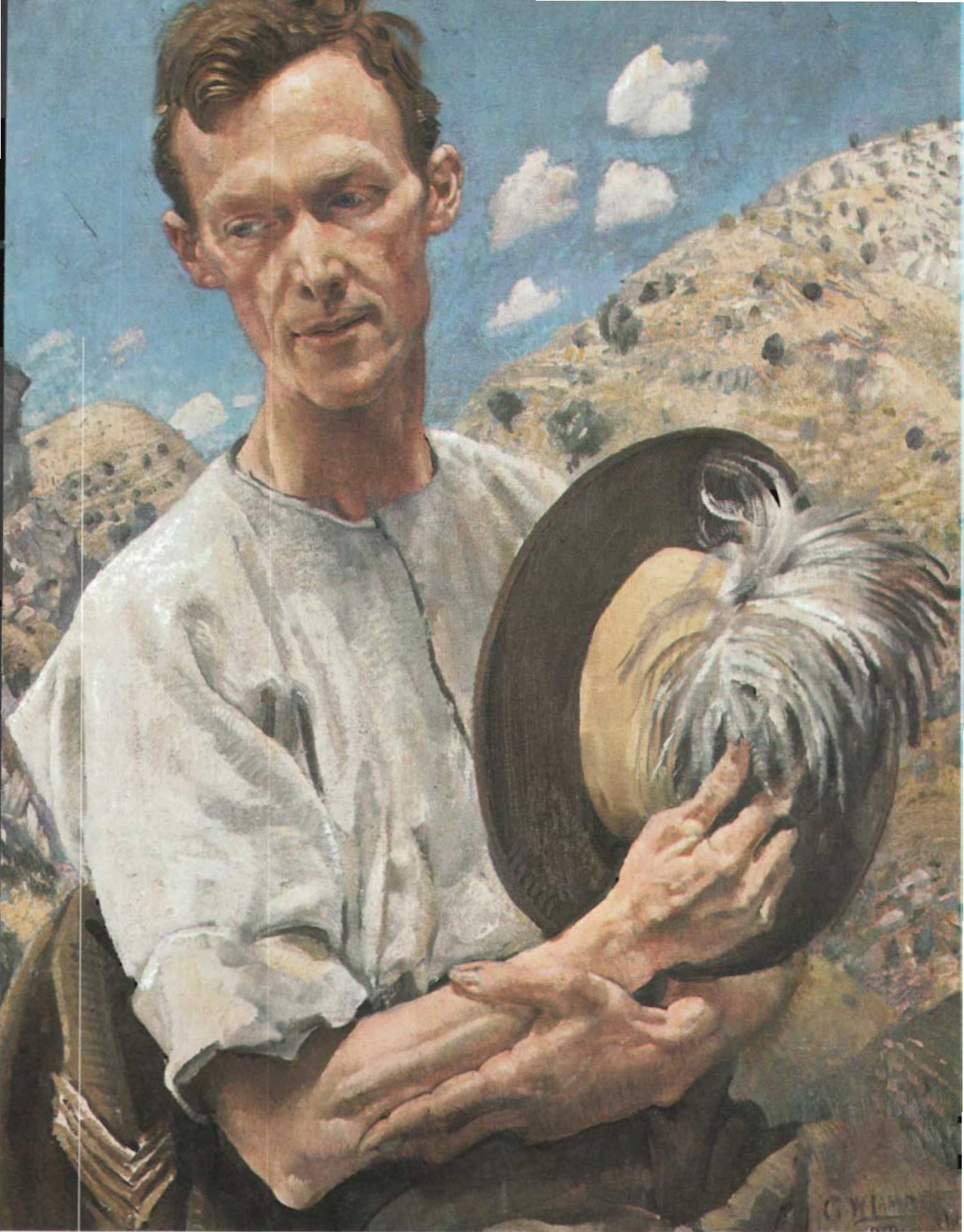
elegant dispassion and classic composition the life of suburbia. His best known picture of his early period, *Collins Street, 5 p.m.*, with its anonymous figures cast in similar modes, reveals the repetitive nature of the city workers released from the day's employment. Sidney Nolan (b. 1917) took his themes from history to create his own mythology, most notably in the series on the theme of Ned Kelly as the symbol of man in a hostile, unsubdued, and almost primeval landscape. Fred Williams (b. 1927) created a new vision of the land with its disorder, its ragged and wilful pattern of gumtrees bursting like fireworks on the horizon, and the asymmetry of the bush. Many other artists of great individual achievement and varied attitudes to both form and content enriched the art of the 1940s and 1950s. Among these were Arthur Boyd (b. 1920), Albert Tucker (b. 1914), and John Perceval (b. 1923).

As the influences from the great metropolitan centres of culture changed in fact and in style and place, many artists turned to abstract expressionism or to symbolic abstract compositions. However, Victoria remained the centre of figurative art, and one exhibition of 1959 (*The Antipodeans*), in the introduction to the catalogue, stated a credo defending figurative art. Nevertheless, the young artists of the 1960s turned more and more to minimal art, and this movement was summarised in the exhibition which was held to open the new National Gallery of Victoria in 1968. At that exhibition (*The Field*), the art was difficult to describe, but the words "hard edge", "unit pattern", "colour field", "flat abstraction", and "conceptual" have been used in discussing it. The *Field* exhibition marked a watershed as history moved into the 1970s.

A significant feature of the art of the past two decades has been the emergence of professional commercial galleries and the increasing interest of the public in art and its collecting. With the building of the new National Gallery Victorians will continue to be able to assess, support, and acquire the paintings of their contemporaries in whatsoever form it is manifest as the very categories of two dimensional, three dimensional, and environmental become less clearly defined.

#### SCULPTURE

In the middle of the last century architectural sculpture began to emerge in Melbourne with the arrival of John Simpson Mackennal. Typical of his work are the sculpture groups to be found above the porticos of the Windsor Hotel in Spring Street and the Railways Building in Spencer Street, Melbourne. His son Bertram became Victoria's first R.A., and was knighted for his services to art. The equestrian statue of King Edward VII in St Kilda Road, Melbourne, is an example of his work in this State. Charles Summers, the son of a stonemason and a graduate of the Royal Academy, arrived here at about the same time as Mackennal; towards the end of 1853 he secured the position of a modeller, and in this capacity he executed the figures adorning the ceiling of Parliament House. A later work of his is the huge monument honouring the ill-fated Burke and Wills expedition. This statue in Spring Street, Melbourne, is one of the largest bronzes modelled and cast in Australia; the standing figure of Burke is 13 ft high. These two examples of sculpture reflect a tradition which was to continue well



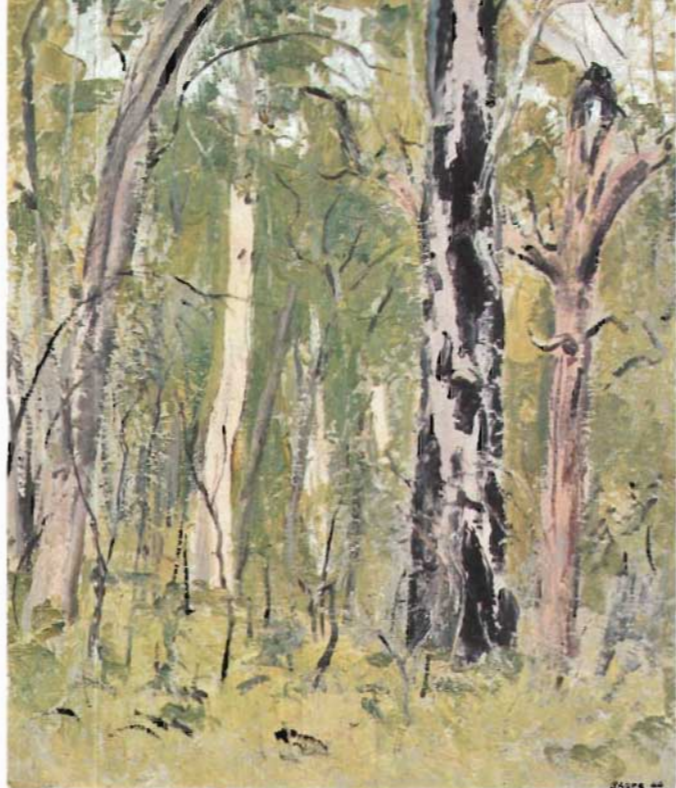
George Lambert *A sergeant of Light Horse* (1920, oil on canvas, 77.1 x 61.2 cm).



Tom Roberts *Coming south*  
(1886, oil on canvas, 63.8 x 50.5 cm).

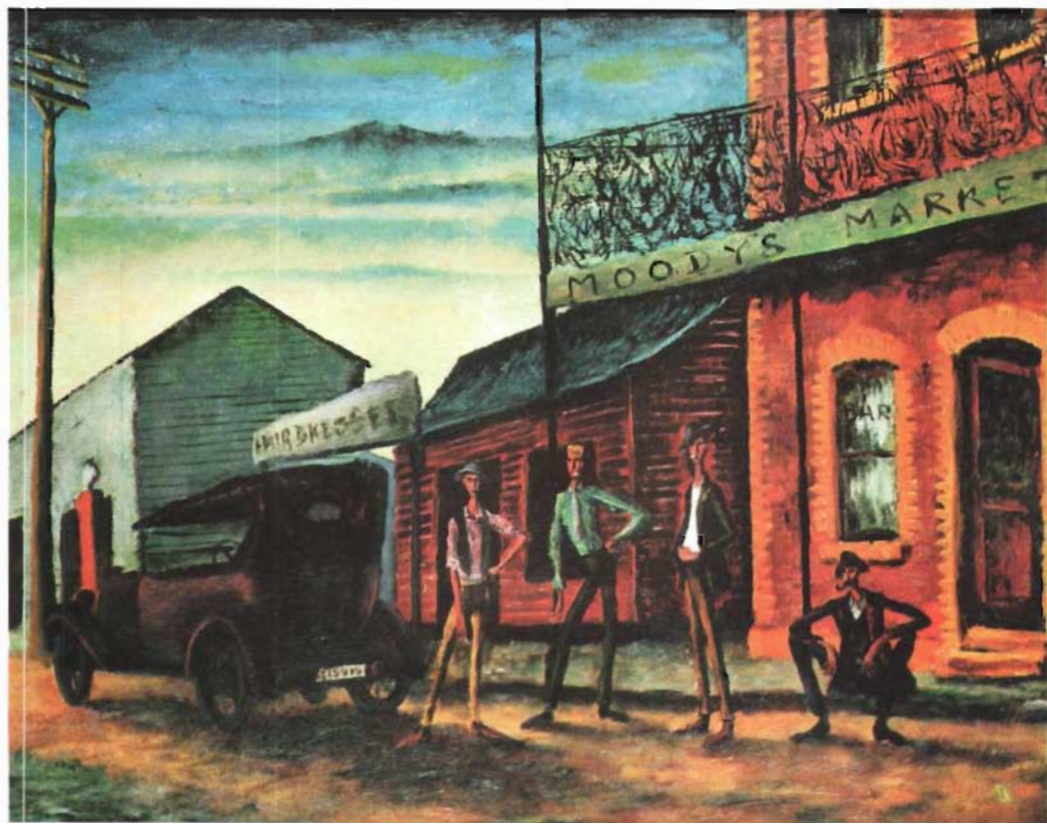
Louis Buvelot *Between Tallarook and Yea* (1880, oil on canvas, 106.7 x 161.7 cm).





Arnold Shore *The bush* (1946, oil on canvas, 62 x 51 cm).

Russell Drysdale *Moody's pub* (oil on wood panel, 50.8 x 61.6 cm).





Thomas Clark *The coast near St Kilda, Melbourne* (1853, oil on canvas, 48.2 x 94 cm).

Sidney Nolan *Sergeant Fitzpatrick and Kate Kelly* (oil on hardboard, 61 x 76 cm).





S. T. Gill *Surveyors* (lithograph, 17.5 x 25.4 cm).

Walter Withers *Spring on the Lower Plenty Road, Heidelberg* (1907, oil on canvas, 35.6 x 51 cm).





Fred McCobbin: *North wind* (1891), oil on canvas, 90.2 x 146 cm).

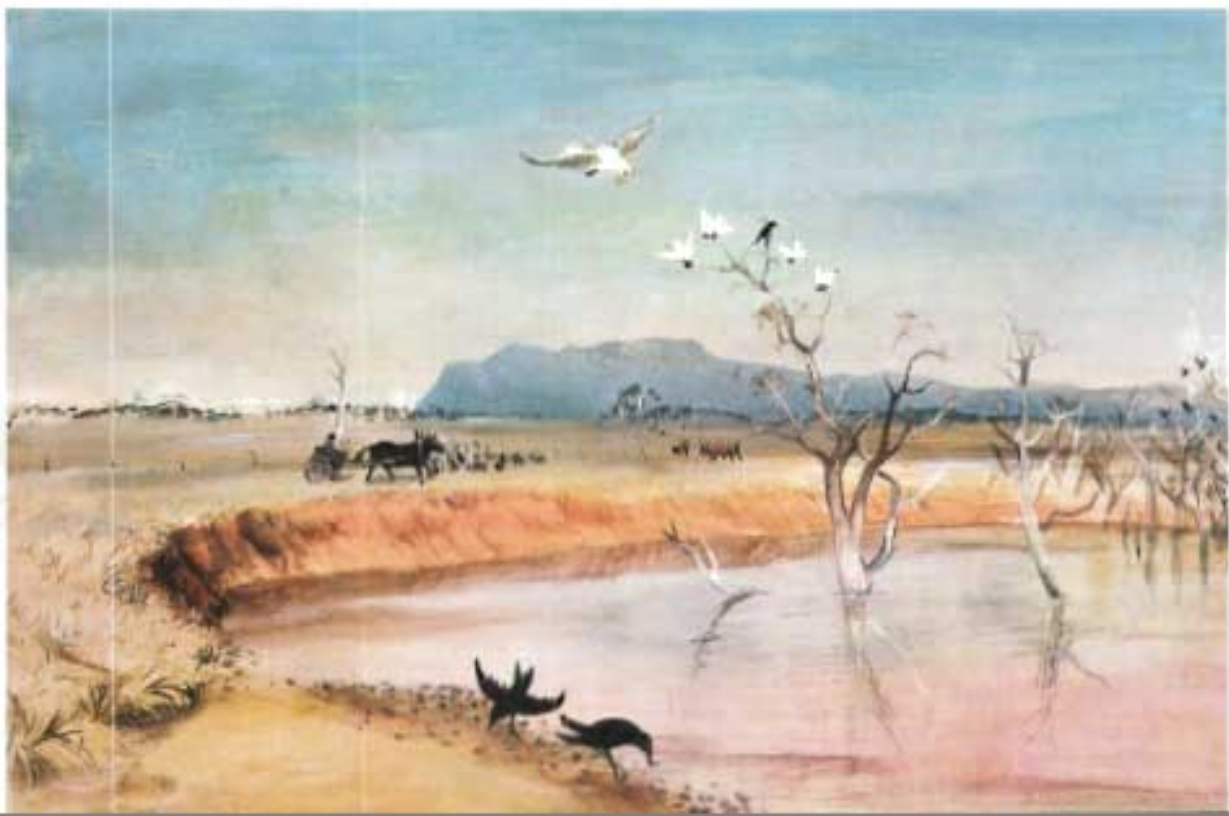
Eugène von Guérard: *A view of the Snowy Bluff on the Wonnangatta River, 1864* (oil on canvas, 95.2 x 152.4 cm).





Rupert Bunny *Self portrait* (oil on canvas, 65 x 50 cm).

Arthur Boyd *Irrigation Lake, Wimmera* (resin and tempera on hardboard, 81.3 x 129.1 cm).







E. Phillips Fox *Moonrise, Heidelberg* (oil on canvas, 75.8 x 126.5 cm).

John Brack *Collins Street, 5 p.m.* (1955, oil on canvas, 114.6 x 162.9 cm).



into the early twentieth century. As far back as 1893 a group was formed which called itself the Yarra Sculptors Society. The original members were C. Douglas Richardson, C. Web Gilbert, W. C. Scurry, C. Y. Wardrop, J. McDonald, J. Fawcett, Margaret Baskerville, and E. S. Smellie.

The sculptures erected around Melbourne conformed to a pattern established in Britain and Europe during the nineteenth century, a movement to classicising the human figure together with concern for exact naturalistic representation; the results were entirely without individuality and consequently Melbourne's sculpture was very uniform in character, the only differences being the skill of the sculptor in his rendering of naturalistic forms. The historical development of sculpture in this State between the two world wars emphasises the naturalistic tradition common to nineteenth century English sculpture as seen in commemorative busts and statues. It was generally of private works such as portrait busts or small bronzes, and public work which was either to commemorate the First World War or to embellish public gardens. Melbourne's leading citizens were immortalised in bronze, as exemplified by the statue of Thomas Bent by Margaret Baskerville at Brighton, and an avenue of the busts of Australian Prime Ministers in Ballarat was commenced by Wallace Anderson. The biggest commission granted was the sculpture to be included on the Shrine of Remembrance and this has been the only attempt in Melbourne's history up to the present day to ally sculpture and architecture on such an ambitious scale. Paul Montford won the final commission for the Shrine and was able to employ seven sculptors and assistants to help in its completion.

In the 1930s a few sculptors began to exhibit works in group exhibitions, although these were frequently appended to a painting exhibition. Critiques of the exhibitions were usually devoted to the paintings; the only hint that sculpture was included was an all-embracing sentence and a list of the sculptors involved. In April 1933 the first group exhibition of sculpture to be held in Melbourne was organised by the local sculptors Orlando Dutton, Leslie Bowles, Wallace Anderson, Ola Cohn, George Allen, and Charles Oliver. Arthur Streeton enthusiastically welcomed the exhibition and expressed surprise that Australia, which had a clear atmosphere and a suitable climate to show sculpture to its best advantage, did not bear witness to this fact. To the contrary, Australian authorities tended to place items of sculpture among trees or in other rather inaccessible areas. Most of the major commissions for sculpture were associated with the First World War. Monuments were erected all over the country to commemorate Australia's first international adventure, and to laud the unique qualities of the Australian soldier in such titles as *Digger over the top*, *The gunner*, and *Call of the sword*. Due to the limited amount of commissions available it was deemed necessary to form the Australian Sculptors Society in 1933. The foundation members named above were later joined by others. This Society existed until 1939 when the outbreak of the Second World War forced it to disband.

Since the Second World War the whole field of sculpture has changed, and indeed the content of sculpture has altered markedly. Many influences are acting upon the Australian scene. There is the influence of new materials such as welded metal, plastics, fabricated material, and concrete which in

many ways have tended to replace the traditional marble, bronze, and stone. One of the greatest influences has been the arrival in this country since the Second World War of sculptors with a wider and different background, a background influenced by the changing forms to be found in Europe since the early twentieth century. There are also Australian sculptors who, having spent some time overseas and having encountered similar experiences, have contributed to Victorian and Australian sculpture on their return. One of the most influential bodies of sculptors has been the Centre 5 group. The group was formed to increase the community's awareness of sculpture, and although exhibiting together, each member has maintained an individual style. Lenton Parr, Teisutis Zikaras, Clifford Last, Inge King, Vincent Jomantas, Julius Kane, and Norma Redpath were all responsible for exerting a profound influence during the mid-1960s by public lectures, studio visits, and major exhibitions interstate. As well as the influence of Centre 5, there have also been some major awards and competitions designed to foster sculpture, such as the Mildura Triennial, the Transfield Prize, the Comalco Aluminium Award, the Flotta Lauro Travelling Scholarship, and the Alcorso-Sekers Award.

There have been several significant contemporary works of sculpture. Norma Redpath's very large bronze *Relief* in the Theatre Lobby of the BP Building in St Kilda Road is typical of her work; the *Relief* in the Administrative Building of the BP Refinery at Crib Point on Western Port is another major work of hers, as is the work over the main entrance of the National Gallery, based on the Victorian coat of arms and designed with the accent on integration with the facade. Clifford Last and Andor Meszaros are two other leading sculptors who work at sculpture as a full-time occupation. The former is represented by his *Family group* in the CRA Building, Melbourne. This work, completed in 1966, stands approximately 5½ ft high. Cast in aluminium in two sections it represents three figures. The forms are the forms of a carver, but they have been simplified somewhat to suit the character of the medium. Another example of Last's work can be found in the new Administration Building at the University of Melbourne.

A very good example of integration of sculpture and building can be seen on the new Customs House in William Street, Melbourne. This huge screen form was designed by Lenton Parr. Some other examples of his work included the *Fountain* in front of the General Motors-Holden's building at Fishermens Bend, a sculpture at the Chadstone Shopping Centre, and the four balustrades on the northern exterior wall of the Union Theatre at the University of Melbourne. Another worker in welded metal is Inge King. Her *Wall sculpture* produced in 1968 for the B.H.P. Research Laboratory at Clayton has been electrically welded, sand blasted, sprayed with a protective coating of bronze, and then oxidised black and rubbed with a wire brush to achieve its metallic sheen. Other of her wall reliefs can be seen at Ballarat Teachers College (1965) and Frankston Teachers College (1961); there is also a free standing metal sculpture *Euridice* produced in 1965 for the courtyard of the B.H.P. Research Laboratory at Clayton. A wall relief of great interest is to be found at the State Savings Bank, 186 Bourke Street, Melbourne. Cast in aluminium and bronze in many sections, it was produced by George Baldessin and

includes those organic forms he uses in his etchings and paintings; it is actually two pieces of sculpture, but both pieces are closely related.

Two other major commissions executed in 1969–70 have been Peter Corlett's Arts Centre *Playground sculpture* and Clement Meadmore's huge iron composition on the Plaza of the AMP Square, William Street, Melbourne. It is interesting to contrast Meadmore's work with the ICI fountain by Gerald Lewers who died in 1962. Lewers travelled extensively in Europe and the Far East. This work reveals his emphasis on movement. Other examples of contemporary interest include Teisutis Zikaras, *Post Office Place fountain*; Tom Bass, *Judgment of Socrates*, Wilson Hall, University of Melbourne; Stanley Hammond, *Chadstone sculpture*, Shopping Centre, Chadstone; and Andor Meszaros, the facade of the Biology Building, University of Melbourne.

Sculpture in Victoria by the beginning of the 1970s was an accepted part of the community's artistic activity and in retrospect the developments of the previous twenty years appeared to exceed those of preceding decades.

#### NATIONAL GALLERY AND ARTS CENTRE

In May 1860 the Trustees of the Melbourne Public Library, encouraged by the increasing prosperity of the developing colony, decided that an art museum should be established. The sum of £2,000 was voted for the purchase of a foundation collection consisting of casts, medals, coins, gems, and other objects from England; these were housed in one small room adjacent to the Public Library. Known as the Museum of Art, it was officially opened in May 1861 by Sir Henry Barkly, Governor of Victoria. On 24 December 1864 a picture gallery, hung with a group of works by contemporary British and European academic painters, was opened to the public. These pictures had been selected for Melbourne by the painter Sir Charles Eastlake, President of the Royal Academy and Director of the National Gallery in London. Under succeeding directors the collections have increased in extent and importance, and although many rooms and galleries had been added to the original building, by the early 1940s the lack of adequate display facilities and of suitable and uncrowded storage areas severely hampered art appreciation and represented a threat to the safety of the works. In 1943 a Government appointed committee recommended that a new National Gallery be built with a separate identity from the Public Library and other institutions at Swanston Street, and in 1946 the 7½ acre Wirth's Park site in St Kilda Road at the southern boundary of the inner city was reserved. In 1956 a building committee of nine was appointed to raise funds and supervise the project. Three years later the architect was commissioned and, with the director, travelled extensively overseas to gather ideas; by this time the project had been expanded. In 1961 the master plan for an Arts Centre—with a theatre and auditoria complex—was released, and an appeal, to which the public responded with great generosity, was launched.

Four years later the foundation stone of the new National Gallery, the first stage of the Victorian Arts Centre, was laid, and on 20 August 1968 the spacious bluestone building was officially opened by the Premier. The National Art Gallery and Cultural Centre Building Committee estimated the

cost of the Gallery building in St Kilda Road to be \$14m. In 1971 the number of staff organising and maintaining the building, minding the collections, and attending to visitors was 170. Currently about 400,000 people visit the Gallery annually. As well, 60,000 children see the building and special exhibitions each year, through the work of the Gallery Education Section.

The Gallery's collection is now considered to be worth about \$30m, although this figure can only be regarded as approximate, the value of almost every object having risen considerably since its acquisition. From 1861 until 1866 funds for purchase of material for the Gallery were provided by government grant. From that time donations and bequests have also been available. Some, such as the John H. Connell Bequest, were donations of objects, and others, such as the Felton Bequest, were pecuniary donations. Alfred Felton, one of the most important benefactors, migrated to Australia from England in 1853, and in 1866 joined in founding the house of Felton, Grimwade and Co., wholesale druggists. He died in 1904, and the residue of his estate amounting to £383,163 went to form a fund, the income from which was directed to be held upon trust in perpetuity. One half was for charitable objects and the other half for the purchase of works of art for the Gallery. The first purchases from this fund were acquired in 1905, and to June 1971 over \$3,300,000 has been spent on works of art.

The next considerable bequest was made by John H. Connell, a well-known Melbourne citizen. A collection of china, glass, silver, furniture, paintings, engravings, and other objects of art was donated in 1914, and further items were added in 1929. These were mainly European pieces and it was not until 1938 that the Gallery acquired a large collection of Asian objects with the presentation of a collection of Chinese ceramics, furniture, and bronzes by Mr and Mrs H. W. Kent. In 1939 a collection of pictures, drawings, bronzes, textiles, china, furniture, ivories, and other works was bequeathed by Howard Spensley to the National Art Collections Fund of London, to be presented to the Government of Victoria. This was followed in 1942 by Mrs Colin Templeton who presented a collection of English porcelain covering the period from 1745 to about 1820 from Bow, Chelsea, Worcester, and Derby, as well as other English factories. In 1968, under an endowment made by William and Margaret Morgan, two hundred examples of English glass from the seventeenth and eighteenth centuries were presented from the famous collection of Mr Gordon Russell of Sydney. There have also been numerous smaller bequests of high quality.

One of the important aspects of the Gallery has been its school of painting. First recommended in 1861, it was established at the Swanston Street site in 1868. Among many well-known heads and teachers have been Eugène von Guérard and Fred McCubbin, and the school's connection with many leading artists indicates its significance in the history of Australian art. Its new building, on the south-west corner of the Arts Centre site, was completed in 1970.

#### ART EDUCATION

Programmes covering the practice and appreciation of the visual arts are included at all levels of education in Victoria. The expansion of these programmes has largely resulted from changes in art education overseas ;

they were implemented and interpreted to suit local conditions. Such adaptation has often been carried out within a particular age level or area, but there has been an increasing overall understanding of the role of the visual arts in relation to communication and education.

The first free kindergarten was opened in 1901, and in 1908 the Free Kindergarten Union of Victoria was established. By 1916, when training for pre-school teaching was undertaken in a separate institution, many of the media now employed in pre-school centres were already in use. While painting was more formal, free periods for two and three dimensional activities always gave opportunity for exploration, and no uniform result was expected. The freedom of finger painting was also enjoyed by pre-school children long before its value was realised at more senior levels. Pre-school centres recognise that commitment to constructive action, which is often evident in children's play, is the basis of all work, and they encourage this innate creative ability. From 1930 onwards an understanding of children's art as distinct from adult forms was assisted by the discoveries of Cizek (Europe) and Viktor Lowenfeld (U.S.A.). The Bauhaus influence became evident in the study of materials during the 1950s, and in the following decade there was greater recognition of the fact that children can only use the opportunity to be creative if their previous experiences have provided sufficient stimulus.

Manual arts lessons were given in primary schools before 1900, some schools at this time employing visiting teachers to teach drawing; pupils were often charged a small fee. In the late 1930s there was considerable discussion about the art syllabus, which had remained unchanged for many years, and as a result, a revised syllabus was issued in 1943 to encourage and preserve individuality and to extend qualities of perception and imagination. Since the appointment of a Supervisor of Art for primary schools in 1958 a composite art and craft syllabus has gradually developed. This has removed the previous rigid distinction between art and craft as separate subjects, permitting a more imaginative approach to materials and placing less stress on the production of "useful articles". This new course was launched during 1967 through a State-wide television programme, which, in three twenty-minute films, showed classes of primary school children working creatively and with self-discipline; the programme was viewed simultaneously by groups of primary school teachers throughout the State. Explanation and discussion followed each film; this experimental introduction paved the way for more intensive in-service training. Now numbering about 250, art-craft centres staffed by primary teachers with a third year of specialised art training serve as focal points for advisory and in-service work within a district. This specialist oversight of art and craft activities throughout primary schooling aims at achieving continuity through all grades. Infant departments have adopted a creative course in which the self-imposed task invites visual experience.

Art education has undergone a fundamental transformation in secondary schools similar to that at the primary level, with greater scope for individual expression. Changes in the syllabus came to be closely linked with the requirements for the Matriculation examination, which date back to 1899 when the syllabus and examination of drawing were under the control of the Faculty of Engineering. Originally based on perspective

drawing from models, the subject was expanded during the next fifty years to include geometrical drawing, memory drawing, and the drawing of objects, plants, and geometrical design. The study of art history and appreciation was first introduced in 1927. Definite moves for reform in art education in Victoria were already being made when the *Herald* Chair of Fine Arts was established at the University of Melbourne in 1945. The influence of this Department has been felt not only at the tertiary level but also in its effects on secondary art and craft courses and in methods of examination and teacher training. As a result the educational status of the subject has greatly improved, and a more liberal method of examining allows students to submit examples of work done throughout the year. There have been parallel changes in junior technical schools where the past over-emphasis on skills alone is now balanced by a more comprehensive study of materials in which imagination and skill are seen as equally vital to design.

The education programme offered by the National Gallery of Victoria has been closely allied to courses in primary and secondary schools. In 1950 an education officer was seconded to the Gallery by the Education Department for the first time. An increasing number of appointments was made as the services expanded to include lectures to visiting classes, the organisation and staffing of country exhibitions, and the preparation of publications. In planning the new Gallery, provision was made for a much wider range of activities and the position of Chief Education Officer was established on the Gallery staff. Seven full-time and five part-time teachers seconded by the Education Department provide staff for 40,000 students requesting this service annually and for extension programmes in country areas.

Until 1910 the course for the Trained Manual Arts Teacher's Certificate largely covered woodwork and metalwork. Art was gradually grafted on to the course, and teachers with this qualification were accepted as primary teachers. It was many years before the art teacher gained recognition in secondary schools and could apply for secondary positions. The Manual Arts Certificate was discontinued in the 1930s and, for a short time before being passed to the Melbourne Teachers College, art and craft teacher training was controlled by the University. Requirements for secondary art teacher training were changed to an Art Certificate and Art Diploma in the 1950s. Following completion of a practical art course in the senior art school of a technical college, a year of teacher training at Melbourne Teachers College and the study of fine arts subjects were required before a teacher received the initial qualification of a secondary art and craft teacher. Post-diploma study was introduced in 1963, and led to an Associate Diploma qualification which included university subjects. In 1967 a revision of the course took place, and an attempt was made to stabilise the past situation where a student's time had been divided between art school, university, and teacher training college; the four year course is now taken completely within the Melbourne Teachers College, and combines practical and pedagogical studies. Teachers for technical schools carry out a four year diploma course at an art school, followed by a period of industrial experience and a year of training at the Technical Teachers College. The primary teacher is trained in the

fundamentals of art and craft, and given an understanding of the philosophies of art education. He may elect to study and practise a particular branch of art or craft in greater depth.

In 1868 a Commission was sent from England to establish technical education in mechanics institutes in Victoria, with a bias towards painting and minor crafts. In 1926 the Melbourne Technical College arranged for some teachers who were admitted as diploma students to complete their art qualifications. Following this, facilities for specialist art training at tertiary level were gradually extended with the development of art schools within the framework of senior technical schools and institutes of technology. These schools train professional artists in fine arts, crafts, and design. During the late 1960s, as in other areas of technical education, art schools gained greater autonomy with freedom to specialise and to plan individual courses. Another area of tertiary training is available in the course offered by the National Gallery Art School. In 1886 the Travelling Scholarship was established for students wishing to continue their studies overseas. Recently, printmaking and sculpture have been included in what was basically a course in painting and drawing. The Fine Arts Department at the University of Melbourne provides for students who wish to include art history subjects in their university degree courses, but does not offer a studio programme.

Late in 1972 the Government announced that it would establish a comprehensive college for the arts.

#### LITERATURE

Any short account of writing in Victoria must be either a mere recital of the names of authors and works, or, at the cost of many omissions, must attempt to assess what is of greatest importance in Victoria's contribution to the literature of Australia. The second course has seemed more appropriate here, and those readers who wish to follow up the subject in greater detail are referred to E. Morris Miller's *Australian literature from its beginnings to 1935* (1940), to H. M. Green's critical *History of Australian literature* (1961), to L. J. Blake's *Australian writers* (1968), to G. H. Wilkes' *Australian literature : a conspectus* (1969), and to the National Library's annual bibliographies.

Victoria has produced four of the half-dozen or so Australian novelists and one poet whose work would deserve mention in any history of world literature. "Henry Handel" Richardson (Ethel Florence Lindesay Richardson) and Joseph Furphy were born in Victoria and their best work was written out of their Australian experience; Martin Boyd, born abroad of Victorian parents, spent the first twenty years of his life in Melbourne. Marcus Clarke came to Australia as a youth and made his literary reputation in Melbourne. The poet Shaw Neilson, possibly Australia's finest lyricist, though South Australian born, spent nearly all his working life in Victoria. In addition to these, Victoria can claim a great number of impressive writers in fiction, drama, and verse whose service to the literature within their own country is beyond dispute: the more important of these will be mentioned later.

Of the four "masterpieces", Clarke's *His natural life* appeared first in serial form in the *Australian Journal* during 1870, 1871, and 1872 and was



published in Melbourne in book form, considerably revised, in 1874 under the title *For the term of his natural life*. Based on historical sources, it crowds all the brutalities of the convict system into the life of one man, but Clarke's artistic achievement rises far above mere sensationalism. The seemingly melodramatic organisation of his narrative can be shown to be justified by his thesis that there is no depth of despair which love cannot redeem and that brutal punishment makes criminals of the men who inflict it.

Henry Handel Richardson was born in the year Clarke began publishing his novel. Her principal novel *The fortunes of Richard Mahony* (1930) was first published in three parts: *Australia felix* (1917), *The way home* (1925), and *Ultima Thule* (1929). The novel is a great prophetic parable, in the naturalistic mode, of the conflict between God and Mammon. On the surface level the tale of a restless, over-sensitive, immigrant doctor, whose fortunes fluctuate with the changing fortunes of the Victorian goldfields from the 1850s to the 1870s, it shows how the prevailing mood of an acquisitive society can work even upon an idealist; but the symbolism of the search for gold represents also the hunger of a divided soul for wholeness of spirit, a wholeness which Mahony achieves for a moment before he is overwhelmed by physical and mental illness. The ironical school story *The getting of wisdom* (1910), set in Melbourne in the 1880s, treats the adolescent version of the same kind of character, this time in the guise of a school girl. Richardson's other novels are set outside Australia.

Martin Boyd, who died in Rome in June 1972, was one of the most passionately "committed" of all Australia's novelists: committed to the preservation of what is valuable in the Graeco-Christian tradition and uncompromisingly hostile to the cynical commercialism which has tightened its grip on civilisation since 1914. His novels are urbane, polished, and witty, but they are full of a noble rage too often ignored by critics. His most important novel *Lucinda Brayford* (1946) contains a moving and convincing portrait of a conscientious objector; while his tetralogy *The cardboard crown, A difficult young man, Outbreak of love, and When blackbirds sing* (1952 to 1962), though in a sense an exploration of the hereditary vagaries of his own remarkable family, add up to a strong attack on the lust for power without responsibility which leads to the wastage of young lives in war.

Joseph Furphy ("Tom Collins") stands quite by himself in this quartet. Self-educated and aggressively Australian, he reveals in his strikingly original novel *Such is life* (1903) all the faults and virtues of a highly intelligent, humorous, but at times self-important eccentric isolated in the country. Furphy sees life metaphorically as a "search for grass" and his novel is organised around a group of Riverina bullock-drovers whose life is just that. This design enables the author, in the guise of "Tom Collins", a civil servant who falls in with them on their wanderings, to present a vivid picture of a unique aspect of Australian life as well as to conduct a complicated argument on philosophical and political questions.

*Such is life* is also intended as a satire on one of the earliest Australian novels, *The recollections of Geoffry Hamlyn* (1859), written by Henry Kingsley about experiences in Victoria before the gold rushes. Furphy denounces it as romanticising, but in fact its descriptive quality at least

is high. Another early novelist of outstanding importance within Australia is "Rolf Boldrewood" (T. A. Browne) whose *Robbery under arms* (1888), "a boy's story for grown-up people", is still one of the most exciting novels of bushranging we possess. Boldrewood wrote a large number of novels which together give an interesting picture of a wide span of Australian history.

Of lesser known Victorian novelists in both senses of the word, two women writers deserve special mention: "Tasma" (Jessie Catherine Huybers) and Ada Cambridge. Tasma's *Uncle Piper of Piper's Hill* (1889) foreshadows Martin Boyd in its treatment of the snobbery of birth and the snobbery of wealth in Melbourne in the 1860s. Ada Cambridge, the wife of an Anglican clergyman who worked in Victoria for nearly thirty years, reveals behind her apparently simple domestic novels, particularly *A marked man* (1890), a lively independent mind with some surprisingly advanced ideas. These ideas are expressed even more openly in her book of poems *Unspoken thoughts* (1887). Of the older generation of twentieth century novelists Frank Dalby Davison (Melbourne-born) and Vance Palmer, a Queenslander who lived much of his life in Melbourne, are the outstanding names. Davison wrote the first of two war-inspired works of distinction in 1931, *The wells of Beersheba*. His later novels *Man-shy* and *Dusty*, tales of animal life, and his *tour de force* *The white thorn-tree*, published just before his death in 1970 draw on his experience of bush and city life. The last, a long, densely-woven study of the maimed and distorted sex lives of modern suburbia, reveals its deep seriousness only with slow and careful reading.

Vance Palmer and his wife Nettie both made outstanding contributions to Victorian cultural life. At his best as a short story writer, just and shrewd as a critic, Palmer wrote a number of sensitive and perceptive novels of which the best is probably *Golconda* (1948), one of a trilogy which follows the career of a unionist until he becomes a State Premier. *The passage*, in more idyllic vein, evokes vividly the spirit of place in the Caloundra district. Palmer's Melbourne novel *The Swayne family* is less successful.

A painter-novelist whose influence on other writers has also been marked is Norman Lindsay, born in Creswick, whose family showed literary and artistic talents of quite exceptional energy. Lindsay has written straight autobiography in *Bohemians of the Bulletin* (1965) and *My mask* (1970), but much of his own story lies in his early novels, the best of which is *Saturdee* (1934), an account of boyhood both amusing and individual. Lindsay has devoted most of his energy to a cheerful tilting at "wowsersism" and philistinism, though he is not always free perhaps from his own kind of concealed philistinism. However, his function as a catalyst during his long life is undisputed.

The second distinguished war-inspired work by a Victorian novelist, Leonard Mann, was *Flesh in armour* (1932), which marked the beginning of Mann's series of quiet, under-rated novels and books of verse. J. P. McKinney's *Crucible* (1935) ranges less widely than *Flesh in armour*, but is one of Victoria's most competent war novels. Among the novelists of the Second World War, Victoria produced a number who have achieved international reputations: Alan Moorehead, James Aldridge, Paul Brickhill, and George Johnston. Johnston began a new phase of his career with the

first of a trilogy, *My brother Jack* (1964).

Since the Second World War, a number of immigrant writers (some of whom grew up in Australia) have added distinction to Victoria's fiction. Chief among these are Judah Waten and David Martin. Waten's group of short stories *Alien son* (1952) introduced with insight the theme implied in the title, which distinguishes his novels such as *The unbending* (1954) and *Distant land* (1964). Martin's best novel is perhaps *The young wife* (1962), a story of Greek migrants which reveals how a tradition of primitive violence can survive in a new country.

The popular success of Morris West's novels has led critics to regard them with suspicion, but *The devil's advocate* (1959) and *Daughter of silence* (1961) deserve serious consideration. West was born in Melbourne but has lived much of his life abroad. Hal Porter, a native of Victoria, has made his mark in several genres, first in the short story; then in novels such as *The tilted cross* (1961); in drama, with plays such as *The tower*; in verse, *The hexagon* (1956); and in autobiography, *The watcher on the cast-iron balcony* (1963). Porter's work brings a new note of sophistication to the Australian scene, though he can be coldly mannered and self-conscious. Among novelists who have commented on the social and political mores of mid-century Victoria is Frank Hardy, whose *Power without glory* (1950) is interesting especially for its subject matter. Among the more outstanding novelists whose work has been done in Victoria since 1960 are G. R. Turner and Peter Mathers.

Of the short story writers, the best of the early practitioners were "Price Warung" (William Astley) and Edward Dyson. In more recent times Davison, Palmer, John Morrison, Alan Marshall, Porter, and Alan Davies are among the most distinguished. Marshall has also written a remarkable children's fairy-tale.

Though Victoria's record in verse is less impressive than in prose, the State nevertheless became the home of Australia's finest purely lyrical and truly mystical poet, Shaw Neilson, whose work often appeals more to overseas scholars than does that of the poets rated more highly here. His poems can best be studied in A. R. Chisholm's edition (1965) and in the posthumous edition selected by Judith Wright and others in 1969, *Witnesses of spring*. A contemporary of Neilson's, Bernard O'Dowd, unlike him, believed that poetry should be militant. O'Dowd's is marked by deep concern for the future of his country as a place where a new civilisation may be developed free from the mistakes of Europe, though without cutting the tap-root binding it to the older civilisation. Poems spanning the years between 1903 and 1921 can be found in *The poems of Bernard O'Dowd* (1941). All of them express a quasi-mystic aspiration towards a national ideal which does not always find adequate verbal expression. But O'Dowd's importance lay also in helping to free poetry from the limitations of the bush ballad and enlarging the scope of its subject matter. Adam Lindsay Gordon, Victoria's principal balladist (born in the Azores), who spent most of his tragically short manhood in Victoria, is still wrongly regarded overseas as Australia's most representative poet. He represents rather an attitude of mind which appeals to all adventurous young men everywhere. In modern times, John Manifold, during his distinguished career as a "serious" poet, has practised the ballad with immense success, as his most recent book *Op. 8* (1970)

demonstrates. The ballad tradition was adapted to city life by C. J. Dennis, whose *Songs of a sentimental bloke* (1915) was a best seller in its day; it depicted the life of the Melbourne "larrikin" with skill and humour, though Dennis's use of the "argot" is a good deal less than accurate.

"Furnley Maurice" (Frank Wilmot) and Hugh McCrae are two Victorian poets whose importance stretches beyond their State borders. Wilmot, in *The gully and other verses* (1929), expresses a yearning for the bush but in later poems such as *Melbourne odes*, his romantic vision is tempered by an astringent realism peculiarly his own. His poems, including the magnificent *To God from the warring nations* (1917) can best be read in Percival Serle's collection of 1944.

McCrae, the son of a minor poet widely known in Melbourne literary circles in the 1880s and 1890s, has written some of the most melodious poetry in our literature, full of a joy of life and a worship of beauty owing much to the influence of the Lindsays, yet free from any vulgarity and saved from over-sweetness by an undertone of melancholy.

Another Melbourne lyrical poet, F. T. Macartney, is a writer whose distinction has too often been overlooked. He writes with deceptive ease and grace and his verse has that rare quality, charm.

Among the more recent poets one can only single out names: Chris Wallace-Crabbe, Philip Martin, Vincent Buckley, Noel Macainsh, Alexander Craig, and one of the most interesting of all, Bruce Dawe. Examples of their work and that of still younger poets can be found in recent anthologies.

Two of Australia's best dramatists, Louis Esson and Ray Lawler, belong to Victoria, and her best essayist, Walter Murdoch, though born in Scotland, grew up, was educated, and worked in Melbourne for many years. His essays retain to this day their freshness, their robust independence of mind, contempt for cant and hypocrisy, and the wit and fun which endeared him to readers of the *Argus* and the *Australasian* in his youth. His *Collected essays* was published in 1938.

No record of literature in Victoria would be complete without reference to two magazines which have provided a forum for writers on all kinds of subjects for many years. Australian literature in general owes a great debt of gratitude to C. B. Christesen's *Meanjin Quarterly* (1940- ) and to S. Murray-Smith's *Overland* (1954- ). Christesen, besides being an editor, is also a competent short story writer and poet.

The strongest link between literature proper and the "applied literature" which is history is W. K. Hancock's *Australia* (1930). Still indispensable reading for those who wish to understand the basic characteristics of Australian life and temperament, its style gives the purest aesthetic pleasure; there is no work of history in this country superior to it in wit, conciseness, elegance, and lucidity. Historical writing and chronicling have since grown in concert with greater interest in Victorian history. Phillip Brown of Geelong began publication of the Clyde Company papers with *The narrative of George Russell of Golfhill* in 1935. Books such as Edward Curr's *Recollections of squatting in Victoria* (1883), Rolf Boldrewood's charming *Old Melbourne memories* (1884), and Edmund Finn's ("Garry-owen") *Chronicles of early Melbourne* (1888), have the hindsight value of reminiscence, not the immediacy of the events. But when poet Hugh McCrae edited that delightful book, *Georgiana's journal*, in 1934 he used the fresh,

graceful, and witty comments of one who had established a family home on the Mornington Peninsula in 1840. Portland pioneers supplied the fascinating material of Marnie Bassett's *The Hentys* (1954); Lady Bassett is one of several historians who have specialised in early Australian history. Noel Learmonth's *The Portland Bay settlement* (1934), published for Portland's centenary in that year, also concerns the Henty family and other early settlers in the district. Dr K. M. Bowden's *Captain James Kelly of Hobart Town* (1965) recounts a sealer's circumnavigation of Van Diemen's Land, while his *Western Port and its early settlers* (1970) deals with the 1826 settlement. Distant further in time are Alan Villier's *Captain Cook: the seamen's seaman* (1967), a fine study by an experienced mariner, and Moorehead's *Fatal impact* (1966), a summation of the white man's influence in Pacific exploration. Margaret Kiddle has written the biography *Caroline Chisholm* (1948), and *Men of yesterday* (1961), a study of the social development of some landed families of the Western District from 1834 to 1890, based on the diaries of Niel Black. Percival Serle published a *Bibliography of Australasian poetry and verse* in 1925, but his greatest work was the two volume *Dictionary of Australian biography* published in 1949.

Victoria's early historians such as G. W. Rusden, Alexander Sutherland, and Henry Gyles Turner laid down a tradition of historical writing which has continued and grown. Ever since Alfred Deakin, Australia's second Prime Minister, wrote about his own political life, Victoria's historical writers have come from a variety of backgrounds, especially from the universities. They have included several academic historians such as Geoffrey Blainey, Manning Clark, R. M. Crawford, J. A. La Nauze, Sir Ernest Scott, Geoffrey Serle, and A. G. L. Shaw. This is a creditable achievement of professional historiography. It is interesting to reflect, moreover, that readers who prefer their history in fictional form will find that Martin Boyd's novel *Lucinda Brayford* covers almost the same time-span as this *Year Book* and records vividly the principal social movements of a whole century.

#### MUSIC

Although before the gold rushes in the 1850s music was not organised on any permanent basis, there was considerable musical activity; recitals were given, attempts were made to form choral groups, and popular music of the time was commonly performed. Even though much of Victoria's musical activity has been centred on Melbourne, there has nevertheless been a continuing tradition of musical performances in all parts of the State, notably in the leading provincial centres. The development of this musical activity has been very much part and parcel of the social fabric of the various communities of Victoria.

In 1853 John Russell founded the Melbourne (later Royal Melbourne) Philharmonic Society, which has since performed a large repertoire of choral music for mixed voices. The Melbourne Liedertafel, established in 1868 on the German pattern for male singers, was followed two years later by the metropolitan and provincial liedertafels. They amalgamated as the Royal Victorian Liedertafel in 1903. In the years after the Second World War the Oriana Madrigal Choir and the Astra Chamber Choir, and more recently the Melbourne

Chorale, have been leaders in a significant revival of choral music and have set high standards of performance. Students from the University of Melbourne and from Monash and La Trobe Universities have also formed groups of choristers.

Francis Ormond endowed the Ormond Chair of Music at the University of Melbourne in 1891, and G. W. L. Marshall Hall was appointed as the first Professor. The University of Melbourne Conservatorium of Music was founded in 1894; recently a postgraduate school for higher degrees has been established. The close identification of the University Conservatorium with the Australian Music Examinations Board (established in 1918 and now examining nearly 19,000 candidates in Victoria annually) has ensured a high standard of professional music teaching. The Melbourne Conservatorium, founded by Marshall Hall, was opened in 1895 and is now known as The Melba Memorial Conservatorium of Music; it provides diploma courses and has produced many fine musicians.

Orchestral music was prominent in early festivals and public events such as the Victorian Exhibition (1854), the Handel Festival (1859), the welcome to the Duke of Edinburgh (1867), the opening of the Melbourne Town Hall (1870), the International Exhibition (1872), the Melbourne International Exhibition (1880), the Melbourne Music Festival Association Concerts (1882), and most important of all, the Centennial Exhibition (1888) at which Frederick (later Sir Frederick) Cowen conducted an orchestra of seventy-three and a choir of 708, giving 244 concerts in one year; his orchestra continued for a short time as the Victorian Orchestra. In 1891 Marshall Hall established an orchestra which gave subscription concerts regularly for many years.

Support was available after 1908 from The Lady Northcote Permanent Orchestra Trust Fund, which still makes annual grants for musical purposes. The Melbourne Symphony Orchestra, founded by Alberto Zelman in 1906, merged with the University Symphony Orchestra in 1932 as the Melbourne Symphony Orchestra, which was taken over administratively between 1935 and 1940 by the Australian Broadcasting Commission; the Commission had been created by the Commonwealth Government in 1932. At the instance of the Victorian Government, the orchestra was called the Victorian Symphony Orchestra between 1949 and 1964. Permanent conductors have included many well-known overseas visitors. Besides the subscription concerts which began in 1929, and the children's and youth concerts, the orchestra gives the Sidney Myer Free Concerts, and performs at the Annual Concerto and Vocal Competitions, all of which originated within the University of Melbourne under the direction of Professor (later Sir) Bernard Heinze. Another person who exercised a decisive influence on music in Victoria was Dr A. E. Floyd, choirmaster and organist of St Paul's Cathedral from 1915 to 1947, music critic of the *Argus* in the 1930s, and frequent adjudicator of musical competitions in many parts of the State. His music programme broadcast by the Australian Broadcasting Commission on Sunday evenings was a national feature from 1940 until his retirement in 1972.

The Astra Chamber Music Society, which was founded in 1950, established a second professional orchestra in 1960. The Society's aim has been to assist young musicians and to present music by Australian composers, together with balanced programmes by Australian soloists of rarely

performed works from all periods. Two remaining chamber music groups are the Musica Viva Society, which has brought world ensembles to Melbourne and rural centres, and the Soirées Musicales Chamber Music Society, which has offered a large repertoire performed by overseas and resident musicians. The foundation of the Australian College of Organists in 1969 was the result of some years of preparatory work by a small group of Victorian musicians ; it aims to promote a high standard of organ playing and church music through diploma examinations.

The advent of radio in the early 1920s brought great changes to the musical life of Victoria. As time elapsed, professional musicians obtained positions with radio station orchestras or as soloists, and concerts by orchestras and by solo artists were broadcast to listeners throughout the State.

Between the 1890s and the 1930s many famous artists toured Victoria including the Australian-born singers Dame Nellie Melba, Ada Crossley, John Brownlee, Amy Castles, and Peter Dawson ; overseas singers Clara Butt, Galli-Curci, Chaliapin, and McCormack ; pianists Paderewski, Grainger, and Backhaus ; and violinists Kreisler and Heifetz.

With improved world travel facilities in the 1930s and later, an increasing number of artists of world renown visited Victoria and were enthusiastically received: Beecham, Ormandy, Sargent, Susskind, and Barbirolli were among the conductors ; instrumentalists included pianists Rubenstein, Arrau, Schnabel, and Gieseking, as well as Australian Eileen Joyce ; and singers Lehmann, Rethberg, Crooks, Schipa, Tauber, and Kipnis, together with Australian artists such as Marjorie Lawrence and Joan Sutherland, have also been popular visitors. Chamber music ensembles, including the Budapest String Quartet and the Boyd Neel String Orchestra, were also very well received. Many of these artists appeared under the auspices of the Australian Broadcasting Commission in concerts which were often broadcast.

The musical entertainment of children and young people has been well provided for by orchestral concerts. Alberto Zelman gave the first children's concert in 1919, and in 1924 Bernard Heinze commenced regular children's concerts. These have been given since that date, and have been under the control of the Australian Broadcasting Commission since 1934. In 1927 a series of chamber music concerts for children was commenced, and about a hundred were given in schools each year during the following fifteen years. In 1932 the University of Melbourne Conservatorium commenced concert tours to country towns, giving two concerts for children and one for adults at each town. These concerts, suspended during the Second World War, were later revived and given by the Melbourne Symphony Orchestra.

Fritz Hart, then conductor of the Melbourne Symphony Orchestra, commenced giving free open air orchestral concerts in 1929. The Music for the People concerts, originally held in the Botanic Gardens, but since 1959 in the Sidney Myer Music Bowl, have always been a popular open air series.

Music in schools was greatly encouraged in 1948 when the late John Bishop organised the first National Music Camp at Point Lonsdale National Fitness Camp. Since then the National Music Camp Association has spread throughout Australia. Besides the annual fortnight residential camp which over 200 students attend to form three orchestras and perform chamber music, the Association holds non-residential camps in the winter vacations

in Melbourne and the other mainland capitals. The Association's highest expression of music for youth is the annual performance of its Australian Youth Orchestra, normally sponsored by the Australian Broadcasting Commission.

A most significant development in Melbourne during the 1960s was the instrumental "explosion" in the schools. The 1940s and 1950s had seen a rapid growth of instrumental activities in the registered schools and in the 1960s the Education Department developed similar programmes which have increased each year. Today many schools employ full-time instrumental teachers.

In 1968 the Sidney Myer Trust established a "Music in Schools Fund" to assist schools in the purchase of instruments for their orchestras. The introduction at Leaving level of music as an approved activity has given added impetus to school music. Choral and orchestral groups will be provided with needed rehearsals, not in the students' spare or free time, but during normal school periods.

Prominent Victorian composers have included Percy Grainger, Dr Margaret Sutherland, Dorian Le Gallienne, Robert Hughes, Felix Werder, George Dreyfus, Helen Gifford, and Keith Humble.

#### THEATRE, BALLET, AND OPERA

##### *Theatre*

In the nineteenth century the theatre in Victoria followed much along the lines of the English theatre, and offered melodrama with occasional Shakespearean plays to suit imported star players. Theatres were opened not only in Melbourne but also in the major provincial cities as these grew in importance.

The Pavilion Theatre, the first in Melbourne, was built in Bourke Street in February 1841. The magistrates at first refused a licence for performances although concerts were held occasionally, but the following year Melbourne's first theatrical attractions were staged when amateurs produced *The Widow's Victim* and *The Lottery Ticket*. Under the influence of George Buckingham, this group acquired an extension of their licence and the Pavilion became the Theatre Royal. The first professional presentation in Melbourne was in August 1842 when Mr and Mrs Knowles from Sydney staged *Monsieur Jacques* and *Naval Engagements*. Francis Nesbitt opened Melbourne's second theatre, Queen's Theatre Royal, on 21 April 1845 with *The Bear Hunter* and *Black Eyed Susan*.

However, it was not until George Coppin arrived with his company from the Olympic Theatre, Launceston, that the theatre in Melbourne was securely established. Coppin opened at the Queen's Theatre Royal with Bulwer's play *Lady of Lyons* and the farce *The Turnpike Gate* on 21 June 1845. After building two theatres in Adelaide he returned to Victoria and joined a Mr Deering who had taken over one of Geelong's theatres; they presented over five hundred performances in eighteen months. At this time the theatre in Melbourne was not as successful as in the provincial areas, particularly in the goldfields areas. Bendigo's Theatre Royal had just been opened by a Mr Carncross with *Lady of Lyons*, and the theatre at Ballarat also prospered.

Late in 1854 George Coppin arrived back from England, and introduced



Gustavus Vaughan Brooke, who was to remain in Australia for five years, in *Othello* at the Queen's Theatre Royal in February 1855. In June Coppin opened his own theatre, the Olympic (or "Iron Pot") which was prefabricated; Coppin had brought it with him from England where it had been constructed of steel at Manchester. *The School for Scandal*, presented on 6 July 1855, was the first production at the Theatre Royal, where Lola Montez was one of the most outstanding attractions; she played both in Melbourne and in the provincial centres. Black, who had built the Theatre Royal, became insolvent, and the theatre was leased by Coppin and Brooke in a partnership which eventually included the Cremorne Gardens at Richmond, the Olympic, Astley's Amphitheatre, and four hotels.

In 1862, during one of his financial crises, Coppin brought Mr and Mrs Charles Kean to appear in his newly opened Haymarket Theatre. Kean was then at the peak of his reputation and brought a new style of presentation noted for its lavish effect and attention to detail in a repertoire of Shakespeare and "superior" melodrama. When the Keans left Australia in 1864 Coppin went with them, returning from America in January 1866 to play *Coppin in California* in both Melbourne and Sydney. At the same time he brought out the remarkable Madame Celeste in *The Woman in Red*. The Melbourne Royal's pantomime of 1873 and 1874 presented an actress who was to become one of the most famous performers in Australian theatrical history. She was Nellie Stewart, who had made her debut at the Haymarket Theatre in the early 1860s as a child in *The Stranger* by Kotzebue. She later played in grand opera (Marguerite in Gounod's *Faust* in 1888), and sang the memorial ode at the opening of the first Commonwealth Parliament in 1901. In 1874 Coppin brought James Cassius Williamson and his wife, Maggie Moore, from America in their successful play *Struck Oil*. The Williamsons opened at the Theatre Royal, Melbourne, on 1 August 1874 and began a new era in Australian theatre. Their play ran for eighty performances, and the Williamsons then visited Ballarat, Geelong, and Castlemaine before leaving for Sydney. They also added Dion Boucicault's *Night and Morning* to the repertoire. After touring the world they returned to Australia in 1879 and introduced *H.M.S. Pinafore* to Australian audiences. In 1882 J. C. Williamson joined with George Musgrove and Arthur Garner, and Coppin retired from theatrical management. When George Musgrove left the partnership in 1890, Williamson bought Garner out and formed a new theatrical company.

The theatre in Melbourne flourished not only with imported attractions but also with the remarkable talent which developed locally, while the presentation of a number of locally written plays such as *Oasis* helped to establish an indigenous flavour. The most notable actress to tour Victoria in the early 1890s was Sarah Bernhardt and during these years Bland Holt presented his sensational melodramas. By the end of the century the theatre was well established in Victoria, and in Melbourne the theatres included the King's, Tivoli, Royal, Her Majesty's, Bijou, Apollo, Princess, and Athenaeum. It was in Melbourne that both Oscar Asche and Allan Wilkie first became popular, as also did Harry Rickards who in 1893 presented his first production at the Tivoli. This became a famous vaudeville theatre where a distinctive type of Australian humour was developed.

In 1911 J. and N. Tait engaged Gregan McMahon to produce repertory



Dame Nellie Melba, the celebrated coloratura soprano, who was born in Richmond, Melbourne. The portrait was painted by Rupert Bunny and now hangs in Her Majesty's Theatre, Melbourne.

*Commonwealth Bureau of Census and Statistics*

Poster for the Victoria Theatre, Ballarat, introducing Lola Montez as the main attraction in plays produced in 1856.

*La Trobe Collection, State Library of Victoria*



The Theatre Royal, Melbourne, the scene of many stage successes, including those of Lola Montez and J. C. Williamson and his wife, Maggie Moore.

*La Trobe Collection, State Library of Victoria*

Final performance in 1965 by the Sutherland-Williamson Grand Opera Company at Her Majesty's Theatre, Melbourne.

*Williamson Edgley Theatres Ltd*



## VICTORIA THEATRE, BALLARAT.

This New and Elegant Theatre WILL OPEN...

**On SATURDAY, Feb. 16,**

1856, under the Management of

**MR. JAMES CROSBY,**

Late Manager of the Victoria Theatre, Sydney.

He is assisted by the first selected New Staff.

# LOLA MONTES

**Best Company ever assembled on Ballarat!**  
Assisted by New scenery, Dresses, and Appointments.

**MR. F. FOLLAND,**

The Popular Comedian, London, is engaged with a

well selected and experienced staff of

the Opera, Tragedy, Comedy, and Variety

performers.

MR. ALBRED NELSON,

MISS CARRY NELSON,

THE NELSON FAMILY.

MR. CHARLES WALSH,

MR. H. RAMSEY,

MR. FRANK VARLEY,

MR. DOUGLAS,

MISS F. WERNHAM,

MRS. CROSBY.

**ON SATURDAY, FEBRUARY 16, 1856.**

## MORNING CALL!

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

By Edward Arnold.

## ANTONY AND CLEOPATRA!

Antony.

Antony.

Antony.

Antony.

Antony.

Antony.

Antony.

Antony.

Antony.

Antony.

Antony.

Antony.

Antony.

Antony.

Antony.

Antony.

Antony.

Antony.

Antony.

Antony.

Antony.

Antony.

Antony.

Antony.

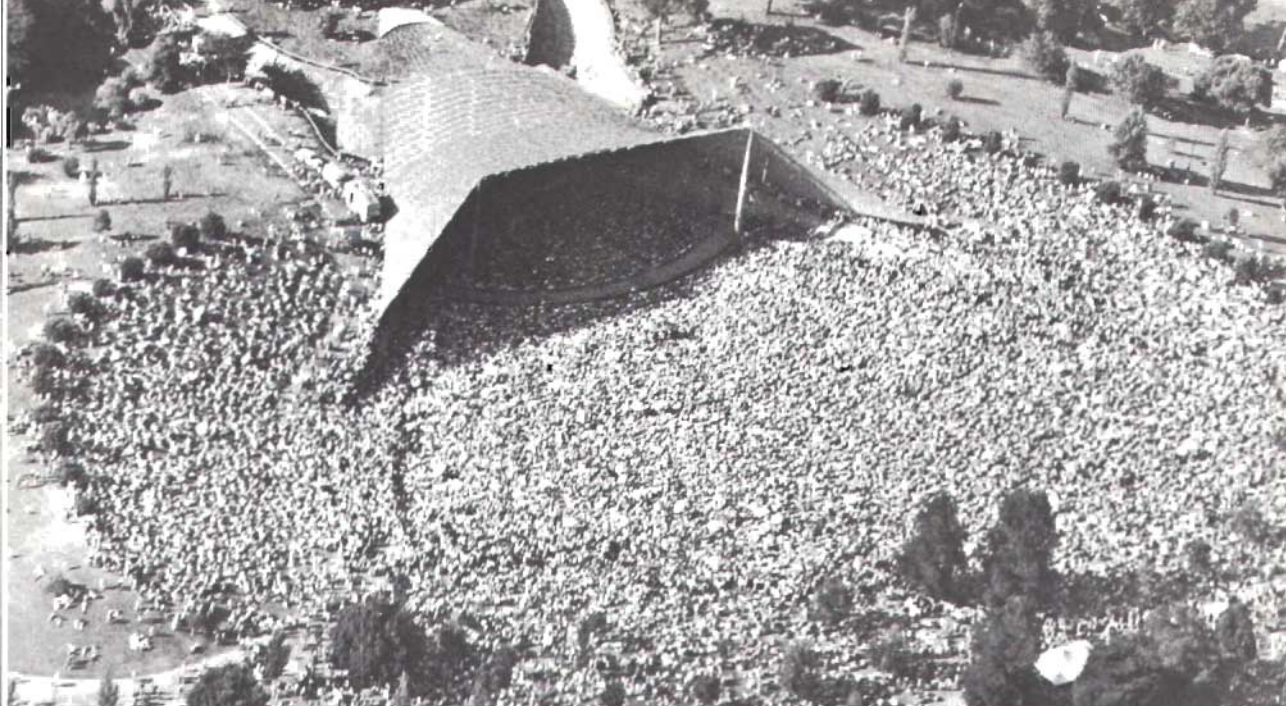
Antony.

Antony.

Antony.

**Prices of Admission--Boxes, 10s.; Pit, 5s.**

**NO HALF PRICE. NO SMOKING ALLOWED.**



The Sidney Myer Music Bowl, set in Melbourne's Domain.

*The Herald and Weekly Times Ltd*

An enthusiastic audience acclaims a Melbourne Symphony Orchestra prom concert in the Melbourne Town Hall.

*Australian Broadcasting Commission*



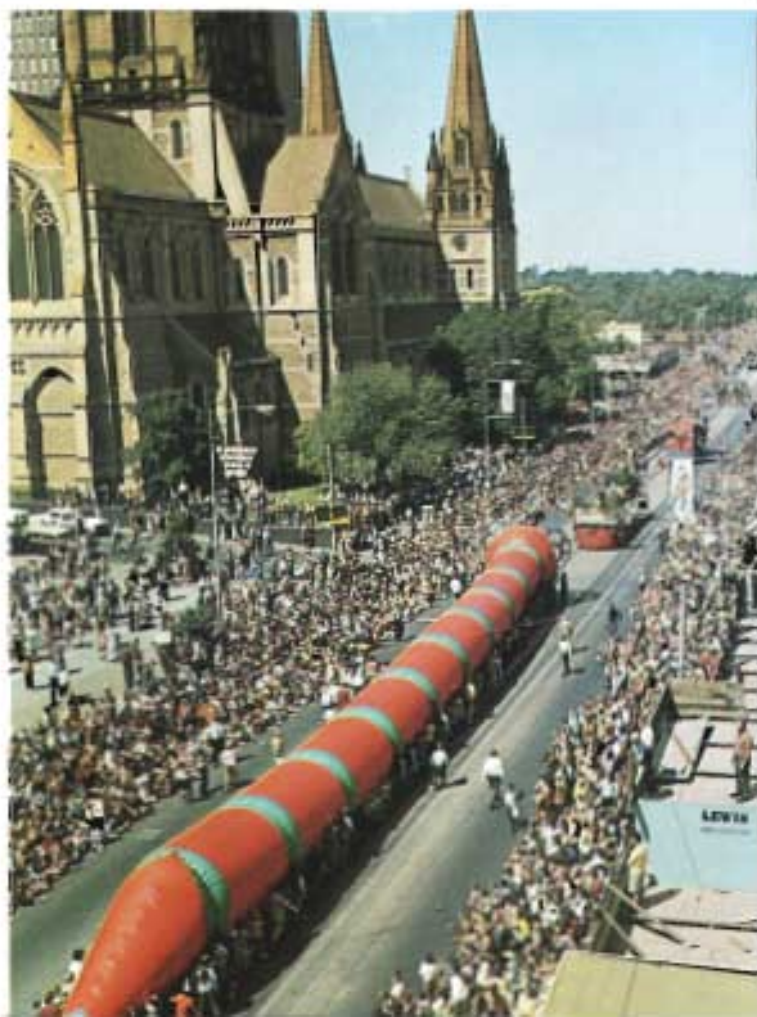


A scene from *The Display*, created for The Australian Ballet and now in the company's permanent repertoire. Sir Robert Helpmann was the choreographer, Malcolm Williamson composed the music, and Sidney Nolan was the designer.

*The Australian Ballet*

The parade at Melbourne's annual Moomba Festival, showing St Paul's Cathedral and the King's Domain in the background.

*Australian Post*



plays. He formed the Melbourne Repertory Theatre and introduced the plays of George Bernard Shaw to Australian audiences, and in 1929 returned to Melbourne from Sydney to form the Gregan McMahon Players, who performed on a semi-professional level. The Taitts took over the J. C. Williamson organisation after Williamson's death in Paris in 1913, and the company has continued to lead the commercial theatre in the years since the Second World War with such productions as *The Kiwis*, *Annie Get Your Gun*, *My Fair Lady*, *The Man of La Mancha*, and *Fiddler on the Roof*. The Garnet H. Carroll management presented *Kismet*, a Ralph Richardson and Sybil Thorndike season, *Sound of Music*, and *Robert and Elizabeth*.

The first three decades of the twentieth century gave Victoria, and indeed Australia, its most vigorous period of live theatre and a comparatively wide choice of entertainment. There were more or less permanent companies in musical comedy and drama, variety, and occasional seasons of opera and ballet. Famous names included Dorothy Brunton and Gladys Moncrieff in musical comedy and actors as well as entire casts from abroad. The advent of films and radio, and much more the depression, brought this vigorous period to an end. By 1936 most of the theatres were closed or given over to the cinema; only musicals (and revivals at that) existed precariously. The more serious dramatic work was left to various repertory groups and the indigenous development of theatre and drama in Victoria in the last three decades has, in fact, been left to the non-commercial theatre companies. In the 1920s an effort was made to encourage native playwrights with the formation of the Pioneer Players, led by Louis Esson and Vance Palmer. During the 1930s two companies were formed in Melbourne on a semi-professional basis: the Melbourne Little Theatre was founded by Brett Randall and Hal Percy in South Yarra (it is now St Martin's Theatre Company), and the National Theatre was established by Gertrude Johnson. Both sought to assist local actors and playwrights, but it was not until the Old Vic Company with Laurence Olivier and Vivien Leigh visited the Princess Theatre in 1948 that the theatre once more became important in the urban areas.

The regeneration of professional adult theatre began with the visit of the John Alden Shakespearean Company in 1952. Although its performances have been criticised as imperfect, the company was important because it was indigenous. In 1953 John Sumner founded the Union Theatre Repertory Company at the University of Melbourne, which was its first sponsor. As the first non-commercial repertory company to be established in Australia on a professional level, it provided a pattern for regional theatre development and was the first to receive support from the Australian Elizabethan Theatre Trust, which has done much to foster theatrical art, especially among local repertory groups. The company was responsible for the first production of Ray Lawler's play, *Summer of the Seventeenth Doll*, and has contributed to the development of diverse talents displayed by contemporary Australian actors. In 1968 it became the Melbourne Theatre Company, and in 1969, after receiving an annual grant from the Melbourne City Council, presented the first production at the Victorian Arts Centre. Recently several small experimental theatres in Melbourne have fostered young indigenous playwrights.

Television has had a more telling effect on live theatre than has radio.

The plays of significance are left to the subsidised drama companies in each State ; the commercial theatre maintains its own prosperity by staging musicals and light comedies. Theatre in Victoria is likely to enter a new era with the completion of the theatre complex at the Arts Centre in St Kilda Road. Continuing support from Commonwealth (through the Australian Council for the Arts formed in 1969), State, and civic authorities will help to ensure that organisations such as the Melbourne Theatre Company develop professionally as representatives of both Victorian and Australian drama.

### *Ballet*

The first company of international repute to perform ballet in Australia was a group headed by Adeline Genée in 1913, but it was not until the visits of Pavlova in 1926 and 1929 that ballet in Victoria received its first major encouragement. In 1934 the Dandre-Levitoff Company was introduced with Anatole Vilczak as principal dancer, and in 1936 the Monte Carlo Company gave Australian audiences the first opportunity of seeing ballets such as the *Firebird*, *Petrouchka*, and *Scheherazade* choreographed by Massine, Fokine, and Balanchine. In 1938, 1939, and 1940 the Covent Garden Company and de Basil Company (which previously visited as the Monte Carlo Company) were also introduced by the J. C. Williamson organisation.

The Second World War prevented further importations, and efforts were therefore made to develop local, untrained talents. In 1940 Helene Kirsova, who had remained in Australia, formed a company which played short seasons in Sydney and Melbourne. Edouard Borovansky, who had first visited Australia with Pavlova and later with the de Basil Company, settled in Melbourne in 1939 and established the Borovansky Ballet which achieved considerable success, both during and after the war. Assistance from the Education in Music and Dramatic Arts Society, formed to promote both ballet and opera, enabled Borovansky to develop the company and to introduce to local audiences Australian ballets such as *The Outlaw* and *The Black Swan*. In 1956 Margot (later Dame Margot) Fonteyn and Michael Somes appeared as guest artists of the company. After Borovansky's death in 1959, Peggy van Praagh became artistic director of the Ballet, but increasing costs necessitated the disbandment of the company in 1960.

Between 1940 and 1956 the only overseas company to visit Victoria was the Ballet Rambert, which produced works by the English choreographers, Frederick Ashton, Anthony Tudor, and Walter Gore. However, during the same period two Victorian ballet groups presented seasons in Melbourne and in the country districts of Victoria, while the Australian National Theatre Ballet, in Victoria and other States, successfully produced the Australian ballet *Corroboree* to John Antill's music. The New York City Ballet and the Royal Ballet toured in 1958. The Victorian Ballet Guild, which in 1968 became the Ballet Victoria under the direction of its founder, Laurel Martyn, presented regular seasons and conducted intensive programmes for student audiences.

The Australian Ballet Foundation was established in 1961 with representatives from the Australian Elizabethan Theatre Trust and J. C. Williamson Pty Ltd ; Peggy (now Dame Peggy) Van Praagh was appointed artistic director and Robert (now Sir Robert) Helpmann co-artistic director. The

Ballet first performed in Victoria during 1963, and has now developed an international reputation. Since 1964 the Australian Ballet has produced such Australian works as *The Display* and *Sun Music*. It has undertaken six overseas tours during the ten years of its continuous operation.

### *Opera*

In November 1855 Melbourne's first four act opera, *Lucia di Lammermoor*, was presented with Maria Carandini singing the leading role. In 1860 William Saurin Lyster arrived with his professional operatic company and established his headquarters in Melbourne. He dominated productions for the next twenty years, and introduced over thirty operas not previously heard in Australia. Among these *The Huguenots* was presented for nineteen performances within three weeks at a time when Melbourne's population was only 140,000.

Victoria, like the other Australian States, has produced some world-renowned opera singers. Opera received perhaps its greatest stimulus from the Melbourne-born and internationally famous singer, Dame Nellie Melba who, before her retirement in the 1920s, made many tours throughout Australia. In the mid-1930s an opera season presented by Benjamin Fuller in Sydney and Melbourne introduced to Australian audiences *The Pearl Fishers* by Bizet; Florence Austral was a principal singer in the series. At this time also the National Theatre Movement was inaugurated with the aim of promoting the performing arts; while overseas, Marjorie Lawrence, who came from Winchelsea near Geelong, established a considerable reputation as an opera singer.

Although after the Second World War J. C. Williamson Pty Ltd imported two Italian opera companies, the main impetus has come from an upsurge of local talent. In Victoria the National Theatre Movement formed a local opera company in 1950, and two years later it combined with a similar group in Sydney to give seasons with John Brownlee in both cities. The most famous production of this time was *The Consul* at the Princess Theatre, with Marie Collier in the leading role. In 1956 the Australian Elizabethan Theatre Trust Opera Company was formed and presented for its inaugural season some operas by Mozart. In 1970 it was renamed the Australian Opera and now has a permanent orchestra and singers under long term contracts. Overseas "stars" such as Tito Gobbi and local talent including Joan Hammond, Elsie Morison, and Elizabeth Fretwell have all sung with the Company, and in 1965 Joan Sutherland returned to Melbourne to head a company which was jointly sponsored by J. C. Williamson Pty Ltd and the Australian Elizabethan Theatre Trust.

### *Conclusion*

The balanced development of the performing arts has been encouraging during the last two decades. Drama, opera, and ballet have all become integral aspects of the State's cultural activities, while support from the Commonwealth, the State, and local government authorities has permitted the achievement of creditable standards. The Victorian Arts Centre, with its proposed three theatres seating 1,800 for opera and ballet, 850 for drama, and from 300 to 1,000 for experimental theatre and other purposes, will provide further incentives for improvement.



## HEALTH SERVICES

---

### DEVELOPMENT OF MEDICINE

#### *Drugs*

A century ago it was correct to speak of the art and science of medicine. Though art is still important in the practice of medicine, science has with increasing acceleration contributed to the advances in all branches of medicine and surgery. The sciences entering into the study of medicine used to be mainly the descriptive sciences of anatomy and botany, with rather small contributions from physics, chemistry, and physiology. The great advances in all departments of medicine have come through the newer sciences of microbiology, radiology, pathology, and biochemistry. The discoveries of physiologists have had profound effects in their applications to medicine and surgery.

The work of organic chemists in universities and in drug manufacturing firms has led to the production of many organic compounds with powerful therapeutic effects. Many of the pharmaceutical remedies used at the beginning of the century are now obsolete and the long prescriptions of many preparations derived from the vegetable world are no longer written. The first outstanding invention of a drug designed for a special purpose was Ehrlich's production in 1909 of Salvarsan, an arsenical compound for the treatment of syphilis and yaws. Another group of chemotherapeutic agents, the so-called sulphha compounds, have had a profound effect in the successful treatment of many of the infections such as pneumonia, meningitis, gonorrhoea, streptococcal infections, dysentery, and urinary infections.

Every year new synthetic drugs are produced in very great variety and close official observation is kept to evaluate them and to ensure that they have no dangerous unwanted side effects. Drugs consisting of organic compounds are now administered in tablet form or given by injection into the subcutaneous tissues, into muscles, or directly in the vascular system. The first great revolutionary change in medicine in this period occurred in surgery when Joseph Lister instituted his antiseptic system based on discoveries by Louis Pasteur. Pasteur was a chemist of genius who proved that fermentation was a phenomenon caused by microscopic living particles. Later, microscopic living things described as microbes or bacteria were shown to be causes of many specific diseases in man, in animals, and in the vegetable world. The science of bacteriology, or microbiology, was developed rapidly by Pasteur and other scientists who succeeded him. From the discoveries of microbiologists have been developed vaccines used in the prevention of

certain specific diseases, antisera used in diphtheria, meningitis, tetanus, and snake bite, and a large series of antibiotics of which penicillin was the first to be used with dramatic effect.

### *Radiology*

Radiology owes its origin to the discovery by Roentgen in 1895 that certain emanations from a Crooke's tube falling on a sensitised surface caused fluorescence, and that some substances such as bones were opaque to these rays and cast their shadows on the sensitised surface. The discovery of these rays, now known as X-rays, was quickly applied in surgery to demonstrate injuries and diseases of bones, but later techniques were devised for using them in the examination of viscera, blood vessels, the central nervous system, and the unborn babe in its mother's womb. X-rays were found to have profound effects on living cells and so are now used in treatment of a variety of diseases, particularly malignant tumours. Radium, isolated by Pierre and Marie Curie in 1898, was found to produce similar effects. Radiotherapy (the use of X-rays and radium in treatment) is a speciality used, either alone or in conjunction with medical or surgical treatments, mainly for neoplasms. A special institution for the use of radiotherapy, the Peter MacCallum Clinic, was established in Melbourne in 1949. Specialists from the Clinic visit patients in a number of country centres. The clinic also has a nursing service for cancer patients living in their homes in the city and suburbs of Melbourne and assists Tasmanian clinics at Launceston and Hobart.

### *Biochemistry and physiology*

Biochemistry and physiology have made rapid and profound advances in the last sixty years. The knowledge gained from these sciences is applied in every department of medicine, originally mainly by physicians but now also by surgeons, gynaecologists, obstetricians, and other specialists. In modern hospitals the biochemistry department is staffed mainly by university graduates. The number of biochemical tests used in diagnosis and treatment, already large, is steadily increasing, and the tests are becoming more complex. In the teaching hospitals the volume of work and its prompt reporting necessitates the use of automation and computers.

An understanding of various bodily functions through research into physiology has contributed greatly to the rational treatment of many conditions encountered in medicine, surgery, obstetrics, and the specialities. One of the outstanding practical applications of physiological knowledge has been the use of blood in blood transfusion. This was developed in civil practice mainly through the influence of surgeons who had returned from the First World War where they had used it with good effect on severely wounded soldiers. Blood transfusion has saved innumerable lives of all ages, from the unborn babe to the very old; it has rendered possible many surgical operations formerly regarded as very hazardous or even impossible of survival. The need for an adequate, regular, and ready supply of blood for patients was met by the establishment of blood banks in hospitals and by the Red Cross Society; the blood is supplied by voluntary donors.

Physiological research in immunology has shown the possibility of transfer of tissues from one human being to another. Examples are corneal grafting for some forms of blindness, arterial grafting in vascular disease, and

most recently, kidney grafting to counter kidney failure. Other organ transplants are posing ethical, philosophical, and financial problems.

*Medicine and the role of the physician*

The role of the physician has changed significantly. A century ago his means for diagnosis were limited by the patient's history of his complaint and by what the physician could find by use of his five senses of smell, taste, sight, touch, and hearing. Having made his diagnosis, his treatment in acute illness was to remove as far as possible those influences which he considered would interfere with natural recovery. In chronic diseases his treatment was confined to a great extent to relieving symptoms; there were a few drugs suited to specific diseases such as digitalis for some heart diseases, quinine for malaria, colchicum for gout, and iron for some forms of anaemia. Most medicines were of vegetable origin and of empirical use, whereas now most are the products of organic compounds, many with specific applications; tablets and injections have superseded the traditional bottle of liquid mixture. The sciences of physiology, biochemistry, radiology, bacteriology, and electronics have had a profound and revolutionary effect on the physician's ability to make a precise diagnosis and establish rational treatment. Further aids are needle biopsies and the use of radio-isotopes.

At the beginning of the century typhoid fever incidence throughout Victoria was high with a great risk to life. With the establishment of the metropolitan sewerage system in 1897, nine years after the Intercolonial Medical Congress in Melbourne had strongly recommended it, the incidence dropped rapidly not only in Melbourne but to a large extent in country areas as well, for unsewered Melbourne had been a great reservoir of infection for all Victoria. However, the risk to life was still high as treatment had to rely largely on skilled nursing; the later introduction of antibiotic treatment was very effective in reducing mortality, and typhoid in recent years has been rare, and has usually occurred only in newly settled unsewered areas.

Pneumococcal lobar pneumonia was a common and dangerous disease, usually fatal to people over thirty-five years of age; it has been practically eliminated since the introduction of antibiotics and sulpha drugs. Diphtheria also has almost disappeared since widespread infantile preventive vaccination has been practised.

Tuberculosis has shown a gradual decline in incidence over the century but the incidence is still too high. Mass X-ray chest examination of the whole community has been introduced progressively since 1949, and is expected to lead to the discovery of early cases and cases among those older people who spread the infection; it is no longer predominantly a disease of people in their twenties. Sanatorium accommodation became largely redundant through the introduction of streptomycin and chemotherapy with the greatly enhanced prospects of cure resulting from their use. Infection with the bovine type of organism has diminished since administrative measures were directed against the disease in dairy cattle.

About 1908 James Mackenzie, a Scottish general practitioner, published his studies on heart diseases and profoundly altered the attitude of physicians to the diagnosis of these diseases and to their significance and their treatment. The use of the polygraph, the electrocardiograph, and X-rays have led to a more precise understanding of heart disease. The intrusion of surgery into

this, with its investigations by cardiac catheterisation and special X-ray techniques, has revolutionised modern cardiology. There is a close co-operation between cardiologist, physician, surgeon, radiologist, and technician, reaching its present climax in open heart surgery practised for congenital and acquired heart diseases.

There has not been an epidemic of true smallpox in Victoria, but odd cases occurred in the nineteenth century and in 1914 and 1921. There were a few cases of a type of smallpox, alastrim, about 1910. Epidemics of measles, chicken pox, rubella, and mumps have not been infrequent, and meningococcal meningitis made a short appearance in military camps during the First World War. Influenza epidemics of various types have at times been serious, the worst being part of the pandemic which, with heavy mortality, swept across the world towards the end of the First World War. There were outbreaks of poliomyelitis which affected a small percentage of the population but which caused great alarm from the attendant mortality and the permanent crippling of survivors. The main outbreaks were in 1925-1926 (with 169 cases), 1937-1938 (2,096 cases), 1949 (760 cases), and 1954 (569 cases), but with the widespread preventive use of Salk (and later, Sabin) vaccine since 1956 the disease has been practically eliminated.

In recent years there has been a slow increase in cases of infective hepatitis. There have been rare local outbreaks of encephalitis and other infective illnesses apparently of viral or rickettsial origin and affecting only a few individuals. Acute inflammatory diseases of the kidneys are now being treated satisfactorily by antibiotics and chemotherapy. Chronic renal failure is treated in the major teaching hospitals with the assistance of so-called "artificial" kidneys, and in some cases by transplanting a kidney from another human being. Melbourne has had a particularly successful record in this matter, but the high financial cost in staff, material, equipment, and accommodation still poses a difficult community problem.

Over the last sixty years the discovery by physiologists of hormones has led to an understanding of the causes of a number of diseases and sometimes to effective treatment of them. Goitre in some of its forms is an example. Formerly surgery was widely practised but now most forms of goitre are successfully treated by the physician; radio-isotopes find a special application in the diagnosis and sometimes in the treatment of thyroid disease. Diabetes mellitus is another hormone dependent disease, caused by a deficiency of insulin. Formerly the treatment was by dieting, and the occurrence of the disease in children was incompatible with long life. Banting and Best produced the hormone insulin in 1922; Dr J. F. Wilkinson, returning to Melbourne through Canada at the time, brought with him the first insulin used in Australia. Insulin or one of its later modifications is not a cure for diabetes but it enables many diabetics to lead almost normal lives, and a young diabetic may now with its help live an active life to a good age. Endocrinology, the study of the endocrine glands and the effects on the body of their hormonal internal secretions, is a speciality of increasing importance and complexity. The discovery and use of cortisone and later of other steroids provided physicians with powerful agents employed in a variety of diseases.

Though the prevention and treatment of scurvy by the use of fresh fruit and vegetables was known as early as the early 1600s and was

practised before European settlement in Australia, the discovery of vitamins as essential accessory food factors from 1880 to 1920 had a profound influence on the treatment of vitamin deficiency diseases such as scurvy, beriberi, pellagra, some forms of anaemia, and other less well defined morbid states. The concept that some diseases were in a group characterised by peculiar immunological reactions was slow to develop. Now many diseases such as asthma, hay fever, some skin diseases, and some reactions to drugs and antisera, are grouped as allergies and are encountered in all branches of medicine. Recently the idea has gained support that some diseases are due to an auto-immune reaction of the body to some of its own cells, and active original research is being conducted in the Walter and Eliza Hall Research Institute. The association of some diseases with nervous stress has aroused wide interest in all civilised countries and the special study of this group is referred to as psychosomatic medicine.

#### *Anaesthesia and surgery*

The discovery of the anaesthetics, ether and chloroform, was followed by their wide use in extending the scope of surgical operations and later by accoucheurs in easing the pains of childbirth. Anaesthetics extended the scope of operations but the early effects were unsatisfactory because operation wounds and accidental wounds frequently were followed by sepsis and death. Following Pasteur's discovery of the effects of microbes in producing fermentation, Joseph Lister formed the idea that microbes gaining entrance to a wound were the cause of "blood poisoning" or sepsis. He applied his theory to kill microbes entering a wound (and on his instruments, hands, and dressings) by using the chemical, carbolic; this antiseptic technique resulted in the clean, non-septic healing of the wound. The Listerian revolution in the practice of surgery had been brought about. His antiseptic technique was subsequently developed into the aseptic technique; means were taken to kill microbes, preferably by heat, on all things which might come directly or indirectly in contact with the wound region, thus avoiding the damaging effects of chemical antiseptics in and around the wound. The techniques were slow to be adopted by older surgeons but the younger progressive surgeons spread the practice throughout the civilised world.

The first Listerian operation performed in Melbourne was by William Gillbee in 1867. Surgeons found now that they could operate with little risk of sepsis on parts of the body previously unsafe for surgery: specialities developed in surgery. Abdominal and orthopaedic surgery in particular made rapid advances. Later surgeons operated on the brain; neurosurgery was well established as a speciality before the outbreak of the First World War. Experience gained in treating head, cranial, and spinal injuries in war-time contributed to the increased interest in this domain of surgery. Soon after the war ended, special departments of neurosurgery were formed at the three teaching hospitals in Melbourne. During the war surgeons had also been obliged to treat wounds of the thorax, and hence had become familiar with techniques applicable to the special problems of lung surgery; they were applied especially to the surgical treatment of tuberculous lungs. Thoracic surgical units have been established in general hospitals, and thoracic surgery is a recognised speciality dealing with many intra-thoracic pathological conditions.

In earlier years, surgery of the heart was limited mainly to the results of trauma, but with improved anaesthetic apparatus and adequate supplies of blood for transfusion, deliberate operations were performed on the heart, mainly for anatomical congenital abnormalities. Such operative ventures were followed by operations on the interior of the heart; these are called open heart surgery and are done for congenital abnormalities, as well as for the effects of antecedent disease, generally rheumatic disease affecting the valves of the heart. They need special apparatus with special technicians, and specially trained nurses and assistants, that is, a special hospital unit and carefully organised team work among many people. The investigation of patients and their preparation prior to operation also requires the services of physicians and radiologists with special skills in cardiology; such work now tends to be concentrated in a few centres well equipped with personnel and machines. The work of the surgeons in the development of cardiac surgery has also affected the study of heart diseases by physicians, thus leading to further advances in the speciality of cardiology.

In orthopaedic surgery conservative measures have diminished in proportion to operative orthopaedics. There has been a much greater tendency to correct the displacement of fractures by open operation with the maintenance of correct position by mechanical devices such as screws, nails, plates, and other structures of stainless steel or vitallium. At the beginning of the century a fracture of the neck of the femur was likely to be followed by failure of bone union. It was a painful condition most often occurring in the aged; nursing was difficult and the mortality rate was high. With the introduction of early reduction of the fracture deformity and fixing the corrected position by nailing the fragments, pain was relieved, nursing was rendered fairly easy, and many patients were able to be ambulatory again. Later still, metal prostheses were substituted for the head and neck of the femur.

An operative treatment which has been a boon to the elderly man is the surgical treatment of urinary bladder neck obstruction, especially obstruction by an enlarged prostate. At the beginning of the century the most that was done in treatment was the passage of a catheter to relieve retention of urine. This was rarely possible for long; in spite of all care, infection of the bladder and kidney occurred and so catheter life was short. Freyer, an Indian Medical Service surgeon, devised an abdominal operation to remove the prostate in 1901. In 1931 American urologists devised a method of removing the obstructing structure by using an electric cutting instrument passed into the bladder through the urethra. This does not require an abdominal operation, and is now a frequent specialist's operation with a very low mortality rate and requiring only a short stay in hospital.

Generally speaking, through scientific and technical advances there has been a rise in the age at which relief of any morbid condition by surgical operation with safety can be expected; it is not age but the patient's general condition which now determines operability. Diseases affecting blood vessels have been successfully treated to an increasing degree in the last quarter century. Some of these operations involve opening or excising large arteries and sometimes substituting natural arterial or artificial grafts. Aortic aneurisms, formerly inevitably fatal, are frequently now successfully treated surgically.

Plastic surgery is one of the oldest surgical practices, but it received impetus as a speciality after the First World War when surgeons were called upon to treat many soldiers for disfigurements caused by wounds and burns. It then became a recognised speciality requiring the establishment in hospitals of special units with appropriate special equipment and technicians. At first it was concerned mainly with the face and mouth but soon extended into remedying defects or the results of injuries in other parts of the body, especially the hand. Each major hospital in Melbourne has its plastic surgery department, but a larger centralised unit for more advanced plastic surgery has been established at the Preston and Northcote Community Hospital. It is staffed by surgeons who are specialists in other plastic surgery departments of various metropolitan hospitals: this is an example of rationalisation of a specialist hospital service, and is being extended to other specialist services.

Surgery is sometimes extirpative but the ideal is always to conserve the patient's normal anatomical structures. Until recently, a limb totally separated from the body by accidental injury was considered to be irretrievably lost, but now attempts are made to re-attach such amputated limbs, sometimes with moderate success. Where the amputated member is a finger or peripheral part of a limb, the blood vessels and nerves to be joined up may be so slender that the techniques and instruments of microsurgery are required. All such surgery demands the co-ordinated efforts of a team of surgeons and assistants. The results so far of attempts to conserve such useful structures encourage the hope that further use of this type of surgery will become more extensive and yield steadily improving results.

Microsurgery is a recent and especially noteworthy development in surgery. In microsurgery very small parts of human anatomy, such as small arteries and nerves and the organs of the special senses, are subjected to surgical procedures. Such procedures require remarkably fine surgical instruments and the use of specially designed operating microscopes which give magnified images of the fine structures being operated upon. The staff and technicians of the Royal Victorian Eye and Ear Hospital have been responsible for the design and construction of many of these ingenious fine instruments.

#### *Ophthalmology*

The invention of the ophthalmoscope in 1851 enabled ophthalmologists to examine the interior of the eye and thereby notice pathological conditions as causes of visual disabilities; it also revealed appearances related to various medical disorders such as diabetes, kidney disease, arteriosclerosis, intracranial lesions, and diseases of the nervous system. This association with general medicine and surgery has increased in value over the years. Many advances in operative techniques, especially the recent "miniaturising" of instruments and suture materials, have led to greatly improved success in the treatment of cataract. There has also been technical progress in the means of examining the eye, such as by slit lamp, test glasses or tonometer, colour vision testing, and muscle balance testing.

Antisepsis, introduced by Lister in 1865 and followed later by his aseptic techniques, had a profound effect on all surgery including ophthalmic surgery. Microbiology led to the discovery that many eye diseases were of bacterial origin. A most beneficial application of microbiology was the

successful prophylactic treatment, used early this century by Crede, of ophthalmia of the new born, which up to that time had accounted for the blindness of about one quarter of the children attending schools for the blind. The incidence was soon reduced to about one in ten thousand, and the condition is now treated effectively by penicillin. Roentgen's discovery of X-rays in 1895 was applied a few years later to the localisation of foreign bodies in the eye; treatment of these and prevention of blindness from this cause has reached a high standard in Victoria. The therapeutic uses of X-rays have been developed in the treatment of neoplasms in the eye and its environs. Encouraging results have been reported in the treatment of retino-blastoma in infants, a condition which formerly posed the difficult decision to remove both eyes in an attempt to save life. Physiological studies of the eye have led to the understanding and treatment of many eye disorders such as errors of refraction, squint, ocular muscular imbalance, and colour blindness. Organic chemical substances have found special applications in the treatment of infection, in assisting examination techniques, and in cataract operations. Physical agents such as heat in the form of diathermy, ultrasonics, and cold (cryotherapy) have added to the effectiveness of some forms of treatment of detachment of the retina.

Two Australian discoveries have aroused wide interest. One was the establishment of the connection of some congenital defects in the child with viral infection during pregnancy in the mother, and the other was the observation of the deleterious effect of excess oxygen on the eyes of premature infants—a discovery made by Dame Kate Campbell of Melbourne. Trachoma, which was common especially in country patients early in this century, has steadily diminished with improvement of hygiene and nutrition of the community and is no longer widespread. Much blindness in the community is preventable, particularly from industrial accidents, and in recent years increased attention has been given to this problem. A campaign has recently been conducted to educate the public to recognise the signs of glaucoma and to seek early treatment to prevent irreparable loss of vision.

#### *Otorhinolaryngology*

Instruments for examination of the nasal and respiratory passages and the gullet have been greatly improved. These have enabled precise diagnosis to be made by the use of the bronchoscope and oesophagoscope; operative treatment for the removal of foreign bodies from the oesophagus and respiratory passages has been simplified through the use of these endoscopes. Complications which formerly attended such accidents have thereby been reduced. X-rays have been extensively used here as elsewhere in diagnosis and treatment. Special value has attached to X-ray diagnosis of pathological conditions of the nasal accessory sinuses and of the temporal bone. Chemotherapy and antibiotics have had a profound effect on the treatment of infections of the ear, nose, and throat. Complications of sinus infection and complications of middle ear infection are no longer the frequent serious dangers of the pre-antibiotic era. They are now largely prevented and accordingly operations on sinuses and on mastoids have greatly decreased in frequency. Studies have elucidated various causes of deafness and have led to rational treatment carried out under an operating microscope. The recently devised operation of stapedectomy in restoring hearing in certain



types of deafness has been followed by remarkable results. The Australian discovery of congenital deafness and other defects as the result of rubella in the pregnant mother has stimulated the study of the effects on the foetus of virus infection and of the use of drugs during pregnancy.

Nasopharyngeal adenoids were first discovered and submitted to operation about 1870. Operations for the removal of adenoids and diseased tonsils are probably the most common of operations in this speciality, but sulphonamides and antibiotics have greatly reduced the necessity for tonsillectomy. Also, laryngeal surgery became well established by about 1870, largely due to the work of Sir Morell MacKenzie. Improved results are obtained in treatment of cancer of the larynx by advanced surgical techniques alone or by radiotherapy or by both. Plastic surgery on the nose for the correction of deformities, whether congenital or traumatic, is of long standing; the nose is still the site of much of the most satisfactory plastic surgery.

#### *Paediatrics*

This branch of medicine has developed during the century into a speciality wherein significant advances have been made. Many factors have contributed to these advances: physiology has been able to explain many diseases of metabolic and endocrine origin and to devise curative treatment in a great number of cases. The commoner infectious diseases have been almost completely eliminated by preventive inoculation. Acute surgical infections have responded to chemotherapy and antibiotics. Osteomyelitis, formerly carrying great risk of death or lifelong crippling and invalidism, is not now as frequent and terrible a disease as it was in the pre-antibiotic era. Epidemics of mumps and measles still occur but a beginning has been made in preventive inoculation against measles. Vaccination against poliomyelitis has been highly successful. Rheumatic fever, a potent cause of valvular heart disease, is now given long term antibiotic treatment with the good prospect of diminished risk of valvular heart disease in later years.

Public health measures have been effective in diminishing tuberculosis, especially of bones and joints; modern drug treatment for established tuberculosis has saved many children. Infant welfare centres have been successful in keeping infants in good health so that the incidence of serious illness in the first year of life has been reduced. Dietetic treatment based on physiological and biochemical knowledge has also made advances in the last generation. For all of these reasons child mortality and morbidity have been greatly reduced so that compared with a century ago, the chance of a newborn infant surviving to adult life has improved dramatically. For 1971 the rate of infant mortality under one year was 14.7 per 1,000 live births. Paediatric surgeons have made great advances generally in operative techniques enabling them to correct many congenital defects which formerly were incompatible with survival.

#### *Obstetrics and gynaecology*

The sciences of microbiology, physiology, biochemistry, radiology, and pharmacology have been applied with beneficial effects to the practice of obstetrics and gynaecology. Microbiology and pharmacology have been applied to prevent and treat puerperal and surgical sepsis. Blood transfusion,

a development of physiology, has saved the lives of many women and their babies, and has also rendered possible operations and obstetrical procedures which would carry a high mortality risk without its use. In babies inheriting Rh factor abnormality, blood transfusion has saved lives when carried out promptly and efficiently; techniques have been devised for giving blood transfusions to the unborn baby. Biochemistry is the basis for the prevention and successful treatment of many of the metabolic disorders formerly so dangerous in pregnant women or in their newborn babies, and radiology is used extensively in assisting diagnosis in both gynaecology and obstetrics. The physiology of the endocrine glands has found wide application in the administration of the appropriate hormone or hormones in various menstrual disorders, in the treatment of infertility, and recently in preventing conception by the administration of hormones in "pill" form.

The first medical professorial chair in a Victorian university clinical school was the Dunbar Hooper Chair of Obstetrics and Gynaecology established at the University of Melbourne by funds from the Edward Wilson Trust in 1929. In consequence the standard of teaching in obstetrics and gynaecology rose rapidly, and the present low morbidity and mortality in mothers and babies can be in great measure attributed to the excellent university training in these subjects. Concurrently with the improvement in the care of the pregnant mother, there has been closer investigation of the causes of mortality in the newborn. There are now specialists practising in the care of the newborn, and many babies are saved by the early recognition and treatment of anatomical and physiological abnormalities. Their work is a link between the practice of the obstetrician and the paediatrician. Early and continued medical care of the pregnant woman, so called "ante-natal care", has enabled the timely recognition and correction of many of the pathological conditions which formerly made childbirth hazardous. It has helped to lower maternal morbidity and mortality, and has also diminished the death rate in the newborn. Maternal mortality in 1934 was 61 per 10,000 deliveries; it had dropped to 2 in 1971. Special techniques of gynaecological examination have enabled diagnoses to be made more easily and at an earlier stage than formerly, and so have enabled the institution of prompt and correct treatment. This has recently had special reference to the early diagnosis of malignant disease of the uterus by the so called "smear test", where the cytologist, by microscopic examination of vaginal fluid, is enabled to discover abnormal cells pointing to the need for further visual and other examinations for evidence of malignancy or pre-malignancy.

A century ago most births took place in the home. Gradually the advantage and added safety of being in a hospital for confinement became recognised, and now most births are in a hospital or a nursing home. Improved training of nurses in midwifery with the exclusion of the untrained midwife by the *Midwives Act* 1915 has been another factor in diminishing morbidity in childbirth.

#### *Medical practice*

Specialisation in medical practice in Victoria occurred slowly in the first half of this century but has increased rapidly since 1950, notably in anaesthesia. Medical attention to the civil population was given

a century ago by general medical practitioners, most of them graduates of British or Irish medical schools. They were naturally of varying ability, but the best of them were men capable of giving good treatment in medicine and surgery and obstetrics well up to the world standards of the day. When the first medical school in Australia was established in the University of Melbourne in 1862, the curriculum was designed to equip its graduates to be good general practitioners. It was the first medical school in the English speaking world to require a five year course ; this has gradually been lengthened, and now, with a year after graduation spent as a hospital resident medical officer, a student spends seven years before he can go into general practice. There is only one form of State registration for practice and that is a general one for medical graduates qualified to practise medicine. A State register of specialists was begun in 1972.

Gradually specialist physicians, surgeons, obstetricians, gynaecologists, paediatricians, and oculists were established in Melbourne. Some of these had graduated from general practice into their specialities. Most patients in the city, and nearly all in the country, were cared for by general practitioners, and the standard of the general practitioner was a high one. Now, many students after graduating go on to some years of postgraduate study to become specialists without ever going into general practice. At first this specialist training had to be in one of the great overseas medical centres, but since the establishment of the Australasian Colleges of Surgeons, Physicians, and Obstetricians and Gynaecologists, and other institutions, excellent postgraduate training is now available in Melbourne. These postgraduate courses cater not only for Australians but also for students from New Zealand and Asia. Fellowship in one of these colleges is regarded as an essential by any practitioner setting up in Victoria as a specialist. Though it is no longer necessary to go abroad, in fact most postgraduate students do spend some time studying in Britain, Europe, or America before becoming established as specialists in Victoria. Specialists are not confined to Melbourne ; many of the larger country towns have a number of them. There are still many individual general practitioners but the tendency since 1940 has been for a number of general practitioners to form a group practice, perhaps with some degree of specialisation within the group. It has made life less arduous for the practitioner, although many patients still prefer to be attended year after year by one individual practitioner. In advanced surgery, it is no longer possible for one surgeon alone to be capable of carrying out the operative procedure. He is the chief of a team consisting of many specialists and assistants and technicians ; he is responsible for the planning of the procedure and the functioning of the team as a whole.

Until the late 1960s medical practitioners accepted the convention that patients in charitable institutions would receive free medical and surgical treatment from the visiting medical staff of the institutions. They were referred to as the honorary medical staff. In the large hospitals where medical students were receiving clinical instruction, their instructors or teachers were these honorary medical officers. For these teaching services they were not paid or at most received a small annual honorarium. These teaching services made great inroads on the time required for their private practices and the increasing complexity of modern medicine made the teaching load even greater. In the medical schools of their respective

universities they were unique in being the only university teachers acting in an honorary capacity. Moves were under way by the early 1970s to bring about the abolition of the honorary system both in treatment of patients and in teaching students.

The first women students were admitted to the Melbourne Medical School in 1887, but for many years women graduates were few and of those who graduated many dropped out of practice. In 1896 the Queen Victoria Hospital was established as a public hospital for women and children, staffed by women practitioners. Later a private and intermediate block, the Jessie MacPherson Hospital, was added, making it the first community hospital in Melbourne. Since the First World War the number of women graduates has increased. They became more widely accepted in practice during the Second World War when there was a shortage of male practitioners as so many served with the Armed Forces.

During the first half of this century there were very few salaried practitioners; most of those were in government service. Most doctors depended on fees from private patients or from contract practice, the so-called lodge practice. Gradually more full-time and part-time salaried posts were established, mainly in government services and in public institutions. Some of the large industrial and commercial enterprises employed their own salaried medical officers to carry out special duties for their employees. By 1970 about 34 per cent of the medical profession were general practitioners, about 21 per cent specialists, and about 34 per cent salaried officers; the remainder practised in two or more of these categories.

#### DENTISTRY

The history of dentistry in Victoria can be said to date from the foundation of the Odontological Society of Victoria in 1884. This Society, made up of fifteen Melbourne dentists, was the first dental association to be formed in Australia and was directly responsible for placing dentistry on a professional basis. Its activities on behalf of the profession directly or indirectly resulted in Australia's first dental Act, hospital, school, journal, and Doctorate in Dental Science.

The Victorian Parliament passed the Dentists Act in 1887 which provided for a Dental Board and a Registrar to keep a register of dentists in the State. Persons who could prove that they had practised dentistry before the passing of the Act could be registered. Those seeking registration after this date were required to have completed a four year course of study provided for in the Act and to pass an examination set by the Board. However, it was not until 1910 that a further Act was passed preventing unregistered people from practising dentistry.

In 1890 the Odontological Society established the Melbourne Dental Hospital in Lonsdale Street for the treatment of the poor. Members of the Society gave honorary service and assisted in the teaching and training of dental students. However, formal teaching facilities were greatly needed for students who wished to qualify for registration with the Dental Board of Victoria. To meet this need the Society established the Australian College of Dentistry in 1897. The College and the Melbourne Dental Hospital were housed together but their finances were kept separate. At first the College issued a diploma of M.A.C.D. (Member of the Australian College of

Dentistry) for students who had satisfactorily completed two years of study after apprenticeship to a private practitioner. Later, the Dental Board of Victoria issued a diploma of L.D.S. (Licentiate of Dental Surgery) on the completion of four years of study at the College.

In the same year as the College was established it published the first professional dental journal in Australia—the *Australian Journal of Dentistry*. The journal included dental news and professional papers from Societies in other States and continued to be the major professional journal in Australia. It was last published in 1955 and thereafter became the *Australian Dental Journal*, the organ of the Australian Dental Association.

Through an agreement between the Australian College of Dentistry, the University of Melbourne, and the Dental Board of Victoria, the College was affiliated with the University of Melbourne in 1904. A degree of Bachelor of Dental Surgery (later renamed Bachelor of Dental Science) was established. In 1910 the University instituted the degree of Doctor of Dental Science at the instigation of the Odontological Society of Victoria. A Chair of Dental Science was established in 1924 and Dr Frank Wilkinson was appointed as the first Professor of Dental Science.

The Australian College of Dentistry moved to a new building in Spring Street, Melbourne, in 1907 which it occupied with the Melbourne Dental Hospital until their relocation to their present premises on the old Haymarket site in 1963. In March of that year the University formally took over the teaching and staff of the College and established the present School of Dental Science of the University of Melbourne.

The Odontological Society of Victoria continued until 1920. Other professional dental societies emerged in Victoria as contemporaries of the Odontological Society, namely the Dental Graduates Society and the Alumni Society of the Australian College of Dentistry. All three societies had merged by 1922 when the Dental Society of Victoria was formed. On 20 November 1928 this body joined the newly formed national society to become the Victorian Branch of the Australian Dental Association.

## HEALTH

### *Department of Health*

The Port Phillip settlement had few health problems until the gold rushes of the 1850s. Health administration was carried out by a Colonial Surgeon, an officer of the New South Wales public service stationed in Melbourne. After separation from New South Wales, health matters were under the control of the responsible Minister. This was originally the Colonial Secretary, and after 1855, the Chief Secretary. The Legislative Council, which preceded the Parliament appointed under the Constitution, quickly introduced a number of Acts of Council to safeguard the health of the population which increased rapidly as the gold seekers arrived. Administration developed into a Medical Department under the Chief Medical Officer, who was also the President of the Central Board of Health. In 1853 Dr William McCrea, a surgeon of the Royal Navy, became Colonial Surgeon and re-organised the quarantine service, established control over water supplies, and ensured that the elementary rules of sanitation were followed.

The Health Act of 1854 introduced a system of local Boards of



The recovery room in the operating theatre block of the Royal Victorian Eye and Ear Hospital.

*Hospitals and Charities Commission*



Radiological techniques in use during an operation at the Alfred Hospital.

*Hospitals and Charities Commission*



The former Royal Melbourne Hospital building in Lansdale Street, now the Queen Victoria Hospital

*La Trobe Collection, Jane Lubenz at Victoria*

The present Royal Melbourne Hospital viewed from Flemington Road.

*Royal Melbourne Hospital*





A training class for nursing aides  
*Huspanly and Charines Comestrov*



Medical students being trained at the Monash  
Medical School, Alfred Hospital.

*Monash University*

Laboratory production of vaccines, c. 1920.

*Commonwealth Serum Laboratories*







The group laundry at Bendigo for hospitals in the Loddon region.  
*Hospitals and Charities Committee*

The main block of the Repatriation General Hospital, Heidelberg.  
*Repatriation Department*



Health, with a Central Board of which Dr McCrea was the first President. The Boards had power over various matters such as sewers and drains and the general cleanliness of houses, food premises, and food. The Common Lodging Houses Act of 1854 included provisions to prevent the spread of infectious diseases, and in the same year the Vaccination Act was passed to prevent the spread of smallpox. The city sprawl was already in evidence in 1855 when the Executive Council brought in an Act to prevent pollution of the Yarra River, Melbourne's water supply, above Queen's Wharf in the City of Melbourne. At the time this Act was introduced development of the Yan Yean waterworks had begun, and in 1858 Dr McCrea was able to report that the City of Melbourne and various suburban municipalities had an ample supply of water. However, water supply still remained a problem for many years in other towns.

Laws relating to quarantine which had been adopted by the New South Wales Government continued to apply in Victoria after Separation in 1851. Until the introduction of an Act to prevent the adulteration of food and drink in 1863, legislation on public health had been aimed primarily at the prevention of disease. This Act was perhaps a sign of the development of some social conscience as it sought to prevent the sale of adulterated food even though the food was not made unwholesome by the adulteration. In 1864 the Licensed Butchers and Abattoirs Act laid the foundation for Victoria's meat supervision laws; it enabled municipal councils to establish, operate, or supervise abattoirs and to appoint inspectors to examine meat. As the density of the population was increasing each year, the Cemeteries Act of 1864 prevented indiscriminate burials with the consequent possibility of water pollution. Proper cemeteries were established and a ban was placed upon burials except in cemeteries. Finally, in 1865, all existing health legislation was consolidated in the Health Act. This Act also incorporated special quarantine provisions replacing three New South Wales Acts which had previously applied in Victoria.

For more than twenty years after its establishment in 1854 the Central Board of Health was concerned mainly with preventing the spread of disease. Nevertheless, the Central Board was concerned with subjects such as infant mortality, and also kept abreast of overseas developments in various aspects of sanitary science. The use of police officers as sanitary inspectors, and the quarantine control of incoming vessels helped the Central Board to keep infectious disease to a minimum; smallpox was effectively controlled by vaccination. Shortly after his appointment as President of the Central Board, Dr McCrea was appointed Chief Medical Officer for Victoria. His duties placed him in charge of the Colonial Hospital, the Orphan Asylum, and the Mental Institution, and gave him the supervision of all immigrants arriving in Melbourne. In 1861 the Surgeon Superintendent of the Mental Institution was made directly responsible to the Chief Secretary, and in 1862 was replaced temporarily by a lay superintendent until the arrival of a newly appointed Medical Superintendent from England in February 1863. The small population and the availability of dedicated staff enabled the Victorian Government to set up a complete medical department responsible for all aspects of health work, preventive and curative, and covering various branches of medicine—general medical, psychiatric, surgical, and infectious diseases. District

surgeons employed by the local Boards of Health were also encouraged to take an interest in hospital matters and were usually employed part-time in general practice.

The Health Act of 1865 and the several amendments to it were repealed in 1883 and replaced by the Public Health Amendment Act; this re-enacted all previous health provisions concerning the organisation of the Central Board of Health and of the local Boards of Health, control of infectious diseases, quarantine, housing matters, and adulteration of food. In addition it sought to establish some measure of control over places where infants might be left by their parents. Any place taking two or more infants under the age of two for nursing and maintenance, apart from their parents, had to register with the local Board of Health and be subject to regular inspection. The Act also provided for the control of the structural safety of public buildings. The expression "public building" was used for the first time and was defined very widely to cover hospitals, theatres, churches, halls, and meeting places of any sort where numbers of persons assembled. An amendment to the Health Act in 1889 recognised the growing importance of local government, and seven representative members of the central body, known as the Board of Public Health, could now be elected by groups of councils of cities, boroughs, and shires. By 1890 urban development had greatly increased, and the public health aspects of the work of the Chief Secretary's Department warranted the establishment of a Ministry of Public Health. The new Department was responsible primarily for the many aspects of preventing injury and illness in the community. The Chief Secretary's Department retained control of mental institutions and the provision of medical services for various government instrumentalities. Child welfare administration was also added in 1890 when the Infant Life Protection Act was passed.

For the next thirty years there were no major changes in the activities of the Department of Public Health, although greater emphasis was placed upon ensuring purity of foodstuffs. However, in 1919 much of the earlier health legislation was repealed and a new Health Act established a Commission of Public Health replacing the former Board of Health; it consisted of not more than three medical practitioners and one representative from the metropolitan municipalities, one representing the cities, towns, and boroughs other than those in the metropolitan area, and one from the shires other than those in the metropolitan area. The new Act dealt with many matters which the Department had previously supervised. It recognised for the first time the need to control the operation of trades which may be dangerous to the health of employees. Among those trades listed were arsenic recovery works, chemical fertiliser works, match factories, and certain industries dealing with metal grinding, white lead, and the manufacture of acid. This was a major development in health law as it conceded at an early date the possibility of technological development in Australia and the need for protection of the workers employed.

The next important step was the introduction of the Ministry of Health Act in 1943. In many ways this Act was a return to the concept of a health service as originated by Dr McCrea in 1853; all health matters requiring governmental control were now under the one administration. The Ministry of Health Act established the Department of Health with a

number of branches, and provided power to establish additional branches. All Acts relating in any way to the prevention and cure of physical and mental illness, the training of persons for health services, the direction of research into all aspects of preventive and curative medicine and the publication of information concerning them, now came under the administrative control of the Minister of Health. The Act made possible the establishment of a branch responsible for maternal and infant welfare, the care of pre-school children, and the dental care and medical examination of school children. In 1948 a branch responsible for the diagnosis and treatment of tuberculosis was set up. With financial support from the Commonwealth Government, the Tuberculosis Branch has been able to reduce greatly the incidence of tuberculosis in Victoria. The functions of the former Department of Public Health were taken over by the General Health Branch of the new Department, while the Department of Mental Hygiene, formerly under the Chief Secretary, became the Mental Hygiene Branch of the Department of Health. In 1952 the Mental Hygiene Authority was created to take charge of mental health services. The authority of the Department in the control of stream and air pollution was extended, the first by the *Health (Amendment) Act 1954* and the second by the *Clean Air Act 1957*. Both of these measures are now under the control of the Environment Protection Authority.

#### *Maternal and child welfare*

The Infant Welfare Division of the then Department of Public Health was established in 1926, when the Government undertook to subsidise municipal councils for the establishment of infant welfare centres throughout Victoria. This subsequently became part of the Maternal and Child Welfare Branch of the present Department of Health. To service sparsely populated areas, the Department established a mobile service which enabled infant welfare sisters with specially equipped vans to travel a circuit of some 200 miles. By 1970, 727 infant welfare centres and eleven mobile circuits serviced every municipality in Victoria. In 1930 a mothercraft lecturing service commenced for senior girls in secondary schools; in 1940 a correspondence service was made available to mothers who could not be contacted through either municipal or mobile services, for example, a lighthouse keeper's family or those living in snowbound alpine areas.

A pre-natal service was established in 1946 at strategically situated infant welfare centres to provide for the medical supervision of those women who booked for their confinements in public maternity hospitals. In the same year the Department first became responsible for the subsidising and supervising of pre-school kindergartens, play centres, and day nurseries. By 1970 there were 29 pre-natal clinics and 811 pre-school centres attended by 39,121 children.

Further developments in the late 1940s and early 1950s included the appointment of a social worker, a dietitian, and a child psychologist to handle special services, and the establishment of an infant welfare service in migrant centres. In 1964 an amendment to the Health Act required that child-minding centres which enrolled more than four children be registered and all personnel approved by the Branch. The objectives of maternal, infant, and pre-school welfare services have broadened from disease prevention

and nutrition counselling to helping with developmental, emotional, and social problems among children.

Prior to the 1943 Health Act, when the school medical and dental services were incorporated into the Health Department as separate divisions, these services had operated as a branch of the Education Department. The School Medical Service began in November 1909 when the Education Department appointed three medical officers to conduct a preliminary investigation into the health of pupils in Victorian schools and their report highlighted the need for a school medical service.

Because of the difficulties of recruiting of suitable medical staff, the School Medical Service between 1943 and 1958 was able to do little more than maintain a token service in a few schools. From 1958 onwards the service sought to give each pupil three routine examinations during schooling; this included one in the third year of secondary school. By 1960 considerable staff increases brought this objective close to achievement and included a consultant paediatrician, an eye specialist, and two psychiatrists. However, due to the large increase in the school population during the 1960s, a further review of activities was needed if all school children were to receive medical examinations. Accordingly the policy was changed to limiting routine medical examination to children in Grade 1 and providing examinations of children in higher grades who required attention. During the 1960s health education programmes have been developed in teachers colleges, giving student teachers an understanding of children's health needs. The nursing staff has continued to visit schools (98 schools in 1970) and inspects children for general health standards, hearing, and vision, as well as arranging follow-up treatment where necessary. In 1971 the staff of the School Medical Service consisted of forty-one medical officers, forty-four nursing sisters, and twenty-two administrative staff. The total number of children examined was 222,588.

The School Dental Service, which commenced in 1921 following reports on the poor dental condition of school children, has also expanded its activities by the addition of extra one-surgery vans and two-surgery semi-trailer units which serve consolidated schools and large schools in country towns. In the metropolitan area, the South Melbourne dental centre was moved to larger premises in St Kilda Road, and additional centres opened in North Fitzroy and Footscray. Each of these centres has a district allotted to it. Registered schools are included in the scheme in all districts visited by the Service. Institutions, special schools, and physically and mentally handicapped children at training centres are also visited by dental officers. However, due to staff shortages, treatment of school children is limited to a group 5-8 years old at commencement, who are then treated at each subsequent visit until they reach 12 years of age. Presently there are thirty-five dental officers making dental services available to 60,000 children.

#### *Mental health*

During recent decades there has been a notable change of attitude towards the mentally ill. This has gradually produced developments from which improved assessment, hospitalisation, and follow-up services have emerged. These services are very different from the neglect and indifference to which the mentally ill and the mentally retarded were exposed before, and even since, the turn of the century.

In the late 1860s Ararat and Beechworth mental institutions were erected and opened. The old Yarra Bend institution, opened in 1848, was classified as unsuitable and marked for demolition, and it was planned that it would be replaced in the early 1870s by the Kew asylum. However, because of the population increase, the closing of the Yarra Bend hospital was not possible at that time. By 1893 the Ballarat and Sunbury asylums had been opened, and the first few detached cottages at Kew had been erected specially for "idiot" children. At that time Victoria was reported to be the only place offering accommodation and training for imbecile children resident within its borders, and in this respect the Colony was then in advance of other countries. A receiving house (now called a psychiatric hospital) was opened at Royal Park in 1907. In 1910 another large mental hospital was commenced at Mont Park. On the outbreak of war in 1914 the Commonwealth Government took over a number of uncompleted wards, finished the buildings, and established two military hospitals in the area. The return to the State of these completed wards in the early 1920s enabled mental patients at Yarra Bend to be transferred and the institution was finally closed.

In 1915 the nucleus of a new institution for the treatment of male patients suffering from psychiatric disorders attributable to war service was established at Bundoora. This new institution was at first supplemented by wards for an additional 90 patients at Mont Park, but in the 1930s additional wards were built at Bundoora.

Efforts were made from time to time to separate completely the mentally sick requiring treatment and rehabilitation or long term care from the intellectually handicapped, whose prime need has always been training by specially qualified staff in social and other activities and in sheltered industrial work. During the 1930s a hostel was established for mildly retarded girls trained to work in the community but needing leisure time supervision. Since then other facilities for the intellectually handicapped which have come into operation are the Pleasant Creek Special School at Stawell and the Janefield Colony, both of which are for educable girls and boys; Travancore Clinic, a diagnostic centre for the intellectually handicapped of all ages and a treatment centre for maladjusted children; the Children's Clinic for the diagnosis and treatment of disturbed conditions in children; and a residential centre at Bendigo for the training of mildly retarded boys of post-school age as manual or farm labourers. During the post-war years a number of day training centres for retarded children and adolescents, operated by private organisations and subsidised by the Mental Hygiene Branch of the Department of Health, were established in quick succession.

During the same period services established for the mentally sick included hostels for convalescent male and female patients, and outpatient clinics, while in the early 1940s Larundel Mental Hospital was built on portion of the Mont Park estate. However, because of the war and the resultant housing shortage the institution was not used for its designated purpose until some years later. In 1953 one section of the original Mont Park institution was attached to the newly available Larundel Mental Hospital and in 1963 the remainder of Mont Park was divided into two institutions, Mont Park and Plenty Mental Hospitals. Largely due to the Second World War it was not possible to maintain the enthusiasm responsible for the establishment and development of these institutions, and by 1951

some mental hospital buildings were in need of repair, many patients were unoccupied, food and clothing left much to be desired, and the medical and surgical staffs were inadequate to cope with prevailing needs. However, a significant development up to this time had been the appointment of the first occupational therapists, psychologists, dietitians, and social workers to work in mental institutions. Criticism and publicity brought pressure to bear upon successive governments, and finally in 1952 the newly appointed Mental Hygiene Authority was empowered to renovate and re-assess existing facilities and to plan new ones. The Mental Hygiene Authority (now the Mental Health Authority) was given statutory powers to formulate, control, and direct general policy and administration for the treatment of mental illness and intellectual deficiency; as such it has endeavoured to make good the defects of the past while incorporating its best features into the present.

Important advances have been made since 1952 in many fields. Among the most significant was the establishment of the Alexandra Parade Clinic in 1960 for the treatment and after-care of sociopaths in conflict with the law, and for alcoholic referrals. The Personal Emergency Advice Service began operating from the Clinic on a 24 hour basis in the same year, providing advice by telephone and personal contact where necessary; it depends largely on volunteer personnel who receive the requisite training from professional staff. Hobson Park at Traralgon in Gippsland was opened to cater for outpatients, day patients, and short-term admissions in 1963, while the Dandenong Psychiatric Centre for day or weekly patients, and outpatients, and St Nicholas' Hospital in Carlton, the site of the central service for the intellectually handicapped, began to operate from 1964. The Kew Day Centre for elderly citizens, the majority of whom are former hospital patients, opened in 1965, and in the following year the Glenhuntly Rehabilitation Centre in Caulfield accepted persons with psychiatric disabilities for work training and rehabilitation in an industrial setting. In 1971 there were thirty-eight day training centres for intellectually handicapped children and two such centres for autistic children in Victoria. These have all been established by voluntary bodies but receive a subsidy from the Government for construction and maintenance costs.

Following the formation of the University of Melbourne's Department of Psychiatry, the Professorial Psychiatric Unit was established adjacent to the Mental Health Research Institute in Parkville; it works in liaison with the Institute, and here medical students receive part of their psychiatric training. Research studies from the Mental Health Research Institute have resulted in extensive statistics showing the need for increased facilities for mentally defective and psychogeriatric patients, the diminished length of hospitalisation necessary for psychiatric patients, the increase in short-term patients seeking treatment, and the decline in numbers of those needing long-term care. Experience has shown that residential care is not always needed for many psychiatric disorders, and the trend in psychiatry has been to reduce hospitalisation to the necessary minimum, where possible treating the patient as an outpatient or in a day hospital where he is no longer cut off from his own environment. Provision has been made in many areas for the mildly and moderately intellectually handicapped, the emotionally disturbed, and the prematurely senile to attend outpatient clinics, rehabilitation centres, and industrial workshops.

Suitable staff recruitment has always presented a problem in administration, as has the difficulty of matching limited resources to the wide needs of mental health. During recent years many older established hospitals have been renovated and enlarged, but, to serve a growing population, additional facilities will be required.

### *Tuberculosis*

In 1887 the recorded death rate from tuberculosis was 193 per 100,000 mean population, while in the late 1960s it was about 2 per 100,000, and new notifications were less than 20 per 100,000. Originally no special measures were taken to discover the disease; equipment for diagnosis and treatment was crude, and all responsibility was in the hands of the private medical practitioner. The State has now accepted full responsibility for providing a comprehensive service, using advanced technical aids for prevention, case detection, and treatment.

Tuberculosis was recognised as being associated with poverty, overcrowding, and poor social conditions. Its infectious nature was suspected, but the causal organism was not isolated until 1882. This discovery stimulated public health measures, and with improving social conditions paved the way for lessening the death toll. In 1906, as a result of research into mining at Bendigo, the affinity between tuberculosis and miner's phthisis was shown. These discoveries resulted in the following control measures:

1. legislation to declare tuberculosis a notifiable disease was introduced in Melbourne in 1903 and notification was made mandatory throughout the State by 1909;
2. sanatoria were established under State and municipal control;
3. laboratory facilities were made available in Melbourne in 1905 and in Bendigo in 1922;
4. an outpatient clinic was established in Melbourne in 1918; and
5. X-ray facilities were brought into use.

In 1927 the first Director of Tuberculosis for Victoria was appointed. He co-ordinated the existing facilities and set up a State controlled tuberculosis service with diagnostic facilities, clinics for outpatients, institutions for intensive care, and a home visiting service by nurses to instruct in hygiene and follow up patients and their contacts. In 1940 mass miniature radiography, developed for routine examination of recruits for the Armed Services, drew attention to the problem of unsuspected active cases among the apparently healthy members of the community. By 1947 it was adopted for case finding in the community, and in 1963 attendance at the surveys was made compulsory for adults. Free treatment for tuberculosis patients was available by 1943, and four years later the State Government introduced a special Tuberculosis Living Allowance. In 1948 this was replaced by the Tuberculosis Allowance, a Commonwealth Government benefit to encourage patients to take treatment. Developments in general medicine such as anaesthesia, blood transfusion, and antibiotics permitted more intensive surgical aid for the individual patient, and the Austin Hospital, which had been used for chronic patients since the previous century, became the hospital for specialised care.



The increasing interest in tuberculosis throughout Australia led to the Commonwealth-State Agreement of 1948 under which increased funds were provided by the Commonwealth Government ; rapid expansion followed as Victoria had a well established service. Mass miniature radiography and tuberculin testing of school children were developed, as well as B.C.G. vaccination for those at risk and leaving school. Control was strengthened by legislation in 1963 for the compulsory examination of persons with tuberculosis or of suspects, and effective chemotherapy was made available. This comprehensive policy has been continued with vigour and good progress has been made. However, once a person has become infected with tuberculosis, even early in life, the infection may lie dormant for many years before actually causing the disease through loss of resistance because of stress and advancing age. Hence, future energies will be directed to keeping under medical supervision those who have already been infected and to protecting the uninfected.

#### *Other infectious diseases*

Owing to ineffective treatment, many infectious diseases were much more serious during the nineteenth century than they are now, and they caused a relatively high death rate. Gastro-intestinal infections in particular were rife both in the metropolis and on the goldfields. From 1834 to 1851 sanitary ordinances were administered from New South Wales, but after Separation local sanitary legislation became necessary, and Victoria's first Health Act came into force on 19 December 1854. Under the Act the appearance of any epidemic, endemic, or contagious disease was to be reported to the Lieutenant-Governor ; the provisions, however, related only to Melbourne and Geelong, and it was not until 1870 that they were extended to cover all local government areas. The Act also provided for a Central Board of Health to make regulations for the prevention or investigation of such diseases, for the establishment of hospitals, and for the cleansing of houses to prevent and check infection. The vaccination of infants against smallpox also became compulsory during 1854. Later legislation permitted conscientious objection and the *Health Act* 1931 finally abolished compulsory vaccination. To combat infectious disease, it became essential to establish hospitals where patients could be isolated and treated by such means as were then available. The first isolation station in Victoria was established at Point Nepean in 1802 as an emergency measure to house, under canvas, scarlet fever victims who were on a ship which had entered Port Phillip Bay. A temporary quarantine station was set up at Point Ormond in April 1840 to tend to typhus victims on the *Glen Huntley*. Later in the 1840s a quarantine station was established in Williamstown ; the Point Nepean quarantine station, set up in 1853, was placed under Commonwealth control in July 1909. In 1872 a sum of £2,750 was voted by Parliament to establish a hospital for the isolation and treatment of smallpox and other infectious diseases. Built as the Queen's Memorial Infectious Diseases Hospital at the Yarra Bend Reserve, it is now known as the Infectious Diseases Hospital, Fairfield. The first buildings were eventually erected by 1901.

As many of the infectious disease wards formerly established in country hospitals have been closed or greatly reduced in size, almost all serious cases are now sent to Fairfield. Furthermore, many of the newly discovered

viral diseases require intensive hospital care and specialised investigation ; facilities for this are only readily available at that hospital.

### *Cancer*

Many hospitals and research centres in Victoria treated cancer and conducted research into its causes for many years, but there was no organisation to co-ordinate the separate efforts until some advisory bodies were set up from 1929 onwards. After several abortive attempts, the *Anti-Cancer Council Act* 1936 was passed to establish an incorporated body to co-ordinate all activities related to research, prevention, and treatment of cancer, and to subsidise these activities. This body was to be called the Anti-Cancer Council of Victoria and money for its activities was obtained by bequests and donations. An appeal was made to the public for funds to establish a Cancer Registry, but the Second World War delayed further development, although in 1943, at the suggestion of the Council, the Government invited an eminent British radiotherapist to visit Victoria and report upon facilities for the treatment of cancer.

Shortly after the end of the war, the State Government and the Council co-operated in purchasing three deep-therapy X-ray machines, but adequate accommodation for a complete radiation therapy service was difficult to obtain. Following the creation of a Cancer Institute Board by the *Cancer Institute Act* 1948 a decision was made to establish the Peter MacCallum Clinic in premises formerly occupied by the Queen Victoria Memorial Hospital, in order to develop a hospital specialising in radiotherapy and chemotherapy and capable of being extended should the need arise. Since then extensive alterations have been made to accommodate modern equipment, and further modifications will be made to provide for extended services. In 1970 the State Government allocated to the Institute the rear portion of the former Royal Mint site, and a master plan for this area is now being developed. The Institute has been supported by the Government and has developed into a widely known cancer treatment centre. Its activities have included a considerable amount of clinical research which has improved methods of diagnosis and of treatment, particularly by radiotherapy, as well as some basic research in fields associated with cancer.

The Anti-Cancer Council of Victoria appointed its first full-time research officer in 1953 ; two years earlier it had sponsored its first research project at the University of Melbourne. Particularly since a very successful public appeal in 1958 and a subsequent one in 1965, the Council has been able to encourage and assist research and investigation into the cause and prevention of cancer. It has stimulated interest in cancer by public education programmes, and has made people aware of the need for early diagnosis of any cancerous condition. The Council has also operated a welfare service throughout the State to assist cancer patients to obtain treatment. In 1964, in co-operation with the Department of Health, the Council established a free service for the early detection by cytological examination of uterine cancer, one of the common forms of cancer in women. The Council has widely advertised the availability of this cell test and although the success of the campaign may not be apparent for a number of years, the discovery of a number of cases in the early operable stage has justified the establishment of the service.

By an amendment of the Cancer Act in 1960 the Anti-Cancer Council

of Victoria is now authorised to affiliate with organisations of a similar nature in other States.

### *Nursing*

Nursing service in Victoria has followed the traditional British pattern of an in-service or apprenticeship programme of training, with public hospitals and major charitable hospitals relying heavily on trainee nurses for nursing service. The first qualified nurses came from Great Britain during the middle of the nineteenth century and established the apprenticeship type training similar to that they themselves had received. No educational standard was required for entrance, and any hospital could "offer" a training which consisted largely of a few lectures and much hard work, including both nursing and cleaning. Often the trainee was required to pay a premium and to supply her own linen and cutlery. No requirements as to length of training, curriculum, examination, or registration were laid down, and no register of "qualified" nurses was kept. This situation persisted until 1902 when the newly formed professional Nursing Association (later known as the Royal Victorian College of Nursing) drew up rules for the registration of nurses already practising, and laid down a training curriculum, conditions for the approval of hospitals as training schools, and a pattern of examinations for registration. Sixty-six hospitals were approved as training schools by 1903, and the first uniform system of training and registration of nurses was commenced. By this time the Women's Hospital had been training midwives for nearly thirty years.

In 1915 the Midwives Act, the first legislation for nursing, was passed ; it provided for the registration of existing midwives and led to the better training of midwives and regulated their field of service. The first Act relating to general nursing was passed in 1923, and through it the responsibility for standards, registration, and control of nursing practice passed from the Nursing Association to the Nurses Board of Victoria, a statutory body. Much later the *Nurses Act* 1956 co-ordinated the education and registration of all branches of nursing in the State, and other aspects of nursing ; the Victorian Nursing Council administers the Act, and exercises wide powers. Before 1958 registration was not compulsory except for those nurses employed as registered nurses. The main development since then has been the introduction of better training programmes, compulsory registration, and the requirement to hold a current annual practising certificate in the branch of nursing being practised for gain.

The educational entry requirement to general nurse training is now four approved subjects at fifth form level, although many student nurses have completed secondary schooling. A new curriculum for general nurse training has been approved and will be fully implemented by July 1974, providing 1,600 hours of formal instruction in the three year course for every student nurse commencing after that date. This curriculum is more comprehensive and better regulated than earlier nurse education programmes. There is a set ratio of education to work undertaken and students must complete a basic nursing education before carrying out nursing duties. The programme includes some psychiatric, public health, and maternity nursing, but does not include midwifery nursing for which there is an additional twelve months course for those wishing to train in this branch of nursing.

To assist in recruitment of applicants to general nursing, bursaries are

offered to students to encourage them to reach Higher School Certificate standard (the students are bonded to complete the course of general nurse training) and officers of the Hospitals and Charities Commission visit schools and conduct meetings throughout the State in a continuing recruitment programme to inform young people of the opportunities in nursing.

In the early years of this century nursing practice was confined to "curative" nursing, but since 1917, when the infant welfare movement commenced and led to improved infant and maternal care now recognised as a vital factor in the prevention of infant mortality, there has been growth in other areas of preventive nursing care, such as school health and industrial nursing services. Training in infant welfare and post-basic areas of nursing was established by the Nurses Board of that time. These courses, together with the other special courses in line with modern medical technology, such as intensive care, renal care, and coronary care nursing, are available to registered nurses. Postgraduate diploma courses in nursing administration and teaching, commenced in the early 1930s by the Royal Victorian College of Nursing, became the responsibility of the College of Nursing, Australia, on its establishment in 1950 with headquarters in Melbourne. Diploma courses are now available in most specialised branches of nursing at that College.

The nursing force is supplemented by nursing aides who undertake a course of twelve months training including six weeks at a nursing aide school and the remainder in hospitals and institutions approved by the Victorian Nursing Council. There is no prescribed minimum education standard for entry to nursing aide training at present, but successful completion of third form of secondary education is desirable.

At 30 June 1971 Victorian public hospitals employed 11,572 nurses full-time of whom 6,976 were trained and 4,596 were students. Of these, 1,578 were trained nursing aides, 243 were registered mothercraft nurses, and 574 were student nursing aides. Because of a general shortage of nurses, hospitals employ many nurses on a part-time basis. At 30 June 1971 there were 1,947 nurses and 329 nursing aides employed part-time in Victorian public hospitals.

#### *Bush nursing services*

In 1909 the idea of providing a nursing service in the remote areas of Australia was conceived by Lady Dudley, the wife of the Governor-General of Australia. She was able to interest Sir James Barrett in the scheme, and as a result the Victorian Bush Nursing Association was formed and the first bush nursing centre was opened in 1911.

From the beginning bush nursing has been self supporting and founded on co-operative responsibility; a central council of management was established to deal with matters of common interest, and a nursing superintendent was appointed. From the earliest days a policy of complete decentralisation has operated. The payment of a small annual fee entitles a person to be a subscriber to a hospital or centre. Subscribers receive free treatment at a bush nursing centre and reduced rates as an inpatient in a bush nursing hospital. Local committees elected from the subscribers in each area are completely responsible for all aspects of local management. Sir James Barrett was the secretary of the Central Council until his death in 1945, and the progress made by the Association was in no small measure due to principles which he initially laid down.

By the end of 1920 there were twenty-eight nursing centres. Nurses worked under medical direction except in cases of emergency, but as the nearest doctor was often far removed and as communications were poor, the bush nurse of that time was frequently responsible for all midwifery and general medical and surgical nursing, and the health of the school children in her area. As country communities grew, some of the cottages which provided accommodation for the bush nurse were extended to become bush nursing hospitals ; from 1926 onwards many small private hospitals became bush nursing hospitals.

The Association continued to expand and several public trusts became interested in its work. An ambulance service was established, and using trust funds the Central Council was able to assist local communities to establish hospitals. As improved roads and transport brought the outlying areas into closer communication with the centres of population the number of nursing centres declined and the number of hospitals increased ; by 1942 there were sixty-two bush nursing hospitals and fifteen bush nursing centres.

Bush nursing hospitals are registered as private hospitals under the Hospitals and Charities Act. Each centre receives financial assistance from the Commonwealth Government under the *Home Nursing Subsidy Act* 1956. Since the end of the Second World War the work has been reviewed and consolidated. Several of the larger bush nursing hospitals have elected to become incorporated under the Hospitals and Charities Act and obtain finance through the Hospitals and Charities Fund ; a large renovation and rebuilding programme has been carried out in the hospitals remaining under the aegis of the Association. The State Government, through the Minister of Health, has made such a programme possible by subsidising approved capital works, first on a one for one basis then later on a two for one basis, and since 1963 on a three for one basis. The State Government has also assisted with the maintenance expenses of bush nursing hospitals. In 1971 there were thirty-nine bush nursing hospitals with a total of 496 beds, and eighteen bush nursing centres.

#### *Paramedical developments*

For almost a century a group of professional workers has provided ancillary medical services for doctors : these paramedical services comprise physiotherapy, occupational therapy, speech therapy, medical social work, psychology, and dietetics.

In 1890 Elizabeth McAuley, through her own work at the Melbourne Hospital, founded the practice of physiotherapy in Victoria, the value of which has been acknowledged by the medical profession, particularly in the rehabilitation of patients. Following the Second World War occupational therapy was firmly established by the techniques developed to assist the recovery of disabled servicemen. The Occupational Therapy School opened in 1948, and the aim of the therapists is to help persons who are handicapped, either physically or mentally, to return to a life of maximum independence. Speech therapy treats disorders of speech, language, and voice, and has developed steadily in Victoria since 1945 when it began at the Children's Hospital. Speech therapists are now employed at teaching hospitals, at metropolitan and country hospitals, and at special hospitals and rehabilitation centres. The Education Department also provides speech therapists for the treatment of children referred by school medical officers.

In 1966 the Victorian Government purchased Lincoln House in Melbourne ; the building now accommodates the training schools of the professions of occupational therapy, physiotherapy, and speech therapy, all of which are affiliated with the Victoria Institute of Colleges.

Professional social workers are involved in a wide field of service, including social welfare, industry, voluntary and statutory organisations, and community development, as well as health. The medical social worker makes a valuable contribution to ancillary medical service, working in close co-operation with the doctor in the fields of general and mental health.

Psychology, as a science and professional practice, is now firmly established in Victoria, where psychologists must be registered under the *Psychological Practitioners Act 1965*. Members of this profession are employed in the universities, the Commonwealth and State public services, commerce, industry, and private practice. They offer a wide variety of services, including teaching, counselling, vocational selection and guidance, and personnel management.

Dietetics relates scientific knowledge to nutrition in the feeding of individuals and communities in health and in illness. Late in 1920 trained nurses were first recruited for special instruction in dietetics, and the first hospital training school for dietetics was founded at the Alfred Hospital in 1931. At present there are three training schools and dietitians are employed in administration, research, industry, and teaching, and in hospital service where the medical team includes the therapeutic dietitian.

#### *Hospitals*

The first hospital in Victoria was opened in Batman's two storey house at the corner of Collins and William Streets in 1837 ; part of the house had been placed temporarily at the disposal of government medical officers. Before that date a government doctor had used a mud hut at the Spencer Street end of Collins Street as a consulting room and infirmary. In 1838 a larger hospital was built in King Street. In the same year the Government in Sydney authorised the construction of a hospital and promised £300 providing the local community raised a similar amount. In 1840 a group of citizens raised money and established the first community hospital with twenty beds and an outpatient section ; it was on the south side of Bourke Street, between Elizabeth and Swanston Streets, in a house loaned by John Fawkner. By 1844 the public had subscribed only £215 but the Government then promised a site and £200 for a new hospital. The Melbourne Hospital was opened on the north-east corner of Swanston and Lonsdale Streets in March 1848 with ten beds; by the end of that year this number had been doubled. The hospital had to cater for a rising population between 1846 and 1856; by 1856 it provided 200 beds. The second Melbourne hospital was established in 1856 ; this was the Lying-in-Hospital, now the Royal Women's Hospital.

The increase in population after 1851 meant that more hospitals were needed in country areas, and they were built at Geelong in 1852, at Castlemaine and Bendigo in 1853, at Kilmore, Warrnambool, and Maryborough in 1854, at Ballarat, Beechworth, and Port Fairy in 1856, at Stawell, Kyneton, Maldon, and Ararat in 1858, and at Amherst, Heathcote, and Dunolly in 1859. By 1862 there were nineteen hospitals with 1,037 beds in the State. In 1869, largely through the early work of Dr Andrew

Gray, a committee of citizens established the Melbourne Institution for Diseases of the Eye and Ear, now the Royal Victorian Eye and Ear Hospital. The Alfred Hospital, named after Prince Alfred, Victoria's first royal visitor, in thanksgiving for his recovery after the attempt on his life in Sydney in March 1868, was opened in May 1871 on its present site. Prince Henry's Hospital like many others began as a dispensary, beds being added later. Established in 1869 the hospital moved to Spring Street in 1876 and the dispensary was closed. It was moved to its present site in 1885, and at first functioned as the Homoeopathic Hospital; owing to difficulties in obtaining homoeopathic doctors, it became a general public hospital in 1934. The Children's Hospital was established in 1870, catering for both inpatients and outpatients; its present location is in Parkville. The Austin Hospital was opened in 1882 at Heidelberg. It originally had 66 beds and cared for patients suffering from conditions such as tuberculosis and cancer, considered incurable at the time. St Vincent's Hospital, now a teaching hospital affiliated with the University of Melbourne, was opened in a terrace house in 1893, and still occupies its original site. It was founded by a small community of the Sisters of Charity. The Queen Victoria Memorial Hospital was for thirty years the only women's hospital in Australia staffed by women doctors. Initiated through the efforts of Dr Constance Stone in 1896, its patients were first treated at St David's Hall in La Trobe Street; the hospital was opened in Mint Place in 1899 and was moved in 1946 to buildings formerly occupied by the Royal Melbourne Hospital. The year of Queen Victoria's Diamond Jubilee was chosen for a public appeal to establish the Queen's Memorial Infectious Diseases Hospital. Some of its buildings were completed in 1901 at Fairfield, and the hospital was opened in 1904.

Generally, hospital design remained unchanged until the First World War. The so-called "Nightingale" ward, a large room accommodating about thirty patients with a fireplace and toilets at one end and a nurses' station at the other, was standard. After the First World War the awareness of infection and its dangers was reflected in design; crevices and ledges were discarded in favour of smooth, easily cleaned surfaces; the crowding of patients ceased and the danger of cross infection was therefore lessened; and laboratories and X-ray departments were enlarged. At the same time biochemical and bacteriological research and the use of X-rays increased and aseptic techniques were introduced to reduce infection hazards. The new Royal Melbourne (formerly Melbourne) Hospital, which moved to its present site in 1944, was the first Victorian hospital whose design reflected these changing conditions. Nightingale wards were discarded in favour of smaller wards for privacy and for isolation; proper and centralised facilities for sterilisation were provided; departments were planned to accommodate new developments of diagnosis and treatment; and provision was made for facilities which included management and engineering services, stores, and laundry.

Antibiotics were first used in Victorian hospitals just before the Second World War; their use has now become widespread, affecting hospitals profoundly, and many infections have been controlled for the first time. The average bed stay of patients in hospitals has been shortened; it was almost halved, from 20 days to 10.2 days, between 1931 and 1970. Laboratories have been expanded to assist in determining the best antibiotic for a

particular infection, the precise character of the infecting organism, and the amount of the particular drug necessary for control. More recently, biological medicine and endocrinology have made dramatic advances. Treatment with biological products has demanded precise assays, and the development of nuclear medicine and the use of isotopes have thrown further responsibilities on radiological and laboratory services. Diagnostic and therapeutic departments are now so planned that they can be expanded in size to accommodate increases in staff and facilities.

As public hospitals are now a service available to all regardless of income, and since patients demand privacy and quality service, changes have involved heavy expenditure. In 1970-71 hospital services were paid for from the following sources: by the Victorian State Government, 46.1 per cent; by the Commonwealth Government, through hospital benefits and other payments, 17.7 per cent; by the patient or through his own fund insurance, 32.8 per cent; and from other sources, 3.4 per cent. Hospital costs have risen steeply. The daily average bed cost in Victorian public hospitals has risen from \$2.67 in 1947-48 to \$28 in 1970-71. Costs are likely to continue to rise owing to the application of new medical scientific procedures and to increasing salaries. Efforts have been made to rationalise hospital services, and in country districts they have been co-ordinated in each of ten regions. The Cancer Institute provides all of the megavoltage radiotherapy for the State, and much of the plastic surgery is centralised in a unit at the Preston and Northcote Community Hospital. In 1968 metropolitan teaching hospitals in collaboration with the Victorian Hospitals and Charities Commission agreed to rationalise their open heart surgery facilities in two hospitals, St Vincent's and the Alfred. Other specialities such as renal surgery and dialysis, orthopaedics, rehabilitation, neurology, and neuro-surgery are under similar examination by expert committees.

#### COMMONWEALTH HEALTH SERVICES

The responsibilities of the Commonwealth Department of Health in the fields of health benefits, public health, and medical and allied research in Victoria have expanded considerably since its establishment in 1921. The Commonwealth Radiation Laboratory, the Commonwealth Bureau of Dental Standards, the Commonwealth Serum Laboratories, the Commonwealth Health Laboratories in country areas, and the National Biological Standards Laboratory are only some of the establishments which have contributed, not only to an improvement in health facilities in Victoria, but in Australia as a whole. However, it was in the field of quarantine that the Commonwealth Department of Health made its earliest contribution to the health of the State.

Section 51 of the Constitution gave the Commonwealth one health function, that of quarantine, but this was not exercised until 1 July 1909 when the Quarantine Act came into force. Until then quarantine was a State function, and in Victoria quarantine powers had existed from as early as 1841. A sanitary station for the treatment of quarantinable disease had been established at Point Nepean in September 1853, with a resident Surgeon Superintendent. At the time of Federation in 1901 quarantine was performed by the State Chief Health Officer. Initially a quarantine branch of the Commonwealth Department of Trade and Customs was created under the



Commonwealth Quarantine Act of 1908, and it came into operation in July 1909. Smallpox, the most feared of quarantinable diseases, had occurred in Victoria in 1857 (16 cases), 1868 and 1869 (43 cases), 1872 (10 cases in Bendigo), and in 1884 and 1885 (56 cases). Vaccination against smallpox was first made compulsory in 1854 for every infant within six months of birth, and it was not until 1919 that a conscientious objection clause was inserted into the Victorian Health Act. From 1875 to 1900 72 per cent of children born were vaccinated. This figure gradually declined until, with the operation of the "conscience" clause in 1920, only 12 per cent of children were vaccinated.

The first Commonwealth Director of Quarantine, Dr W. P. Norris, was appointed in 1909 and Dr J. H. L. Cumpston was appointed as Chief Quarantine Officer and Superintendent of Quarantine, Victoria, in 1911.

During the First World War many national health problems were raised, particularly those associated with the medical examination of troops, their welfare and care overseas, the rehabilitation of the physically disabled after the war, and the increased realisation of the seriousness of social diseases. The nation-wide influenza epidemic of 1918 and 1919 emphasised the need for a wider development of health services, and led to the creation of the Commonwealth Department of Health in March 1921. All quarantine positions were transferred to it from the Department of Trade and Customs. The war produced difficulties in obtaining supplies of antitoxins from abroad, and caused embarrassment to hospitals and medical practitioners throughout the country. As early as 1883 a depot had been established at Royal Park, Melbourne, for the production of calf vaccine. This depot was transferred to the Commonwealth Government in 1912, and it was on this site that the Commonwealth Serum Laboratories were established in 1916. In 1961 the Commonwealth Government passed the Commonwealth Serum Laboratories Act which placed the Laboratories under the control of the Commonwealth Serum Laboratories Commission, a body responsible to the Minister for Health.

In 1920 the Director of Quarantine decided to establish diagnostic laboratories as an aid to doctors practising in country areas. With the creation of the separate Department of Health, laboratories were set up in quick succession, and one of the first of these was the Bendigo Laboratory which was established in 1922 and which still functions under the Victorian Division of the Department. The Commonwealth Radium Laboratory was set up in 1927 and expanded in 1935, eventually to become the Commonwealth Radiation Laboratory. At the time of the financial crisis of 1931 the Government reviewed the Department's functions and decided that the Department should retire from industrial hygiene, maternal and infant welfare, tuberculosis and venereal disease control activities, tropical hygiene investigations, and research generally. These changes became effective early in 1932.

After the depression many reports were considered by the Government on social security. Two of these, "A Comprehensive Health Scheme" submitted in July 1943 and again in 1945, and a report on "Commonwealth Hospital Scheme and Hospitalisation" submitted in 1944, were particularly significant. They formed the basis of the Chifley Government's approach to a national health service. Initial difficulties were experienced in the

establishment of a pharmaceutical benefits scheme and the Constitution was amended in 1946 to permit subsequent legislation. Following the change of government in 1949 the *Pharmaceutical Benefits Act* 1952 was introduced. Changes were also made to hospital benefits, the Acts of 1945, 1947, and 1948 being superseded by the Act of 1951. A wide-ranging series of discussions was held with interested parties about the introduction of medical benefits, and regulations were passed in 1953 under the existing National Health Service Acts. The pensioner medical service was initiated in August 1950 to provide a full medical and pharmaceutical service to pensioners and dependants. All of these benefit schemes were consolidated in the *National Health Act* 1953.

The Commonwealth Bureau of Dental Standards, initially attached to the University of Melbourne, became part of the Commonwealth Department of Health in 1947. The National Biological Standards Laboratory was established as part of the Department in 1958, and its virology section has been located in Melbourne since 1962.

In 1970 a new Medical Benefits Plan was introduced, based on lists of most Common Fees for the whole range of medical services. It also provided differential rates of benefits for some 340 selected medical services, depending on whether the service is rendered by a general practitioner or a specialist in the practice of his speciality. Where the Common Fee is charged the patient contribution is not more than \$5, even for the most costly operation and the services associated with it.

#### MEDICAL EDUCATION

Medical Education in Australia began in 1862 when the first medical school opened with the entry of three students to the University of Melbourne. The connection with the University was of great importance for all future Australian medical schools. This circumstance set the pattern; medical education was to become in this country inseparable, physically and academically, from the universities.

The University of Melbourne at this time had on its council A. D. Brownless (1817–1897), and it was mainly due to his drive that the medical school was founded. He demanded (and got) a five year medical course forty years before this was standard in the United Kingdom. In 1862 a grant of £6,000 was given by a reluctant government, and the building which resulted on the north-east corner of the campus was occupied in 1864. Halford, the first professor (a distinguished physiologist), also occupied the Chairs of Anatomy and Pathology. Even in those days Brownless fought hard for adjacent land on which to build a university hospital. Eventually in 1942 the new Royal Melbourne Hospital was built and occupied in 1944. The hospital was near the south-west corner of the University, and on this area a new complex of buildings was eventually occupied by the Faculty in 1969.

Clinical instruction was first given at the Royal Melbourne Hospital in 1864, at the Alfred Hospital in 1888, and at St Vincent's Hospital in 1909. The Royal Children's Hospital and the Royal Women's Hospital became involved with the clinical teaching in their early years. (See table on page 563.) The medical school grew slowly; a joint Chair of Anatomy and Pathology was founded in 1882 and divided in 1906. Not until 1929 was another Chair (Obstetrics) established. Professors of Medicine and Surgery

were first appointed in 1955. Nevertheless, the University influence had remained dominant, particularly in the three pre-clinical years. By 1970 there were twenty-eight professors in nineteen departments.

In the years up to 1955 all clinical teaching was given by the visiting staff. However, since 1955 at the University of Melbourne, and from the first year of clinical teaching at Monash University (1964), the clinical professors have been in charge of undergraduate teaching which they now share with the visiting staff. The end of this unpaid system is in sight although it seems certain that the dual teaching aspect will continue with payment provided by the universities.

The student body slowly increased, the demands by Victoria for medical graduates being met by Melbourne graduates, doctors migrating from the United Kingdom, and the considerable number of Victorians who graduated in London and Edinburgh and then returned home. At 20 year intervals the aggregate number of students in the course were: 3 (1862); 181 (1882); 256 (1902); 731 (1922); 702 (1942); and 993 (1962). The year 1962 represents the first combined total of Melbourne and Monash Universities, the latter having opened in 1961. The projected number (combined universities) for 1972 was 2,263.

Monash University was established at Clayton in 1958, not as a technical university as originally intended, but as a multi-faculty structure, which included the humanities, sciences, and professional courses. A compelling reason for full university status was the need for a second medical school which was to be established on the campus. Land was reserved alongside the medical school for a university hospital to be established in the 1970s. Affiliation agreements, recommended by a government committee on medical undergraduate education (Lindell Report 1960), were completed with the Alfred and Prince Henry's Hospitals in 1960. The University of Melbourne generously agreed to phase out of these two clinical schools, meanwhile establishing a new affiliation with the Austin Hospital in 1965. Monash University, in addition, established a clinical school of obstetrics, gynaecology, and paediatrics at the Queen Victoria Hospital.

The Psychiatric Hospital, Royal Park, and Fairfield Hospital, each affiliated with the University of Melbourne, were made available by their boards of management to both universities for teaching. (See table on next page.) By 1971 there was a full-time Dean and eighteen professors in eleven Departments of the Faculty of Medicine at Monash University with 936 undergraduate students.

Medical education for many years was directed towards the graduation of a sound clinician, capable after six years of training to take his place in the community as a general practitioner. The modern need for an education based on scientific principles and laboratory practice has resulted of necessity from the increasing orientation of medicine towards science; it was expected that the "undifferentiated" doctor would then move into the postgraduate training phase directed towards one of the specialities or training for general practice. The emphasis on the scientific aspects has resulted in the need for the new medical school complex at the University of Melbourne, opened in 1969, as well as the new school at Monash University opened in 1961. Each university has had to erect new clinical sciences buildings at its affiliated hospitals.

These developments have shown that undergraduate education is only a first stage in the lifelong need for continuing education. While there has been an increasing emphasis on scientific attitudes and skills, at the same time there has also been a move away from the purely mechanistic approach. It is now better understood that medicine is closely allied to the social sciences. Consequently far more emphasis is given to psycho-social aspects both at the undergraduate and postgraduate levels. The phase now emerging will see close attention being given to strong graduate training programmes in hospitals which will be recognised as appropriate for this purpose by a system of accreditation.

VICTORIA—TEACHING HOSPITALS

Hospital	Date of establishment	Date of university affiliation
<b>UNIVERSITY OF MELBOURNE</b>		
Royal Melbourne	1848	1864
Royal Women's	1856	1864 (a)
Royal Children's	1870	1870
Alfred	1871	1888-1964
Royal Park	1907	1907
St Vincent's	1893	1909
Fairfield	1904	1909
Prince Henry's	1869	1952-1964
Austin	1882	1965
Larundel	1943	1971
Mercy	1971	1971
<b>MONASH UNIVERSITY</b>		
Queen Victoria	1896	1963
Fairfield	1904	1963
Royal Park	1907	1963
Prince Henry's	1869	1964 (b)
Alfred	1871	1964 (b)
Larundel	1943	1966

(a) No formal affiliation—students first attended in 1864.

(b) Transferred from University of Melbourne in 1964.

PHARMACY

One of the first pharmacists to practise in Victoria was Dr Barry Cotter, who described himself as "surgeon and druggist" and conducted a pharmacy on the corner of Collins and Queen Streets as early as 1839. This was the forerunner of Hood and Co. at present located at 215 Elizabeth Street. Another early Victorian pharmacy has been operating since 1849; it is that of Henry Francis and Co.

The Pharmaceutical Society of Victoria was formed in Melbourne by some twenty British pharmacists in 1857 and by the end of the year there were 105 members. The Society first met in a house in Bourke Street to oppose an attempt by Dr D. J. Tierney, M.L.C., to introduce a Poisons Bill into Parliament without first consulting the pharmacists whose rights were threatened. The Bill was effectively blocked and withdrawn, and was not reintroduced for twenty years. A subsequent meeting in the same year adopted a resolution seeking a journal and ". . . a uniform system of education as shall secure to the profession and the public the safest and most efficient administration of medicine and the uniting of . . . members into a recognised and independent body". In 1858 publication

of a journal by the Society began. Styled the *Quarterly Journal and Transactions*, it was edited by W. Johnson, who was also Government Analyst, and J. Bosisto. Frederick Cooper, who was elected first president of the Society, was also one of Victoria's first pharmacists. The early pharmacists were British and their society as well as their college were structured along the British pattern. They received great help and encouragement from the parent society, and correspondence between the two bodies was prolific. Visitations and personal contacts were few, but information was obtained from migrants. The characteristic British chemist's shop, which differed from the European style, became established in Victoria. The goldfields and the remote country areas produced some quaint variants in the type of practice. By 1861 the Society's membership had fallen to fifteen, and no records of consequence were kept until the Society was revived by legislation in 1876. During this time many incompetent pharmacists had entered practice "counter prescribing" and the so-called "consulting chemist" was commonplace; encroachment on medical practice was widespread.

In 1876 the Pharmacy and Poisons Act became law, and the registration of pharmacists became compulsory. The first Pharmacy Board, a registering and examining body, was formed under the presidency of Bosisto, and as the effects of the Society began to be felt, the quality of pharmacists' practice also improved slowly. From 1876 pharmacists were precluded from practising medicine and surgery, except in accordance with "the rights and privileges hitherto enjoyed". These were not precisely defined until 1927 when a Pharmacy Board inquiry stated that they were to render first aid, to give emergency treatment in case of poisoning, to prescribe for common ailments of common occurrence by judging on the symptoms in an open shop, and to refrain from practising surgery. One surgical procedure which still remains legal in the current Medical Act is that pharmacists may practice exodontia outside any city, town, or borough. This is no doubt a relic of the needs of the frontier community; so far as is known, no practising pharmacist in the State now exercises this right. Of great importance to the profession has been the long standing provision for qualified ownership of pharmacies, and the consequent proscription of the company pharmacy. After 1876 the tedious wrangle over encroachment on medical practice became insignificant.

In 1927 another pharmaceutical organisation, the Pharmacy Guild of Australia (formerly the Federated Pharmaceutical Service Guild of Australia), was founded. The Guild is a central association of pharmacy owners who must also be pharmacists; it has its central headquarters in Melbourne and branches in all States, and practically all master pharmacists in Australia are members. It protects the commercial interests of master pharmacists, and it is the official negotiating body with the Commonwealth Government under the National Health Act. Although a sectional group, the Guild co-operates with State professional societies. It has attempted to improve the appearance of pharmacies, merchandising techniques, and professional remuneration.

The Victorian College of Pharmacy, opened in 1884, is owned and operated by the Pharmaceutical Society of Victoria and is affiliated with the Victoria Institute of Colleges. It conducts a degree course in pharmacy.

## SOCIAL SERVICES AND WELFARE

---

### VOLUNTARY WELFARE

It is not possible to comprehend the development of social welfare in Victoria without taking into account the special role of voluntary bodies and voluntary action. There has been voluntary welfare activity in Victoria since the earliest days of settlement, when organised care and social provision were necessary for those without private means, families, or friends. During the nineteenth century it could be said that in many areas voluntary leadership and organisation filled a gap which in other countries had been filled by local government. The names of the institutions characterise the period : the Immigrants' Home, the Strangers' Aid Society, and later, the Travellers' Aid Society. The most important of the early voluntary welfare agencies was the Immigrants' Aid Society, managed by a committee representing various religious denominations and an executive of seven. New arrivals were given information, advice, temporary lodging, storage for goods, medical aid, and financial aid if destitute ; at various times the Society was also responsible for neglected children and deserted wives. Although heavily dependent on government grants it remained under voluntary management. As the demand for immigrant aid declined it became, in 1902, The Victorian Homes for the Aged and Infirm, and is today the special geriatric hospital, Mount Royal. By the time of the 1890 Royal Commission on Charitable Institutions there were such diverse agencies for social welfare as benevolent asylums, orphan asylums, the Asylum and School for the Blind, and the Deaf and Dumb Institution.

In 1840 moves were made to establish a hospital for the sick poor of Melbourne. In the following year a small temporary building with twenty beds and an outpatient section, managed by a committee of clergymen, was opened; the first permanent hospital, later to be the Royal Melbourne Hospital, was being built in 1846. The Governor was reluctant to provide funds, fearing to establish a precedent for government responsibility ; however, from its beginning the State Treasury made charitable contributions. Throughout Victoria the Government's donations for the poor increased, and in 1881 the first Inspector of Charitable Institutions was appointed, with limited responsibility to regulate voluntary charities. When the Hospitals and Charities Commission in 1948 replaced the older Charities Board (originally set up in 1922 to collate government grants and control charities), its work was directed towards policy formation and co-ordination. Voluntary work has also been carried out by organised religious denomina-

tions, initially within the individual congregations of Scots Church, St James Cathedral, St Francis Church, and Wesley Church. Later, a number of religious institutions and societies were secularised, as when the Melbourne Orphanage (now the Melbourne Family Care Organisation) became separated from the congregation of St James, or when the Scots Church Visiting Society became the Melbourne Ladies Welfare Society. However, many activities have continued under church auspices: work concerning child welfare is particularly important, many institutions being maintained by the Catholic Church, while the Salvation Army is especially concerned with social derelicts.

Voluntary agencies in children's welfare work have co-operated with State authorities through various representative associations and have contributed to legislation, community education, and the practice of child care which has changed over the years through greater knowledge of child development. Most of the agencies have been concerned with counselling services, adoption and foster care arrangements (which were made more stringent by the *Adoption of Children Act 1964*), and as an alternative to these, residential care in various types of homes and institutions.

Voluntary bodies have emerged in many other fields of social welfare in this century. These have included the Victorian Division of the Red Cross Society, founded in 1914, which introduced its blood transfusion service in 1929 and pioneered music and art therapy for mental patients after the Second World War. Its work in helping ex-servicemen and their dependants has been matched by the efforts of other organisations such as the Returned Services League, Legacy, and Toc H. The R.S.L., founded in 1916, has provided homes, club amenities, and visits for ex-servicemen, and watches over their constitutional rights. Legacy has made itself responsible for war orphans, endeavouring to give them the help denied by the absence of a father. Toc H was originally formed in 1915 as a soldiers' club in France, and has continued its social work in the community.

Voluntary work to help the physically disabled began in 1918 and was at first confined to children—the beginning of the Yooralla School and Hospital. In 1935 the Victorian Society for Crippled Children was formed and its services later extended to adults; in the same year work for the mentally ill was officially embodied in the Council for Mental Hospital Auxiliaries, whose activities had begun three years previously.

After the Second World War the efforts of parents of children with cerebral palsy were mainly responsible for the creation of the Spastic Children's Society of Victoria. Relatives and friends of the mentally ill formed themselves into an association in 1945 and three years later helped to establish child minding centres for mentally retarded children.

The Old People's Welfare Council was set up in 1951 to co-ordinate welfare work among the elderly, most of whom in Victoria do not live in institutions. However, various churches and philanthropic organisations provide a limited range of residential homes for them.

Owing to its wide variety, the extent of voluntary activity today is partly unknown. It may be professional or otherwise, and it may involve direct service, fund raising on a large or small scale, committee work in organisations with very large budgets or in mutual aid organisations such as parent groups connected with mental retardation, private philanthropic

activity, or the provision of additional effort related to government welfare programmes. However, it is known that organised voluntary activity plays an important part in social welfare. In 1968 the Australian Council of Social Service compiled a comprehensive list of almost five hundred Victorian welfare agencies. Some 175 of these had a paid staff of 17,187, and some 100 agencies' voluntary workers numbered 27,332; total capital and maintenance expenditure was approximately \$57m of which almost 60 per cent came from government sources. Although details concerning the origins of non-governmental contributions are incomplete, contributions are not derived from private gifts alone. In 1961 a survey revealed that income from philanthropic sources was still important in some areas, including advisory services to the handicapped, recreation, family and child welfare, and the work of co-ordinating bodies in welfare. However, these services were the least costly. For the more expensive health services only 2 per cent of maintenance income was derived from charitable contributions, although gifts were rather more important with respect to capital investments. An important source of maintenance income was found in fees charged to patients and clients or against contributions to various insurance schemes. The alternative to State subsidised voluntary action might have been a network of local government welfare activities, but in the early days of settlement this was impractical as the resources, leadership, and tradition of local government were lacking. The State-subsidised welfare agencies almost became an administrative organ of government, therefore, and developed a special character. Whereas in Great Britain voluntary welfare action had been motivated largely by the dehumanised services of the Poor Laws, and in the United States of America it was thought to be an alternative to government action, in Victoria voluntary work and government activity were not considered as opposed to each other.

State development has necessarily affected voluntary activity; for example, the statutory Hospitals and Charities Commission now effectively controls the voluntary hospitals. Commonwealth Government activity has also made some voluntary work irrelevant, while many volunteers have been replaced by salaried professional staff. There have, however, been no signs of a diminution of voluntary activity, which is being channelled into new areas, often concerned with pioneering new services: one voluntary agency initiated both elderly citizens' clubs and family planning clinics and another began retarded children's centres. Self-help groups for epileptics, the mentally ill, deserted families, alcoholics, and others have also developed, and are helping to change public attitudes, provide mutual aid, and influence governmental social welfare policies. There are large numbers of volunteer committee members, serving not only on voluntary bodies, but active also on governmental advisory committees.

During the 1960s there has been evidence that voluntary action is not only continuing but is gaining in significance, and the importance of the tasks of such volunteers has led to increased demand for special courses of training. For example, the Mental Health Authority provides special courses of training for volunteers manning personal emergency centres, and the Victorian Council of Social Services has variously provided courses of training for volunteers working in citizens' advice bureaux. Although the Commonwealth Government has only recently become involved with the more personal social



services, it has tended to utilise the services of voluntary action long established in Victoria. It has sponsored groups of volunteer workers to aid the recently arrived migrant and has subsidised voluntary bodies in their programmes for the aged and disabled.

#### CHILD WELFARE

Voluntary organisations and private individuals provided all child care in Victoria until well into the 1850s. However, the discovery of gold in 1851 brought a large population increase in a short time, with associated social problems. The Immigrants' Aid Society, formed in 1853, took over some disused government buildings in "Canvas Town" where it accommodated arriving immigrants. By 1855 hundreds of disappointed diggers had returned to Melbourne, mostly destitute and some with families to support. An arrangement was made in 1857 by which neglected children coming under the care of the State could be kept at the Immigrants' Home. However, because the Home itself had no legal standing, the Superintendent of the Immigrants' Home was not empowered to prevent relatives of the children from reclaiming them if they so wished. There were over fifty neglected children in this Home in 1858; by 1864, there were over 600, and the number coming under care was steadily increasing. It became clear that the Government had to legislate for the welfare of these children and the *Neglected and Criminal Children's Act* 1864 was passed by Parliament.

This Act declared that the State would open "Industrial Schools" where the children could be taught to be useful members of society by training in "habits of decency and order". The existing voluntary organisations were also encouraged to open such Industrial Schools by a government grant of 5s per week for each child they accommodated. In addition, the Act defined those conditions under which children could be removed from the control of their parents, along with the legal obligations of the parents to contribute to the support of their children. At the same time it was emphasised to parents that they should not be too eager to place their children with the State; in fact, the State would only intervene when the child was "in danger". Unfortunately, no financial assistance was available from the State for children living in their own homes.

In 1864 the Department of Industrial and Reformatory Schools, headed by an Inspector, was established with offices at the corner of King and Bourke Streets. It started with 463 children from the Immigrants' Aid Society and another 190 were committed by police during the following year. The first Industrial School was opened near Princes Bridge. The response from voluntary organisations was very disappointing and, because of the demand for Industrial School accommodation, the Government was forced to embark upon a rapid programme of development. By 1865 schools had been opened at Sunbury, Geelong, and Ballarat. In 1866 the hulk *Nelson* was acquired to accommodate some of the 1,560 wards then under the State's care, and over the next four years three more hulks were commandeered for use as accommodation by the Department, and joined the fleet moored in Hobsons Bay. By 1871 only three schools were being maintained by voluntary organisations and these accommodated only a little over 300 children. The State at the same time had twelve schools

with 2,621 children, the largest school, at Sunbury, accommodating some 714 by 1872. It had become clear by this time that the State's hurried attempts to solve the "wandering child problem" were unsuccessful. Not only were many of the buildings used for these schools quite unsuitable and staff deficient and often ill-suited to the task, but the whole scheme of industrial training was poorly conceived.

In 1872 the Chief Justice, Sir William Stawell, presided over a Royal Commission and its findings were as expected. It found that the schools were "hurtful to health, the morals, the intellectual and industrial training of the children, and tended to sink them into a life of permanent poverty or crime. The whole system of congregated charitable schools is based on a wrong principle injurious to both the children and the State". The Royal Commission suggested "boarding out" of wards as an alternative to the institutionalised care. This system had been working with great success in South Australia for many years and is today called foster care. An amendment to the Act was passed in 1874 to enable boarding out to be introduced and, in anticipation of this and following a previous resolution from the Legislative Assembly, over 600 children had been placed in foster homes by the end of 1873. By 1880 all the State's industrial schools, and all the vessels which had been used as such, were abandoned. The boarding out system depended on district ladies' committees, the members of which were appointed by the Department. They were responsible for finding foster homes for the children, seeing the children were well settled in, and paying the subsidy of 5s per week to the foster parents. At their peak there were one hundred ladies' committees, all functioning with apparent success. Two small reception centres were maintained for receiving children from the court and accommodating them until a foster home had been found for them. These reception centres, however, had only a capacity of thirty. By 1884, 2,105 children had been boarded out in 949 homes, a figure which shows the rapid acceptance of the scheme. The *Neglected Children's Act* 1887 forbade "any interference from relatives not of good character", and boarding out regulations deprived parents of any knowledge of their children's location.

Child welfare legislation between 1887 and 1890 confirmed the position of the voluntary homes where wards who could not be boarded out were placed by the State. The *Children's Maintenance Act* 1919 provided financial assistance for families without breadwinners; it was then possible for families to be kept together, the children not needing to be made wards to receive State assistance. Notwithstanding this, there were about 7,000 wards at the end of 1928, many of whom were boarded out. (There were only 7,260 wards in 1971.) This was the peak of the boarding out system, and from then on the decline was even faster than the acceptance of the system had been. The *Adoption Act* 1928 was responsible for some of the decrease in the numbers boarded out; many foster parents adopted wards in their care for they then had permanent and undisturbed custody. The depression meant that many foster parents found they could not afford to maintain wards while, on the other hand, some foster parents in fact continued merely for the 7s a week they received for the service.

Between 1920 and 1940 the Government developed a system of departmental inspection of foster homes and of recruitment of full-time

foster parents. During the Second World War payments were increased to 10s per week because of the difficulty in obtaining foster parents. In 1953, when the payment was 27s 6d per week, boarding out was at its lowest point with only 12 per cent involved. Only 21 per cent of children in the care of the Department were boarded out in 1955, while 63 per cent were in voluntary homes and less than 15 per cent had been placed under supervision with their parents or relatives. By this time it was apparent that the voluntary homes could not continue to provide sufficient institutional care for all State wards unaided.

The *Children's Welfare Act* 1954 attempted to modernise child welfare legislation and the name of the Department was now known as the Children's Welfare Department, after many changes of name since 1919. The Act clarified antiquated expressions and, more importantly, it provided for the formation of a Child Welfare Advisory Council to advise the Minister on desirable alterations in practice and procedure. It left the Department with the following functions : to receive and transfer children from the courts ; to ensure that maintenance was received from parents ; to exercise certain supervisory powers over the voluntary children's homes ; and to provide financial assistance for needy children to prevent a family break-up.

In the 1950s the Department was caring for many teenagers who obviously required vastly different treatment from the very young children in its care. This situation made it imperative that a complete revision of child welfare services be undertaken, and with the passing of the Social Welfare Act in 1960 this was done. The Act created a Social Welfare Department, as a branch of the Chief Secretary's Department, with the following responsibilities : child and family welfare, youth welfare, prison administration, probation and parole services, as well as training and research. Under the *Social Welfare Act* 1970 the Department came under the control of the newly appointed Minister for Social Welfare.

#### SOCIAL WELFARE DEPARTMENT

A report in 1959 by the Director of Penal Services was the basis for the formation of the Social Welfare Department. It emphasised the "need for concentration on preventive social measures", and stressed the link between the Child Welfare and Penal Departments: "It is agreed break-downs of family life are conducive to delinquency and that ineffective treatment of delinquents is reflected into the prison field". The report stressed the prevention of social problems rather than the mere alleviation of them. With this as an objective, the *Social Welfare Act* 1960 determined the functions and established the structure of the Social Welfare Department.

The Social Welfare Department, administered by the Director-General within the administration of the Chief Secretary's Department, absorbed all the functions of the former Children's Welfare Department and of the former Penal Department. Under the control of the Director-General, six divisions were established. The Family Welfare Division is based on the recognition of the supreme importance of the family and the need for its preservation. All children under 15 years of age entering the State's care are the responsibility of this Division. The Family Counselling and the Family Assistance Sections of this Division provide professional advice and financial aid to prevent family disturbances. The Family Welfare Advisory

Council exists to perform "watchdog" activities and to advise the Minister. The Youth Welfare Division concentrates on the problems of youth. Wards over the age of 15 are placed in the care of this Division. Young offenders between the ages of 15 and 21 may be detained in youth training centres where the treatment programme given by highly qualified personnel is more important than the custodial function. The Youth Advisory Council recommends financial grants each year to privately conducted youth organisations.

The Prisons Division is responsible for all prisons, with emphasis on the rehabilitative purposes of imprisonment; training programmes are implemented to enhance the prospect of the prisoner's rehabilitation into the community. The Probation and Parole Division supervises children and youths admitted to probation by Children's Courts and youths and adults admitted to probation by adult courts, and co-ordinates the work of the honorary probation officers throughout Victoria. The after-care assistance and supervision of such people, and the supplying of courts with pre-sentence reports are important duties of this Division. Other responsibilities of the Division include the services of the Youth Parole Board and the Adult Parole Board.

The Training Division develops and co-ordinates training in the departmental divisions and provides training for personnel from institutions and organisations working in the field of social welfare. Courses are offered for honorary probation officers, child care officers, youth officers, prison officers, and youth leaders. The Research and Statistics Division compiles statistics, and conducts and encourages research into social problems.

The *Social Welfare Act* 1970 provided for a Minister for Social Welfare and the Department ceased to be a branch of the Chief Secretary's Department. Subject to the Minister, the Director-General of Social Welfare has the responsibility of administering the Department. The Department, while maintaining its old structure, has been given additional functions and many existing provisions have been amended by the Act.

#### PRISONS

The first magistrate arrived from Sydney in 1836 to administer law in the Port Phillip District. The first gaol, which was a lock-up, became necessary in 1837; shortly afterwards it was burnt down by Aboriginal prisoners. After this incident a brick store leased from John Batman provided accommodation for prisoners, and sufficient space was available in an adjacent lane for holding "drunks" in stocks. In 1840 there were only twenty-seven convictions from a population of 10,000. The original Melbourne Gaol was opened in 1845 and held fifty-nine male and nine female prisoners at that time. Unfortunately, the gaol was the only place to house the insane, and in 1847 fifteen "lunatics" were held there. A treadmill had been installed for prisoners sentenced to hard labour, for it was policy then to impress on prisoners the futility of a criminal life. The gold rushes brought a crisis: the gaols were already overcrowded and a tea-tree stockade had to be constructed in the district of Pentridge, five miles north of Melbourne, along a bush track known as Sydney Road. In wheeled wooden huts it provided sleeping accommodation for eighty.

At Separation in 1851 the administration of penal establishments was transferred to the Penal Department of the Chief Secretary's Department ; the former was headed by an Inspector General. After introduction of gold mining licences in September 1851 the pressure on gaols became heavy. In 1852 Pentridge Stockade was made permanent, and stockades were erected at Collingwood, Richmond, and Williamstown in 1853. At each stockade prisoners were engaged in quarrying and road making. Also in that year the prison hulks *Deborah*, *Success*, and *President* were pressed into service. The men detained on the last named were kept in solitary confinement. By "industry" a prisoner could obtain a ticket of leave which gave him the freedom of one particular district ; he could not, however, leave the district, and he could be recalled for any "misconduct". (This system was discontinued in 1860 and absolute remissions substituted.) Prisoners from the hulks were taken ashore and employed in road building and other public works. In 1857, when a number of the prisoners refused to participate in road making in Williamstown, the Inspector General, John Price, a strong disciplinarian, visited them to hear their grievances. He was set upon with rocks and shovels, as a result of which he died; fifteen prisoners were tried for his murder and seven were hanged. In the same year a Select Committee on Penal Discipline reported that the hulks were unsatisfactory and recommended that Pentridge become a proper gaol. This was done, the prisoners themselves building the outer bluestone wall of the prison.

A Royal Commission investigating the prison system in 1870 recommended that a prisoner serving a term of less than twelve months should not be detained at Pentridge, and that gaols which had previously been controlled by the Sheriff of Victoria or his deputies be transferred to the Inspector General. This was enacted by Parliament in 1871 and the Penal and Gaols Department came into being. In the early 1880s the gaols held many old, destitute, and insane people who were sent to prison on vagrancy charges "to save them dying in the streets". Some gaols, including the Ararat gaol, were transferred to the control of the Lunacy Department in 1886 ; this was chiefly a move to alleviate temporarily the overcrowding which then existed in the asylums. The employment of prisoners on public works eased off during the 1880s and, when the Melbourne City Council cancelled its contract for bluestone in 1893, the Pentridge quarry closed down. In the following year a completely separate women's prison was established within the walls of Pentridge.

The Indeterminate Sentences Board, established in 1908 by the *Indeterminate Sentences Act* 1907, was responsible for classifying certain prisoners, determining for how long they should serve, and when they should be released, either provisionally or absolutely. The Act also provided for a number of reformatory prisons and a system of probation. The system was slightly amended in 1915 and reformatory sentences, release on parole, or release on probation were also used ; Castlemaine Prison was proclaimed a reformatory prison, and in the following year McLeod Reformatory Prison was established on French Island. The "Old Melbourne Gaol" in Russell Street was closed in 1922 and the trial and remand prison was then established in the building previously used as the Women's Division of Pentridge ; the Women's Division had been transferred to another

building. Cooriemungle Prison Farm was established in 1939. During the Second World War Bendigo and Geelong gaols were used by the Defence Department for military detention purposes.

In 1950 the Inspector General of Prisons undertook an overseas study tour, after which he reported to Parliament; he emphasised that treatment of prisoners should be rehabilitative rather than retributive. As a result of further recommendations, Langi Kal Kal Training Centre was established for young offenders to replace Castlemaine Reformatory Prison; an educational programme was instituted; and the first entirely separate women's prison in Australia was established in 1956 at "Fairlea" with a female officer as governor. The *Penal Reform Act 1956* abolished indeterminate sentences and established the probation and parole services in the form in which they exist today; this was the first legislation in Australia to provide for parole of sentenced prisoners. Although attempts had been made to ensure youthful offenders were not unduly exposed to hardened prisoners and their influence, sufficient facilities were not available to enforce this policy. This problem of rehabilitating young offenders was one important feature dealt with under the *Social Welfare Act 1960*.

#### SOCIAL WORK EDUCATION

It is usual to regard the formation of the Victorian Institute of Almoners in 1929 as the beginning of social work education in Victoria, although this is only a specialised branch of social work concerned with the welfare of hospital patients. The international problem of social work education has been whether each field of social work practice (medical, family correction, child welfare, and so on) requires a distinct and separate educational preparation, or whether it is possible to have a common professional training for students in diverse fields. These developments were the outcome of a number of trends and events. There had been an increased commitment to social welfare and with this an awareness that leadership in welfare organisations required special skills and knowledge. There was also a growing body of knowledge available concerning social work and social welfare which could not be absorbed by volunteer workers, while to many who had travelled overseas it had become apparent that in other countries social work education was a growing concern. As a result, a meeting at the Charities Board in 1929 determined on the establishment of the Victorian Institute of Hospital Almoners, and a year later the newly appointed almoner at the Melbourne Hospital became the first Directress of Training. Until 1933 the Institute offered a two year course in which it incorporated some general social work education apart from its main emphasis on almoner training. In 1931 Sir Richard Stawell presided over a representative meeting of several bodies: the Council for Mental Hygiene, the Institute of Almoners, the Charity Organization Society, the Central Council of Benevolent Societies, and the National Y.M.C.A., and as a result a Committee on Social Training was appointed to investigate a general course of social work training, preferably at the University of Melbourne.

The Committee on Social Training was unable to organise a broad course of education for social work at the University of Melbourne, and instead a Board of Studies was appointed to supervise a course which

began in 1933. In June of that year a widely representative body, the Victorian Council of Social Training, took over the Committee's work and offered a two year course of general social work education, emphasising practical work in the field as well as theoretical knowledge. Both training bodies were dependent upon the support of persons prominent in academic or community affairs and there was overlapping membership between the two bodies. Eventually both courses of training were to merge and be taken over by the University of Melbourne, but before this occurred each body had operated with a limited budget. In particular, the Victorian Council of Social Training relied largely upon gifts from philanthropic individuals, industry, and trusts. Courses were developed which emphasised practical training in the field, but theoretical knowledge was included.

In 1941 responsibility for the general course offered by the Victorian Council for Social Training was transferred to the University of Melbourne, although the Council was required to guarantee finance for the first three years. In 1947 the length of the course was extended to three years to allow for specialisation in the final year. This meant that the Victorian Institute of Hospital Almoners was no longer necessary, and in 1949 the Board of Social Studies took over its training responsibilities; shortly afterwards the Institute was closed. On its transfer to the University of Melbourne the course did not lose its practical orientation, but its academic base was strengthened. Brief courses of lectures in social philosophy, social organisation, physiology and nutrition, psychology, mental hygiene, social history, and problems of society were gradually replaced by extensive degree subjects of greater depth. Combined courses with Arts and Commerce were made available, and by 1962 the course director had been appointed an associate professor. In 1967 the University agreed in principle to establish a four year degree course as soon as adequate funds were available. By 1969 the Department had nearly 350 students, most of whom combined their social work studies with degree work in other faculties. The students represent a wide cross section of society and there is a significant growth in the number of men entering the profession. Many graduates are leaders in voluntary and public welfare, some being employed in government departments or voluntary welfare agencies, while a number have contributed to social work research.

While there have long been in-service courses within particular social agencies, general courses for social welfare personnel other than social workers have been developed in Victoria since 1950. These courses have been designed for those interested in child care, youth workers, marriage guidance counsellors, honorary probation officers, youth and prison officers, welfare officers, and volunteers in citizens advice bureaux and other community information and service centres.

A course of training for child care workers, originally sponsored by the Victorian Council of Social Service in 1955, became the responsibility of the Social Welfare Department in 1962. A professional Youth Leadership Course was begun by the Social Welfare Department in 1965 and in 1970 this became a Diploma of Youth Leadership Course. Other courses, both full-time and part-time, in youth leadership and group activities have also been developed by such bodies as the National Fitness Council, the Y.M.C.A., etc.

A growing feature of social welfare training in Victoria has been the inclusion of training for volunteer personnel. The Marriage Guidance Council of Victoria was early in this field, providing intensive courses for marriage counsellors. Courses for volunteers, including members of governing bodies, were provided by the Victorian Council of Social Service for a time, and the Mental Health Authority pioneered the training of volunteer workers in citizens advice and other information bureaux.

The Institute of Social Welfare (formerly the Training Division of the Social Welfare Department) under the guidance of the Social Welfare Training Council, now provides courses in child care and youth leadership and courses for welfare officers, workers in community information and service centres, and honorary probation officers.

An Institute of Training for Community Service was formed in 1970 for the training of certain volunteer and professional personnel in social welfare. Financial and other difficulties have, however, prevented the Institute from becoming operational.

#### COMMONWEALTH SOCIAL SERVICES IN VICTORIA

The Commonwealth of Australia Constitution Act of 1900 gave the Commonwealth Government power to legislate concurrently with the States for invalid and old age pensions. In the same year, however, the Victorian Government enacted an age pension scheme to be effective from Federation, and it was not until July 1909 that this was replaced by a scheme, which together with an invalid pension scheme effective from December 1910, was the beginning of Commonwealth social service activity. In October 1912 the Commonwealth introduced a maternity allowance scheme but did not bring in additional social service benefits until 1941. There was a general trend of increased rates over the period except during the depression years 1931 and 1932 when rates of benefit and eligibility conditions were restricted. These amendments, however, were repealed between the years 1932 and 1937, and benefits returned to pre-depression levels. Commonwealth Government responsibilities were extended considerably during the Second World War when the foundations of the existing comprehensive social security scheme were laid. Child endowment for all but the first child in a family and for all children in institutions was introduced in July 1941, while a limited scheme of vocational training for invalid pensioners was also introduced in the same year. Widows' pensions were introduced in July 1942, with a higher rate of pension and more liberal means test provisions being available to those with dependent children. Funeral benefits for deceased age and invalid pensioners, and allowances for the non-pensioner wife and the unendowed child of an invalid or permanently incapacitated age pensioner were introduced in July 1943. The unemployment, sickness, and special benefits scheme began to operate in July 1945.

In 1945 legislation to provide pharmaceutical benefits free of charge was declared unconstitutional, and doubts were raised about the validity of other measures for which there was no specific constitutional provision. As a result of a successful referendum held in September 1946 the Commonwealth was given power to legislate for the provision of maternity allowances, widows' pensions, child endowment, unemployment, pharmaceutical, sickness, and hospital benefits, medical and dental services



(without invading civil liberties), benefits to students, and family allowances. Constitutional validity was thus given to all existing measures, and the Commonwealth was also permitted to extend its activities. The *Social Services Consolidation Act* 1947 consolidated legislation and revised a number of anomalies. Since December 1948, when a comprehensive rehabilitation service was introduced in place of the more limited 1941 scheme, new benefits have been introduced and many services liberalised and expanded. In June 1950 child endowment was extended to the first child, while the pensioner medical service, administered by the Department of Health and providing medical attention of a general practitioner nature, pharmaceutical benefits, and hospital benefits free of charge to eligible pensioners and their dependants, came into force in February 1951. A new type of social service began in November 1954 when the Commonwealth introduced a subsidy scheme for voluntary organisations to assist them with the capital cost of establishing homes for aged persons. The scheme was extended in September 1969 to provide a personal care subsidy for persons aged 80 years or over who receive approved personal care in hostel-type accommodation provided by voluntary organisations. In November 1963 a subsidy scheme had been introduced for eligible organisations providing accommodation for disabled people working in sheltered workshops. In June 1967 the subsidy was extended to include the capital cost of establishing the workshops and at the same time a rental subsidy for up to three years was introduced for eligible organisations which rent premises to provide sheltered employment. In June 1967 a sheltered employment allowance was introduced for qualified disabled people engaged in approved sheltered employment, while in October 1970 the subsidy scheme was expanded to include the capital cost of accommodation for disabled people employed in normal industry as well as those employed in sheltered workshops. A subsidy towards the salaries of certain sheltered workshops staff was also introduced, as was a training fee of \$500, payable to the sheltered workshop organisation in respect of each eligible employee who is placed in open employment for not less than 12 months.

Changes to existing social services in recent years have included the introduction in October 1956 of a payment for the second and subsequent children under 16 years of age of widowed, invalid, or permanently incapacitated age pensioners; the extension in September 1963 of additional payments for children of pensioners to cover student children over 16 years up to the end of the year in which they attained the age of 18 years; the extension in January 1964 of child endowment to include student children aged between 16 and 21 years; and in October 1965 the provision of allowances for the wives and children of all age pensioners where there are dependent children, while additional payments for children of pensioners were extended to include student children aged between 18 and 21 years. Supplementary assistance came into operation in October 1958 for widow pensioners paying rent and for single age or invalid pensioners (and married pensioners where the spouse is not a pensioner) with limited means. A mother's allowance was introduced for widow pensioners with children in September 1963, and in October 1965 a guardian's allowance came into operation for single, widowed, or divorced age or invalid pensioners with children in their care.



Instruction in operating a lathe as part of rehabilitation training for disabled persons.  
*Department of Social Services*

"Meals on wheels" enable many pensioners to have a daily hot meal in their own home.  
*Brotherhood of St. Laurence*





Blind children using guide wires in a foot race.

*Royal Victorian Institute for the Blind*

Youth leader trainees being taught the construction of an emergency stretcher.

*Social Welfare Department*





Sabin oral poliomyelitis vaccine, produced in Melbourne, is distributed to children throughout Australia.

*Australian News and Information Bureau*

This specially fitted "heart" ambulance carries a complete range of cardiac monitoring equipment.

*Hospitals and Charities Commission*





The community centre at the Carrum Downs village settlement for elderly people.  
*Australian News and Information Bureau*

Occupational therapy at Melbourne's Kingston Centre.  
*Hospitals and Charities Commission*



There have also been frequent alterations in rates of pension and in the means test. A notable change occurred in March 1961 when the previously distinct tests on income and property were amalgamated into the merged means test, where a property component equivalent to \$2 for each complete \$20 of a pensioner's property above \$400 was added to his annual income to arrive at his "means as assessed". The rate of pension payable was reduced by \$1 for every \$1 of "means as assessed" in excess of \$364. A further significant change took place in November 1963 when a standard rate pension for single age and invalid pensioners (or married pensioners where the spouse is not in receipt of a pension) was introduced at a higher rate than that paid to each of a married pensioner couple. In April 1967 the amount of "means as assessed", which permits the payment of a full pension, was increased to \$520 for a standard rate pensioner and to \$884 for a married pensioner couple (\$442 each). In 1972 the eventual abolition of the means test was announced. In June 1968 the Commonwealth introduced a scheme to assist the States in the provision of aid to needy mothers ineligible for assistance under the Social Services Act. In September of the same year a training scheme was introduced for widow pensioners wishing to undertake gainful employment. In June 1969 the Commonwealth introduced a scheme to provide financial assistance to the States on a matching basis to assist them in the development of a range of approved home care services, senior citizens centres, and nursing homes, mainly for the aged. Another notable advance was the introduction of the tapered means test in September 1969 which extended the upper limits of means at which pensions cease to be payable and enabled all reduced rate pensions to be increased by providing that only half of the amount by which a pensioner's "means as assessed" exceed the permissible amount is deducted from the pension. At the same time, a higher rate of mother's allowance and guardian's allowance was introduced for a pensioner with an invalid child requiring full-time care or a child under six years of age in her care. In January 1970 the Commonwealth introduced a subsidised medical insurance scheme for low income family units, people receiving unemployment, sickness, or special benefits, and migrants during the first two months of their residence in Australia. Eligibility for the standard rate of age or invalid pension was extended in March 1970 to each of a married pensioner couple who permanently lose the economies of living together in their matrimonial home as a result of failing health. In 1970 legislation was introduced to provide assistance on a subsidy basis to eligible organisations which provide "meals-on-wheels" services for the aged and for invalids in the community, a subsidy scheme was introduced for eligible organisations to assist them establish premises for the training and accommodation of handicapped children, and a higher rate of sickness benefit was introduced for the chronically ill.

Commonwealth Government benefits and services are available uniformly throughout the country and to segments of the population who fulfil the qualifying conditions.

#### REPATRIATION

Victoria occupies a special place in the Australian repatriation system for it was in this State that the Repatriation Commission was first formed

in 1917; the Department's Central Office, established in 1918, remained in Victoria until early 1970 when it moved to Canberra. Since 1914 repatriation has embraced three essential elements: compensatory pensions, medical treatment for war-caused disabilities, and re-establishment measures. In Victoria these functions are carried out by some 2,400 employees at the Victorian Branch Office, the Heidelberg Repatriation General Hospital, and other smaller institutions in the State.

It was not until troops began to return to Australia for demobilisation after service in the First World War that the magnitude of the task of meeting their repatriation needs was fully realised. In 1917 the Australian Soldiers' Repatriation Act was passed, and in April 1918 the Repatriation Department was established to administer the wide range of benefits provided for ex-service personnel. Services provided by the Department, apart from medical care, include pensions, vocational and professional training, and loans for establishment in business.

During the First World War the Defence Department set up a number of military hospitals and institutions in the various States to treat wounded and ill servicemen. These included general hospitals, auxiliary hospitals, and artificial limb factories. By 1921 the control of these hospitals and institutions had been transferred to the Repatriation Department. A general hospital at Caulfield, Victoria, had been acquired by the Defence Department in 1915 and was known as No. 11 Australian General Hospital. New wards were constructed on the site and the first patients were admitted in April 1916. When the hospital was taken over by the Repatriation Department in July 1921 it had twenty-two wards and a bed capacity of 520, although it was possible to accommodate almost 600 additional patients if verandah space was utilised. The hospital was then re-designated the Repatriation General Hospital, Caulfield. By February 1939 the hospital grounds comprised some eighteen acres of land as in the intervening years much of the property was surplus and was transferred to various authorities.

With the outbreak of war in September 1939, it became necessary to double the number of beds at the Repatriation General Hospital to provide for the treatment of incapacitated servicemen. Five new wards were built, existing buildings were renovated, and additional premises were rented. Between 1939 and 1941 approximately 14,057 members of the forces were admitted to Repatriation General Hospitals throughout Australia and almost half of these passed through Caulfield. In 1940 a large general hospital known as 115 Australian General Hospital was built at Heidelberg by the Department of the Army to provide treatment for members of the forces of the Second World War, thus relieving Caulfield of this task. The hospital was situated in an area of 65 acres and was a combination of a multi-storey block and pavilion wards. During the latter years of the war the number of incapacitated patients being discharged from the forces increased considerably; they became the responsibility of the Repatriation Department. In 1947 it was necessary for the Department to take over the hospital at Heidelberg; this was done gradually because of the shortage of nursing and medical staff at the time. The hospital was named the Repatriation General Hospital, Heidelberg, and the hospital at Caulfield was re-designated the Repatriation Hospital, Caulfield.

Between 1948 and 1954 most wards and buildings at Caulfield were

transferred to the Hospitals and Charities Commission for use as a convalescent home, the exceptions being those wards used in conjunction with the Repatriation Outpatient Clinic in St Kilda Road. At the request of the Hospitals and Charities Commission these remaining wards were vacated in May 1963. The chest clinic and pathology department moved to the Repatriation General Hospital at Heidelberg, and the X-ray department was transferred to the Victorian Branch Office.

The first government artificial limb factory was established by the Defence Department in 1917 within the grounds of the Caulfield Hospital; the Commonwealth Government had obtained the services of an American limb-maker for the purpose of establishing limb factories throughout Australia. The Caulfield factory was found to be too small and inconveniently situated, and in March 1919 was transferred to a site in Sturt Street, South Melbourne. A new building incorporating the latest equipment was later erected on this site.

In 1919 the Department acquired, under trust, a property with a home at Brighton. This property became known as the Anzac Hostel, and has since been used for the treatment of ex-servicemen who, although seriously disabled, do not require the full treatment facilities of a general hospital. A further departmental property, a sanatorium at Macleod, was acquired in 1920 from the Defence Department. Treatment has since been provided there for repatriation patients. An outpatient clinic established in 1920 at the Victoria Barracks was transferred the following year to the basement of a building in St Kilda Road occupied by the Victorian Branch of the Department. As facilities here proved to be inadequate a new outpatient clinic was constructed in St Kilda Road in 1937. In 1923 the Commonwealth Government established a mental hospital at Bundoora in the setting of a mixed farm. Control of the hospital was transferred to the State in 1926, and under an agreement between the Repatriation Department and the State Government, repatriation psychiatric patients who require custodial care are accommodated there. During the Second World War the Department established a restoration centre at the Rockingham Red Cross Home in Kew. This institution provides comprehensive psychiatric treatment and assists patients towards their re-establishment in civil life. There are also extensive voluntary services for ex-service personnel, some of which are mentioned on page 566.

#### MIGRANT WELFARE

Until 1850 the Port Phillip District lacked the organised services of the New South Wales settlement, where some of the first free settlers not only received grants of land from the colonial administration, but were also provided with cheap labour and rations. The New South Wales Legislative Council did little to help the development of the District, whose representatives had difficulty in attending meetings, and often did not agree with the remote deliberations and limited insight of the Council. However, by 1851 when Victoria had become a separate Colony, many voluntary welfare services had been introduced, mainly by the churches, benevolent and charitable societies, and similar institutions which provided shelter, food, clothing, and employment for the ill and needy.



Victoria's population had increased to such an extent that the 1861 Census, apart from 1,694 Aborigines enumerated, recorded a total of 538,628 persons, mostly free settlers who had come following the discovery of gold in 1851, either as gold seekers or to find employment in expanding rural and commercial fields. While some were able to stay on their ships for a few days or in old barracks while seeking employment and lodgings, most lacked adequate shelter at first, particularly large families and young women encouraged to migrate in an attempt to obtain a balance between the sexes. However, although the colonial administration subsidised welfare services to some extent until 1872, it was not directly involved. One of the first women to practise individual social work was Caroline Chisholm, known as "the immigrants' friend", who came to Victoria in 1854 to organise assistance for distressed families and individuals in the goldfields areas. Similar work was later continued by various church workers, especially Selena Sutherland of Scots Church. During the 1880s many Melbourne churches became involved in the distinctive feature of church social work known as "rescue work". In the meantime, welfare services became concentrated upon Melbourne to provide assistance for the many miners and other migrants returning from country areas or coming from other Colonies seeking employment or medical attention.

Assisted immigration programmes were discontinued from the early 1880s until Federation when it was agreed that the Commonwealth would select and assist migrants to travel, and the States would retain the responsibility for nominating the numbers and categories required and arranging accommodation and employment on arrival. In 1921 the Commonwealth took over all aspects of migration work in the United Kingdom, and together with the States launched the unsuccessful large scale rural group settlement of British migrants in 1922. The depression of the 1930s accentuated the serious social problems caused by the irregular arrival of large numbers of poorly selected migrants, especially in periods of economic decline, and until the outbreak of the Second World War, when migration ceased, estimates of Australia's absorptive capacity had tended to be extremely cautious.

To undertake the task of post-war reconstruction and future national development, the Commonwealth Government embarked on a very large immigration programme in 1945, with the co-operation of the States, and established the Commonwealth Department of Immigration. Following the recommendations of the Commonwealth Immigration Advisory Committee in 1946, the Premiers' Conference agreed that the Commonwealth would control recruitment, processing, movement, and placement in employment of assisted British migrants, and the States would handle their nominations and arrange for their reception, accommodation, and after-care. Federal Cabinet later decided that immigration reception and training centres would be established at Commonwealth expense for non-British migrants to provide accommodation from which individuals could be assisted towards employment and where basic English instruction could be given. The formation of the Commonwealth Immigration Planning Council in 1949 to advise the Minister for Immigration on matters referred to him relating to planning, national development, and migrant accommodation and employment, marked the formal introduction of long-term economic

planning to the overall immigration programme. The Council comprises members of the community who are recognised leaders in the fields of industry (both trade unionists and employers), economics, science, and public administration.

Between 1947 and 1950 the Commonwealth Department of Immigration took over former R.A.A.F and Army camps and other establishments and converted them to holding centres. By 1951 three reception centres and twenty holding centres had a total capacity of 47,000 migrants; the seven of these situated in Victoria were at Bonegilla, Rushworth, West Sale, Maribyrnong, Mildura, Benalla, and Somers. Later the Department of Labour and National Service provided hostels (centres) to enable migrants to live near their place of work until they could obtain private accommodation. As the Displaced Persons Migration Scheme became obsolete the need for these centres diminished, and by 1960 few remained open; the last one, at Bonegilla (established in 1947), closed in December 1971. During 1952 Commonwealth Hostels Limited was formed and took over the administration of all migrant hostels from the Department of Labour and National Service; in June 1971 there were nine migrant hostels in Victoria controlled by this company. In March 1967 the Commonwealth decided to introduce self-contained flats to supplement transitory accommodation hostels for newly arrived Commonwealth-nominated families. Since that time one hundred and four flats have been completed at East Burwood, Oakleigh, Braybrook, Maribyrnong, East Preston, and West Heidelberg. A programme to replace outmoded migrant hostel accommodation (mostly Nissen huts) with modern masonry buildings was introduced during 1967 and a large number of these improved dwellings has now been completed. The latest hostel, designed to accommodate a thousand persons, was opened at Springvale in 1970.

The Commonwealth Immigration Advisory Council was established in 1947 to advise the Minister for Immigration on the sociological implications of migration and to make proposals in the interests of the new settlers. Members provide a broad cross-section of Australian public opinion. At its March 1971 meeting the Council agreed to change the existing framework from five standing committees (on naturalisation, established migration policy, social patterns, migrant youth, and migrant women) to three (on social patterns, migrant education, and citizenship). The Council also endorsed the practice of appointing *ad hoc* committees for specific tasks. Studies already undertaken by the Council cover crime among migrants, mental illness, the assimilation and progress of migrant children, the balance of the sexes, migrant youth in the Australian community, and the departure of migrants from Australia. In 1949 the Commonwealth Minister for Immigration announced that a nation-wide "Good Neighbour Movement" would be introduced in the following year to promote among migrants a deeper appreciation of the privileges and obligations of Australian citizenship, to encourage migrants towards naturalisation, and to co-ordinate the work of churches and voluntary organisations concerned with the reception and after-care of migrants. As a result the Good Neighbour Council of Victoria was established in 1950, superseding the Victorian Immigration Auxiliary which was formed four years earlier as a voluntary co-ordinating organisation to assist with reception and after-care of British migrants. By

mid-1971 the Council was supported by numerous voluntary workers, and it had about 150 centres of operation and 130 affiliated organisations.

Between 1947 and 1970 Victoria received approximately 800,000 new settlers from Britain, Germany, Holland, Italy, Greece, Malta, Austria, Spain, Denmark, Eire, Finland, France, Norway, Sweden, Switzerland, Turkey, Yugoslavia, and the United States of America, and from Central and South America. The diversity of migrant nationalities, contrasted with the predominantly British immigration before the Second World War, involved the Commonwealth Department of Immigration in new functions relating to the welfare of migrants. The variety of cultural patterns and the special needs of individual migrants caused the Department to establish its own special assimilation services. A social welfare section was established within the Department in 1949, following a survey of migrant assimilation in the previous year. The section is staffed in each State by trained social workers who assist migrants with their settlement problems. These workers and other welfare personnel provide a skilled counselling and referral service, especially in relation to problems of marital and family discord, physical and mental illness, employment and accommodation, delinquency, and social and cultural maladjustment. They work closely with the Victorian State Department of Immigration and community bodies involved in migrant welfare. In addition, they visit Commonwealth migrant hostels as well as country areas where problems of settlement arise. However, the greatest number of problems come from Melbourne and the near metropolitan area. The International Social Service assists the Department by providing casework service where more than one country is involved; a Commonwealth grant is paid to this agency. By late 1952 three social workers had been appointed to the Commonwealth Immigration Office at Melbourne, and later three welfare assistants joined the staff. There is now an establishment of five social workers and six welfare officers. As the balance of the sexes has been a matter of concern, programmes include both selection for the passages and after-care of single migrant girls. A welfare officer of the Integration Section at the Melbourne Office meets young women on arrival, providing accommodation and assistance generally during their first few weeks in Victoria. In 1968 the Department introduced a scheme whereby selected voluntary community welfare agencies could be provided with Commonwealth Grant Funds, to enable them to employ qualified social workers to work with migrants. In this way a service can be established over a wide geographic area. By early 1971, eight grants had been approved for Victoria.

With the commencement of large-scale migration from Europe at the end of the Second World War, English language training began in pre-embarkation assembly areas, followed by classes on ships, in reception and holding centres, and later, in capital cities and country towns. Correspondence courses, geared to lessons broadcast over the national network of the Australian Broadcasting Commission, were also commenced. In 1951 the Migrant Education Section within the Victorian Education Department was established in Melbourne by agreement between the Commonwealth and Victorian Governments. By 1971 the Migrant Education Section was conducting over four hundred and fifty classes throughout

Victoria. The intensive form of instruction in the English language using language laboratories, designed primarily for professional, semi-professional, and student migrants, was introduced at the Royal Melbourne Institute of Technology in October 1969, at a centre of the Migrant Education Section in May 1970, and at the Victorian Employers' Federation in October 1970. An occasional intensive course has also been conducted at Monash University during university vacations. Other courses of varying lengths have been arranged at the University of Melbourne and the Church of All Nations in Carlton. A growing number of industries provides, in co-operation with the Commonwealth, special classes for employees, and courses in elementary, intermediate, and advanced English are available at the Adult Education Centre, Melbourne. In 1970 the Commonwealth inaugurated special classes in both government and non-government schools, supplemented in 1971 by full-time English language courses at migrant hostels for children for whom an adequate command of the language is necessary before attending secondary schools.

The integration function of the Commonwealth Department of Immigration, comprising the assimilation, social welfare, and education of migrants, has expanded considerably since 1965, making available facilities such as the free translation and interpreting service provided in Melbourne, which is especially useful in dealing with social welfare cases. This expanded assistance to migrants has been necessitated by the arrival from time to time of national groups of displaced persons who have left their countries as a result of political unrest, and who often have difficult social problems to overcome. Much more emphasis, therefore, is now placed on the provision of services to cope with, and where possible reduce, the incidence of breakdown among migrants which has resulted largely from the social and cultural dislocation which accompanies attempts to settle in a new country. It was decided to encourage migrants to improve their facility to integrate into the Australian community by learning the language and customs of this country among people of their own culture, and with this aim in view, the Department appointed in 1969 a specialist officer to work with national and ethnic groups and organisations. It has been found that, given this encouragement, migrants usually move completely into the community without needing further assistance from their national groups. Attempts have been made to settle more migrants in rural areas, but generally in Victoria the tendency has been to settle around major industrial centres, particularly those established since the Second World War.

#### CO-ORDINATION IN SOCIAL WELFARE

Co-operation and liaison between voluntary and statutory agencies and within the voluntary welfare field have, as previous sections have shown, been features of Victorian social welfare over many years. More formal provision for this has, however, been made by the development of co-ordinating councils and associations. Some of these, such as the Victorian Council of Social Service and the Good Neighbour Council, have a wide general membership; others confine their interest to particular welfare fields or groups such as children, the aged, etc.

The first co-ordinating councils to be formed were the National Council

of Women, established in 1902, and the Children's Welfare Association in 1912. These remained the main co-ordinating welfare bodies until the Second World War, when the Youth Council, Victorian Council of Social Service (1946), the Good Neighbour Council (1950), and the Old People's Welfare Council, now the Council on the Ageing (1951), were formed. Social and welfare workers are also employed by municipalities.

All these co-ordinating bodies aim to provide a meeting ground and forum for agencies with common concerns and interests, as well as an avenue for joint action, and all strive to help in overcoming deficiencies in services and to discourage overlapping in social welfare provisions.

## MASS MEDIA

---

### BROADCASTING AND TELEVISION

In 1905 the Commonwealth Parliament passed the Wireless Telegraphy Act giving the Postmaster-General legislative powers to regulate radio development. Broadcasting services in Australia began experimentally and the first demonstration of radio telephony in Melbourne was carried out by a transmission from Collins House to the Aircraft Exhibition held at the Exhibition Building in June and July 1920. The following year Amalgamated Wireless (Australasia) Ltd made a series of weekly experimental broadcasts in Melbourne, and in 1922 the first proposals for regular services were put forward. In 1923 regulations were made under the Wireless Telegraphy Act to establish a broadcasting system known as the "sealed set scheme". The stations were maintained by subscriptions from listeners, each of whom used a receiver which operated only on frequencies allocated to the stations to which the subscription was paid. The receiving apparatus was sealed by inspectors of the Postmaster-General's Department so that no alteration could be made to permit reception from other stations. The subscription fees fixed by the operating companies varied from 10s to £4.4.0 depending on the station a listener desired to hear, and a licence fee of 10s was payable to the Government. The first broadcasting station in Victoria, 3AR Melbourne, was operated by the Associated Radio Company under the sealed set scheme. It began operations on 26 January 1924. 3AR, 2SB Sydney (now 2BL), 2FC Sydney, and 6WF Perth were the original sealed set stations. The sealed set scheme was abandoned as a failure after only 1,400 listeners had applied for licences.

In 1924 class "A" and class "B" services operating under licences granted by the Postmaster-General were introduced. Class "A" stations were maintained by revenue received from broadcast listeners' licences, and from the broadcasting of advertisements which was permitted for limited periods daily. Class "B" stations did not receive revenue from licence fees but only from the broadcasting of advertisements and other publicity. Listeners were free to tune to the programmes of any station provided they held a receiving licence. The first class "A" stations were those which had operated under the sealed set scheme; they were later joined by 3LO Melbourne, 4QG Brisbane, 5CL Adelaide, and 7ZL Hobart. The licence for station 3LO was granted on 22 July 1924 to the Broadcasting Company of Australia, and the station began operations on 13 October 1924; the programme of 3LO on 31 October 1924 broadcast the farewell

appearance of Dame Nellie Melba in *La Bohème* at His Majesty's Theatre. The public freely availed themselves of the new services. In the first year just over 20,000 listeners were licensed in Victoria, and by 1929 the total number of licences in Victoria had grown to 142,750. The first class "B" stations licensed in Victoria were 3UZ Melbourne, which began operations on 8 March 1925, and 3DB Melbourne, which began on 21 February 1927. The original licence for 3UZ was granted to O.J. Nilsen and Co. and the original licence for 3DB was granted to the Druleigh Business College. The licence for 3DB was transferred in 1927 to 3DB Pty Ltd, which was acquired by The Herald and Weekly Times Ltd in 1929. By 1929 there were eight class "A" and twelve class "B" stations, providing programmes to 300,000 listeners in Australia.

In 1928 the Government, after a report by a Royal Commission, decided to take over the class "A" stations and establish a system under which the technical equipment of those stations would be owned and operated by the Post Office, and the provision of programmes left to experienced private companies under contract. The technical operation of the class "A" stations, 3AR and 3LO in the case of Victoria, was assumed under this arrangement by the Post Office from 1929, and programmes were provided by the Australian Broadcasting Company under contract. The company was a combination of Greater Union Theatres Ltd, Fullers Theatres Ltd, and J. Albert and Sons. The class "A" stations were not permitted to broadcast advertisements. Up to this time Australian broadcasting appears to have developed piecemeal, and the new arrangements made between the Postmaster-General's Department and the Australian Broadcasting Company were the beginnings of a national broadcasting coverage. Considerable improvements in programmes and extended coverage were effected under the Australian Broadcasting Company. The first long distance broadcast relay in Australia had taken place in 1925 when the proceedings of the annual dinner of the Australian Natives Association were relayed by trunk line from Ballarat to Melbourne; the first interstate relay between the eastern States took place in the same year. After the Australian Broadcasting Company took control of the class "A" stations, relayed programmes between States became a feature of their service. In 1930 the Australian Federation of Commercial Broadcasting Stations was formed to protect the interests of member stations and to impose a code of self-regulation. The Federation then comprised the thirteen class "B" stations. Today it has a membership of the 116 commercial broadcasting stations in operation throughout Australia.

In 1932 the Australian Broadcasting Commission (A.B.C.) was established; it replaced the Australian Broadcasting Company as the programme authority for the class "A" stations, which were henceforth known as the national broadcasting service. There were at that time twelve such stations in Australia including 3AR and 3LO in Melbourne. The technical services remained the responsibility of the Post Office which also provided facilities for programme relays between the States, and between the city studios and the country stations. The national broadcasting service was a notable development in providing comprehensive broadcasting services throughout the Commonwealth. Previously, especially until the Australian Broadcasting Company was formed, services had tended to be restricted to the capital

cities where advertising and licence revenue were highest. The vast area of the Australian continent and the scattered distribution of population in many parts also presented difficulties in providing services to country areas. The aim of the national broadcasting service was to provide satisfactory reception of at least one national programme to listeners throughout the Commonwealth. In addition the capital cities and Newcastle were provided with two stations to provide a choice of programmes in these large centres.

The A.B.C. began to plan a comprehensive national programme service. Special programme spheres such as music, education, drama, talks, light entertainment, sport, and news were planned on a Commonwealth-wide basis. Small orchestras were established in all States and, from 1934 onwards, overseas and Australian artists of distinction were featured by the Commission for concert and broadcast performances with these orchestras. Orchestral concerts for children were regularly presented after 1933, as were broadcasts to schools and adult education talks. Special competitions and guidance from the Commission's staff were offered to encourage Australian writers. The first A.B.C. Dance Band was formed in Melbourne in 1932. As a national service, the Commission gave special attention to such essential programmes as news, weather and market information, rural services, and children's and religious programmes. The Commission's stations in country areas developed from four in 1932 to eleven in 1939. By October 1938 two national stations had been erected in each State capital, resulting in the introduction of the dual network system of light and serious programmes. These networks were later designated interstate and national, respectively, and the major programmes of each were relayed from one or other of the State capitals.

In the following years, several major technical and engineering features were incorporated in the national service. Transmitter output of 10kW was adopted for the main stations, and the so-called "anti-fading" radiator was introduced to extend the area of reception. These new mast radiators of great height (the tallest over 700 ft) became landmarks in many parts of Australia. To limit their physical height while retaining their desirable electrical characteristics, the "loaded" radiator was developed with a 60 ft diameter armature weighing 6 tons mounted at the top of the mast; this type was installed at the Victorian station 3WV near Horsham. Melbourne national stations 3AR and 3LO are an example of the operation of an "anti-fading" radiator incorporating the facility of simultaneous operation of both transmitters on the one mast.

The operating conditions of national stations were determined so as to ensure as far as possible the satisfactory reception throughout the Commonwealth of the programmes provided by the Commission as an Australia-wide operation; income for the service was provided by licence fees and later by government appropriation. Early in the development of the national broadcasting service, high frequency stations were established to provide a broadcasting service to remote areas of Australia beyond the range of medium frequency stations. The first such station was established in Victoria at Lyndhurst in 1935, and in 1971 there were eight stations in Australia in the domestic high frequency service. Coincidental with development of a national broadcasting service, substantial progress was made with the expansion of the service provided by class "B" stations; these have been



known as commercial broadcasting stations since 1929. In general, the commercial broadcasting stations were intended to provide substantially a local or regional service through separate stations servicing relatively restricted areas, income being derived from advertisements. By 1932 there were forty-three commercial stations in operation in Australia. Listeners' licences numbered 370,000. The first country commercial broadcasting station in Victoria was 3BA Ballarat, which began operations on 31 July 1930. By 1932, therefore, the broadcasting services of Australia had evolved to their present form, namely, a dual system of national and commercial services. The system may be described as a partnership of public ownership and private enterprise.

The 1930s and 1940s saw remarkable developments in commercial broadcast programming. "Ball by ball" descriptions of test cricket from England, pioneered by commercial stations, are an example. The first such broadcast took place in 1930 when the Australian team, captained by W. M. Woodfull, won the Ashes. These broadcasts involved the elaborate use of cable facilities, and by various means the atmosphere of the game was simulated. From the mid-1930s serial dramas were introduced into programmes. These flourished, and later half-hour and hour plays were broadcast, thus founding the Australian broadcast transcription industry which provided wide employment for Australian artists; from 1940 onwards, war-time restrictions on the import of transcription material completed the development of the local industry to the stage of supplying all Australian needs. Quiz and give-away programmes of a flamboyant nature were features of this period, and community singing and band music were other popular programme material. Broadcasting personalities emerged and names such as George Edwards (actor), Jack Davey (quizmaster), and Mal Verco (ventriloquist) are still remembered. Network operation of commercial stations became characteristic; first came the Major Network, to be followed by the Macquarie Network in 1938. These two large networks are still operating and provide the basis, by the pooling of the resources within each network, for producing quality programmes which would not be generally possible otherwise. The essential basis of network broadcasting also included the availability from the Post Office of landline links to stations throughout Australia. Relay of programmes between stations increased rapidly from 1930, and broadcasting emerged as a powerful medium for business advertising with network programmes sponsored by large national advertisers. A notable feature of Australian commercial broadcasting is the specialised service rendered by stations to their local communities. These services include assistance in times of emergency, annual appeals for charity, and continuing assistance with community projects.

Evidence of the recognised social importance of broadcasting at this time is provided by regulations introduced in 1935 to limit the ownership and control of stations; it appeared undesirable for this medium to be controlled by too few people. Although much more stringent controls were adopted, the same principle was later to be applied to television by legislation first enacted in 1960. Legislation in both fields has been considerably developed over the years. A single entity may not have an interest of more than 15 per cent in more than one metropolitan commercial broadcasting station in any State,

four metropolitan stations in Australia, four stations in any State, or eight stations in Australia. A person or company may not hold a shareholding, voting, or financial interest of more than 5 per cent in more than one commercial television station in the capital city of a State or in more than two commercial television stations in the Commonwealth. There is the exception for both broadcasting and television that certain more extensive interests existing before the legislation are still permissible.

The Second World War hastened the development of Australian broadcasting. The demand for news and information, the need for more entertainment in the home and in camps and front line areas, the increase in school and adult education broadcasts as children were moved to or kept home in country areas, and the increasing use of local talent as overseas artists and programme services were no longer available, can all be traced to the emergency conditions of the period. Both national and commercial stations gave their maximum help to the Government's war effort at this time. In particular, the A.B.C. developed its news service, and from 1942 until the end of the war, it presented a national 7 p.m. bulletin through both national and commercial networks. In 1946 legislation was passed obliging the Commission to establish its own independent news service.

Remarkable technical development, especially in the receiving equipment available to listeners, has occurred since services began in 1923. At first, many receivers were "crystal sets", but these were quickly followed by receivers using thermionic valves, first provided with power by batteries and then by the electricity supply mains. In the early stages most receivers were relatively cumbersome, being designed for home use, but in the 1930s portable receivers using dry batteries were developed; as receivers at that time still required the use of thermionic valves, the batteries were heavy and the receivers relatively costly to operate. After the Second World War "solid state" (transistor) devices were developed, and these performed similar functions to thermionic valves, but required much less power for operation. The development of transistor devices caused a revolution in receiving habits as receivers of very small size were produced, requiring only very low power for operation and using very small dry batteries. The emphasis had formerly been on listening in the home; since the war there has been a substantial move towards portable operation with receivers carried by individual listeners and in cars. Changes in broadcast transmitting equipment have not been as dramatic as in receivers, but there has been a steady development in equipment with a relatively rapid growth in equipment using transistors in recent years, resulting in greater reliability of operation.

In 1948 a special Board was established to control broadcasting and television in the Commonwealth, because of the notable expansion of broadcasting services, the problems created by pressure on the available limited frequency channels, and the prospect of the introduction of television. The Australian Broadcasting Control Board was analogous in concept with controlling authorities in other countries, and it assumed from the Post Office responsibility for the control and administration of the broadcasting services. The Post Office and the A.B.C. retained their responsibilities for the provision of technical facilities and programmes, respectively, for the national broadcasting service.

The Board has wide powers for the technical planning of the broad-

casting and television services, ensuring efficient operation of stations, and in respect of the commercial services, ensuring adequate and comprehensive programmes complying with its own standards. On the question of programme standards much had been done by the Australian Federation of Commercial Broadcasting Stations which had already adopted a "code" of programme standards as a measure of self-regulation. The Federation still maintains its own code alongside standards determined by the Board. The Board's standards incorporated some of the provisions which had been in the Federation's code and consolidated a number of the Board's previous rulings on programme matters, including advertisements.

The Board immediately made comprehensive plans to develop the national broadcasting service and to authorise higher power for a large number of commercial broadcasting stations. This resulted in substantial technical development and included the establishment of twenty-eight new national broadcasting stations. Stations with power of 50kW (compared with the previous ceiling of 10kW) were introduced into the service to override the increasing electrical interference and to improve reception in the more remote areas.

The Board also planned the introduction of television. Immediately after the war both Britain and America had resumed television transmissions and soon afterwards there was a potent demand in Australia for a television service, which was introduced in 1956 following a Royal Commission. It was decided that Australian television should comprise a dual system of national and commercial services; in the first stage, stations were established in Sydney and Melbourne. Commercial station HSV Melbourne was the first station to begin operating in Victoria; it commenced on 4 November 1956. ABV, the first Victorian national station, opened on 19 November 1956. Telecasts of the 1956 Olympic Games in Melbourne by ABV, HSV, and by GTV during test transmissions prior to commencement of a regular service provided an auspicious introduction of television to Victoria. The Government had decided to introduce television in stages to avoid the difficulties experienced in many overseas countries. Approval was given in 1957 for services in the remaining capital cities and subsequently services have been extended to thirty-seven country areas. Services have been approved for a further thirty-nine country centres.

The Australian television system operates with a 625 line screen and a picture frequency of 25 per second. The national stations and most of the commercial stations operate on the same power of 100kW effective radiated power. National and commercial stations are located on common or nearby sites with the object of ensuring generally equal coverage and to simplify receiver aerial installations. In many cases the two services share facilities. As adequate television reception is virtually dependent on line of sight conditions between transmitting and receiving aerials, many localities in "shadow" areas receive poor service in an area of generally good reception. With overall coverage of the more densely populated areas practically achieved, efforts are being directed to improve reception in those areas; translator stations, relatively low powered devices which receive the signals of a parent station and retransmit them on a different frequency, have proved a popular and effective means of achieving this.

Before licences were granted for commercial television services, the

broadcasting legislation was amended to apply to the grant of licences for both commercial broadcasting and television services by a system of public invitation for applications for a licence issued by the Postmaster-General. Applications are the subject of public inquiries by the Australian Broadcasting Control Board ; the first inquiries under this system were those for the commercial television licences in Sydney and Melbourne, and public inquiries have since been held into the granting of all licences issued.

Television is not only a major source of entertainment and relaxation, with pictorial coverage of sport, news, and major events of public interest. Sectional audiences are also catered for by a wide range of programmes which include information and entertainment for women in the home, talks and discussions, educational and rural matters, and programmes directed to children. All stations are obliged to provide time for religious programmes. The entertainment programmes consist mainly of television drama, comedy and variety, panel and quiz programmes, and feature films ; on the basis of regular and recurring costs, news in all its aspects is a major programme item. In 1968 some stations developed a breakfast-time programme consisting almost entirely of news and commentary which then was a significant development in television's service to the community. Hours of service of television stations have been steadily increased and some stations are now operating for more than 100 hours weekly.

When television services were introduced in 1956 the Australian radio manufacturing industry was in a position to provide most of the receivers required. The receivers were designed around the use of thermionic valves, with picture screen sizes mainly of 17 inch diagonal measurement. Succeeding years saw the introduction of screens of up to 25 inches; increased angles of deflection of the electron beam have enabled receiver cabinets to become more compact. Solid state techniques have not been extended to television receivers to the same extent as to broadcast receivers, largely because of the greater power requirements and higher frequencies involved, but there is an increasing tendency towards their use. Such development may decrease the size of receivers, but the picture tube is ultimately the major limiting factor in that direction. The early television transmitting stations used mainly imported equipment, but the majority of later transmitters were of Australian manufacture ; some transmitters have since been exported to other countries. Solid state techniques have been introduced in the lower power stages of transmitters and in television studio equipment. A major advance in studio equipment was the overseas development of the videotape recorder shortly after television had begun in Australia ; it has had a pronounced effect on studio production techniques, and for outside telecasts such recorders are invaluable.

One of the basic principles on which the Government approved the inauguration of television services was that satisfactory programme standards should be established and maintained to avoid the misuse of the medium and to facilitate the positive contribution which it could make to the welfare of the people. Programme standards for commercial stations determined by the Australian Broadcasting Control Board some months before services began require the observance of ordinary good taste and commonsense, respect for the individual needs of the public, proper regard for the special needs of children, and respect for the law and social

institutions. They contain special provisions to protect children; programmes televised between 4.30 p.m. and 7.30 p.m. on weekdays and at any time before 7.30 p.m. on Saturdays and Sundays must be suitable for children or family viewing. All films imported for television are subject to classification by the Chief Film Censor according to the Board's standards. The standards also limit the extent and frequency with which advertising matter may be transmitted. The effects of television on children have been a subject of interest, and in 1965 the Advisory Committee on Children's Television Programmes, appointed by the Australian Broadcasting Control Board, issued a leaflet entitled *Helping children to use television wisely*. The leaflet has had a very wide circulation—over 300,000 copies have been issued. It suggests broadly that parents should guide their children's television viewing to complement other activities.

Television has had profound effects on broadcast programming. It soon established a strong attraction for the formerly prime listening times of 6.30 p.m. to 9.00 p.m., and day-time periods became the times of highest audience for radio; this applied especially to the breakfast and pre-noon period. At the same time the programme format of commercial radio changed, especially in the case of capital city stations. Former programmes such as music, drama, and quizzes which had been provided in quarter, half, and hour units were replaced with fewer types of programmes, which comprised modern music, news, current affairs, and conversation and services. Musical programmes featured the most popular tunes; the news, formerly broadcast in three or more comprehensive news programmes at fixed and widely spaced times of day, was provided much more frequently with summaries every hour or more often, and important news flashes were injected into programmes. Service programmes included weather reports, road traffic reports, beach shark patrols, etc. Advertisers' use of radio changed largely from sponsorship of programmes to spot advertising within programmes provided by the stations themselves. In particular, radio drama, a feature of pre-television programmes, declined markedly, especially in evening hours; in this field television had an obvious advantage. These developments came to result in a move by radio into fields better suited to it than to television. Radio's special qualities are the ability to provide frequent up-to-date news and services, because of its flexibility and immediacy of presentation. The trend was intensified by the transistorised receiver, the greatly increased installation of radio receivers in cars, so providing a large out-of-doors audience, and the replacement of group listening in the home by individual receiver ownership. Most homes came to have more than one receiver. The emphasis in the community on youth with its demand for popular music, and the demand for world news and views have completed the development. In recent years there has been considerable expansion in the type of programmes which depend wholly on speech, such as discussions, interviews, and critical commentaries. An emphasis in these programmes on public service and enlightenment has revitalised commercial broadcasting as a communication medium.

Because of its more specialised programme targets, television did not affect the broadcasting services of the A.B.C. as much as those of the commercial radio stations. Such changes as did occur reflected

the growing sophistication of audience tastes and programme design. From 1947 to 1950 the Commission established permanent symphony orchestras in all States (the Victorian Symphony Orchestra in 1949, renamed the Melbourne Symphony Orchestra in 1969) and its concert organisation also spread to major provincial centres. Youth subscription concerts had been introduced in 1947, and overseas orchestras as well as artists were brought to Australia, resulting in enhanced appreciation of fine music. In the talks field, general talks gave way to more discussions and documentaries, commentaries and information on world affairs, surveys of local history and heritage, and examinations of the developments in science and of social problems. Drama and feature productions retained their popularity both in day-time and evening hours, while the old variety programme gave way to more sophisticated humour and to programmes of selected music, annotated and presented by specialists.

In 1963 a major reorganisation of the Commission's broadcasting network system, "Newrad", was introduced to improve the balance of programmes for Third Network (or regional) listeners, while the more general First and Second Networks were replanned to give a wider balance of programmes. In 1964-65 the Commission took over from the Postmaster-General's Department the control of radio technical services in studios and control rooms of the national broadcasting service; the Department continues to provide and maintain the transmitters.

Television programmes themselves have, in the meantime, been the subject of considerable development from the point of view of standards. The community has tended to depart from previously accepted standards, and this has been reflected in television programmes. This development in Australia possibly began with the introduction of the satirical type of programme in the mid-1960s. In respect of these developments the Control Board has applied its programme standards against the background of current standards in the community; however, in the Board's view, greater care and discretion should be exercised in television than may be necessary in other media which can be more easily controlled by the exercise of parental or similar responsibility.

The appointment of the Select Committee of the Senate in 1962 to inquire into and report on the production of films and programmes suitable for television is another instance of the intense interest in broadcasting and television media. The basic concern of the Committee was the encouragement of Australian programmes on television, and, although no formal decision has been made by the Government on the Committee's report, action by the Control Board has given effect to some of its views. Only a limited number of the Committee's recommendations were directly related to television; the others involved far-reaching proposals relating to the film industry and the live theatre.

A matter of particular interest in the development of both broadcasting and television has been the part played by the use of Australian artists in portraying the Australian character and way of life. The Broadcasting and Television Act places an obligation on the A.B.C. and licensees to use as far as possible the services of Australians in broadcasting and television programmes.

When services began, commercial television stations experimented freely

with Australian programmes ; some, based on popular broadcasting programmes, were found unsuitable for television and were discontinued after a short trial. Audience measurement surveys showed that the public preferred imported programmes to live productions of the quality then produced, and by the end of 1959 the majority of commercial stations were televising almost entirely imported programmes during the popular viewing hours. In 1960, after commercial stations had been established in all capital cities, a requirement was imposed for the televising of a specified overall proportion of Australian programmes, of which a certain amount was to be during peak viewing periods. This marked the beginning of the development on commercial stations of Australian television programmes which, with the expansion of the services to country areas from 1961 to 1965, was associated with the exchange of programmes by direct relay and the use of videotape and film. The obligation imposed on licensees in 1960 to use Australian programmes has been expanded and programmes now must be 50 per cent Australian overall. In each month between 6 p.m. and 10 p.m. not less than 50 per cent of programmes must be Australian, not less than six hours of first release Australian drama must be presented between 6 p.m. and 10 p.m., and four hours of programmes for children of school age produced in Australia must be presented. Improvements in the quality of Australian programmes have brought some to world standard in production ; certain Australian programmes now enjoy wide popularity and are included in the top twenty television programmes throughout Australia. Some have also been sold to other countries. Since 1960 there has been a requirement that all television advertising material must be of Australian production, so giving considerable encouragement to the film industry.

The A.B.C. has been prominent since the inception of broadcasting and television in the production and presentation of Australian programme material in both media. In broadcasting its achievements included the establishment of symphony orchestras, a concert organisation, and the presentation to the Australian public of outstanding overseas artists. In television the Commission has given special encouragement to Australian writers and artists. More than half of the Commission's television programmes are of Australian origin.

Special features of Australian broadcasting services include the broadcasting of the proceedings of the Commonwealth Parliament, and the Australian overseas high frequency broadcasting service, the programmes for which are provided by the Commission. Parliamentary proceedings are broadcast by one of the two national stations in Melbourne ; the service was introduced in 1946. High frequency services, directed to overseas listeners, began in 1939 as a war-time measure with a 10kW transmitter ; a high power station was established for the service at Shepparton in 1944. It is now known as " Radio Australia ". Radio Australia aims to give listeners in other countries a better understanding of Australia by providing accurate information about the way of life, through objective news reporting, talks, and features. As in the case of the national broadcasting service, the technical facilities and operation of Radio Australia are provided by the Post Office.

Historically, the Post Office has always been closely associated with the growth and operation of the broadcasting and television services. The Department has established and operated the transmitters

for both the national broadcasting and television services since their inception. The relay of programmes between stations is an important feature of the services, and facilities for this are provided by the Post Office. In particular, a system of Post Office communication links is the whole basis of the national broadcasting and television services. On behalf of the Australian Broadcasting Control Board, the Department also investigates the causes of interference to reception, and assists listeners and viewers in minimising them.

At 30 June 1971 broadcasting and television services in Victoria comprised 5 national broadcasting stations, 20 commercial broadcasting stations, 8 national television stations, 9 commercial television stations, 7 national television translator stations, and 7 commercial television translator stations. Combined viewers' and listeners' licences totalled 690,464 and there were 115,613 and 64,298 separate viewers' and listeners' licences, respectively. Broadcasting services were being provided to over 99 per cent and television services to over 96 per cent of the Australian population. Throughout Australia the aggregate weekly hours of operation of the services were 7,404 of television and 26,220 of broadcasting.

#### THE PRESS

On 20 January 1848 Charles Joseph La Trobe, reporting to Governor Fitz Roy in Sydney, described the nine principal newspapers published in the Port Phillip District. His opinion of the nine journals was low: "The general style, tone, and character of the Port Phillip press has been hitherto as discreditable to the District, as the little influence which it may have exercised at home or abroad has been decidedly injurious".

John Pascoe Fawcner had published the *Melbourne Advertiser*, the first Victorian newspaper, within three years of the District's settlement. The first issue of four hand-written foolscap pages appeared on Monday, 1 January 1838. Probably no more than thirty copies were made of each of the first nine issues; the tenth issue, published on 5 March 1838, was the first to be printed. Fawcner had secured a quantity of type, and as noted by the historian James Bonwick his "thoroughly orthodox" construction of the paper indicated he was "well acquainted with the details of publication". However, he had failed to obtain a printer's licence from Sydney, and Lonsdale suppressed the paper after seventeen issues; in the words of Bonwick, "the light of Melbourne intelligence was suddenly extinguished". In October 1838 a printer, Thomas Strode, arrived from Sydney with a quantity of type which had been discarded as unserviceable and a wooden press which he installed in a four room cottage in Queen Street. On 27 October he printed the first issue of the *Port Phillip Gazette*, a four page weekly and Melbourne's first licensed newspaper; George Arden was editor and co-proprietor. It was priced at 1s, and although the advertisements covered a wide range "from baby linen to walking stallions", the circulation was small and revenue meagre. When not writing copy Arden canvassed subscriptions and advertisements, and Strode frequently composed and printed the paper single handed. In 1839 the *Gazette* became a bi-weekly, appearing on Wednesdays and Saturdays. Fawcner,



having obtained a licence, published the first issue of the *Port Phillip Patriot and Melbourne Advertiser* on Wednesday, 6 February 1839. It was also a four page weekly selling for 1s, and its aim to advise the public and uphold free speech was stated in blank verse at the head of the chief editorial article in each issue. On 29 April 1839, 12 days after the *Gazette* had done so, the *Patriot* became a bi-weekly, appearing on Mondays and Wednesdays. It was first printed at Fawkner's Hotel at the corner of Collins and Market Streets, but the press was later moved to Market Square.

The appearance of a second newspaper introduced a party spirit; as Bonwick wrote, "party language assumed a bitterness unknown before the rivalry of the Press". Fawkner's *Patriot* supported the settlers and ex-pirees from Van Diemen's Land, while the *Gazette* aspired to be the organ of the official and moneyed classes. Both were lively: Fawkner's, in the words of "Garryowen", was "always ungrammatical, often illogical, but invariably personal and offensive"; George Arden's was more fluent, but he was equally ready to quarrel in print. In May 1839 Arden, who had a history of censures for libel, was fined £50 and sentenced to 24 hours imprisonment for libelling Willis, the resident Judge at Port Phillip; he was again in trouble with Willis in October 1841; then he tangled with Fawkner, and in February 1842 was charged with writing an article tending to bring the administration of justice into contempt. He was fined £300 and given a 12 month prison sentence. Freed in May 1842, he was again fined for libel before the end of the year. He and Strode had dissolved their partnership, and Strode moved to Adelaide, then north to the Murray River, and finally north again to Maitland, where he founded the *Gazette*. Some years later he returned to Melbourne where he died on 1 May 1880.

The *Port Phillip Herald*, Melbourne's third newspaper, began publication on Friday, 3 January 1840. Like its contemporaries it sold for 1s, but unlike them, it began as a bi-weekly issued on Tuesdays and Fridays. The publisher and proprietor was the Anglo-Indian George Cavanagh, who had come to Sydney and eventually became a journalist, founding the *Sydney Gazette* in 1836. He brought type, a press, compositors, reporters, and an editor, William Kerr, to Melbourne to establish the *Port Phillip Herald*, of which Joseph Thompson was the printer. Cavanagh chose the motto "Impartial—not neutral", although Fawkner described the *Port Phillip Herald* as "the most intolerant, bigoted and lyingly-censorious journal in the colonies". It did not prevent him hiring Kerr to edit the *Patriot* in 1841, although the association did not remain amicable for long. By 1844 Kerr had changed the *Patriot's* policy to support the views of urban rather than rural Port Phillip and was vilifying his proprietor in editorials. Fawkner, who seemed unable to control the ebullient Kerr, was forced to the desperate expedient of replying to his own editor's abuse through the columns of the rival *Port Phillip Herald*. The bizarre situation was resolved when G. D. Boursiquot bought the *Patriot* in 1845. Kerr started his own newspaper, the *Argus*, in the following year.

Fawkner had many associations, direct and indirect, with early colonial newspapers. His first apprentice, William Beaver, whom he employed in June 1839, subsequently founded the *Corio Chronical and Western District Advertiser*, the second newspaper to be established at Geelong. Richard Osborne, Fawkner's second apprentice, was proprietor of the *Warrnambool*

*Examiner* from 1851 to 1880. John Davies, one of his reporters on the *Port Phillip Patriot*, settled eventually in Tasmania where he founded that State's principal metropolitan daily, the *Hobart Mercury*. The most celebrated of Fawkner's newspaper associates was James Harrison, who joined him from Sydney as a compositor for the *Patriot* in 1839. About 18 months later Fawkner sent Harrison to Geelong to establish the first country newspaper in the Port Phillip District, the *Geelong Advertiser*, a weekly. The first issue appeared on 21 November 1840. The *Geelong Advertiser*, now a daily, is Victoria's oldest newspaper. Harrison, later an editor of the *Age*, invented a system of refrigeration which stimulated the Australian meat export trade. He was a convinced advocate of protection for Australian industry before David Syme adopted the cause. After two years as editor for an absentee owner, Harrison joined with John Scumble to buy the *Geelong Advertiser*. Soon afterwards he became sole owner, and exerted considerable influence by his fearless but generally fair-minded journalism. His policy was directed for the most part to the squatting interests, but of the nine newspapers described by La Trobe in his 1848 report, the *Geelong Advertiser* was the only one he praised: "On the whole, it has been remarked to contain more useful matter, and to be more creditably and decently conducted than any other paper in this District".

Three other country newspapers were founded early. One, the *Portland Mercury and Port Fairy Register*, made a fugitive appearance in 1842, but was not mentioned by La Trobe in 1848. The others, the bi-weekly *Portland Guardian and Normanby General Advertiser*, established in 1842, and the weekly *Portland Gazette and Belfast Advertiser*, founded the following year, were strongly disapproved by La Trobe. He considered both to be "of very low character". The two completing the Superintendent's despised nine were the *Argus*, launched on 14 June 1846 by William Kerr, and the *Albion*, a weekly dating from 1847, said by La Trobe to possess no character, being "merely an offshoot of the *Argus*". The latter was mainly responsible for keeping alive "the violent and disgraceful party spirit that has sprung up in Melbourne". Altogether La Trobe believed that support of these papers was a stigma on the inhabitants as the *Port Phillip Patriot* systematically dealt "in abuse and gross misrepresentation of persons and facts", while the *Port Phillip Gazette* seemed "to possess no distinctive principles or characters". Apart from the *Geelong Advertiser* there was hope to be discerned only in the *Port Phillip Herald* which, "although without talent or fixed principles, is upon the whole more decently conducted, and is admitted into houses where other local papers are excluded".

La Trobe's dislike is understandable, but it would be erroneous to assume that the quality of the newspapers was as low as he said. He was accustomed to the British style of serious newspapers of information, such as *The Times* which catered for the professional and commercial classes; it was not until the abolition of the newspaper tax in Britain in 1853 that the flood of so-called "popular" papers was released. Australia, where the stamp tax had been abolished in 1830, on the other hand presented the response of free men to colonialism. The rise of the Australian press paralleled that of the independent press in America and Canada. The collision of the developing commercial classes with colonial authority, and

the growing demands of the urban populations for a voice in their own affairs are vividly reflected in the pages of the first Australian newspapers. In Melbourne, where the first settlers had come in defiance of the Government in Sydney, the voice raised against the administration was loud, impolite, and frequently angry.

Victoria's first newspapers could not afford to be genteel; the population was small and their circulation restricted. According to La Trobe's estimate the *Port Phillip Herald* enjoyed the largest circulation, a mere 800 copies, the *Port Phillip Patriot* ranked next with a circulation of 600 copies in town and country, the *Argus* had a circulation of about 400 copies, the *Port Phillip Gazette* about 350 copies, and the *Albion* 50 copies. Of the country newspapers the *Geelong Advertiser* and the *Portland Gazette* enjoyed circulations of 300 copies each. The *Portland Guardian* was supposed to have a circulation of about 200 copies and the *Corio Chronicle* about 100 copies. Colonial Victorian newspapers, therefore, sought to appeal to the widest possible public to attract advertisements as well as readers; they could not exist solely for the benefit of a small but influential group. Their reading fare was a rich mixture; local news, foreign items culled from overseas newspapers, gossip and scandal, political news and comment, crime and sensation, and odd snippets of useful information on whatever topic caught the editor's fancy. Partisan arguments on topical questions were presented vigorously and with the strongest personal vituperation. These newspapers were serving a developing society which was without its own distinct literature or culture; they were very much an index of its interests and passions.

From the point of view of such men as La Trobe, matters would only grow worse. As the population grew, so the opportunity for other newspapers to find an audience was enlarged; by 1850 Melbourne had seen several rise and disappear. In order of appearance, so far as it can be established, they included the *Weekly Free Press and Port Phillip Commercial Advertiser*, the *Melbourne Times*, the *Melbourne Weekly Courier*, the *Standard and Port Phillip Gazette*, the *Melbourne Courier*, the *Observer*, and the *Melbourne Family Journal*. They were fugitive publications, surviving mere weeks or a few months at the best. Except for the record of their titles most have vanished utterly, leaving only an occasional issue preserved by chance in a library file or in a family collection of documents. The spread of newspapers through the country was naturally slower. In addition to the two Geelong and three Portland newspapers named earlier, only two other country journals had appeared by 1850, both in Geelong. They were the *Victoria Courier and Working Man's Advocate* and the *Victoria Colonist and Western District Advocate*. The earliest issues of each in the State Library date from 1849.

Victoria's first daily newspaper was published in this period. It was the *Melbourne Daily News*, founded by George D'Arley Boursiquot, an actor, elder brother of Dion Bourcicault, playwright and actor and father of the actor-manager Dion Boucicault\*. Boursiquot became a full-time journalist, working first as a reporter for the *Port Phillip Herald*. He founded the short-lived bi-weekly, the *Standard and Port Phillip Gazette*,

\* Dionysius George Boucicault (1859-1929) was the son of Dionysius Lardner Bourcicault (1822-1890), who began to drop the "r" from his name from about 1860. George D'Arley Boursiquot preferred an anglicised form of the family name.

in 1844, bought the moribund *Port Phillip Patriot* in the following year, and three years later founded the *Melbourne Daily News*, which incorporated the *Patriot*. The first issue of the *Melbourne Daily News* appeared on 1 October 1848. A four page paper with seven columns to a page, it carried an average of eighty advertisements daily, and appears to have been a commercial success.

Between 1850 and 1860 a great expansion of Melbourne and country newspapers took place. The discovery of gold soon after the separation of the Port Phillip District from New South Wales brought an influx of population, and on the goldfields some enterprising journeyman printer usually appeared to start a newspaper. In Melbourne, suddenly the richest metropolis in Australia, large numbers of newspapers were started and died as suddenly. However, some developed: the *Argus*, which La Trobe declared in 1848 to have a circulation of only 400 copies, had grown to a circulation of 5,000 four years later, and its advertising revenue soared from a mere £13 to £800 a week by July 1852 when the size of the paper was doubled and the price was cut from 3d to 2d. Some other papers were not so fortunate. The *Melbourne Weekly Dispatch* first appeared early in 1851 but closed soon after gold was discovered, as the entire staff deserted to go to the diggings. The *Port Phillip Gazette* disappeared in 1851. Thomas McCombie, who had bought the copyright of the paper for £50 in October 1844, conducted it under the original name until 1 April 1851, when it was renamed the *Melbourne Times* and became a daily under the editorship of William Kerr. Two months later George Boursiquot bought the paper and closed it, thus clearing from the field a rival to his *Melbourne Daily News*. However, Boursiquot's interest in Melbourne journalism was declining. At the end of 1851 he sold the *Melbourne Daily News* for £4,200 to Edward Wilson, who in partnership with J. S. Johnston had bought the *Argus* in 1848 from William Kerr for less than £300. It proved to be a very profitable purchase although Wilson, soon to be joined in partnership by Lachlan Mackinnon and Alan Spowers, was a journalist and not a financier; when Wilson died in 1878 the net profits of the *Argus* were running at an annual figure of £22,000 to £24,000 and the paper was acclaimed as "*The Times of the Southern hemisphere*".

The one contemporary of the *Argus* from the founding days of Melbourne journalism had undergone a transformation by then. In 1849 the *Port Phillip Herald* became the *Melbourne Morning Herald*. It was edited by Edmund Finn, the celebrated "Garryowen", whose service with the paper began in 1845 and continued for 13 years, during which time it became recognised as the organ of the Roman Catholic Church in Victoria. A syndicate bought the *Herald* in 1854, but the paper continued to encounter difficulties, reverting to bi-weekly publication at one stage. David Syme, proprietor of the *Age*, took control in November 1868, and before selling the *Herald* two years later converted it to an evening daily newspaper. The *Herald* remains today as Melbourne's only evening newspaper, the survivor with the morning daily, the *Age*, of the city's earliest newspapers.

The *Age* first appeared on 17 October 1854, published by the merchants John and Henry Cooke. It was a daily of eight pages of six columns selling at 6d, and issuing from a building in Elizabeth Street. The new paper,

announced by its nonconformist proprietors as "a journal of politics, commerce and philanthropy", had shaky beginnings. The Cookes were soon succeeded by a co-operative proprietorship formed by the paper's printers, but they prospered no more than the founders. In 1856 the editor, Ebenezer Syme, and his brother David bought the paper for £2,000. David, who had had no success as a gold miner, worked as a road contractor, while Ebenezer produced the paper. The *Age* had been a strong advocate of the miners' cause at Eureka, and Ebenezer's trenchant pen in support of radical interests drew admiration but little circulation. On 13 March 1860 Ebenezer died, and David, then 33 years old, took over as manager and editor. It was the beginning of the outstanding career in nineteenth century Australian journalism. By the 1870s the political power and influence of the *Age* was so formidable that it was commonly believed that no Victorian Government would dare act on an important issue without first consulting Syme's wishes.

More Melbourne and country newspapers were founded in the decade of gold's discovery than in any comparable period until the land boom years towards the end of the century. Their titles were as varied as their aims. In Melbourne they included the *Express*, the *Reformer*, the *Auction Mart*, the *Banner*, the *Melbourne Illustrated News*, the *Gold Diggers' Advocate*, the *Illustrated Melbourne Family News*, *Melbourne Punch*, the *News Letter of Australasia*, the *Leader* (which survived until 1956), the *Empire of the South*, *My Notebook*, *Bell's Life in Victoria*, the *Examiner and Melbourne Weekly News*, the *Illustrated Melbourne News*, the *Melbourne Evening Mail* (the first, but short-lived, evening daily newspaper in Victoria), the *People's Tribune*, the *Colonial Mining Journal*, the *Economist*, the *Christian Times and Australian Weekly News*, and late in 1858, the first foreign language newspaper, *Journal de Melbourne*, followed in 1859 by *Victoria Deutsch Press* and *Melbourner Deutsch Zeitung*. Three more Western District papers were founded before the first mining camp journal. In 1851 the *Port Fairy Gazette* and Geelong's *Victorian Advocate and People's Vindicator* were published, and the *Mercury and Victorian Standard* appeared in Geelong the following year. The first miner's newspaper, the *Mt Alexander Mail*, was published at Castlemaine in May 1854. The *Creswick Weekly Chronicle* and the *Kilmore Standard of Freedom* appeared in 1855. Ballarat and Bendigo acquired three newspapers each in 1856: the *Times* of Ballarat in March; the *Bendigo Weekly Advertiser*, the *Courier of the Mines and Bendigo Daily* and the *Ballarat Star* in July; the *Ballarat Miner and Weekly Star* in August; and the still surviving *Bendigo Advertiser* in December. In September 1856 the first Melbourne suburban newspaper, the *Williamstown Chronicle*, was published. Beechworth, Kyneton, and Maryborough acquired newspapers in 1857, as did the Melbourne suburbs Prahran and South Melbourne. Ararat, Heathcote, Maldon, and Richmond newspapers appeared in 1858; in the following year papers were published in Chiltern, Daylesford, Port Albert, and Footscray, and Williamstown acquired a second suburban journal, the *Williamstown Independent*. In 1860 the *Hamilton Spectator*, which survives today, was founded.

Evening newspapers began to appear with increasing frequency in Melbourne from 1860, although most were short lived. The *Evening News* (1862) and the *Evening Star* (1868) were only two evening dailies among the twenty-two metropolitan newspapers founded between 1860 and 1869.

Other publications of some note included the *Advocate* (1868), the *Australasian* (1864—now the *Australasian Post*); the *Daily Telegraph* (1869), the *Weekly Times* (1869), a forerunner of the surviving journal of that title, and the curiously named *Southern Ray, Yeoman and Australian Acclimatiser*. Country and suburban newspapers were established during the decade in Hawthorn, Inglewood, Rutherglen, Sale, Dunolly, Smythesdale, Talbot, Echuca, Gisborne, Majorca, Avoca, Collingwood, St Arnaud, Tarnagulla, Woods Point, Bacchus Marsh, Alexandra, Coleraine, Rose-dale, Benalla, and Jamieson.

The spread of country and Melbourne suburban newspapers continued from 1870, new publications rising to take the place of those which did not survive. Port Melbourne and Romsey acquired their first newspapers in 1870, and in 1875 newspapers began in Bairnsdale, Beaufort, Buninyong, Colac, Fitzroy, North Melbourne, Stawell, and Wangaratta. Four years later Camperdown, Drouin, Kangaroo Ground, Shepparton, and Warragul had their own newspapers, and Bright, Eaglehawk, and Tatura obtained newspapers in 1880. By 1900 there were 250 Victorian country and Melbourne suburban newspapers in existence. The country and suburban newspaper total had fallen to 212 by 1940 and has remained roughly constant since then. A marked development has been the improvement in content and presentation of suburban newspapers, many of which are issued free. Several range in size to 40 pages and claim a circulation of 30,000 to 40,000 copies weekly. Some are owned by the metropolitan daily newspapers, which have found them a profitable investment.

Newspapers aimed at religious or other specialised interests began to appear after 1870. They included the *Licensed Victuallers' Advocate* (1877), the *Jewish Herald* (1879), the *Irishman* (1872), the *Abstainer* (1889), the *Daily Australasian Shipping News* (1888), the *Literary News* (1882), *War Cry* (1883), the *Vigneron and Orchardist* (1891), the *Chinese Times* (1902), the *Worker* (1893), *Socialist* (1906), *Labour* (1907), the *Rural Worker's Gazette* and the responding *Land Owner's Gazette* in 1910, *Stock and Land* (1914), *Countryman* (1917), and the *One Big Union Herald* in 1918. Sporting newspapers emerged in 1882 when the *Sportsman* first appeared. It was followed by the *Sporting Echo*, the *Sporting Wire*, and the *People's Weekly* (or "Pink 'un") in 1899, and *King of Sport* in 1906. The surviving bi-weekly *Sporting Globe*, successor to them all, was not founded until 1922. Women's interests were catered for by the *Australian Society News* (1881), *Table Talk* (1885), the *Australian Woman's Sphere* (1900), *Vanity Fair* (1903), and *Woman's News* (1905). None of these has survived.

Some publishers chose extraordinary names for their publications. *Sam Slick in Victoria* appeared in 1879 and *Babylon* in 1880; the *Ant* was published in 1890, when the *Blade*, the *Bohemian*, and *Gossip* also appeared. The *Boomerang* was published in 1894, the *Search Light* in 1896, and that splendid medley the *Australian Police News and Music and Drama* in 1895. All were ephemeral and most specialised in sensation, crime, and exposure. These papers were the "popular press", meeting a popular demand. The paper which benefited most from the demand for a more popular journalism than that provided by the two dominant morning newspapers, the *Age* and the *Argus*, was the *Herald*.

It was one of the Australian evening dailies which the Sydney journal, the *Bulletin*, castigated in 1889 for purveying lurid information about prize-fights, murders, divorces, or breach-of-promise cases. About that time, the circulation of the *Age* was nearly 100,000 copies daily, the largest in Australia. The *Herald* reached a daily circulation of 50,000 in 1900, and the *Argus*, the conservative rival of the radical *Age*, had a circulation averaging some 70,000 copies daily.

Early Victorian newspapers were enterprising and efficient in their business arrangements. The newsagency system of newspaper distribution had been established by 1870. As early as 1872 the *Argus* joined the *Sydney Morning Herald* and the *Adelaide Register* in a shared service of cabled news from overseas, costing each partner between £8,000 and £9,000 annually. Also, journalists showed ingenuity in "beating" competitors to the news; there are accounts of *Argus* reporters monopolising telegraph wires by instructing the operator to transmit passages from the Bible.

Although Federation reduced the political power of the press generally in Australia, its effect was less immediately apparent in Victoria because the Commonwealth Parliament remained in Melbourne until 1927, and the traditional preoccupation of such newspapers as the *Age* and the *Argus* with serious affairs of politics gave each a seeming weight and influence beyond its true measure. Consequently, both were slow to appreciate the need for such modernisation as clearing the front page of advertisements to open it to news, or to recognise the strength of the challenge from the new style of pictorial journalism. That form of newspaper reached Victoria on 11 September 1922 when the *Sun News-Pictorial* was first published. It was one of a stable of newspapers which the Sydney-based Denison group sought to introduce to Melbourne, as were the *Midnight Sun* first published on 4 September 1920 and the *Evening Sun*, published on 4 April 1923.

The Denison attempt to publish in Melbourne was opposed by Keith (later Sir Keith) Murdoch (the editor of the *Herald*), who had once been a reporter for David Syme's *Age*, and had learned modern newspaper techniques in London's Fleet Street under Lord Northcliffe. The Denison group retreated to Sydney when Murdoch bought the *Sun News-Pictorial* in 1925 with the *Evening Sun*, which he closed. He concentrated his efforts on establishing the *Sun News-Pictorial* and succeeded beyond expectation; today it has a circulation of more than 650,000, the largest of any Australian newspaper and treble the circulation of its principal Melbourne competitor, the *Age*. From the Melbourne headquarters of The Herald and Weekly Times Ltd, the joint stock company which owned the *Herald* and a number of other newspapers and periodicals, Murdoch widened the company's interests to cover South Australia, Queensland, Western Australia, and Tasmania, as well as such related fields as radio broadcasting and newsprint manufacture. The strength of The Herald and Weekly Times Ltd in Melbourne was demonstrated when the *Argus* sought to publish an evening daily, the *Star*. The first issue appeared on 28 October 1933, with a circulation of 250,000 copies. By May 1936, when forced out of existence by competition from the *Herald*, the circulation of the *Star* had declined to 60,000. Similarly in 1969 when the *Age* commenced publishing an evening daily paper, *Newsday*, on 29

September, competition from the *Herald* was sufficiently strong to ensure its closing down after publication of 183 issues. The *Herald*, Melbourne's only evening daily newspaper, has a circulation exceeding 500,000 copies. The *Age's* circulation is some 190,000 copies daily. The *Argus* ceased publication in 1957, when its circulation stood at about 170,000 copies.

In the past thirty years there has been a notable increase in foreign language newspapers in Victoria to cater for migrants. They include *L'Avanguardia Libertaria* (1930), *Giornale Italiano* (1936), the Greek newspaper *Phos* (1937), and since 1950, *Il Globo*, *Hlas Domova*, *Tygrdnik Kalolicki*, *Die Neue Welt*, *Australian-Greek*, and *Neos Kosmos*.

A Melbourne edition of the nationally circulated daily newspaper, the *Australian*, began publication in 1964, and Melbourne had three morning dailies for the first time since the disappearance of the *Argus*. A strong sabbatarian tradition had prevented the emergence in Victoria of the Sunday press, which spread from Sydney to other Australian capitals after the founding in 1895 of the *Sydney Sunday Times*. Publication of Sunday newspapers was illegal in Victoria until the law was amended in 1969. The *Sunday Observer*, Victoria's first regular Sunday newspaper, commenced publication in September of that year. In February 1971 the *Australian* launched a national Sunday newspaper, the *Sunday Australian*, which, however, merged with a Sydney paper in 1972. The *Sunday Review* appeared in October 1970. In March 1971 the *Sunday Observer* ceased publication and another Sunday paper, the *Melbourne Observer* commenced publication.

#### PUBLISHING

Book publishing in Victoria, as in older countries, developed as an adjunct to printing or bookselling. The printer was the book producer or manufacturer; the bookseller placed it before the public. The publisher (who in Britain until early in the nineteenth century was generally a bookseller as well) emerged as a link between author, printer, and bookseller. He usually accepted financial responsibility for publishing a literary work, arranged for its printing, publicised it, and sold it to the booksellers. In many cases he commissioned authors to write books on subjects which he had suggested. Until late last century it was customary for an author to sell his copyright to a publisher for a lump sum; this was gradually replaced by the royalty system, where the author retains the copyright and the publisher pays him a royalty (normally 10 per cent of the published price) on every copy sold. In Victoria the separation of publishing from kindred activities has been much slower than in older and more populous communities. There were no publishers as such before 1918, when three publishing houses were launched; two of these ceased publishing in the early 1920s; the other survived only until the 1930s. Publishing was an expensive and risky business. The publisher needed a bookshop and a printing works or agencies for overseas publishers in order to succeed, and as a result many authors had to finance their own works.

The first book to be published in Victoria was George Arden's *Latest information with regard to Australia Felix* which Arden and Strode printed and published at their *Port Phillip Gazette* office in 1840. A year earlier this firm had produced the first pamphlet to appear in the settlement,



*Articles and rules for the regulation of the Melbourne Union Benefit Society.* Copies of both these rare works are in the La Trobe Library. However, the very first printing in what is now the State of Victoria was done at Sullivan Bay (the site of the present township of Sorrento). This was a series of General Orders and Garrison Orders issued by Lieutenant-Colonel David Collins between 16 October 1803 and 27 January 1804. They were the work of convict printers who operated a small handpress under a tree near the beach.

William Kerr, who later founded the *Argus*, brought out editions of his *Melbourne almanac and Port Phillip directory* in 1841 and 1842; these were the first directories produced in the settlement. Daniel Harrison, who in the late 1840s and early 1850s conducted bookshops in Melbourne and Geelong, published several books from each address. James J. Blundell, a bookseller and stationer, published some early work of the artist S. T. Gill; he issued a number of books between 1852 and 1866, and in 1854 he reprinted the now rare edition of R. H. Horne's *Orion*. Thomas Ham, who engraved the first Victorian postage stamps, published maps and books in the early 1850s, when several works relating to the goldfields were also published. Edward Khull, printer to the *Herald*, became the first Government Printer in January 1851, but his services were terminated later that year and John Ferres, printer to the *Herald*, was appointed. He actually laid the foundation of the office which has been responsible for many works of a high standard, and he printed the first *Victorian Year Book*, that for 1873.

These pioneers only published books sporadically, and George Robertson was the first person to publish in a large and systematic way. Trained in Dublin, he arrived in Melbourne in 1852 and at once opened a bookshop. His earliest publication was a sermon by the Reverend Mackintosh Mackay in 1855, and he became the first in Australia to establish a separate publishing department. His authors included James Bonwick, Adam Lindsay Gordon, Henry Kendall, Marcus Clarke (whose book, *His natural life*\*, he published in 1874), W. E. Hearn, Brunton Stephens, George Gordon McCrae, Rolf Boldrewood, and Alexander Sutherland; he also printed local editions of works by overseas writers. He opened branches in the other colonies and had a London office by 1857, some of his titles being distributed or reprinted in England by leading houses. Robertson dominated the book trade of Australasia until his retirement in 1890. From about this time, another and younger George Robertson, of the Sydney firm of Angus and Robertson, was consolidating his position as a publisher. H. T. Dwight, F. F. Bailliere (who was appointed Publisher in Ordinary to the Victorian Government), and Wilson and Mackinnon of the *Argus* all printed actively after the 1850s, as did Sands and McDougall whose *Directory of Victoria* has been published annually since 1857. Evans Brothers began the *Victorian municipal directory* in 1860; it was acquired by its present publishers, Arnall and Jackson, nineteen years later.

Samuel Mullen, who had arrived in Melbourne with George Robertson, opened his own bookshop in 1859. He published many high class works, a policy continued by his successors. In 1921 the firm he had founded amalgamated with George Robertson and Company to form the present house of Robertson and Mullens. In 1960 they were acquired by Angus and Robertson,

\* Later reprinted under the title, *For the term of his natural life*.

which later had an editorial office in Melbourne until 1969. A. H. Massina, a printer from England, arrived in Melbourne in 1855. Four years later he joined with others to establish a printing works of which he eventually became sole owner. The firm established the *Australian Journal*, published from 1865 to 1955, and provided an outlet for leading local writers such as Marcus Clarke and Adam Lindsay Gordon. Massina also published books by these and other Australian authors. E. W. Cole became a bookseller in 1865, and published C. J. Dennis' early verses as well as many social and religious items. Some of these he compiled himself, such as the *Funny picture book*, which was very popular for many years. Fergusson and Mitchell, printers, publishers, and booksellers, produced the now prized volumes *The chronicles of early Melbourne* by Garryowen (Edmund Finn) in 1888. In 1905 T. C. Lothian published his first book; it was the first of many literary or educational works he published, and he did much to bring public attention to young poets such as Bernard O'Dowd and Shaw Neilson.

S. J. Endacott and Macmillan and Co. were both active from the 1920s onwards, as was the Melbourne University Press which established new standards in scholarly publishing and book production under Gwyn James during the 1940s and 1950s. Early in the century Whitcombe and Tombs developed a large educational list in Victoria, and F. W. Cheshire, who had started an educational bookshop in 1925, published his first work, a textbook, three years later. Other educational works followed, and during the war a general publishing department was developed. It expanded until the firm became one of the largest publishing houses in Australia and was acquired by overseas interests.

Local publishing received an impetus during the Second World War when stocks of books from Britain, the traditional supplier, were severely restricted. Local publishers produced many titles, although hampered by paper rationing as well as by the inability of printers and binders to cope with this extra work. Established firms and newcomers such as Hawthorn Press and Georgian House brought out much original Australian material, and since the 1950s local branches of British publishers have reprinted many books locally. The post-war growth in population has provided a much larger home market for publishers, and schools are increasingly using locally written textbooks; many overseas houses are now publishing Australian books through local branches, while several Victorian printers are equipped to print and bind books of almost any specification.

The Australian Book Publishers' Association with sixty-five members is the spokesman for the industry; twenty-six members are based in Victoria. Since 1962 publishers have united to display works at book fairs and exhibitions at home and abroad, and a substantial export trade is being developed. The members' combined turnover for 1971 was nearly \$18.5m, representing 16.3 million volumes; 10 per cent of this was exported.

Significant new trends emerged in publishing during the early 1970s. The firm of Angus and Robertson has been acquired by a group of financial interests, and the expansion of Rigby Ltd and the Jacaranda Press has meant that publishing is no longer largely confined to Melbourne or Sydney. There were also, in 1971, five university presses at Melbourne, Canberra, Sydney, Brisbane, and Perth. Above all, the economics of publishing underwent fundamental changes; the rise in costs necessitated a government bounty to

printers which only partly arrested the flow of Australian books sent to Hong Kong for printing. The booksellers too faced problems as a result of rising costs and the abolition in 1972 of retail price maintenance.

## RECREATION

## SPORT

Sport has played a significant role in the history of Victoria. Games of English origin such as football, cricket, tennis, and bowls were the first sports to be played here, but a wide range has since been introduced from other parts of the world ; lacrosse from Canada, basketball (America), judo (Asia), and gymnastics (Europe) are a few examples.

Sport has undoubtedly been a major factor in the development of Victoria's social life ; its effects on various social groups in the State have been far-reaching even if they are difficult to define with precision. In the early years some sports were confined to persons of means, but some of these have become increasingly popular during this century—such are racing and golf ; polo and other equestrian sports, on the other hand, generally have not. Sport has also been the major constituent of Victoria's leisure activities and indirectly has influenced such aspects of the economy as transport, communications, catering, etc. In education its influence has been very strong, especially in the non-government schools, many of which have placed great emphasis on the importance of sport as a social and educational tool, and in many cases still make sport compulsory.

The common interest in sport among adults has been a formative factor in the growth of many social clubs and associations in the community, and this interest has also been substantial enough to produce at least one newspaper entirely devoted to sport. The influence of sport beyond Victoria has been important ; most sports have engendered interstate and overseas competition. The best known of these have been the Test matches between England and Australia, the trophy being the legendary Ashes, cynically commemorating the Australian victory over the English eleven at The (Kennington) Oval on 29 August 1882—the death of English cricket whose body would be cremated and the ashes taken to Australia.

The world's best exponents in many sports have long visited Victoria, but in recent years they have come in greater numbers, largely as a result of modern air travel. The greatest sports event in the history of the State, the 1956 Olympic Games held in Melbourne, did much to advertise Victoria to the world ; teams of contestants representing sixty-seven countries took part in the Games, and spectators came from nearly as many. South-east Asia and Pacific area table tennis championships have also been held in Melbourne, as well as the world squash titles ; in 1959 the Canada Cup

(now the World Cup) for golf was held on the Royal Melbourne Golf Club course. The World Cup was again held in Australia, also at the Royal Melbourne, in 1972.

Facilities for some sports have never quite matched the demand for them, but the State Government and municipal authorities have attempted to remedy this by subsidising and assisting sports associations and organisations, and in 1972 the State Government announced the appointment of a Minister for Youth and Recreation. Encouragement of sport is also provided by some of Australia's largest companies ; in the 1960s these began to take a major interest by providing prizes for professional events, by bringing overseas teams and coaches to Australia, and by subsidising amateur sport. Many have sponsored State titles, and some have paid the full cost of interstate travel for State teams. Further encouragement of sporting activities has resulted from improved coaching and playing facilities in schools. There have also been major social and economic developments which have had their impact on sport and the way it has been played in the State. The growth of the economy especially since the Second World War is one of these factors, but others are the shorter working hours (especially since the introduction of the forty hour week in 1948) and the five day working week generally.

### *Cricket*

Historically cricket was one of the first sports played in Victoria. This was soon after the arrival of the first settlers, who showed much ingenuity in arranging matches such as Gentlemen of the Melbourne Cricket Club *versus* Tradesmen, Benedicks *v* Bachelors, and Bearded *v* Cleanshaven. As clubs were formed handicap matches were played ; the stronger teams were limited to eleven players, while the weaker opponents had numbers varying from fifteen to twenty-two. The first international match, England *v* Victoria, began at the Melbourne Cricket Ground on 1 January 1862. English teams again visited the Colony in 1863 and 1873, and the first Test Match was played at the Melbourne Cricket Ground in March 1877 ; Australia won by forty-five runs. An interesting sidelight on the cricket scene in Victoria was the visit of the Aboriginal team, trained at Edenhope, to England in 1868, some ten years before the first European team toured there. The team had moderate success, winning fourteen games and losing the same number ; the remaining nineteen were drawn.

In the early days cricket was controlled by the Melbourne Cricket Club : the Victorian Cricket Association is now the senior controlling body in Victoria, and there are other associations in Melbourne and in the country with over 50,000 registered players. Interest in cricket has grown considerably, primarily as a participant game although the Tests and interstate matches attract crowds sometimes exceeding 50,000 ; in 1961 a record 90,000 spectators watched the second day of play of the Fifth Test in the Australia *v* West Indies series at the Melbourne Cricket Ground. Victoria made 1,107 runs against New South Wales during the 1926-27 season, the highest team score in first class cricket ; W. H. Ponsford, when playing for Victoria against Queensland at Melbourne in the 1927-28 season, made 437 runs, the highest individual score by a Victorian. Victoria has competed regularly in the interstate Sheffield Shield series, and until 1971 had won the trophy on twenty occasions. Testimonial games have been held in Melbourne, one



Ocean going yachts off Port Phillip Heads  
*Department of Trade and Industry*



Melbourne Cricket Ground, January 1864.  
*La Trobe Collection, State Library of Victoria*

An Australian Rules football match being played on the Melbourne Cricket Ground in the late 1960s.

*Ministry of Tourism*



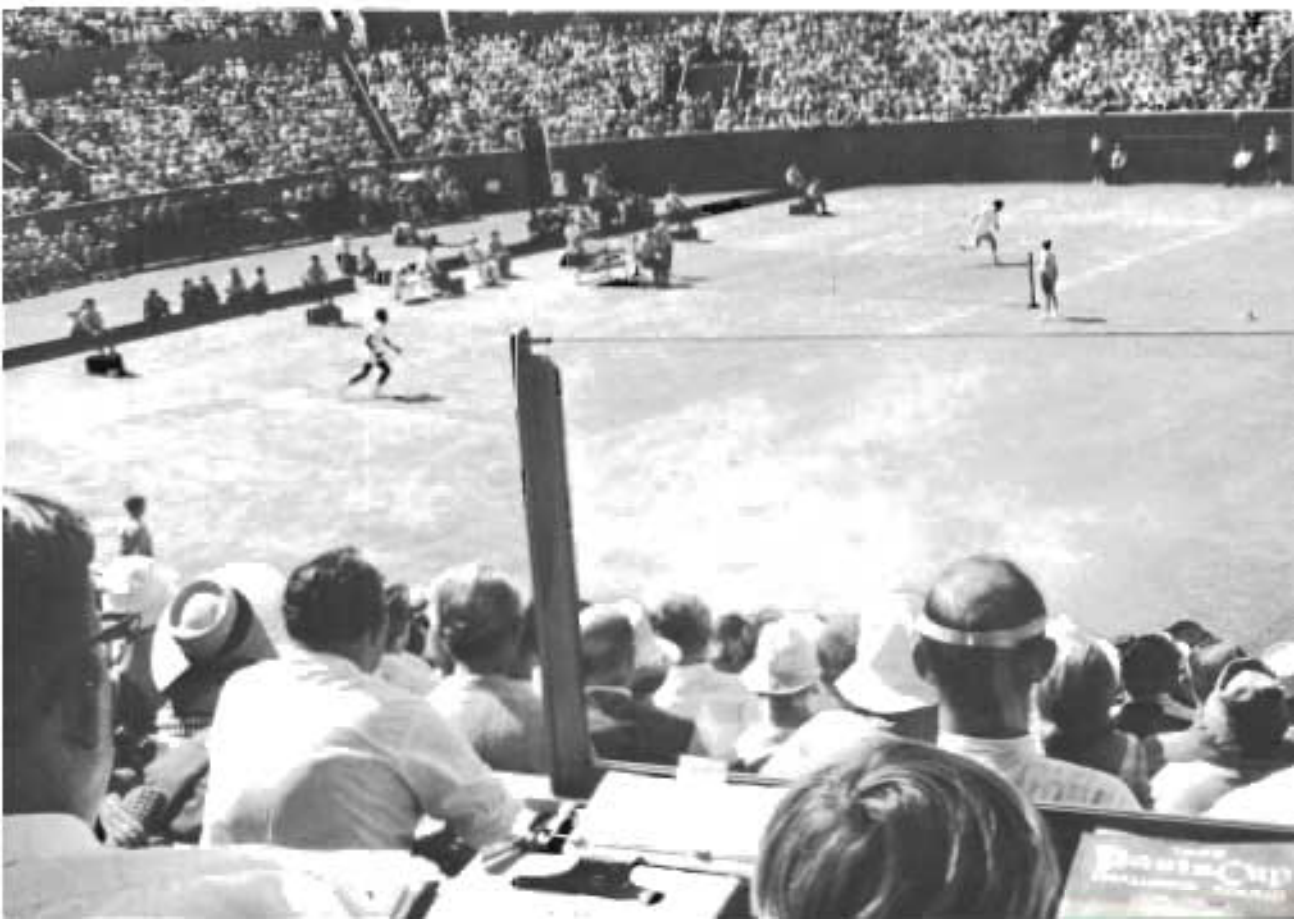


Interstate bowls competition at Middle Park with competing teams from Victoria and New South Wales.

*Australian News and Information Bureau*

The Victorian Lawn Tennis Association courts at Kooyong, where many notable tennis matches have been played.

*Gordon De Lisle*







Approaching the turn at Sandown Park in the Melbourne heat of the Tasman Cup series in 1971.

*Confederation of Australian Motor Sport*



The finish of the 1886 Melbourne Cup, as portrayed on the cover of *The Illustrated Australian News* of 11 November 1886.

*La Truie Collection, State Library of Victoria*



A quiet haven on Lake Eildon with some of the lake's many boats at anchor.

*State Rivers and Water Supply Commission*

Relaxed fishing at the junction of the Ford and Aire Rivers near Cape Otway.

*E. H. Lamb*






An archaeological "dig" at the Mill, Portarlinton, conducted by the National Trust.

*Ministry of Tourism*

Caravanning has become a popular way of spending holidays.

*A. de la Rue*





The north-east, which contains Victoria's highest mountains, provides an ideal setting for winter sports.

*Australian Tourist Commission*

One of the beaches in Port Phillip Bay, Victoria's coastline also provides many fine ocean beaches.

*Department of Trade and Industry*





Newsmen at work in a Melbourne daily newspaper  
*The Herald and Weekly Times Ltd*

A programme being recorded at a country television studio.  
*Wolfgang Jansen*



of these being for Sir Donald Bradman after his retirement from cricket in 1948.

The Melbourne Cricket Club, which developed the Melbourne Cricket Ground, is one of the oldest clubs in Australia. Founded in 1838 it was situated on Batman's Hill, now the site of the Spencer Street railway station. In 1846 it moved south of the Yarra, and remained there until 1854 when a railway line was planned to run through the arena. Governor La Trobe offered the club a site of ten acres in the Police Paddock (now Yarra Park) where it has remained ; subsequent land grants have increased the area of the site to some 14.5 acres. The spectator accommodation has been progressively increased and in 1971 the ground could accommodate about 125,000 persons. The ground was the main venue of the 1956 Olympic Games which were held in Melbourne. The club was associated with the foundation of Australian Rules football ; it also sponsored the first interstate tennis matches, and brought the first American baseball team to Australia in 1888. The club fields teams in bowls, tennis, rifle shooting, lacrosse, and hockey.

Women in Australia first played cricket at Bendigo in 1847 ; in 1890 the first women's match between Victoria and New South Wales was played in Sydney. Women's cricket has never flourished in schools, and the number of adults playing the sport has always been fairly small ; in the 1968-69 season only twenty-nine teams were affiliated with the Victorian Women's Cricket Association.

#### *Australian Rules Football, Soccer, and Rugby*

T. W. Wills of Geelong, who had studied at Rugby in England, devised Australian Rules Football as a game to prevent cricketers from becoming physically "soft" during the winter. As in England, where the game varied from village to village and club to club, so in Victoria various codes of the game existed side by side in the 1850s. Wills drew up a uniform code which came to be known as Australian Rules Football. A relative of his, H. C. A. Harrison, gave many years of service to securing acceptance of these rules. Wills died in 1880 and Harrison in 1929. The first recorded game was played in August 1858 between teams from Melbourne Grammar School and Scotch College. Through the years the game has evolved and now there are eighteen players in a League team (Victorian Football Association sides have sixteen) ; the ground is normally about 185 yards by 155 yards in size ; "behind" posts have been added and the goal has been equated to six points ; a field umpire and boundary and goal umpires are now provided—in the early days the team captains controlled the game ; each team has its "home" ground, and matches generally alternate between "home" and "away". A recent development has been the building of a ground by the Victorian Football League at V.F.L. Park, Waverley ; this was first used on 18 April 1970. Other major controlling bodies are the Victorian Country Football League, which controls the largest number of leagues and clubs in Australia, the Victorian Football Association, and the Victorian Amateur Football Association.

Australian Rules is the most popular spectator sport in Victoria ; more than three million spectators watch the game in Melbourne each year, and more than 100,000 attend the Victorian Football League final match.

Outside Victoria the game is popular in Tasmania, South Australia, and Western Australia ; although not a major sport in Queensland or New South Wales, the game is played in those States. Interstate matches are played regularly between teams representing the four southern States, but these do not generally attract as much interest as does a weekly inter-club match in Melbourne. Australian Rules is widely encouraged in Victoria through inter-school and country matches. Most schools of sufficient size have teams, many of which are of a high standard ; inter-school competitions, based on regional bases or on school affiliation, are held annually and generally provide sport throughout the winter months. The larger schools often have several teams, each of a different standard, generally based on the age of the student. Outside Melbourne each of the several country leagues conducts a match series annually, and many of these matches draw sizeable crowds of spectators ; teams for these games generally represent a country town, although the larger towns and provincial cities may have two or more teams in a league. Australian Rules Football has produced many names which are famous for any of a number of reasons : the highest goal scorer in a season ; kicking more than 100 goals in a season ; and playing in the greatest number of matches are a few. The major honour is winning the coveted award for the best and fairest player in the Victorian Football League for the season, the Brownlow Medal. This award was initiated in 1924, and four players, Haydn Bunton, Dick Reynolds, Bob Skilton, and Ian Stewart have each won it three times. Press, radio, and television coverage of Australian Rules in Melbourne is such that every facet of the game is covered for all matches ; it is doubtful if any one sport receives such publicity elsewhere in the world. However, the Victorian Football League does not allow direct telecasts of its matches inside Victoria, but it does allow videotape recordings to be shown after the matches are finished.

The first known Soccer match in Victoria was played in 1883 when a New South Wales team visited Victoria ; a year later a Victorian team returned the visit. The game is now administered by the Victorian Soccer Federation but was controlled by the Victorian Amateur Soccer Football Association before the introduction of professional soccer here after the Second World War. The game had little publicity before then ; settlers from Britain and Europe have made it increasingly popular since the late 1940s, and it has gathered popularity in schools since the mid-1960s ; altogether there are now more than 50,000 players in the State.

One code of football which has not yet gained wide popularity in Victoria is Rugby, a game which originated in the English public school of that name. Rugby Union was first introduced by an English team in 1888, but the present inter-club programme did not begin until 1909. Regular competitions for the Dewar Shield were held until the First World War. The present Rugby Union was formed in 1926. About twenty teams take part each weekend during the winter months, and it is played in several schools.

#### *Tennis*

Tennis was first played in Victoria as a controlled sport in 1878 under the auspices of the Melbourne Cricket Club. Other clubs later appeared and the Lawn Tennis Association of Victoria, formed in 1893, organised

the first Davis Cup challenge round in Australia in 1908. The principal tennis events now include the Victorian tennis championships, the Country Carnival, the L.T.A.V. Winter Pennant, and Metropolitan Week. Only small crowds attend inter-club matches, but for major events such as State titles, Davis Cup rounds, or Australian championships, events at which top overseas players are present, crowds may exceed 10,000 at L.T.A.V. headquarters at Kooyong. Major championships are held on lawn courts, but the majority of the courts in the State are porous. Tennis is played throughout the year and is taught in many schools. Well known Victorian tennis players have included Wimbledon singles winners Norman (later Sir Norman) Brookes, Gerald Patterson, Neale Fraser, Frank Sedgman, Ashley Cooper, and Harry Hopman (who captained twenty-one Australian Davis Cup teams to win the cup on sixteen occasions). Apart from holding Wimbledon, Australian, and American tennis titles, Sir Norman was a Davis Cup representative on nine occasions between 1905 and 1920; he was also an outstanding administrator and was president of the Lawn Tennis Association of Australia from 1926 to 1955. There are probably more than 200,000 tennis players in Victoria, but not all are members of properly constituted organisations. Tennis has possibly been a major "social" sport in Victoria; as only few players are needed for a team, it has been possible to organise teams from small groups of people. In the rural areas particularly, tennis matches were frequently arranged between adjoining communities, providing a social event for the people of the district; this was often followed by a dance in the local hall.

#### *Horse racing and trotting*

The first horse race meeting in Victoria was held on 6 and 7 March 1838 over a semi-circular course between the present sites of the North Melbourne and Spencer Street railway stations; a similar meeting was held on the same site in 1839. The flats beside the Maribyrnong River were an excellent galloping ground, and the first meeting at "The Racecourse" (later named Flemington after Robert Fleming who had a cattle run nearby) was held from 3 to 5 March 1840. Small racecourses were established in the inner suburbs, but Flemington remained the only important racecourse in Melbourne until 1876. For the first 25 years it was shared by the Victoria Turf Club and the Victoria Jockey Club which later amalgamated as the Victoria Racing Club; this body in conjunction with the State Government still remains the controlling body of racing. The internationally famous Melbourne Cup was first run by the Victoria Turf Club in 1861, and was the richest handicap race in the world. The best remembered winners are perhaps Carbine and Phar Lap, both New Zealand bred. In 1890 five year old Carbine carried a record weight of 10 stone 5 lb to victory against 38 rivals in the then record time of 3 minutes 28½ seconds. Phar Lap was a four year old in 1930 when he won carrying 9 stone 12 lb; he started at 11/8 on, the shortest priced favourite ever. Archer in 1861 and 1862, Peter Pan in 1932 and 1934, and Rain Lover in 1968 and 1969 have been the only horses to have won the race twice.

The Victorian Amateur Turf Club conducts Victoria's second richest race, the Caulfield Cup. Formed in Ballarat in 1875, the Club acquired tenancy of the Caulfield racecourse in 1876 and conducted the first Caulfield Cup in 1879. It now also controls Sandown racecourse which opened in 1965.



At Melbourne's fourth racecourse, Moonee Valley, there has been racing since 1883. In 1970 there were also 64 country racecourses at which 368 meetings offering prize money of \$1.46m were conducted.

Victoria was the first State to introduce legal off-course totalisator betting. Conducted through the Totalizator Agency Board, this operated for the first time at a Flemington meeting on 11 March 1961. In 1970-71 its turnover on horse racing was about \$154m, on trotting \$49m, and on dog racing \$28m.

Trotting races for ridden horses were included in race meetings early in the 1800s, but horsedrawn sulkies were not used until about the 1880s. The first major trotting events were held at Elsternwick in conjunction with galloping races; the first Victorian all-trotting meeting was probably held at Richmond in May 1907. In November 1947 night trotting with betting was legalised; an average of nearly 20,000 people now attend Saturday night meetings at the Showgrounds, and about \$1m in stake money is presented each year. The major event is the annual Inter-Dominion Championship, which is contested in Australia and New Zealand on a rotation basis. First held in Perth in 1936, the series has been held in Melbourne in 1950, 1959, 1964, and 1970. Greyhound racing, begun in Victoria in the 1870s, became increasingly popular after the introduction of tin-hare racing and totalisator betting; crowds of 10,000 are often found at major events.

#### *Golf and bowls*

Golf was one of the earliest games played in Victoria, the first course being on the site of what is now the Flagstaff Gardens; a group of enthusiastic Scotsmen played there in 1847. The oldest existing Victorian clubs are those at Nhill (formed in 1888) and Beaufort (1889). At a meeting in 1901 at the Port Phillip Hotel it was decided to form the Victorian Golf Association; it was constituted a year later. The first pennant matches under the control of the Association began in May of that year with six affiliated clubs competing. The Melbourne Centenary Open, Amateur, and Professional Championships, which took place in November 1934 at the Metropolitan Golf Club, were the major golf events held until then in Australia. Most major events are now televised direct, often to a five-State network. One of the greatest of Victorian golfers is Peter Thomson, former State amateur champion, who won the British Open title five times after turning professional. There are four major golf bodies in Victoria: the Victorian Golf Association of privately owned clubs with 56,000 amateur male members; the Victorian Ladies' Golf Union with 30,000 members; the Victorian Golf League, a body made up of clubs having their headquarters on public courses; and the Victorian section of the Professional Golfers' Association of Australia, comprising professionals at clubs and public courses and a few full-time tournament players. In addition to affiliated members, there are about 100,000 public course players not affiliated with any organisation. The large State public courses, Yarra Bend and Albert Park, each cater for about 100,000 players yearly. There are about forty public courses in Victoria, most of them in the Melbourne area; even so, there are often long waiting times at weekends.

Another popular participant sport has been lawn bowls. Bowls in England in the early 1800s was very much a tavern sport, and the first bowling

greens in Australia developed in the same environment. The first recorded game was played at the Beach Tavern at Sandy Bay in Hobart on 1 January 1845. Within a few years it was being played in Victoria and the Melbourne Bowling Club, Windsor, formed on 11 April 1864, is the oldest bowling club in Australia. The Victorian Bowling Association (now the Royal Victorian Bowling Association) was formed in July 1880, and there are now about 900 clubs in the State, with nearly 70,000 registered male members and 30,000 women members. Most country towns have a club, and in some of them women outnumber men.

#### *Athletics and cycling*

The basic structure of the present Victorian Amateur Athletic Association was formed in 1891 by representatives of four harriers' clubs. The first Australasian athletic championships were held in Melbourne in 1893, and in 1897 Victoria became a member Colony of the Amateur Athletic Union of Australasia. It was for many years essentially a cross-country body, although track and field athletics were conducted on a limited scale; track athletics began to dominate the Association's policy only after the First World War. The Friendly Societies' ground (now Olympic Park) became the home for track and field meetings during the summer months, and there were over thirty clubs in the metropolitan area, as well as those at Ballarat and Bendigo, before the Second World War. Returned servicemen increased the popularity of athletics and it became necessary to use two ovals at Olympic Park, although interest in cross-country running still remained. After the 1956 Olympic Games many new clubs joined the Association; it now has almost 8,000 members. The main events conducted by the Association are the Victorian Annual Championships and the All Schools Championships in November of each year. The "Little Athletics" movement, begun in the mid-1960s with one or two small clubs, grew to have a membership of 30,000 by 1970; it caters for children from 7 to 12 years of age. Victoria has produced many great athletes and dominated Australian amateur athletics in the 1960s, largely due to higher standards of coaching, including that carried out in schools. Noted among Victorian athletes in the 1960s were Ron Clarke, Herb Elliott, John Landy, and Pam Kilborn. Clarke, in 1956 the fastest junior mile runner in the world, had carried the Olympic torch into the main stadium for the Melbourne Olympic Games. He retired from running in 1970, holding world records for five distances varying from two miles to 10,000 metres. Elliott was the 1960 Olympic 1,500 metres champion and the world 1,500 metres record holder who, on seventeen occasions, ran the mile in less than four minutes. Landy is a former world mile record holder and was the first Australian to run a mile in less than four minutes, and Pam Kilborn is a hurdles world record holder.

Professional athletics date back to the middle of last century and are administered by the Victorian Athletic League with a membership of about 1,500. Weekly events, most of which are handicap races, are held from November to Easter, the main events being held in country areas. The Stawell Gift meeting at Easter is the highlight of the professional year and attracts runners from all States.

One of the most recent sporting developments in Victoria is the modern pentathlon. Unknown to most Victorians before the 1956 Olympic

Games, this sport consists of horse riding, pistol shooting, swimming, fencing, and running events. State championships are now held annually.

An older outdoor sport in Victoria than athletics is cycling, but in recent years its popularity has not matched the increase of population. The appeal of the motor car has affected spectator as well as participant interest. The Melbourne Bicycle Club was formed in 1878, although it seems almost certain that races were held earlier. The first six-day races were held in Melbourne in 1881, and the best known road event is still the Melbourne-Warrnambool race which dates back to 1895. Victoria has produced some outstanding cyclists among whom are Hubert (later Sir Hubert) Opperman who, after becoming a champion in Australia, achieved international fame by winning many events in Europe in the late 1920s and early 1930s. Others include Russell Mockridge who won two gold medals at the Helsinki Olympic Games in 1952, Jack Hoobin who won the World Amateur Road title in 1950, and Sid Patterson who won numerous amateur and professional titles.

#### *Aquatic sports*

Competitive swimming began in Victoria about the middle of the nineteenth century. The first known clubs were formed in 1876 and 1877, and the Victorian Swimming Association, now the Victorian Amateur Swimming Association, was formed in 1893, the first swimming carnival held under its patronage being at Hegarthy's Baths, St Kilda, in that year. The first Victorian State Swimming Championships were held in the 1895-96 season, and the Australian Swimming Championships were held in Melbourne in the 1900-01 season. By the 1906-07 season seven new clubs had joined the V.A.S.A. and 641 competing swimmers were registered.

The Association now has nearly 30,000 members, about 75 per cent of them being under sixteen years of age. One of the first Victorians to achieve international success was Frank (later Sir Frank) Beaurepaire who won 200 different championships in many countries and represented Australia at three Olympic Games. He was the first of a number of Victorians who achieved world fame in swimming. Leading Victorian swimmers in the period since the Second World War, especially in the 1950s which proved unique in Australian swimming, have included John Marshall who broke world records at all distances from 220 yards to one mile, and Judy Joy Davies who dominated Victorian women's swimming for nearly 20 years and set world and Olympic records. Dawn Fraser, although not a Victorian by birth, was a Victorian representative when she won the Olympic 100 metres freestyle title for the third time in succession in 1964. Her 100 metres record of 58.9 seconds, set in Sydney in 1964, was still standing until equalled in 1971 and broken in 1972. Crowds of 1,000 to 2,000 watch most State championship meetings, and capacity crowds of about 5,000 usually attend Australian championships when they are held in Melbourne every four or five years. Since 1948 the State Government has assisted country building committees with the construction of many pools, usually on a dollar for dollar basis. The recent construction of more heated indoor pools permits year round training, leading to improved standards.

The first recorded game of water polo was played at South Melbourne

in 1897, and the Victorian Amateur Water Polo Association was formed in 1928. Women's water polo began in Victoria in 1966, and interstate games were held the same year. More than fifty teams regularly take part in men's games each year; the sport is also played between schools with about a dozen teams taking part.

Aquaplaning, an early form of water skiing, was practised in the 1930s but it was not until 1946 that skis resembling those of today were first used. Many inland areas of water are used, and many country towns provide facilities which have made lakes and reservoirs major tourist attractions. The first national championships were held in 1951 and the Victorian Water Ski Association was formed in 1953. It was the first State controlling body in Australia. Many of the world's best water skiers are brought to Melbourne for the annual Moomba Masters, a recognised major event in world water skiing circles.

The first yacht races were held in Victoria in the 1840s, and the Victoria Yacht Club was formed in 1856. Races worth more than £500 were held on Port Phillip Bay in the 1880s, but the sport is now almost entirely amateur. Annual State championships are held for more than twenty classes of yachts, and over 30,000 yachts sail regularly in Victoria. Trailer-borne yachts, and the construction of launching ramps in rivers, lakes, and at the seaside, permit yachtsmen to vary their sailing locations. Inland sailing is gaining popularity, and the use of lightweight fibreglass and plywoods has increased the number of enthusiasts. Port Phillip Bay is still the centre of yachting in Victoria. It was the scene of the 1956 Olympic titles, and since then several world titles have been held there with contestants coming from all continents.

The most popular participant aquatic sport in Victoria is fishing. More than 85,000 Victorians pay a \$2 annual fee for an inland fishing licence. Trout is the most sought-after catch, although the fish had to be introduced to Australia. From 1841 many attempts were made to import English trout eggs, but the first success was not achieved until 1864. A hatchery is now maintained by the Fisheries and Wildlife Department at Snobs Creek, from which more than a million young trout are liberated in Victorian waters annually. There are also about 200,000 sea fishermen in the State; no licence fee is charged for amateurs to fish the sea off the Victorian coast, and snapper, salmon trout, mullet, and flathead are popular catches. Underwater spear fishing became increasingly popular during the 1960s, the Underwater Spearfishermen's Association of Victoria having been founded in 1949 to organise safety rules for both the fisherman and the public.

Victoria's ocean surf beaches are widely used by both fishermen and surfers. The Victorian branch of the Surf Life Saving Association of Australia, formed in 1947, now has twenty-six clubs at popular surf beaches; there are more than 3,000 members in Victoria, and the number is increasing following the introduction in 1958 of the "Nipper" surf life saving movement, which instructs children under 12 years of age. However, some surf life saving clubs are finding difficulty in gaining members because of the increased popularity of surfboard riding. State surf life saving championships are held for seniors and juniors each year, and teams are sent to the national championships.

In 1956 an American surfing team introduced lightweight surfboards to

Australia ; coated with fibreglass, these are usually ridden while standing up. The Victorian Branch of the Australian Surf Riders' Association, founded in the early 1960s, has only about 1,000 members but many Victorians own surfboards and use them regularly. In 1970 the fifth World Surf Board Championships were held near Torquay, with competitors coming from ten countries.

Canoeing has long been practised in Victoria but the first Australian canoeing competitions were not held until 1951. Both still-water and slalom (white-water) races are held in Victoria, but it is a minor sport, with fewer than 1,000 active members in the Victorian Amateur Canoe Association. Several schools adopted the sport in the late 1960s.

The Melbourne University Rowing Club, formed in 1859, is one of the oldest sporting clubs in Australia. Interstate rowing events began in 1873 when crews from Tasmania, New South Wales, and Victoria took part in events on the Yarra River. Rowing, one of the major school sports for nearly 100 years, was confined to private schools until the 1930s, when some high schools added it to their sports programmes. It generally attracts few spectators in Victoria, but large crowds watch the Public Schools annual Head of the River contests on the Barwon River at Geelong.

Motor boat racing in Victoria, dating from the early part of this century, did not become popular until the late 1940s and early 1950s when many new classes of championships were added to the annual programme. During the 1950s and early 1960s events were held in Melbourne on Albert Park Lake, but weeds became a hazard, and many events were moved to inland lakes and rivers. Marathon events of considerable length on rivers or on Port Phillip Bay are also popular. State and national championships are held annually for more than twenty classes of speed boats, hydroplanes, and cruising motor boats.

#### *Other popular sports*

Most ball games other than those already described have been played in Victoria. Hockey was played soon after 1900 ; it was introduced to the State by the Royal Navy. Victoria took part in the first interstate tournament held in Sydney in 1910. The game is played in schools and many pupils continue to play after leaving school. It is entirely amateur and has never attracted large crowds ; even at international matches it is rare to find more than a thousand spectators.

Baseball was first played in Australia in about 1856 by Americans on the Ballarat goldfields ; it was not apparently until 1885 or 1886 that Australians began to play the game in Melbourne. More than 100 senior teams now take part in regular competitions in Melbourne, and in the late 1960s the number of young players increased significantly as a result of a competition for sub-teenagers. The sport receives limited publicity, but has expanded more in the last ten years than in the previous thirty. Baseball was a winter game in Victoria for most of its history, but in the late 1960s summer baseball was introduced to bring Victoria into line with other States and with overseas countries. Softball is popular with women. American troops in Melbourne during the Second World War are generally credited with introducing the sport to Australia, but few men in Victoria have played since about 1949 ; it is now an all-female game and there are about 15,000

players in the State. A similar game, "rounders", had been played by school children for many years before the introduction of softball. Volleyball was played as a physical education activity in many schools during the 1930s, but did not become an organised sport with regular inter-club games until the 1950s.

Croquet, a traditional British sport, was played on the lawns of many Melbourne houses from 1850 onwards, but was not then the highly competitive sport it has since become. Men and women meet in open competition; there are about 2,000 players in Victoria. Tournament croquet in Australia did not begin until after the Second World War, and the Australian Croquet Council was not formed until 1949. Interstate matches and national championships have been played regularly since 1950. In 1874 lacrosse was introduced to Australia in Melbourne by a Canadian and it was popular for many years. A Canadian team toured in 1907, but interest declined; in 1959 a visiting team from America toured Australia. Lacrosse is played in few schools in Victoria, and is almost unknown in country areas. In the early 1960s it was re-introduced for women, who now play interstate matches. In 1970 an American team visited Victoria on an Australian tour.

The first recorded archery club in Victoria was formed in Port Melbourne at Liardet's Brighton Pier Hotel in November 1840. This club does not appear to have survived for long, but the sport seems to have been firmly established by 1855. It is now administered by the Archery Society of Victoria which has more than 1,000 members of affiliated clubs. State and national championships are held annually, and it is practised by about equal numbers of men and women; archery for juniors has recently been introduced.

Polo also dates back to last century, being first played in Victoria in 1875; the high cost of maintaining horses has limited its popularity, but interstate events when played near Melbourne can attract crowds of several thousands. Other equestrian sports in Victoria include fox-hunting and polo-crosse, as well as events held at country and metropolitan shows. The Equestrian Federation of Australia was formed in 1949, and as State bodies were organised soon afterwards, Australia began to compete in major international events. Popularity increased after 1956 when the Olympic Games were held in Melbourne, although the equestrian events had to be held in Sweden because of Australian quarantine regulations.

The horse was supplanted by the motor car in many spheres of Australian life early this century, and the first motor car race in Australia was held in Maribyrnong in 1903. Two years later the first Australian reliability trial started in Sydney and finished in Melbourne, and the first Australian Grand Prix was held at Phillip Island in 1928. Top international drivers now regularly compete in Melbourne where the Sandown track is of world class, and these international meetings often attract more than 30,000 spectators. The first organised motor cycle club in Victoria was formed in 1904. Weekly events are now held throughout Victoria, often in conjunction with motor car race meetings, and annual State and Australian championships are conducted for all classes.

A unique Australian sport—unknown in most overseas countries—is woodchopping. Competitive woodchopping in Victoria began in the 1890s at Noojee. It is now a major attraction at the annual Royal Melbourne Show where the prize money exceeds \$5,000, and there are more than 1,000

competitors in the State. Australia is the only country where woodchopping as a sport has been put on a well organised basis.

Pigeon races have been held in Victoria since the beginning of the century. There are now more than 3,000 owners who breed and race birds regularly and each owner would have a "stable" of about sixty birds. Races are run over distances up to 600 miles and in normal conditions the birds average about 45 mph. Hawks and storms can take a heavy toll in longer races.

Rifle shooting is one of the oldest organised competitive sports in Victoria. It was well established in the 1850s, and the first intercolonial matches between Victoria and New South Wales were held in Melbourne in November 1862. Rifle ranges were built in many parts of the State early in this century, and the sport has a large following in country districts. The sport is encouraged by the Commonwealth Government, and the S.M.L.E. rifle (.303) is used, sometimes with permitted modifications. About 150 clubs operate in Victoria. "Perc" Pavey of Oakleigh, the most outstanding of Australian rifle shooters, won the King's Cup at Bisley, England, in 1948 and the King's/Queen's in Australia on ten occasions. In Victoria the Australian Clay Target Association, which controls clay shooting, has about eighty clubs with 2,000 members.

Victoria has some excellent snowfields, but the ski season is far shorter here than in Europe, and the snowfalls less certain. Scandinavian migrants were the first to ski in Australia, and they were holding organised competitions in the 1860s. Skiing probably began as a sport in about 1870 in Victoria, but the present controlling body, the Victorian Ski Association, was not formed until July 1955. The Victorian Ski Association has more than a hundred affiliated clubs, but the majority of the State's skiers do not take part in competitive skiing. Before the Second World War, skiing was expensive and facilities were undeveloped; the sport was practised mainly by the well-to-do. Increased prosperity since then has given it wider appeal and skiers now come from all walks of life. Improvements such as new access roads, hotels, motels, and ski lodges, the introduction of mechanical lifts, and the availability of hire equipment have increased the number of participants.

Skating has always enjoyed a following among the young in Victoria, but few pursue the sport after leaving school. State and national titles are held annually for figure skaters and speed skaters. Related to skating is ice-hockey, which was first played in Australia in Melbourne in 1908, and interstate matches have been held ever since. The game has not gained much popularity, despite efforts to encourage junior players, and Melbourne has seldom had more than two or three rinks. Crowds of several hundreds watch the inter-club games in Melbourne, in which about eight teams usually take part.

Victoria's principal indoor sports complex is in the northern section of the Albert Park. Four buildings house a table tennis stadium, and courts for basketball, badminton, and squash. Table tennis has been a competitive sport since the mid-1920s, and is controlled in Victoria by the Victorian Table Tennis Association, which has over 20,000 registered competitive players. Men's basketball, played from the beginning of the century, did not gain popularity until after the Olympic Games in 1956; it is estimated that more

than 50,000 now play the game at least once a week. Badminton was played in Victoria in the 1920s, but the first Australian titles were not held until 1935. The Victorian Badminton Association (with a membership of about 8,000, including men and women) controls the game, which is limited to Melbourne and a few country centres.

Boxing was established at the time of the gold rushes ; the longest Australian "bare knuckle" bout, which lasted 6 hours 15 minutes, was fought at Daylesford as early as 1856. The first world title contest held in Victoria took place in 1908. There is no boxing control board in Victoria, and rival groups sometimes recognise different State champions. Attendances at normal weekly events at Festival Hall usually number about 5,000 ; the prize money, however, is seldom sufficient to permit professional boxers to earn a living in Victoria. In 1968 Lionel Rose became the first Victorian to win a world title when he won the world bantamweight championship ; a few months later Johnny Famechon became world featherweight champion.

Competitive wrestling began in the 1850s and has passed through many phases. Amateur wrestling is controlled by the Victorian Amateur Wrestling Association ; it has fewer than 1,000 members, however, and the sport attracts few spectators. During the mid-1960s wrestling was introduced to some high schools and interest has increased slightly since then. Professional wrestling went through a boom period in the late 1960s.

The Victorian Amateur Weight Lifters' Association has fewer than 1,000 members, but many athletes practise the sport for training purposes. There is little interest in country districts, and activities are mainly confined to Melbourne, where the Association has its own gymnasium and conducts inter-club meetings. A few schools have introduced it as a competitive sport.

Competitive gymnastics in Victoria date back only to 1937, although the sport was practised here earlier. The spectacular displays at the 1956 Olympic Games increased interest, but there are fewer than 1,000 competitive gymnasts in the State ; the number of spectators is usually small. Olympic-type gymnastic equipment is not available in many schools and there are few qualified coaches.

The first handball courts were built in Victoria some time in the 1840s, often near hotels. The first interstate games were played in the 1870s, and Australian championships were played in Melbourne in 1920. It is now played mainly in Roman Catholic schools.

Fencing was introduced into Victoria in about 1910, and has made rapid progress in the last decade, mainly owing to its increasing popularity in many schools. It is almost entirely a participant sport ; even for State and Australian championships it is rare to find more than 200 or 300 spectators.

Billiards was played in Victoria before 1850, and by 1853 Alcock, a Fitzroy furniture manufacturer, was making tables in Melbourne. Alcock brought players from England to encourage the game, and it became fashionable for most large houses to have a billiard room. Public billiard saloons became popular late in the nineteenth century ; as equipment expenses are high, most tables are now found only in sporting or social clubs, but there are some saloons where tables may be hired. An annual inter-club programme is held in Victoria with more than fifty teams involved,



and there is also an Australian amateur championship. Walter Lindrum, who was born in Kalgoorlie, Western Australia, but who spent most of his life in Victoria, was probably the world's greatest player; his record break of 4,137 made in 1932 has not been bettered. Snooker was first played in Australia in about 1887, and now has an international following.

Ten-pin bowling was introduced to Victoria in 1960, when it created wide interest, but its popularity declined, and within five years a number of centres were forced to close. In Victoria the game is purely commercial, all centres being privately owned.

The most popular sports in Victoria in the early 1970s were horse racing, Australian Rules Football, tennis, cricket, golf, and bowls, while greyhound racing gained popularity following the provision of new facilities and the introduction of legalised off-course betting.

#### SOCIAL, CULTURAL, AND RECREATIONAL ACTIVITIES

The cultural and recreational life of Victoria has developed in several roughly definable epochs. In the early days of settlement social activities were unsophisticated and centred mainly on the home, church, and local hall; they had been introduced basically on the pattern of recreation then existing in the countries from which the settlers had come. In Melbourne the Athenaeum was established as early as 1839 as was the Melbourne Club, followed two years later by the Port Phillip Club. Most towns wanted a cricket ground and a racecourse and, as time elapsed, rowing, hunting, fishing, and bowling also became popular.

The second epoch from the gold discoveries in the early 1850s until the economic depression of the 1890s showed a wide diversification of social activities. Interest in sport remained; hunting and especially racing provided strong social links, as did cycling—a very fashionable pursuit until it came to be superseded by interest in the motor car, which appealed to young men who could afford it. Other outdoor recreational activities which were becoming popular included cricket, Australian Rules Football (devised in the late 1850s), and tennis (introduced in the 1870s); golf had been introduced as early as the 1840s but did not gain much in popularity until after 1900.

The centre of social entertainment was the circle which revolved around Government House. From here radiated grand entertainments whose features were frequently emulated on a lesser scale by mayoral balls. However, most entertaining took place in private houses and the practice of dining out in fashionable hotels such as Menzies did not really take on until early this century. Codes of etiquette and social behaviour tended to be well defined for luncheon and tea parties, formal dinners and balls (most larger houses built during the period included ballrooms), and in such customs as "calling" and being "At Home". In fine weather, picnics in the country were a favoured pastime and all these social entertainments were made possible by abundant domestic help. Many hostesses planned their social year to culminate in Melbourne Cup week which attracted the wealthier graziers with their families to town. The larger country properties arranged their own house-parties at other suitable times during the year, frequently to coincide with country race meetings.

This gaiety, however, did not extend to the whole community. Among the suburban middle classes there was a strong temperance and sabbatarian movement which helped establish temperance hotels, for example, the Federal and the Grand (later the Windsor) Hotels in their early years, and made itself felt strongly in 1883 when Parliament rescinded a decision of the Trustees of the Melbourne Public Library, Museum, and Art Galley to open their institutions on Sundays. They remained closed until 1904. Another feature of this staid social outlook was a marked expansion of "hall" culture.

The mechanics institutes and similar establishments (there were over 300 of them by the mid-1880s) provided library facilities. The public lecture, both entertaining and educational, became an accepted part of social life, and many lecturers came from overseas to Melbourne and the provincial centres. Apart from its main purpose, the lecture was also a popular means of charitable fund raising, and it featured in campaigns for shorter working hours. During this period indigenous publishing also became established and publications such as *The Victorian Review*, *Melbourne Review*, and *Melbourne Punch* gained a wide readership; many were illustrated and provided a steady income for various artists. Library services expanded, and most libraries carried a wide range of imported as well as local publications. The theatre was becoming very popular, featuring imported productions with local and overseas artists. Choirs consisting of local participants gave choral performances in the various churches and in community concerts; the Philharmonic Society was established in 1853.

During the latter half of the century many Victorians spent their holidays by the sea and several resorts became fashionable; Queenscliff and Sorrento were served by paddle steamers from Melbourne, and like other beach resorts had open sea baths. Inland, Mt Macedon became highly regarded as the Governor had a summer residence there and guest houses at Healesville (the end of the railway line) were also popular. When the railway linked Melbourne to Sydney and Adelaide, interstate holidays became more frequent.

Civic pride frequently expressed itself in the establishment of parks and gardens and the construction of impressive public buildings, all of which gave parts of Melbourne and some provincial cities an atmosphere of dignity and beauty. Collins Street provided a fine setting for "doing the Block" on Saturday mornings. The planting of gardens, especially, was a reminder of Britain when it was found possible to acclimatise many exotic plants. The design of some fine gardens under the guidance of W. J. Guilfoyle reflected English garden prototypes. Many of the prosperous squatters and merchants engaged in private building and garden design with the same end in view and frequently adorned their homes with fashionable works of art, stocked their libraries with the standard classics, and satisfied their love for exotica with ferneries and conservatories. Their gardens also happened to be useful for garden parties, croquet, and tennis.

The economic depression of the 1890s caused the vigorous social and cultural life of the earlier period to contract. Book buying for the libraries declined, as did the promising book trade; local enterprise in the theatre and in music lost its impetus; most marked of all was the decline of the old intellectual vigour reflected in the daily press. The influx of well educated, intellectually alert people during the gold rushes had had an effect on the whole community out of proportion to the actual numbers involved. The next

generation, which began to assume public and private responsibilities on a significant scale from 1890 onwards, seemed to differ from the older generation, and the cultural life in some respects was less firmly based in its British origins, especially at the time of the Federation movement. But exceptions did occur : the Shakespeare Society and the Classical Association both flourished in the early decades of this century, and were patronised by those with academic and similar interests. Social diversions now came to include trips to Tasmania and trips " home " (to Britain). In fact the ships developed a distinctive social life which gave the women the opportunity to display their finest clothes and their husbands the responsibility of organising large quantities of luggage.

By the early years of this century the patterns of recreation had been established, and succeeding decades saw only modifications rather than basic changes. As the hours of labour were shortened the population had more time available for recreation. One of the main beneficiaries of this trend was the theatre which provided most entertainment until the depression and the advent of the cinema. The First World War gave women greater responsibility with involvement in such activities as Red Cross. One result of their social freedom, was their greater participation in organised sport : basketball, hockey, tennis, and golf all became recognised women's sports. Towards the end of the First World War new organisations emerged, and included the associations of returned servicemen such as the Returned Sailors' and Soldiers' Imperial League of Australia, Legacy, and Toc H. Although primarily welfare organisations, the R.S.L. clubs in fact became recreation centres with provision first for indoor games, generally billiards and snooker, and later for outdoor games such as bowls ; in soldier settlement areas the clubs made a significant contribution to recreation. The churches also contributed to recreation ; many had halls which were available for social activities and sometimes indoor games, and some had tennis and basketball courts. The economic depression of the 1930s exerted its influence in that recreation activities became less cultural and more escapist. Commercial libraries became more popular, especially in Melbourne's growing suburbs, and in some country towns took over from the waning mechanics institute libraries. Art attracted more interest, stimulated by the modern European schools of painting, press controversy, and the importation of an important overseas exhibition just prior to the Second World War.

Technology also influenced the cultural and recreational life of the community. The gramophone and radio brought a variety of music to a wider audience, and the radio became part of the daily domestic routine ; outside the home the cinema became a well established commercial institution. Even the smallest towns had cinematographs and screens in the local halls ; in Melbourne and the provincial cities and towns, very large, and frequently ornate, picture theatres were built.

During the Second World War the resources of recreation were largely diverted to meeting the needs of servicemen and women in Australia and overseas. After 1945, however, new attitudes became apparent ; increased leisure time followed the introduction of the 40 hour week in 1948, and this gave increased opportunities for evening activities. Indoor sports won increasing popularity, numerous " little " literary magazines

were produced, and Australian writers and poets became more popular ; the imported serious film became a recognised art form ; the National Theatre Movement staged a brief revival of the theatre from 1947 to 1949 ; in 1956 the Little Theatre built its own home, St Martin's ; the repertory movement continued to flourish ; a large number of music and dramatic societies emerged, both in the country and city ; and in 1949 Victoria's present permanent symphony orchestra was founded.

Technological advances further modified leisure activities. The high fidelity record player became widely used from the 1950s onward, and with the long playing record, which could now more faithfully reproduce the original performance, promoted a wider interest in music. The development of the tape recorder as a high fidelity machine also assisted in the production of various recordings ; recorded tapes featuring classical and other music productions became available, allowing taped recordings of many different types of programmes to be played in the home. This development was more noticeable in the 1960s. One aspect of continued technological improvement was seen in the development of photographic equipment and materials which became increasingly sophisticated. The most widely accepted post-war improvement has been the 35 mm colour transparency which can easily be projected on a screen. The photographic industry now caters for all needs from the simplest to the most advanced.

The Free Library Service Board (now incorporated in the Library Council of Victoria), the Council of Adult Education, the Elizabethan Trust, the National Fitness Council of Victoria, and other such bodies have all provided recreational and cultural facilities which are partly subsidised by government funds.

Rising living standards during the 1960s have had a significant effect on the social and recreational patterns of community life. The automobile has enabled people to travel where and when they will, and camping or caravanning have become a popular way of spending a holiday. Various State authorities provide cultural and recreational facilities for tourists, such as the National Parks Authority in its parks. Two of Victoria's most popular national parks are Mt Buffalo and Wilsons Promontory. Mt Buffalo National Park, a ski resort, offers overnight accommodation at the Chalet and Tatra Inn, and ski lifts operate on its major ski runs. Wilsons Promontory National Park, with overnight accommodation for 150 at Tidal River, has walking tracks to many parts of the area, including Sealers Cove and the lighthouse. The State Rivers and Water Supply Commission makes areas at its reservoirs available for recreation ; it encourages boating, swimming, and angling clubs, as well as youth or welfare organisations, and co-operates with these to provide facilities for their members. The two most popular reservoirs used for recreation are Lake Eildon and Lake Eppalock. Both are within easy reach of Melbourne, and each summer weekend crowds visit boating and picnic sites around them. Other reservoirs also have facilities and serve local areas. There are many picnic sites in the State forests, administered by the Forests Commission of Victoria, and tracks to scenic and other interesting areas. The Commission has always regarded the provision of recreational facilities as one of the major functions of its work.

Looking at recreational patterns as a whole, however, outdoor activities, and sport in particular, have continued to be the most popular ways in which Victorians spend their leisure time.

Possibly the most significant cultural manifestation of the 1960s and latter years has been the rapid increase in interest in the historical background of Victoria. This is shown in the output of books dealing with Victorian local history, the growth of the National Trust of Australia (Victoria), a large number of local historical societies, and the setting up of local and folk history museums, some of which are of considerable historical value. The activities of the National Trust have grown since the late 1950s and now extend to virtually every part of the State. The pioneering museum at Swan Hill illustrates the growing interest in history ; it has set a pattern for many others including the Ballarat Historical Park at Sovereign Hill.

PART FIVE

---

*Scientific and  
Technological Development*

# 1

## SCIENCE IN VICTORIA

---

### INTRODUCTION

Science is universal and international but at the same time it can have highly specialised features or be concerned with localised phenomena. At the present time, Victoria, as every other advanced state or country, is actively contributing to many fields of basic and applied science. For most of these fields, Victorian work is a significant segment of the Australian contribution to world knowledge with no special character relating it to this particular State. Throughout Victoria's history, however, special investigations have been needed to deal with natural calamities, epidemics in man or domestic animals, invasion by weeds and animal pests, or with the requirements for such necessary local developments as the siting of roads and railways, drainage of swamps, and provision of water for town supply or irrigation.

Again, as in every other area of the modern world, science in Victoria has a history which involves both the application of science from elsewhere in its development, and the growth of indigenous scientific activity and achievement within the State.

The pattern of early settlement in Victoria had little to do with science. The first comers were looking for new pastures for their sheep and, until the discovery of gold, wool was the only significant export. With the gold discoveries of the early 1850s a flood of immigrants swept into Victoria, including every kind and condition of men. There were professional and other well-educated men among them who were ambitious that science, art, and letters should find a place in the infant colony. It was a measure of the enthusiasm and optimism brought by the gold discoveries that the University of Melbourne, the National Museum and Art Gallery, and two organisations to foster science, the Victorian Institute for the Advancement of Science, and the Philosophical Society of Victoria, were all founded in the years 1853 and 1854. The latter two amalgamated in 1855 and became the Royal Society of Victoria in 1859.

It is natural that most early scientific work was largely descriptive in the fields of botany, zoology, and geology. Frederick McCoy, who was appointed Professor of Natural Science when the University of Melbourne was founded, was prominent in all these fields but pre-eminently in palaeontology. Significant work in the experimental sciences began when Masson, Baldwin Spencer, and Lyle were appointed in 1887 and 1888 to chairs at the University of Melbourne. Baldwin Spencer's work on the

cultural anthropology of the Central Australian Aborigines was probably the most significant scientific contribution from Australia before the First World War.

Medical research in Victoria began when Professor G. B. Halford, the first Professor of Medicine (from 1863 to 1903), began experimenting with snake venoms. Although of uncertain scientific worth, his work may have stimulated his successor, C. J. Martin, to an interest in the same field. At around the turn of the century, Martin and Cherry in Melbourne did important work on the neutralisation of snake venom by antivenene; this added significantly to the world's understanding of immunity. Just before the First World War, H. B. Allen, Professor of Pathology, was interested in bringing laboratory science into the Melbourne Hospital. He succeeded in interesting the Walter and Eliza Hall Trust; the Walter and Eliza Hall Institute of Research in Pathology and Medicine was established and began to function in 1920 as an independent research institute attached to the Melbourne Hospital. This was the first move of this type in Australia, and was followed by the development of similar institutes for medical research in other teaching hospitals in Victoria and in the other States with medical schools. The Walter and Eliza Hall Institute has remained, however, one of the most distinguished in Australia. Another very important development was the foundation of the Commonwealth Serum Laboratories in Melbourne in 1916, initially in the buildings which had been built for the Walter and Eliza Hall Institute. This has not only been the most important source of vaccines, sera, and the like for Australia, but has also played a major part in research. Two achievements which were of importance to medicine in Australia were the production of antivenene against Australian snake venoms and the preparation of influenza virus vaccines. Even more important for the Australian economy was the production of vaccines against a number of bacterial diseases of stock.

During the years since the end of the Second World War, medical research has burgeoned in the university medical schools. Clinical sciences buildings have been erected at the hospitals and research activity in the pre-clinical departments has steadily increased. This, of course, has been a world-wide development, and medical research in Victoria ranks in quantity and quality with what is being done anywhere else in the advanced countries of the world.

Veterinary science has necessarily been of special interest to Australia, and a veterinary school was founded at the University of Melbourne in 1908 with J. A. Gilruth as the first Professor. A steady stream of valuable work came from the school. Then in 1935 the Council for Scientific and Industrial Research (C.S.I.R.) Animal Health Laboratories were built in nearby Parkville. Under the direction of L. B. Bull these in turn provided major discoveries of great economic importance; black disease, bovine pleuro-pneumonia, complex plant poisonings associated with disturbed copper metabolism, contagious abortion, and the early studies on rabbit myxomatosis were some of the important areas of study. Finally, in 1962 the University's Veterinary School, which had lapsed since 1927, was re-established.

As in the rest of Australia, a large proportion of scientific work in Victoria is carried out in the laboratories and field stations of the Commonwealth Scientific and Industrial Research Organization. This and



its precursors, the Council for Scientific and Industrial Research (1926 to 1949), the Commonwealth Institute of Science and Industry (1920 to 1926), and the Advisory Council of Science and Industry (1916 to 1920), all represent Commonwealth-wide activities. The beginnings were, however, mainly forged in Melbourne, then the seat of the Commonwealth Government. Many men were concerned but three of the key figures came from the University of Melbourne. Professor W. A. Osborne was one of the originators in promoting the earliest discussions. Professor (later Sir) David Orme Masson was probably mainly responsible for insisting that the C.S.I.R. should be actively concerned with research under its own direction and not merely serve as a co-ordinating body. Professor (later Sir) David Rivett, who had recently succeeded Masson as Professor of Chemistry, became the first director of the C.S.I.R.

Since 1926 there has been a steady expansion in all States and in an ever-widening range of fields. In Victoria the first two divisions to establish laboratories were Forest Products and Animal Health. A Division of Industrial Chemistry set up in 1939 at Fishermens Bend has since expanded into a number of new divisions of which the Division of Chemical Physics is perhaps the best known. Three other divisions based in Melbourne are Tribophysics, Building Research, and Atmospheric Physics.

Although the C.S.I.R.O. was devised primarily to apply scientific methods to the problems of primary and secondary industry, it has also sponsored a great deal of wholly basic research with no direct economic application, for example, in radio-astronomy. In the more "applied" divisions, the tendency has been to concentrate on the elucidation of principles leaving more immediate practical problems to the research and extension activities of State Government departments and the research and development sections of industrial firms. Both groups have expanded over the years, each organisation arising in response to some practical need, enlarging with prosperity or being held back in depression. It does not seem possible to make any general statements about their history and it will be best to refer the reader directly to their specific contributions in this volume.

#### EARLY BEGINNINGS

Scientific activities in Victoria were notable not only for the early date at which they commenced and for their virility and scope, but also for the high scientific stature of the participants. In 1852, following the first gold discoveries, A. R. C. Selwyn was appointed to initiate the Geological Survey of the Colony, to be followed by other geologists including R. Brough Smyth, later Secretary of Mines. In 1853 an astronomical observatory was established at Williamstown under R. L. J. Ellery, and it made notable observations. The Meteorological and Magnetic Observatory, under the direction of Professor G. Neumayer, was established in the Flagstaff Gardens in 1858. In 1863 both observatories were transferred to the Domain.

In order to study the strange vegetation of the Colony, Dr Mueller (later Baron Sir Ferdinand von Mueller) established in 1857 what is now the National Herbarium, a short time after he became director of the Melbourne

Botanic Garden (now the Royal Botanic Gardens). Mueller had carried out notable pioneering expeditions for botanical collecting purposes in 1853 and 1854, including expeditions through north-eastern Victoria, the Grampians through to Albury, and southern and eastern Gippsland. In 1855 he had accompanied Gregory's expedition from Perth to the Northern Territory, and had acquired a further valuable botanical collection.

In 1854 the National Museum was established, largely through the efforts of Captain Andrew Clarke, R.E., the Surveyor-General of the Colony, and some of the new Museum's specimens were displayed at the Melbourne Exhibition of that year. The first official appointment to the Museum staff was the zoologist William Blandowski, who conducted a scientific expedition in 1854 to collect material for the Museum. In the same year the University of Melbourne was founded, Professor (later Sir) Frederick McCoy being appointed to the Chair of Natural History, at the same time becoming the first Director of the Museum.

Two important scientific societies were founded in 1854: the Victorian Institute for the Advancement of Science with a constitution and by-laws based on those of its British counterpart, and the Philosophical Society of Victoria. The Institute owed its origin to W. S. Gibbons, an analytical chemist and lecturer at the Mechanics Institute, and aimed to encourage communication between people with interests in the natural sciences, to provide a centre for the collection of observations and specimens, and to assist in developing the resources of the Colony. It was due to Captain Clarke, who had been largely instrumental in establishing the National Museum, that the Philosophical Society of Victoria (modelled on the Royal Society of Britain) was founded. The Society had as its objects the study of the whole field of natural science, and the provision of assistance in the development of the natural resources of the Colony.

Clarke, Selwyn, and Mueller served on the governing bodies of both societies which, in 1855, combined to form the Philosophical Institute of Victoria, a practicable arrangement in view of the limitations of the Colony's resources at that time. The Institute actively studied the natural resources of the Colony and the possible beneficial introduction of exotic animals and plants. It was also interested in the formation of an astronomical society, and sponsored the organisation of a geographical expedition: the pioneering Burke and Wills expedition of 1860. In 1859 the Institute obtained Royal assent to assume the title of the Royal Society of Victoria. Sir Henry Barkly, the Governor of Victoria and President of the Institute at that time, continued as President of the Society, in which he took a very active part; subsequent Governors of Victoria have accepted the position of patron. The Royal Society of Victoria has continued to flourish, encouraging and carrying out scientific work.

Founded in 1857, the Zoological Society of Victoria was incorporated into the Acclimatization Society of Victoria in 1861; this became the Zoological and Acclimatization Society in 1872, and finally in 1910, the Royal Zoological and Acclimatization Society. McCoy, Mueller, and other leading scientists were actively interested in the work of the Society. The aim of the Society was the introduction and acclimatisation of animals, birds, fishes, and plants, both useful and ornamental. The first collections were housed in the Richmond Paddock opposite the Melbourne Botanic Garden,

the animals being removed in 1862 to the present Zoological Gardens site at Royal Park, and the plant specimens being transferred to the Botanic Garden.

As the sciences of genetics and ecology were as yet comparatively undeveloped, many failures occurred, such as the attempts to introduce nightingales, partridges, canaries, and pheasants into the local bird populations, and Murray Cod and "Murray" lobsters into the Yarra. Another failure was the project to introduce oysters and crayfish into Lake Corangamite on the assumption that the fact that the lake had a similar salinity to ocean waters would ensure the success of the project. On the other hand the Society had many "successes", including the introduction of the blackberry, rabbit, starling, thrush, and sparrow. Trials were also made of Brahmin cows and Aden, Bengal, and Russian sheep, foreshadowing modern experiments. By the 1930s the Society was facing financial and other difficulties, and requested the Victorian Government to assume responsibility for the Zoological Gardens and the extensive collections housed therein. As a result the *Zoological Gardens Act 1936* appointed the Zoological Board of Victoria, on which the Society was represented until its final disbandment in the 1950s.

Other important societies founded in the early years of the Colony included the Field Naturalists' Club of Victoria, the Geographical Society of Victoria, and the Royal Victorian Horticultural Society. A branch of the British Astronomical Association functioned between 1897 and 1963, being superseded by the Astronomical Society of Victoria which had been established in 1922.

#### AUSTRALIAN AND NEW ZEALAND ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

The Australasian Association for the Advancement of Science was formed in Sydney in 1886, holding its inaugural congress in 1888, and acting through congresses held at two year intervals in the capital cities of Australia, with New Zealand included once in each rotation. In 1930 the name was changed to Australian and New Zealand Association for the Advancement of Science, the first A.N.Z.A.A.S. congress being held in 1932. After the first congress in Sydney in 1888, the University of Melbourne was the venue in 1890, 1900, 1915, 1921, 1935, 1955, and 1967. The announced intention, following the lead of the British Association for the Advancement of Science, was to "promote science among the interested public". The term "science" was used to include history, education, and economics. Until the 1950s interstate travel for scientific discussion was not common, and these congresses were outstanding among the scholarly gatherings. They were more an occasion for scientific discussion than for enlightening the public. With the development of specialist societies since about 1950, and with easier travel, A.N.Z.A.A.S. began to work towards a more popular and less specialised type of science and to concentrate on symposia between different interests, leaving special topics to the specialist societies; restructuring of the Association in this direction occurred in 1970. By 1967 attendances in Melbourne had already reached 3,600.

While Melbourne has often been the venue for international meetings,

the meeting of the British Association for the Advancement of Science in 1914 was the one occasion when this parent body met in Australia. Many distinguished overseas guests arrived for this meeting which, unfortunately, was interrupted by the outbreak of war.

#### FELLOWS OF THE ROYAL SOCIETY, LONDON

During the 140 years of Victoria's history since the first settlement, many learned persons have contributed to the advancement of knowledge. Some of these have been honoured for their efforts in their respective fields by being elected as Fellows of the Royal Society in London. The following list, verified by the Royal Society, London, is of those Fellows who at some stage in their lives have lived and worked in Victoria; many of these have attained international status in their own fields; all have contributed greatly to the advancement of knowledge in Victoria.

- KAY**, Captain Joseph Henry, R.N. (1814–1875).  
F.R.S. 1846.  
Entered Royal Navy 1827; resident in Melbourne, c. 1854–1875. At one time (dates not known) Director of H.M. Magnetic Observatory at Hobart Town, Tasmania.
- STRZELECKI**, Sir Paul Edmund de, K.C.M.G. (1797–1873).  
F.R.S. 1853.  
Explorer and geologist; came to Australia in 1839. In February 1840 ascended Mt Kosciusko which he named, and later that year explored Gippsland region of Victoria. In 1846 was awarded the Founder's Medal of the Royal Geographic Society.
- MUELLER**, Baron Sir Ferdinand Jakob Heinrich von, K.C.M.G. (1825–1896).  
F.R.S. 1861.  
Botanist, explorer and geographer; Government Botanist to the Colony of Victoria. Director of the Melbourne Botanic Gardens, 1857–1873.
- VERDON**, Sir George Frederic, K.C.M.G., C.B. (1834–1896).  
F.R.S. 1870.  
Lawyer; came to Melbourne in 1851. Called to the Victorian Bar 1863. Treasurer for Victoria, 1860–1861 and 1863–1868. Agent-General in London, 1868–1872.
- ELLERY**, Robert Lewis John, C.M.G. (1827–1908).  
F.R.S. 1873.  
Physician and astronomer; came to Melbourne in 1851. Trained for the medical profession, but took up astronomy. Founded Observatory at Williamstown in 1853. Director Geodetic Survey of Victoria, 1858–1874. Government Astronomer, Melbourne, 1863–1895.
- McCOY**, Sir Frederick, K.C.M.G. (1823–1899).  
F.R.S. 1880.  
Physician; came to Melbourne from Dublin. Educated for the medical profession. Appointed (c. 1854) Professor of Natural Science in the University of Melbourne. Founded the National Museum of Natural History in Melbourne.
- CLARKE**, Sir George Sydenham, G.C.M.G., later Lord Sydenham of Coombe (1848–1933).  
F.R.S. 1896.  
Soldier; Governor of Victoria, 1901–1904.
- SPENCER**, Sir Walter Baldwin, K.C.M.G. (1860–1929).  
F.R.S. 1900.  
Zoologist and ethnologist; Professor of Biology in the University of Melbourne, 1887–1919. Trustee of Public Library, National Gallery, and National Museum of Victoria, 1895–1928.
- GREGORY**, John Walter (1864–1932).  
F.R.S. 1901.  
Geologist; Director of the Geological Survey, Mines Department, Victoria, 1902–1904. Professor of Geology in the University of Melbourne, 1900–1904.
- MARTIN**, Sir Charles James, C.M.G. (1866–1955).  
F.R.S. 1901.  
Physiologist; Lecturer in Physiology in the University of Melbourne, 1897. Professor of Physiology in the University of Melbourne, 1901–1904. Chief of Division of Animal Nutrition, C.S.I.R., 1931–1933.

- MICHELL**, John Henry (1863–1940).  
F.R.S. 1902.  
Mathematician; Professor of Mathematics in the University of Melbourne, 1923–1929.
- MASSON**, Sir David Orme, K.B.E. (1858–1937).  
F.R.S. 1903.  
Chemist; Professor of Chemistry in the University of Melbourne, 1886–1923. Participated in organisation of Mawson's Antarctic expedition, 1911–1914. President of Australasian Association for the Advancement of Science, 1911–1913. Chairman of organisation for meeting of British Association for the Advancement of Science in Australia in 1914. First President of Australian Chemical Institute, 1917–1920. Associated with formation of Australian National Research Council, President, 1922–1923.
- LYLE**, Sir Thomas Ranken (1860–1944).  
F.R.S. 1912.  
Mathematician and physicist; Professor of Natural Philosophy in the University of Melbourne, 1889–1915. Chairman of Board of Visitors of Melbourne Observatory and Member of State Electricity Commission of Victoria, 1917–1937.
- AGAR**, Wilfred Eade (1882–1951).  
F.R.S. 1921.  
Zoologist; Professor of Zoology in the University of Melbourne, 1919–1948.
- EWART**, Alfred James (1872–1937).  
F.R.S. 1922.  
Botanist; Government Botanist to the State of Victoria, 1906–1921. Professor of Botany in the University of Melbourne, 1906–1937.
- JONES**, Frederic Wood (1879–1954).  
F.R.S. 1925.  
Anatomist; Professor of Anatomy in the University of Melbourne, 1930–1937.
- LABY**, Thomas Howell (1880–1946).  
F.R.S. 1931.  
Physicist; Professor of Natural Philosophy in the University of Melbourne, 1915–1944.
- MICHELL**, Anthony George Maldon (1870–1959).  
F.R.S. 1934.  
Consulting engineer; graduate of the University of Melbourne. Consulting engineer in Melbourne, 1903–1959.
- VERNEY**, Ernest Basil (1894–1967).  
F.R.S. 1936.  
Pharmacologist; Research Professor in Physiology in the University of Melbourne, 1961–1964.
- KELLAWAY**, Charles Halliley, M.C. (1889–1952).  
F.R.S. 1940.  
Pathologist; graduate of the University of Melbourne. Resident Medical Officer and later Registrar, Melbourne Hospital, 1912–1914. Director of the Walter and Eliza Hall Institute of Research in Pathology and Medicine, Melbourne, 1923–1944. Specialist physician, Royal Melbourne Hospital, 1925–1943.
- ECCLES**, Sir John Carew, F.A.A.  
F.R.S. 1941.  
Physiologist; Professor of Physiology, University of Otago, New Zealand, 1944–1951. Professor of Physiology, Australian National University, 1951–1966. President, Australian Academy of Science, 1957–1961.
- RIVETT**, Sir Albert Cherbury David, K.C.M.G., F.A.A. (1885–1961).  
F.R.S. 1941.  
Chemist; graduate of the University of Melbourne. Associate Professor, 1920. Professor, 1924–1927. Deputy Chairman and Chief Executive Officer, C.S.I.R., 1927–1945, Chairman, 1946–1949.
- BURNET**, Sir Frank Macfarlane, O.M., K.B.E., F.A.A.  
F.R.S. 1942.  
Biologist (immunologist); graduate of the University of Melbourne. Resident pathologist, Melbourne Hospital, 1923–1924. Assistant Director of the Walter and Eliza Hall Institute of Research in Pathology and Medicine, 1928–1931 and 1934–1944. Director of the Institute and Professor of Experimental Medicine in the University of Melbourne, 1944–1965, and Emeritus Professor from 1965. Nobel Laureate (Physiology and Medicine), 1960. President of Australian Academy of Science, 1965–1969.

- FAIRLEY**, Sir Neil Hamilton, K.B.E. (1891–1966).  
F.R.S. 1942.  
Physician; Assistant Director, Walter and Eliza Hall Institute of Research in Pathology and Medicine, 1920–1922. Director, L.H.Q. Medical Research Unit, Cairns (where experiments led to control of malaria in jungle warfare), and consulting physician for tropical diseases to Australian and United States of America Armed Forces, 1942–1945. Tata Professor of Tropical Medicine, Bombay. Wellcome Professor of Tropical Medicine, University of London. Honorary consultant to British Army, 1950–1956. Buchanan Medal of Royal Society, 1957.
- TIEGS**, Oscar Werner, F.A.A. (1897–1956).  
F.R.S. 1944.  
Zoologist; Associate Professor of Zoology in the University of Melbourne, 1933–1951. Professor and Head of the Department, 1951–1956.
- BRUCE**, of Melbourne, The Rt Hon. Viscount Stanley Melbourne, P.C., C.H. (1883–1967).  
F.R.S. 1944.  
Statesman; Prime Minister of Australia, 1923–1929. High Commissioner for Australia in Great Britain, 1933–1945. First Chancellor of Australian National University, Canberra, 1952–1961.
- CAMERON**, Sir Gordon Roy (1899–1966).  
F.R.S. 1946.  
Pathologist; Assistant Director, Walter and Eliza Hall Institute of Research in Pathology and Medicine, 1925–1927. Professor of Morbid Anatomy, University College Hospital Medical School, London, 1937–1964, and Emeritus Professor, 1964–1966.
- FELDBERG**, Wilhelm Siegmund, C.B.E.  
F.R.S. 1947.  
Neuropharmacologist; at Walter and Eliza Hall Institute of Research in Pathology and Medicine, 1936–1938. Honorary lecturer, University of London, since 1950. Head of Laboratory of Neuropharmacology, National Institute for Medical Research, London, since 1966. Professor Emeritus.
- BULLEN**, Keith Edward, F.A.A.  
F.R.S. 1949.  
Mathematician and geophysicist; Senior Lecturer in Mathematics at the University of Melbourne, 1940–1945. Professor of Applied Mathematics, University of Sydney since 1946.
- ANDERSON**, John Stuart, F.A.A.  
F.R.S. 1953.  
Chemist; Professor of Inorganic and Physical Chemistry and Head of the Department of Chemistry in the University of Melbourne, 1954–1959.
- CHERRY**, Sir Thomas Macfarland, F.A.A. (1898–1966).  
F.R.S. 1954.  
Mathematician; Professor of Mathematics in the University of Melbourne, 1929–1963. President of the Australian Academy of Science, 1961–1965.
- HILLS**, Edwin Sherbon, C.B.E., F.A.A.  
F.R.S. 1954.  
Geologist; graduate of the University of Melbourne. Professor of Geology and Mineralogy, University of Melbourne, 1944–1963. Deputy Vice-Chancellor of the University of Melbourne, 1962–1970, and Research Professor of Geology in the University since 1964. Chairman of Trustees, National Museum of Victoria, 1961–1968.
- MARTIN**, Sir Leslie Harold, C.B.E., F.A.A.  
F.R.S. 1957.  
Physicist; appointed to Natural Philosophy Department of the University of Melbourne, 1927. Professor of Physics in the University of Melbourne, 1945–1959 and Emeritus Professor in 1960. Chairman of the Australian Universities Commission, 1959–1966. Professor of Physics and Dean of Faculty of Military Studies (University of N.S.W.), Royal Military College, Duntroon, since 1967.
- FENNER**, Frank John, M.B.E., F.A.A.  
F.R.S. 1958.  
Biologist; Francis Haley Research Fellow, Walter and Eliza Hall Institute of Medical Research, Melbourne, 1946–1948. Professor of Microbiology, John Curtin School of Medical Research, Australian National University, Canberra, 1949–1967, and Director of the School since 1967.

- ROBERTSON, Sir Rutherford Ness, C.M.G., F.A.A.**  
F.R.S. 1961.  
Botanist; Member of the Executive of the C.S.I.R.O., Melbourne, 1959–1962. Professor of Botany, University of Adelaide, 1960–1969. President, Australian Academy of Science, 1970. Chairman, Australian Research Grants Committee, 1965–1969. President, A.N.Z.A.A.S., 1965. Master of University House, Australian National University, Canberra, since 1969.
- WHITE, Michael James Denham, F.A.A.**  
F.R.S. 1961.  
Zoologist; Professor of Zoology in the University of Melbourne, 1958–1964. Professor of Genetics in the University of Melbourne since 1964.
- MENZIES, Rt Hon. Sir Robert Gordon, K.T., C.H., F.A.A.**  
F.R.S. 1965.  
Lawyer and statesman; practised as a barrister at the Victorian Bar. Entered Victorian Parliament 1928. Attorney-General, Minister of Railways and Deputy Premier of Victoria, 1932–1934. Prime Minister of Australia, 1939–1941 and 1949–1966.
- ISAACS, Alick (1921–1967).**  
F.R.S. 1966.  
Virologist; Rockefeller Travelling Fellow at Walter and Eliza Hall Institute of Medical Research, 1948–1950. Head of Division of Bacteriology and Virus Research, National Institute of Medical Research, London, 1961–1967.
- WHITE, Sir Frederick William George, K.B.E., F.A.A.**  
F.R.S. 1966.  
Physicist; educated Victoria University College, New Zealand. Served in C.S.I.R., Melbourne, 1941–1946. Chief Executive Officer, C.S.I.R.O., 1949–1957, Deputy Chairman, 1957–1959, and Chairman, 1959–1970.
- PRIESTLEY, Charles Henry Brian, F.A.A.**  
F.R.S. 1967.  
Physicist; Chief of the Division of Meteorological Physics of the C.S.I.R.O., Aspendale, Victoria, since 1946.
- WALSH, Alan, F.A.A.**  
F.R.S. 1969.  
Physicist; Assistant Chief, Division of Chemical Physics, C.S.I.R.O., Victoria, since 1961. Introduced atomic absorption spectrometry.
- MILLER, Jacques Francis Albert Pierre, F.A.A.**  
F.R.S. 1970.  
Pathologist; Head, Experimental Pathology Unit, Walter and Eliza Hall Institute of Medical Research since 1967. First to demonstrate immunological importance of thymus gland.

## UNIVERSITIES AND INSTITUTES OF ADVANCED EDUCATION

---

### UNIVERSITY OF MELBOURNE

The *Faculty of Agriculture*, established in 1905, remained strictly a teaching organisation until 1928 when funds for research were provided under the Agricultural Education Acts Amendment Act of that year. These funds were used by the Dean, Professor (later Sir Samuel) Wadham, to support surveys of the soils and land use practices in four Victorian districts, and sociological studies of farmers through the wheat belt and of irrigators in the Mildura area. These surveys all contributed to his writings and his recommendations as a member of the Rural Reconstruction Commission in the 1940s. A later survey was concerned with the wool industry of the Western District. In recent years the research programme has greatly increased with the provision of additional funds from governments, primary industry research funds, banks, and industrial sources. A large part of the Faculty's field research work is conducted at Mt Derrimut.

Work in agricultural chemistry has been concerned with trace elements in soils, especially the essential elements manganese and molybdenum. A unit of the C.S.I.R.O. was connected with this work and also investigated silicon in plants. Work in agricultural biochemistry has covered fatty acid and amino acid metabolism in sheep tissues, proteins and polysaccharides in relation to the quality of wheat, the utilisation of the rumen bacteria as a source of nutrients by sheep, and biochemical changes during the maturation of the sheep blowfly.

Workers in the plant sciences have been concerned basically with the developmental physiology of crop plants, in particular the reactions of varieties to temperature and length of day in relation to flowering and maturity. Other studies have concerned the effects of nitrogen fertilisers, weed competition in crops, the invasion of permanent pastures by annuals, and plant breeding problems. The research programme in animal production has dealt with nutrition, the growth and body composition of animals, and genetic improvement. Meat studies have shown how nutrition, breed, sex, age, and weight influence the quality of cattle and sheep carcasses. A performance recording scheme for cattle breeders has been recommended.

Sociological studies have been made in selected districts with particular reference to agricultural extension needs and problems. The agricultural economics research has been on farm management aspects of the grazing and wheat industries and on the marketing of wool, beef, and dairy products.



Recently work has been concentrated on problems of rural reconstruction.

In the *Faculty of Dental Science* organised research began with the appointment of the first professor, Dr F. C. Wilkinson, in 1924. However, as early as 1886 papers had been presented on numerous subjects to the Odontological Society of Victoria, which had been formed two years earlier by a group of Melbourne dentists. It was instrumental in establishing the Dental Hospital of Melbourne, as well as the Australian College of Dentistry, the first dental school in Australia, in 1897. Some organised research was carried out there, notably on dental caries, and members published the *Australian Journal of Dentistry*, a precursor of the present *Australian Dental Journal*.

During the early part of this century, when research facilities were not readily available, work was carried out in close association with university departments. One project in 1913 investigated the relationship of saliva to dental decay. Dr Wilkinson, when appointed to the Chair of Dental Science in the University of Melbourne, became the first professor at the Australian College of Dentistry. He obtained funds from the college for a clinical research laboratory and an annual grant was devoted to dental research. In 1929 legislation enabled the University Council to act as trustees for the Dental Research Department's funds; the F. A. Kernot Bequest, also made at that time, still assists dental research considerably. Some of the earlier projects concerned the absorption of alveolar bone in Aboriginal skulls, a new method of root canal treatment, and the pathology of pyorrhoea.

In co-operation with the University's Metallurgy Department, a special laboratory was set up in 1934 for the study of metallography including the fundamental properties of dental amalgams. In 1947 this laboratory was taken over by the Commonwealth Department of Health and became known as the Commonwealth Bureau of Dental Standards; during the Second World War it tested materials for the Armed Services. After the war, with the increase of students, clinical teaching had to be carried out in accommodation previously reserved for research, which therefore suffered even though some university departments, notably Physiology and Pathology, gave considerable research assistance to the Faculty. Funds were more readily available after the appointment of professors to the Chairs of Dental Prosthetics and Conservative Dentistry in 1949, and suitably equipped research laboratories were available when the School of Dental Science moved to new buildings in 1963.

Early research workers were mainly concerned with establishing facilities and encouraging those interested in projects, but some aspects of research have received continuous attention. Under the first professor the main interests were in anatomy and pathology, and a materials research laboratory was developed. His successor, Professor (later Sir) Arthur Amies, extended research in the field of dental materials, until the laboratory was taken over by the Bureau of Dental Standards, and interest in dental pathology continued. Latterly, research has covered the prevention and cure of dental disease, the role of fluoride in dental health, bone development, the physiology of speech and mastication, and immunological studies.

Considerable sums have been provided for research by private sources, the University itself, the State and Commonwealth Governments, the Australian Research Grants Committee, and the National Health and Medical

Research Council. Between 1970 and 1971 \$105,000, which included a capital grant of \$50,000 for an electron microscope, was available for research, and 22 members of staff were engaged in research activities.

Although *Faculty of Engineering* courses were introduced in 1861 research was, at first, limited and sporadic. The earliest work seems to have been on tests of model bridges begun about 1870 by the first Professor of Engineering, W. C. Kernot, whose research on local timbers and wind pressures on buildings was also significant. Later wind pressure studies were carried out on models in the wind tunnel which was installed soon after the First World War, and other important work was done on electrical measuring equipment, and on metal creep in lead and aluminium alloys. There were no research scholarships in engineering until after 1920, and other finance came first from the Science and Industry Fund; it was used between 1930 and 1935 for research on the strength of welds. After the Second World War separate Chairs were created in Civil, Mechanical, and Electrical Engineering, and the staff in each department was increased. More research scholarships became available; laboratories and equipment were improved; and industry sponsored several projects. In 1971 over one hundred members of staff and postgraduate students were engaged in research and teaching activities. The annual university research grant to the Faculty was about \$86,000 exclusive of scholarships, but about \$250,000 came from outside sponsors, mainly for specific projects.

In metallurgy, studies of cavitation (the development of very small holes) at grain boundaries in deformed metals have become widely known. This was the result of combined research done by the university staff and a C.S.I.R.O. group within the Metallurgy Department, as was also the study of the electrolytic production of titanium metal from titanium chlorides. Since 1948 a unit has been studying methods of converting brown coal to fuel of high calorific value, and one of these, high-temperature carbonised char, has shown promise as a competitor to metallurgical coke from New South Wales. Recent studies have shown that raw brown coal as well as the char may have considerable potential in metal extraction, removing pollution from water, and collecting oil slicks. In mining, close links have been maintained with the C.S.I.R.O., especially in work on methods of mineral separation and processing. Studies on rotary drag drilling are among the University's own projects.

Civil engineering studies on rock fill dams, in which some of the overflow passes through the dam itself, rather than over a costly spillway, have received recognition. Studies have also been concerned with the carrying capacity of long slender piles, driven through soft soil to rock at depth; in fact, the foundations of the first stage of the Arts Centre, built between 1966 and 1968, were designed on the basis of this research. The failure of King's Bridge in 1962 prompted research on the brittle fracture of the broken girders, and since 1956 the difficult problem of highway foundation design has progressed.

In mechanical engineering, boundary layer fluid flow has been studied on building structures, ships' hulls (including aspects of the design of an Australian entry for the America's Cup yacht race), water turbines, and aircraft wings. Investigations have also centred on the mechanics and economics of milling and turning. The human engineering group has been

assessing the strains on the car driver; the interaction of the vehicle, driver, and roadway; and the design of motor cars.

For nearly twenty years electrical engineers have investigated the stability of electric power systems where sudden overload or other failure can cause widespread breakdowns. Originally the work was experimental, but a computer programme now predicts the performance of electrical machines in large interconnected systems. Research on electronic circuits has important applications in the design of amplifiers used in telecommunications. A third major project has been on the noise performance of semi-conductor devices.

Between 1960 and 1964 a group of chemical engineers conducted experimental work on packed catalytic tubular reactors and fluidised bed reactors. Since 1964 heat and mass transfer processes have been studied: improved gas heat transfer is an example which it is hoped will result in improved designs for gas heated equipment.

Since 1954 the Agricultural Engineering Department has operated the Australian Tractor Testing Station. Research has also been conducted on run-off from catchments and infiltration of water in bay irrigation. The Survey Department has investigated transition curves and astronomy, the mathematics of adjustments of surveys as used in the 1966 adjustment of the Australian Geodetic Survey, and the adjustment of aerial photographs in photogrammetry.

In the *Faculty of Medicine* of the University of Melbourne, the first Medical School in Australia, was established in 1862, and the first Professor, G. B. Halford, began teaching in 1863, being responsible for courses in Anatomy, Physiology, and Pathology. By 1885 it became necessary to accommodate Pathology and Anatomy in a separate building, and in 1900 Bacteriology and a lecture theatre block were added. Anatomy was transferred to a new building in 1923.

Medical School development in the early years involved consolidation rather than expansion. The number of students was relatively small, the medical course was designed for general practitioners who were greatly in demand in a rapidly growing community, and medical science was in its infancy. Staff in the departments was inadequate, equipment deficient, and facilities for research limited. A typical department might consist of a professor and one or two other members, but teaching commitments permitted little time for research, which the School was thus unable to support on a continuing basis. The only exceptions to this were the Hall and the Baker Institutes.

During the Second World War the importance of research in solving complex medical problems was recognised, and the resulting impetus continued into the post-war period. New departments, additional staff, and greatly improved facilities were necessary. In 1947 the Royal Children's Hospital established a Clinical Research Unit which was incorporated in the Royal Children's Hospital Research Foundation in 1960. Since the mid-1950s all departments of the Medical School have been enlarged, and are now accommodated in new buildings in the south-west corner of the University. Many new departments have also been created, and clinical professorial units with well equipped research laboratories have been established in all the teaching hospitals associated with the University. Modern teaching and

research facilities are now under construction at St Vincent's Hospital, the Royal Victorian Eye and Ear Hospital, and in the new clinical schools at the Austin and Mercy hospitals.

When the Medical School was founded there was one professor responsible for courses in Anatomy, Physiology, and Pathology ; it was twenty years before another chair was established. By the outbreak of the Second World War the professorial staff numbered only 6 ; in 1971 it was 28. Five of these chairs, as well as the Florey Laboratories, were established through substantial contributions from private benefactors and the community. Sub-professorial staff numbers have increased from 5 in 1866 to about 145 in 1971.

By 1931 endowments to the University for medical research had reached a level which justified the creation of a Medical Research Funds Committee ; three years later this became the Medical Research Committee. The funds remained small, however, and in 1942 the sum of only \$9,206 was available. The following approximate figures illustrate the gradual development of internal funds : 1950, \$22,000; 1952, \$46,000; 1955, \$50,000; 1962, \$106,000; 1965, \$196,000; 1969, \$173,000; and in 1970, \$225,000. The substantial growth in research which has occurred since 1945 has been largely due to external funds provided by Australian and overseas foundations and various government and non-government bodies in Australia. These include the National Health and Medical Research Council, the Australian Research Grants Committee, the National Heart Foundation of Australia, the Anti-Cancer Council of Victoria, and the Life Insurance Medical Research Fund of Australia. With the growing international reputation of the School, overseas aid has greatly increased in recent years. As a result of this support, the total expenditure on medical research had grown to \$800,000 in 1964, and in 1971 was approximately \$1.25m.

Outstanding among the large number of research programmes undertaken over the years have been Sir Macfarlane Burnet's contributions to virology and immunology, culminating in the award of a joint Nobel Prize in 1960 ; studies on snake venoms ; work on the comparative physiology of monotremes ; the nature of the toxin-antitoxin reaction ; nerve repair studies ; the elucidation of the nature of chloroform death ; studies on the comparative anatomy of the Australian Aboriginal and Australian mammals ; pioneer studies on surgical pathology and thoracic surgery ; work on prophylaxis against tetanus, the problems of hospital sepsis, and on barbiturate and morphine antagonists ; studies on peripheral nerves and nerve repair ; and the work of the Florey Laboratories and the Department of Physiology on salt and water biology, renal hypertension, and cell differentiation.

The *Walter and Eliza Hall Institute of Medical Research* owes its foundation to Sir Harry Allen, then Professor of Pathology in the University of Melbourne, who in 1915 urged the Walter and Eliza Hall Trust of Sydney to provide the Melbourne Hospital with diagnostic laboratories. Early in 1915 the first director, Dr G. C. Matheson, was appointed and building on the hospital site began. It was completed in 1916, but as Matheson was killed at Gallipoli, the Institute was not inaugurated until January 1920 as the Walter and Eliza Hall Institute of Research in Pathology and Medicine, acquiring its present title in 1947. Since then it has had an unbroken record of work in the medical sciences under its successive directors. By 1939 the hospital

laboratories had become independent of the Institute, and in 1946 the clinical research unit of the Institute was established with its own ward in the Royal Melbourne Hospital. This re-established a close but specifically limited relationship with the Hospital. Several of the Institute's scientists have become Fellows of the Royal Society and Fellows of the Australian Academy of Science. Since 1944 the Director has also held a Chair in the University of Melbourne. This was at first styled the Chair of Experimental Medicine, but is now the Chair of Medical Biology.

A wide range of topics has been studied, depending both on the special interests of individual workers and on the need for the investigation of epidemics or of war-time contingencies. The first major study was of hydatid disease (between 1920 and 1924), followed by a long series of investigations on Australian snake venoms between 1927 and 1938, leading to the production of an anti-venene by the Commonwealth Serum Laboratories. Arising from these studies important work was carried out between 1935 and 1939 on the action of toxic substances in provoking the liberation of active pharmacological agents from cells. In 1934 the Rockefeller Foundation began to support extensive and significant virus research, which was carried out in the following years under Sir Macfarlane Burnet who was Director of the Institute from 1944 to 1965. This included work between 1935 and 1941 on psittacosis, herpes virus, and poliomyelitis. During the Second World War a major segment of the Institute's activities was concerned with influenza and methods of producing vaccines from virus grown in the chick embryo, a technique initiated in the Institute between 1935 and 1945. Influenza virus remained a central theme for the Institute until about 1957 and the two most important fields to be developed were the progressive clarification of the function of sialic acid and neuraminidase, and the development of techniques for genetic recombination between influenza viruses. Interest in immunological topics has grown during the last twenty years, and since 1957 these have become the main activity of the Institute. Sir Macfarlane Burnet, O.M., F.R.S. shared a Nobel Prize with P. B. Medawar in 1960 for his part in the discovery of immunological tolerance, and from 1957 to 1959 had developed his clonal selection theory of immunity. Since 1960 the Institute has developed into one of the world's main centres of immunological research.

In 1971 there were 53 research workers at the Institute, in addition to supporting staff and postgraduate students, and the total research expenditure in 1970-71 was \$948,000.

The *Faculty of Science* gained its reputation for scientific research following the appointments of Professor (later Sir) David Orme Masson (Chemistry), Professor (later Sir) Baldwin Spencer (Biology), and Professor (later Sir) Thomas Lyle (Natural Philosophy). With Professor (later Sir) Frederick McCoy, who was appointed Professor of Natural Science in 1855, they became the first four of the sixteen members of the Faculty elected as Fellows of the Royal Society, London. Twelve were later elected Fellows of the Australian Academy of Science. McCoy pioneered Australian palaeontology; Masson determined atomic volumes and worked on the theory of solutions; Spencer made the first scientific studies of the Australian Aboriginal and was the founder of Australian anthropology; and Lyle studied fundamental problems of electro-technology and the theory of the alternating current

generator. A number of notable successors also encouraged the development of research. J. H. Michell, a Fellow of the Royal Society who became Professor of Mathematics in 1923, made important contributions to hydrodynamics and elasticity. The value of his work on the wave resistance of a ship, published in 1898, was only recognised by overseas authorities some thirty years later.

By 1930 there were five departments in the Faculty, each with a small research staff and some postgraduate students working for the M.Sc. degree. They were supported by the Department of Mathematics in the Faculty of Arts, and by the Bacteriology, Biochemistry, and Physiology Departments in the Faculty of Medicine.

Scientific research and training for industry, teaching, and government service have been important since the earliest days. McCoy was responsible for the establishment of the National Museum of Victoria. Masson played an important part in public health work, in organising Antarctic exploration, and in the formation of the Australasian Association for the Advancement of Science (later A.N.Z.A.A.S.) ; he was also first Chairman of the Committee which eventually became the Commonwealth Scientific and Industrial Research Organization (C.S.I.R.O.), as well as first President of the Royal Australian Chemical Institute. In later years members of the Faculty made important research contributions in nuclear science; gave advice to the Council for Scientific and Industrial Research (C.S.I.R.) and the defence and service departments; set up the Radium Laboratory and the X-ray Laboratory which later came under Commonwealth control; formed the Optical Munitions Panel during the Second World War; advised the paper industry; and explored various mathematical aspects of engineering and aerodynamics. Professor Ewart produced handbooks on Victorian weeds, poisonous plants, and forest trees, and the authoritative *Flora of Victoria* in 1930.

Until the end of the Second World War many students with the M.Sc. degree from Melbourne went overseas for further research training. In 1946 the degree of Ph.D. was introduced, candidates for which have typically worked in Melbourne as research students before taking staff positions or going overseas with post-doctoral fellowships. Even so, the growth of the C.S.I.R.O. and the lack of finance for the universities tended to limit scientific research in universities.

The 1957 Murray Report noted that Australian honours and postgraduate research schools were generally weak, despite the high quality of postgraduate students. As a result of this report, the Australian Universities Commission was constituted. Since then increased financial aid has assisted the growth of the original Departments—Chemistry, Physics, Botany, Zoology, and Geology ; increased the size of research schools ; and assisted the development of many newer Departments—Anthropology, Computation, Forestry, Genetics, Mathematics (transferred from Arts), Meteorology, Statistics, and the Science Departments linked with the R.A.A.F. Academy. In 1970 the staff in all these departments numbered 181, with 136 on the technical side; and there were 6 research fellows, 255 M.Sc. students, and 237 Ph.D. students, many of whom were also engaged in part-time teaching. In 1969 alone, the members of the Faculty published 380 scientific papers, and at the end of that year, 58 M.Sc. degrees and 49 Doctorates were awarded. The increasing size of the research schools would not have been possible without industrial

support, private benefactions, and subsidies from government instrumentalities. From 1966 to 1970 the Australian Research Grants Committee provided \$1.2m to the Science Faculty for various projects.

Research contributions by the Faculty have been widely spread and have included :

*Physics* : The accurate determination of the mechanical equivalent of heat ; measurements of thermal conductivity ; studies of long-wave X-rays, the Auger effect, cosmic rays, and the Mossbauer effect ; advances in the theory of electron diffraction.

*Chemistry* : The invention of the Steel-Grant microbalance and its use in the study of the photographic process ; the origination of new synthetic methods in heterocyclic organic chemistry ; the characterisation of many plant products and of organo-metallic compounds ; studies of magnetochemistry and the electronic structure of compounds ; kinetic studies of the mechanism of chemical reactions, including those on surfaces and of solids ; and the development of new techniques for the study of the chemistry of reacting solids.

*Geology* : Advances in stratigraphy and palaeontology, especially in Tertiary sediments and in the relationships of the Palaeozoic igneous and sedimentary rocks, and geochemical investigations.

*Zoology and Genetics* : The structure and evolution of insects, a long-term test of the theory of Lamarckian inheritance ; the cytology, genetics, and evolution of Morabine grasshoppers ; the ecology of marsupials and of amphibians ; the social organisation of Australian Aboriginal tribes ; and the electrophysiology of muscle and nerve in man and the lower animals.

*Botany* : Studies of plant respiration, photosynthesis, and hormones ; of plant pathology ; of alpine ecology in relation to soil conservation ; of the plant microfossils of brown coal ; of marine botany, forest ecology, and conservation ; and electron microscopy of virus, phloem, and leaf surfaces.

*Forestry* : The ecology and silviculture of *Eucalyptus* and of *Pinus radiata* ; photo-interpretation and remote sensing.

*Meteorology* : Glacial meteorology and glaciation ; agricultural and aeronautical meteorology.

*Biochemistry and Physiology* : The study of respiratory pigments and amino acid metabolism ; the chemistry of polysaccharides and proteins ; and the salt metabolism of sheep.

*Computation* : Advances in computer techniques.

The *Faculty of Veterinary Science* began with the first Veterinary School of the University of Melbourne about 1908. This was the University's first official association with veterinary education and research, and the School replaced the Melbourne Veterinary College. The Melbourne Veterinary College was a privately owned institution established by W. T. Kendall in 1888, and was gradually absorbed by the University between 1905 and 1910. Although research records of the Melbourne Veterinary College are incomplete, it is known that Kendall and others conducted studies covering tuberculosis in cattle, the production and use of subcutaneous tissue exudate for vaccination against bovine pleuropneumonia, "bone chewing" in cattle, the toxicity of various poisonous plants, possible antidotes against snake venom, and stringhalt and osteoporosis in horses. Kendall was also interested in the study of professional history

and published a number of papers.

The first Veterinary School at the University completed and published significant research work. An extensive survey was conducted of the beef nodule forming worm, *Onchocerca gibsoni*, and the School also continued diagnostic tests for pleuropneumonia in cattle while developing a reasonably satisfactory complement fixation test by the use of tissue exudate. Subsequently this test was improved and standardised by the C.S.I.R.O. by using organisms grown in an artificial medium. Studies of "bone chewing" in cattle continued, and it was shown that the paralysis which sometimes accompanied this activity was a form of botulism. A series of experiments was also conducted on the bionomics of the sheep ked (a wingless lousefly), *Melophagus ovinus*. In the early 1920s a special laboratory was set up to study the bacteriological status of the metropolitan milk supply, and extensive surveys were conducted on *Mycobacterium tuberculosis* and other pathogens, as well as on the various factors leading to high bacterial counts in commercial milk.

The Act of Parliament which authorised the absorption of the Melbourne Veterinary College into the University of Melbourne also stipulated that a Veterinary Research Institute should be established to perpetuate the veterinary laboratory diagnostic service initiated by Kendall. Research projects conducted by this Veterinary Research Institute, which was established in 1928, included studies of a peculiar type of actinomycosis of the mammary glands of cattle and of other mammals; the epidemiology of Newcastle disease in Australia in the 1930s; John's disease in cattle and the development of a complement fixation test for its diagnosis; ovine brucellosis in sheep and the development of a complement fixation test for diagnosis and control; infectious pneumonia in pigs; botulism in wild birds; copper poisoning in domesticated birds; parasitism in dogs and foxes, particularly in relation to the significance of the foxes in the distribution of the sheep measles parasite *Taenia ovis*, and the tongue worm *Linguatula serrata*; leptospirosis in domestic and wild animals; low grade swine fever under Australian conditions; facial eczema in sheep; eperythrozoonoses and other anaemias in domesticated animals; colibacillosis in birds and animals; mycobacterial infections and interference with the tuberculin test; and hypomagnesaemia in cattle.

In 1963 undergraduate classes, which had been discontinued since 1927, recommended in the School of Veterinary Science at Parkville and subsequently at the School's Veterinary Clinical Centre at Werribee. The first class graduated in December 1967. Postgraduate students were enrolled almost immediately, and most of the research projects have provided postgraduate training in research for the degrees of M.V.Sc. and Ph.D.

In anatomy the main recent research interest has been in the reproductive tract, particularly in the development and structure of the male system. This is balanced, in the field of animal production, by concentration on diseases of the reproductive system of males and the measurement of their effect on fertility in herds and flocks. In physiology, pharmacology, and biochemistry the principal interest has been in the physico-chemical effects of physical effort, particularly in relation to horse racing. Parasitological research has included basic work, such as the effect of hormones on infestation by worms, and applied studies on the epidemiology of internal parasites in sheep and cattle. Microbiological studies have related to the



viruses causing abortion in mares and the immunological aspects of nasal granuloma of cattle. Much of the research in pathology has been directed to the nutritional deficiency diseases which affect the growth of bone. Interest has also developed in the causes of liver diseases in animals and in poultry diseases which severely limit the production of chicken meat and eggs. Research surgery has covered various aspects, including the causes of infection of the kidneys and of degenerative diseases of bones and joints. Preventive medicine has become the chief research interest in medical investigations and projects have covered the economic assessment of disease control and prevention programmes, the development of alternative programmes when existing ones do not achieve maximum economic efficiency, and the testing of new programmes in terms of practical feasibility in normal farm conditions.

Much research has been supported financially by funds from the animal industries, but there have also been significant contributions from private endowments and from a research trust set up for the re-establishment of the Veterinary School. The amount available for research in 1971 was \$154,000, and 21 staff were employed in research projects.

#### MONASH UNIVERSITY

The *Faculty of Engineering* has engaged in research since its foundation in 1960. Facilities have increased and academic staff, of whom there were only five early in 1961, numbered about 70 in 1971. By 1971 special contributions had supported and assisted 79 projects, in addition to other research. Sixty-nine Masters Degrees and Doctorates had been awarded, and about 120 scholars were enrolled as higher degree candidates. In 1970, \$1m was paid in salaries to the staff of the Faculty and \$295,000 on maintenance and equipment. Of these sums a significant proportion can be related directly to research activities. In addition, and apart from the specific outside research grants mentioned above, over \$125,000 was disbursed in salaries to personnel engaged purely on research, and there were about another twelve research students who were not supported financially by the University.

Work in the Faculty covers the broad fields of chemical, civil, electrical, materials, and mechanical engineering. The use of computers in research has given a new dimension to analytical techniques, for example, through their use as a link in the control of many production processes. Examples of engineering research which receive stimulus from the practice of technology include structural engineering, materials engineering, production science, noise problems, electric power transmission, and mineral and chemical processing.

All departments in the Faculty are also engaged in some form of "bio-engineering": work in electrical engineering has included research in neuro-physiology, while electrical techniques and statistical methods have combined with neurosurgery in the context of communications in the nervous system, demonstrating a link between electrical communications and the impulses conducted along nerves. Studies are also being made of the behaviour of animal tissue (whether flexible structures such as blood vessels or the brain) to predict behaviour under extreme conditions of accident or applied forces, and in circumstances where artificial substitute components are required. A growing field of research has covered the effects on animal

and vegetable life of pollution in the atmosphere and water, and studies have been undertaken on the biochemistry of food processing as well as of other materials. Transport, urban development, water supply, and irrigation are all related to other civil engineering activities. Other research is undertaken in the more conventional engineering fields such as electronics, control systems, electrical machines, power conversion, processes in chemical reactors (including distillation, crystallisation, and fluidisation), heat and mass transfer, fluid mechanics, flows in estuaries, vibrations, dynamics, and mechanisms. Many projects necessarily interact with one another; "control systems" link almost all branches of engineering, and studies on the wind-loading on large buildings bring both civil and mechanical engineers into close contact with the meteorologists.

The *Faculty of Medicine* was founded at the opening of the University in 1961, and now includes the Departments of Anatomy, Biochemistry, Physiology, Pathology, Microbiology, Medicine, Surgery, Paediatrics, Obstetrics and Gynaecology, Social and Preventive Medicine, and Psychological Medicine. As these cover a large segment of the biological sciences, a free interchange of research and teaching staff continually takes place with the Faculty of Science. In 1971, for example, there were 301 science students and 331 medical students working in the Department of Biochemistry.

Research has proceeded in all departments since their establishment. The university staff, almost without exception, is engaged in research, as is a number of the visiting staff attached to the affiliated hospitals. The full-time academic staff now numbers 160, the visiting staff 200, and the supporting staff 200. The budget for salaries for the Faculty was \$2.4m in 1971, and for maintenance and equipment, \$465,000. A significant proportion of this is devoted to research. Since the Faculty was established, \$8m has been spent on buildings for the Medical School at the University and at the affiliated hospitals (Alfred, Prince Henry's, Queen Victoria, Royal Park, Larundel, and Fairfield), providing a net area of 270,000 sq ft. A total of \$3m has also been spent on furniture and equipment for these buildings. In addition, the sum of \$2.3m has been spent specifically from research grants and donations to the Faculty during the years 1962 to 1970, including \$593,000 in 1970, in which year 342 papers were published by the Faculty.

The Anatomy Department directs its main research to studies of the very fine structures in cells by the use of the electron microscope with particular reference to the intestines, glands, and lungs.

The Biochemistry Department studies *diabetes mellitus* and the importance of the new substance A.C.G., discovered in this Department, in controlling this disease. Arthritis and the ageing process and the various inherited and chemical factors which influence all cells form a large part of the research.

The Physiology Department studies include the transmission of messages along nerves, and the detailed study of nerve and muscle structure by the electron microscope from other research fields. Work is also being conducted on marsupials, particularly in relation to kidney function.

In the Department of Medicine much of the research activity centres on the control of body functions by hormones; to this end radio-isotopes are used. High blood pressure, stomach ulcers, coronary disease, and the breathing mechanisms of the new-born child are also intensively studied.

The Department of Surgery carries out research on injury in its broadest

sense—of tissues and the whole man. Work at a basic and practical level has been done in the areas of gastric and nutritional investigations and of organ transplantation, particularly of the liver, and on the treatment of severe burns.

In the Department of Obstetrics and Gynaecology a special study of the physiology of the unborn child and methods of diagnosing danger signals before and during birth has proceeded for a number of years. Social factors related to contraception, unmarried mothers, and sexual behaviour are all being actively researched.

The Paediatrics Department conducts research on blood, respiratory, and intestinal diseases in the new-born child. Fundamental studies on the production of red blood corpuscles, anaemias, and leukaemia have been undertaken, and the importance of minute amounts of minerals in the body is being examined.

The Social and Preventive Medicine Department deals with traffic accidents; student health, particularly psycho-social aspects; suicide; and the effect on the family of sick members in hospital.

The Psychological Medicine Department's main areas include the mother's care of her baby and how this influences its development; the causes of excessive crying and problems of insomnia and food upsets in infants; and the effect of emotion on heart and blood pressure.

The Pathology Department directs a very large part of its research towards cancer. Investigations proceed into protective mechanisms, with the aid of radioactive substances.

The Microbiology Department's research includes studies on the organism which causes infectious jaundice as well as rapid means of identification of various bacteria.

The *Thomas Baker, Alice Baker and Eleanor Shaw Medical Research Institute* was established in 1926 to provide laboratory services for the Alfred Hospital and to conduct medical research. It is situated in the hospital grounds. In 1949 the Hospital created a clinical research unit which was functionally joined with the Institute and this, together with expanding activities, necessitated a complete re-building and re-equipping programme from 1966 to 1968. The founders had created a Trust, which assumed responsibility for the major portion of maintenance work, and which also bore the costs of this re-building project, about \$1.5m, in contrast with only \$6,000 for the original building. Similarly the annual maintenance costs have increased from \$6,000 in 1926 to approximately \$350,000 (including the Clinical Research Unit) in 1971, while the number of graduate staff has grown from seven to twenty-five.

At first, work was largely concerned with improving the routine medical services of the hospital, but by 1949 these activities had all been transferred to the hospital and members of the Institute were free to engage in medical research and postgraduate teaching. Developments now sponsored by the Institute help to establish new service departments in the Hospital; the clinical pathology services, the cardiovascular diagnostic service, and the diabetic and metabolic unit of the Alfred Hospital all arose from Institute activities. Facilities are provided for medical students, and postgraduate training is available in both medicine and science. The Institute was formally affiliated with Monash University in 1965.

During the first twenty years, practical research covered a wide field, including the introduction to Victoria of insulin treatment for diabetes, the study of beef measles as a public health hazard, and the treatment of detached retina of the eye. During the Second World War studies were associated with chemical warfare. More recently the Institute's research has led to considerable improvement in the treatment of haemophilia and to extensions of cardiovascular surgery; pure research now represents the major portion of its activities. The fact that various fields of interest must be related when any biological problem is studied in all its ramifications is illustrated by the linking of research at cellular component level with problems of the cardiovascular system (embracing heart, blood vessels, and blood), the production of some forms of cancer by the action of chemicals, the disturbances of the air passages of the lungs producing asthma, and the mobility of parts of the alimentary canal.

The international reputation gained by the Institute has sprung from the contributions of many workers. Especially important has been work on the clotting of blood and the resultant improvement in the treatment of haemophilia and excessive clotting. Investigations covering the behaviour of cardiac muscle cells, together with the roles of calcium and of drugs which react to it, have established a basis for research in other countries. Studies on the control of body fluids in relation to heart failure, and on the identification and study of kinecard, have also been carried out.

Research in the *Faculty of Science* at Monash University began with the appointment of its first professors in 1960, the year before undergraduate teaching began, with the intention of establishing research programmes which would attract workers from other parts of Australia and from overseas. It is carried on in all departments with practically every member of the academic staff, numbering 190 in 1971, involved. These are supported by 26 research staff ranging from technical assistants to research fellows. The annual salaries for academic and research staff amount to almost \$1.8m and the annual expenditure on maintenance and equipment, directly attributable to research, to \$299,000. Research was first undertaken in the Department of Chemistry in theoretical chemistry and spectroscopy, using both an infra-red and a nuclear-magnetic-resonance spectrometer. In the Department of Physics the fields chosen were low-temperature and solid-state physics, and the basic equipment included a helium liquefier and a large electro-magnet. In the Department of Zoology, emphasis was placed on the behaviour and physiology of Australian fauna, and in the Department of Mathematics the research interests were directed towards theoretical radio astronomy.

Departments of Botany and Psychology were established in 1965. In Botany the principal areas of research were translocation in plants, the mapping of the distribution of plant species in Victoria, Quaternary ecology, and the cell biology of grasses. In the Department of Psychology, research has been carried out by a group working in physiological psychology, where the neurophysiological bases of attention, habituation, and learning have been studied. Other work covers human cognitive processes such as memory, complex skills, and information processing, while some workers have studied problems in perceptual constancy, illusion, and instability. Since 1965 new departments in the Faculty have included Genetics, Information Science, and Earth Sciences. Research projects have been set

up in the fields of the genetic control of enzyme synthesis and DNA specificity, and in numerical taxonomy and computer simulation.

An important adjunct to both research and teaching activities has been the availability of adequate computing facilities. At the end of 1961 the University had acquired its first computer, a Sirius, around which grew an independent computer centre offering a service to all departments in the University. This has grown rapidly and in 1971 operated two Burroughs B5500 computers and one Control Data 3200 which also served some Victorian hospitals and other affiliated organisations.

Research in the foundation departments has increased steadily with staff numbers. In 1964 a Professor was appointed to a Chair of Inorganic Chemistry to direct a programme in organo-metallic and co-ordination chemistry, and in 1965 a Chair of Organic Chemistry was established to carry out studies in synthetic organic chemistry, especially organo-phosphorus compounds, heterocyclic compounds, and compounds of biological significance. Meanwhile, a microwave spectroscopy group has also developed. Among various spectrometers, the group operates some special instruments designed to study very unstable compounds and compounds in high density magnetic fields.

In Physics one project has done much to establish the magnetic properties of chromium in a highly purified state, and another has shown that grain boundaries in certain alloys have a marked effect on the magnetic behaviour of superconductors. The Department also performed the first Australian photon-counting experiments on light coherence and constructed a refrigerator which regularly attains the lowest temperature reached in Australia, one twentieth of a degree above absolute zero, for the purpose of studying the atomic structure of magnetic solids.

The University's Jock Marshall Reserve with its near-natural conditions has been used in zoology research. Besides their scientific interest, the Department's arid-zone and fresh-water biology projects have immediate application to the development of water resources and to increasing the productivity of dry environments in the north-west of the State. The Department has instituted a programme in vertebrate palaeontology, and fish fossils about 400 million years old have been discovered.

Monash was the first Australian university to build up a large multi-professorial Department of Mathematics. A second Chair, for Pure Mathematics, was filled in 1963, and was followed by a Chair in Mathematical Statistics in 1964. By 1965 two other Professors of Pure Mathematics had been appointed, and two Chairs of Applied Mathematics were established in 1965 and 1967. By this time the research activities of the Department had expanded to cover the fields of functional analysis, groups, semigroups, lattices, genetics, operational research, astrophysics, and geophysical fluid dynamics.

#### LA TROBE UNIVERSITY

Research in the Science Schools at La Trobe University began in 1966 with both the School of Biological Sciences and the School of Physical Sciences being housed temporarily, partly in the basement of the Library and partly in Glenn College. Some research work was also carried out in

laboratory space provided by Monash University, the University of Melbourne, and the C.S.I.R.O. until the completion of the Physics, Chemistry, and Biological Sciences buildings in 1969. In 1971 the School of Agriculture lacked the necessary space to embark on a full scale research programme.

In the *School of Agriculture* the main lines of investigation stem from the often fatal disease, "grass tetany", in cattle and sheep, characterised by a temporary lack of magnesium in the blood at particular times of the year. The role of magnesium in the animal's metabolism is being studied; regular analyses of pastures from affected areas are being carried out.

Research by the *School of Biological Sciences* has included the following :

*Botany.* Research in this department concerns the structure and development of plants and factors governing their distribution and relation to the environment. Detailed studies are concerned with the ultrastructure of cells; biochemical aspects of cell differentiation; the physiological growth of algae; factors governing the entry of parasites into plants; the form and growth of members of the Liliaceae with an arborescent habit of growth; and studies on the distribution of eucalypts in arid zones of Australia.

*Genetics and Human Variation.* Research is carried out on a broad range of topics, including behavioural, ecological, radiation, and biochemical genetics. Organisms being studied include micro-organisms, insects, plants, marsupials, and man. The interaction of genetic type and environment is being stressed with respect to local population of insects and plants. Other interests include physical anthropology of Australian Aborigines, immunology, and cell biology.

*Zoology.* Studies include a zoo-geographic survey of the south-east Australian reptile fauna; patterns of reproduction in dasyurid marsupials including *Dasyuroides byrnei*, *Dasyercus cristicauda*; pathology of dasyurid marsupials; speciation of endemic psocopteran insects of the Galapagos Archipelago; studies on the origin and distribution of the psocopteran insect fauna of the Melanesian arc of islands, taxonomy and ecology of psocopteran insects of Australia and South America and of neuropteran insects and their hymenopterous parasites; ecology of wasps causing galls on *Acacia*, and insects causing foliage damage to eucalypts; insect physiology and ultrastructure; population ecology of the Light Brown Apple Moth, *Epiphyas postvittana*; bionomics and ecology of the Pear Slug, *Caliroa cerasi*; ecology of the Diamond Black Moth, *Plutella maculipennis*; comparative endocrinology of vertebrates with particular reference to salt and water metabolism in birds.

The *School of Physical Sciences* has carried out research in the fields of chemistry, mathematics, and physics.

*Chemistry—Inorganic and Analytical.* Of the 92 elements which are naturally occurring, inorganic chemistry is interested in and concerned with 91 of them, in the general sense. Of particular interest and significance are the so-called transitional elements which comprise many of the elements important to industry and metallurgy (iron, chromium, nickel, etc.) Ions of these metals react with organic compounds forming co-ordination compounds, and a study of their preparation, chemical behaviour, and other properties provides valuable theoretical information which can produce compounds of value in industry, medicine, and agriculture. This type of

work and study is classified as the "preparation and study of co-ordination and organo-metallic compounds". Often the organic moiety used has to have certain characteristics, and must be designed and synthesised (design and synthesis of multi-dentate chelating agents). In the modern chemical industry the ability to analyse or determine the constituents present in a compound is of great importance. This is true in the Australian mineral industry, the pharmaceutical industry, and in agriculture. Advanced methods are required and these are usually instrumental, so interest centres in spectroscopic techniques such as ultra-violet and visible spectrophotometry, infra-red spectroscopy, and atomic absorption spectroscopy, in which properties of the metallic atom, which are based on the emission or absorption of radiant energy, are exploited. Electro-chemical studies, such as polarography, chronopotentiometry, and chronoamperometry, by which the reducing or oxidising properties of the metal atom in the compound can be characterised, are also of interest, and can lead to valuable information on the compounds as a whole. Thermal methods (thermogravimetry and differential thermal analysis) are also used and the weight losses associated with particular entities examined; these methods are based on the behaviour of the chelate (co-ordination) compounds when heated in a controlled manner.

*Chemistry—Organic.* The Organic Division studies certain theoretical, physical, and synthetic aspects. Work is in progress on understanding and predicting the properties and reaction of organic molecules, both by theoretical calculations and by more empirical relationships with other known features; particular use is made of modern instrumentation, allowing important properties to be measured. Relationships between structure and biological activity are also being studied; much synthetic work is involved in these studies. Work on pollution, particularly by insecticides, is also being carried out.

*Chemistry—Physical.* Mass spectrometers, controlled by the University's PDP 9 computer, are being used in the analysis of complex organic mixtures (e.g., flavours), the determination of isotope abundances in minerals, and the study of energy states of molecules. Energy states are also being investigated by using high energy radiation to displace electrons from the molecules, and related theoretical calculations of the bonding in polyatomic molecules are being made. The rates of reactions of gaseous free radicals, crystal structures of organic and co-ordination compounds, levels of chemical contamination in the local environment, and the geochemistry of ores are also being studied.

*Mathematics.* Among the areas of research are: application of mathematics and statistics to biology with special emphasis on population genetics, maximising the use of limited resources subject to physical or economic constraints, obtaining approximate solutions to mathematical problems where exact solutions cannot be obtained, and utilising a computer for language translation.

*Physics—Electron.* Studies are made of the interaction of electrons with gases and solids. Some effects of X-rays on solids are being examined. Lasers are used to study the surfaces of solids.

*Physics—Space.* The composition and movements of the earth's atmosphere above 60 miles altitude are being studied theoretically and experimentally. Studies are also proceeding on the theory of liquids and of elementary particles.

## SCHOOL OF MINES AND INDUSTRIES, BALLARAT

When the School of Mines and Industries was established at Ballarat in 1870, it was the first institute of technical education in Australia. Its original object was to provide two types of training, one of a scientific type in the various branches of mining technology for mining engineers, surveyors, and assayers, and the other a training for managerial and sub-professional mining employees. Chemistry and metallurgy laboratories were erected during 1871 and 1872, and from the 1880s trade and secondary courses were established to provide an adequate technical and educational basis for persons desiring to undertake professional and sub-professional courses. It was soon found necessary to broaden the scope of courses to cater for additional technical professions such as the various other branches of engineering, applied science, and geology. The School awarded the first diploma in Victoria (metallurgy) in 1896, and the first engineering diploma (mining engineering) in 1897.

During its early years the School depended heavily on funds from local private sources, government grants, and revenue from the public assaying and smelting of gold. Although by 1881 financial difficulties necessitated a reduction in lecturing staff, the School Council established Chairs of Chemistry and Geology to which professors were appointed. From 1887 to 1893 the School was an affiliated college of the University of Melbourne.

In 1881 the School had anticipated the advent of university extension courses by introducing a series of popular science lectures by prominent scientists, including the Government Botanist, F. J. H. Mueller, and the Government Astronomer, R. L. J. Ellery. An astronomical observatory was established by the School on nearby Mount Pleasant in the 1880s; its 12½ inch Newtonian telescope was later removed to the Commonwealth Observatory on Mount Stromlo in the Australian Capital Territory. For some years meteorological observations were published in the School's annual report, which also contained scientific papers, chiefly on geological matters. In 1896 an X-ray plant was installed and used for both clinical and experimental purposes; this was only seven months after Roentgen's demonstration of his discovery.

By 1890 the School was conducting courses in many fields other than mining, including natural philosophy (physics), electricity, telegraphy, biology, botany, and materia medica. Progressively these courses became broader and more advanced until the present diploma courses evolved: art; business studies; applied chemistry; mechanical, electrical, electronic, civil and mining engineering; applied geology; metallurgy; and applied physics. In 1971 a degree course for B.App.Sc. (Chemistry) and a postgraduate diploma course in malting and brewing were introduced. The latter course is the only one of its kind in Australia. From this expansion of the tertiary division has evolved the present Institute of Advanced Education which is being progressively transferred to a new 240 acre site at Mount Helen near Ballarat.

## BENDIGO INSTITUTE OF TECHNOLOGY

The Bendigo Institute of Technology was established in 1873 as the Bendigo School of Mines and Industries to meet the scientific and technical needs of the local gold mining industry by providing instruction in subjects



related to mining, chemistry, geology, and metallurgy, the first diploma (metallurgy) being awarded in 1902. The tertiary section of the Institute is affiliated with the Victoria Institute of Colleges and is being progressively transferred to a new site at Flora Hill with a modern campus and buildings. Fifteen diploma and post-diploma courses are now provided in the fields of applied science, art and design, business studies, engineering, general studies, mathematics, and information science. Degree courses in metallurgy and in civil engineering were due to commence in 1973.

The Institute operates a regional computer centre which has developed a new computer programming language used by secondary schools in the central and northern areas of the State. Other educational research and development has included theoretical and practical approaches to the improvement of tertiary level study skills. Testing services for industry are provided by the Institute, the Soil and Concrete Laboratory being approved by the National Association of Testing Authorities to undertake compression testing of concrete between 50,000 lb and 300,000 lb per square inch. It makes available a full range of concrete testing services to contractors and builders in northern Victoria.

#### ROYAL MELBOURNE INSTITUTE OF TECHNOLOGY

The Royal Melbourne Institute of Technology was founded in 1882 as the Working Men's College. It has been the Institute's policy since its inception to develop courses to meet the demands of the State's technological and industrial growth, and during its ninety years the Institute has continued to offer an increasing range of vocationally oriented courses.

Traditionally, the Institute has also made staff and facilities available to both government authorities and industry for technological problem-solving and testing. Initially, testing and allied services were carried out by individual staff members. This led to the establishment of a testing department in 1935. Although this department had permanent staff and its own equipment, it still relied on, and utilised, staff and equipment from the teaching departments for particular services to industry.

It was not until late in the 1960s that the Royal Melbourne Institute of Technology was able to develop an industrially oriented research programme. In 1968 the Institute undertook its first major research project. A grant of \$10,000 from the Commonwealth Advisory Committee on Advanced Education enabled two research fellows to undertake a study of the information service provided by colleges of advanced education. Over 7,000 firms were invited to participate in a survey of practices and needs, and the study was completed in 1969.

Although extensive use is made of the Institute's facilities and personnel by outside organisations, the potential for investigation and research has only been partly developed. The growth in demand, both in volume and complexity, has indicated the need for a co-ordinated and comprehensive approach to testing services and research. In 1971 the Institute announced the registration of Technisearch Ltd, a company limited by guarantee and owned by the Institute. Technisearch aims to promote the development and practical application of science and technology to industry and commerce, and to undertake applied research and investigations in collaboration with industry.

**TEXTILE COLLEGE, GORDON INSTITUTE OF TECHNOLOGY**

The Textile College, Gordon Institute of Technology, was opened in 1946, although research and public testing in textiles at the Institute dates from 1938. The College teaches textile technology and textile science at postgraduate, undergraduate, and diploma levels, and also engages in public testing for the woolgrower (including a fleece measurement service to aid stud breeders), and in research into the physical and chemical properties of the Australian wool fibre for manufacturing. It conducts refresher courses, conferences, and seminars, and has participated in overseas conferences. In 1971 the staff consisted of ten lecturers and four demonstrators. An annual research grant of \$30,000 is received from the Australian Wool Board, which, together with major industrial firms and manufacturers' associations, contributes about \$38,000 annually in special student scholarships.

The Textile College has carried out pioneer research on the dimensions of wool staples and bulks (fibre diameter, length, crimp frequency, shape of cross-section, etc.) and their inter-relationships; the efficacy of woolclassing and wool-sorting techniques; the relationship between fibre properties in the flock or manufacturing bulks and their manufacturing importance in tops, yarn, and fabric; the effects of woven fabric parameters on the subjective and objective assessments of cloth; the causes of certain processing effects of special wools, such as lambs' wool, carpet wool, and stained wool; and the modifying effects of finishing and dyeing on the woven fabric. Ninety scientific papers were written between 1945 and 1971 for overseas and local publication.

The Australian Wool Board's Experimental Unit is housed in the College under a collaborative agreement and acts as a practical liaison or technical service between research and industry. Modern textile machinery, valued at \$1m, was supplied mainly by the Commonwealth, with some help from the State, and includes woollen, worsted, and cotton-type machinery, together with weaving and knitting plant. The textile testing section is being rapidly developed.

---

The following organisations, which have no formal university affiliations, are engaged in, or sponsor, medical research :

**ST VINCENT'S SCHOOL OF MEDICAL RESEARCH**

The St Vincent's School of Medical Research was established in 1952 as a result of a bequest made by the late John Holt. The research activities of the School fall broadly within the field of molecular biology, the science which seeks to explain the biological phenomena from the chemical and physical properties of the bio-molecules, examples of which are proteins and nucleic acids. Studies of this type have already shed much light on such fundamental biological mechanisms as immunity and heredity.

The study of the structure of proteins has been the main interest of the School, and some notable contributions have been made. Among these are the internationally used advanced technique of determining protein structures, and the invention and introduction in 1967 of the protein sequenator instrument to quicken the task.

Research on the mechanism of blood clotting has led to an understanding of changes in the structure of fibrinogen, a protein in the blood. For the first time an overall picture of the fibrinogen molecule has been gained, opening up possibilities for the study of inherited and acquired defects in the blood clotting mechanism.

More recently investigations have been directed towards the molecular basis of the immune reaction, and important aspects of the mechanism by which antibodies are synthesised in the body have been clarified.

In 1971 the staff of the School comprised five research workers and six technical officers. There is also a variable number of visiting research workers from Australia and overseas. The main source of finance for the School is the interest on the John Holt foundation bequest, but supporting grants have been obtained from the National Health and Medical Research Council and from the Australian Research Grants Committee. The expenditure of the School for the financial year 1971-72 was \$73,534.

#### NATIONAL HEART FOUNDATION OF AUSTRALIA

The National Heart Foundation was established by public subscription in June 1961 for the study, diagnosis, and treatment of diseases of the heart and the circulatory system, for the rehabilitation of sufferers of these diseases, and for promulgating information on the prevention, treatment, and control of heart disease. In Victoria the Foundation supports experimental and clinical research on the cardiovascular system, notably in such fields as the mechanism and pharmacology of drugs affecting cardiovascular function and coronary circulation, and specialised studies on hypertension and thrombosis. As a voluntary organisation, most staff are honorary, although the work is co-ordinated by a small team of salaried workers.

The Foundation's research programme, which accounts for two thirds of all its expenditure, has advanced cardiovascular work in Australia, and between 1963 and 1969 about \$400,000 was spent annually on supporting various projects, about one third of this being awarded for work in Victoria. Aid given to fundamental research has enabled Australia to make important contributions to world knowledge in the electro-physiology of nerve and muscle cells, and in the analysis of heat production in contracting heart muscles. Clinical and applied research work has included the development of new X-ray and other practical techniques in diagnosing early heart failure, in surgery techniques, and in the development of intensive coronary care wards. Rehabilitation units are also maintained and staffed by the Foundation in all capital cities and other major population centres. A Work Assessment Centre specialising in the rehabilitation of patients has been operating in Melbourne for some years, assisting an increasing number of patients to lead productive and rewarding lives. The total number of patients per year increased from 27 in 1961 to over 1,200 in 1971.

As heart diseases are now responsible for more than 34 per cent of all Australian deaths the Foundation has established a public information and education programme so that risks may be recognised and minimised. Over sixty publications for lay and professional readers have been published, and material has also been prepared for the news media. The Foundation finances a continuing education programme to help keep doctors informed of the latest developments, and it supports the recruitment and training of

research workers through its Undergraduate Medical Research Scholarships and by grants for fellowships and specific research projects.

By 1971 the Foundation had awarded a total of over \$1.4m for research in Victoria, had supported 82 research grants in the State, and was currently supporting 27 research projects, fourteen vacation scholars, and six undergraduate research students, representing approximately one third of the Foundation's total awards in Australia.

## COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION

---

### HISTORICAL OUTLINE

At the commencement of the First World War Germany had well-established chemical and precision machine industries, and held a near monopoly in the manufacture of such commodities as dyestuffs and optical instruments. Other countries came to realise the importance of providing scientific help to industry ; the British Government quickly created the Department of Scientific and Industrial Research. Convinced that a similar organisation was needed in Australia, the Prime Minister, the Rt Hon. W. M. Hughes, called a meeting in Melbourne of prominent scientists and industrialists, as a result of which a temporary body, the Advisory Council of Science and Industry, was established in 1916. By 1917 a scheme for a permanent Institute of Science and Industry had been drafted, but political support failed. The Advisory Council struggled on ; its financial resources were extremely limited, and it had neither laboratories, research staff, nor apparatus of its own. Nevertheless, it appointed a number of expert committees which did valuable work in co-ordinating and stimulating research in existing laboratories. In 1920 the Government, due largely to the advocacy of Professor (later Sir) David Orme Masson, the first Professor of Chemistry at the University of Melbourne, established a permanent Institute. Sir George Knibbs, who was then the Commonwealth Statistician, was appointed Director in 1921.

In 1925 the Commonwealth Government convened a conference of scientific and industrial leaders in Melbourne to advise how the Institute might best be re-organised and its activities extended, and the Prime Minister, the Rt Hon. S. M. Bruce, invited a leading British science administrator, Sir Frank Heath, to advise on the reorganisation of national scientific research in Australia. Resulting from the ensuing recommendations the Science and Industry Research Act in 1926 established the Council for Scientific and Industrial Research, which in its early days was guided by an Executive Committee comprising Mr G. A. (later Sir George) Julius, Professor A.C.D. (later Sir David) Rivett, and Professor A.E.V. Richardson. Rivett, who was the only full-time member of the Committee, was Professor of Chemistry at the University of Melbourne from 1924 to 1927.

The Council organised its work into a number of Divisions. No attempt was made to centralise the organisation ; laboratories and field stations were set up wherever in Australia was most appropriate for the work concerned.

The emphasis was on primary production problems, plant and animal diseases, insect pests, food preservation and transport, irrigation problems, and utilisation of forest products; within a few years the Council had established the Divisions of Animal Health, Animal Nutrition, Entomology, Food Preservation, Forest Products, Plant Industry, and Soils.

In 1936 the Commonwealth Government decided to extend the activities of the C.S.I.R. to embrace the problems of Australia's secondary industries, and this led to the establishment of the National Standards Laboratory, the Division of Aeronautics, and the Division of Industrial Chemistry. At the outbreak of the Second World War most of the long-range research programmes of the C.S.I.R. were suspended and the Council concentrated on work of immediate bearing on the war effort; further research groups such as the Division of Radiophysics and the Lubricants and Bearings Section (later the Division of Tribophysics) were formed.

After the war the Council was able to give its full attention to problems of primary and secondary industry. New Divisions and Sections extended the work into building research, meteorological physics, physical metallurgy, wool textiles, coal, and other fields. In 1949 the Council was re-constituted by Act of Parliament as the Commonwealth Scientific and Industrial Research Organization (C.S.I.R.O.). It ceased all secret or classified work, the Division of Aeronautics becoming the Aeronautical Research Laboratories of the Department of Supply. The first Chairman of C.S.I.R.O. was Professor (later Sir) Ian Clunies-Ross. He was succeeded by Dr (later Sir) Frederick White in 1959, who was followed by Dr J. R. Price in 1970.

The first annual report of the C.S.I.R. in June 1927 listed 41 scientific officers. The Council had a small chemical laboratory in rented accommodation. By 1971 C.S.I.R.O. had over one hundred laboratories and field stations throughout the Commonwealth and a total staff of 6,400 including more than 1,800 scientists. In 1970-71 C.S.I.R.O. spent some \$65m on research; about three quarters of these funds were provided directly by the Commonwealth Government, the remainder being contributed by primary industry, individual companies, Australian and overseas government instrumentalities, and private foundations. The Head Office of C.S.I.R.O. (and of its predecessor, C.S.I.R.) was located in East Melbourne until 1971, when it was transferred to Canberra.

#### C.S.I.R.O. IN VICTORIA

As a Commonwealth organisation charged with undertaking research for the benefit of Australian rural and industrial activity, most of C.S.I.R.O.'s research is directed towards problems common to more than one State. Thus, while work on physics is concentrated in Sydney, on soils in Adelaide, on building research in Melbourne, and on insect control in Canberra, the results of this research find application in many parts of Australia, not merely in the State where the research is carried out.

Today about one third of the organisation's research is conducted in Victoria and the section which follows traces the history up to 1971 of those C.S.I.R.O. Divisions and Sections which are, or have been, based in Victoria, giving a brief account of their activities and achievements.

### *Protein chemistry*

In 1949 the Biochemistry Section of the Division of Industrial Chemistry was separated from the Division to become the Biochemistry Unit of the newly established Wool Research Laboratories. In 1952 the Unit moved to Parkville, and in 1958 it became the Division of Protein Chemistry, mainly conducting research on the structure and physical properties of the wool fibre; since 1965 some research has been undertaken on hides and leather.

The Division has made a major contribution to the elucidation of the detailed structure of the wool fibre at the cellular and molecular levels, and has developed biochemical techniques for wool and protein research workers in general. Studies of the distribution and reactivities of amino acid side-chain groups in wool proteins have helped provide a strong basis for understanding many of the physical and chemical properties of the wool fibre. Research on the biochemical mechanisms involved in linking protein molecules to one another during the permanent pleating of woollen garments and the flat setting of suitings had led to a search for new types of chemical cross-links which could be exploited in more rapid setting processes. The demonstration that some oxidative shrink-resist treatments do not completely split disulphide bonds unless a second chemical reagent is employed has also guided further research on these processes. Studies have shown that the sunlight yellowing and bleaching of wool are caused by ultra-violet and blue light, respectively; tryptophan in wool appears to be the major source of discolouration. A process developed by the Division for whitening wool and retarding sunlight yellowing is being used by industry.

Research has also led to a method adopted by the fellmongering industry of recovering wool from sheepskins, and to the use of tanned sheepskins in hospitals for the prevention of bedsores. Work on hospital blankets has shown that with appropriate detergents, shrinkproofed hospital blankets can be boiled without discolouration or damage. The Division has successfully developed a vacuum pressing method of baling wool, a method for protecting wool during carbonising, and a fluorocarbon treatment which prevents the accumulation of wool wax on shearing combs during shearing.

### *Textile industry*

A Textile Research Laboratory was established at Geelong in 1949 as one of the three C.S.I.R.O. Wool Research Laboratories; it became the Division of Textile Industry in 1958.

Research in the Division has been concentrated on problems and improvements in wool textile processing, and on the development of new and better consumer products from wool. Chemical treatments have been devised which make woollen fabrics shrinkproof, mothproof, resistant to "balling" or "pilling", and which confer permanent press properties, perhaps the best known being the "Si-Ro-Set" process for permanent creasing or pleating, which has been used by clothing manufacturers in Australia and overseas.

Notable achievements in textile processing have also been made in the Division. The introduction of a sheep branding fluid, removable during normal processing, has overcome the problem of "tar" in the Australian clip. A scouring process has been developed for cleaning greasy wool by passing it under a series of jets which spray it with either an organic solvent

or a detergent solution ; jet scouring plants are now operating in Australia and in overseas countries. A control instrument developed for the Noble comb is widely used by the wool combing industry, and improved methods of dyeing have been devised which enable wool "top" to be dyed rapidly and on a continuous basis instead of in batches. An entirely new concept of spinning invented at the Division is known as the self-twist system. Self-twist spinning machines are extremely compact and can produce two-ply worsted yarns at twelve to fifteen times the speed of conventional machines. They are manufactured under licence in Australia and distributed overseas.

#### *Chemistry and minerals*

A Division of Industrial Chemistry was set up in 1940 and was located in the Chemistry Department of the University of Melbourne until 1941 when it moved to Fishermens Bend. In 1958 the Division was divided into the Divisions of Chemical Physics, Mineral Chemistry, and Physical Chemistry, and into several smaller sections which later became the Divisions of Organic Chemistry, Applied Mineralogy, and Chemical Engineering. The Division of Chemical Physics transferred to Clayton and the Division of Mineral Chemistry to Port Melbourne in 1965.

In 1966 the Divisions of Physical Chemistry and Organic Chemistry combined to form the Division of Applied Chemistry, while the Mineragraphic Investigations Section, formed at the University of Melbourne in 1927 to study ore materials by microscopic, spectrographic, X-ray, and other techniques, became part of the Division of Applied Mineralogy. In 1967 the Division of Coal Research, Sydney, became part of the Division of Mineral Chemistry, and in 1969 the Division of Chemical Engineering moved to Clayton. In 1971 those Divisions concerned with research for the mineral industries were re-organised and grouped together as the C.S.I.R.O. Minerals Research Laboratories, a complex which has its headquarters in Melbourne and which comprises the Divisions of Chemical Engineering, Mineral Chemistry, and Mineralogy. The latter Division, which has its headquarters in Perth, was formed from parts of the Divisions of Mineral Chemistry and Applied Mineralogy. The remaining staff of the Division of Applied Mineralogy was transferred to research groups in the Divisions of Tribophysics and Building Research. Later in 1971 the Mineral Physics Section of the Division of Mineral Chemistry became an independent section within the Minerals Research Laboratories.

During the Second World War the Division of Industrial Chemistry spent much of its time on the immediate problems imposed by the war, such as extracting uncommon metal derivatives from local minerals. Titanium tetrachloride, for example, was needed for smokescreens, and cerium oxide was needed as a polishing powder for optical lenses. The Division worked on many chemical problems, including the construction of laminated aircraft propellers, prevention of "crazing" of plastic aircraft windows, concentration and drying of foodstuffs, and the preservation of leather boots in hot and humid climates.

Many of the discoveries made during the wartime investigations of ores of the less common metals were subsequently developed into industrial processes ; typical examples include the use of butyl titanate as a heat-resistant paint medium, the manufacture of glass polishing powder, the



separation of hafnium from zirconium, and the production of compounds of aluminium, chromium, and zirconium.

Following the formation of the Division of Mineral Chemistry in 1958, research was extended to cover the industrial extraction of gold, copper, aluminium, and the base metals. Research has since been initiated in the fields of mineral exploration, mining, mineral dressing, and extraction metallurgy.

A Cement Section, supported by manufacturers, was formed in the Division in 1941 to carry out research into the problems of cement production and utilisation. At that time there had been some spectacular failures of overseas concrete structures which had been attributed to a chemical reaction between the cement and the aggregates. The group was able to show how failures could be avoided by proper selection of the aggregate. After the war, the Section entered the field of ceramics and demonstrated the suitability of Australian clays for whiteware manufacture. Subsequently work in the field of industrial minerals led to major projects on refractories for use in kilns, furnaces, and gas plants; contaminants in Victorian brown coal seams; boiler fouling; and the solution of problems in Lurgi gas plant operation. The Section became the Division of Applied Mineralogy in 1962.

In 1944 a group equipped with modern physical facilities for the investigation of chemical problems was set up in the Division of Industrial Chemistry. This group later became the Division of Chemical Physics. It is concerned primarily with basic researches; these have yielded results of great practical importance. For example, spectroscopic studies led to two new techniques, one for producing light of high spectral purity, the other for carrying out chemical analysis by means of atomic absorption measurements. Instruments based on these techniques are now manufactured under licence to C.S.I.R.O. by Australian and overseas instrument manufacturers and are widely used throughout the world.

Studies in the diffraction of light and of electrons have led to a major advance in physical optics, while X-ray methods have been used to determine the structures of several large organic molecules of biological significance. Electron microscopy applied to studies of such materials as muscle, plant chloroplasts, protein crystals, and wool has yielded important new biological knowledge. A knowledge of the solid state is of basic importance in many industrial processes, and as a contribution to this knowledge, investigations have been made of some of the electronic processes involved in diffusion, oxidation, luminescence, and the chemical reactions of solids. In addition to its research programme, the Division of Chemical Physics has stimulated and assisted in the production of scientific instruments in Australia.

The Division of Applied Chemistry is concerned with the application of chemistry to problems of particular importance to Australian industry. Considerable effort is being devoted to the synthesis of new chemicals and the isolation of naturally occurring ones; some of these are of potential value as insecticides, and others have pronounced pharmacological effects, anti-tumour activity, and activity in plant growth control. Research in the area of organo-metallic chemistry is aimed at developing new compounds of some of Australia's basic metals such as zirconium, titanium, and aluminium. It has potential value to the chemical industry in

providing specific catalysts for certain kinds of reactions. Significant advances have been made in developing a method for reducing evaporation from reservoirs and in devising processes for purifying water. Studies of ice nucleation and crystallisation are contributing towards understanding the basic mechanisms of cloud-seeding methods of inducing rainfall.

The Division has developed infra-red aerial methods for detecting bush fires, and has devised a system for economically starting large control fires by dropping incendiary capsules in a grid pattern from aircraft. It is also working on problems in chemical thermodynamics and theoretical physical chemistry, and on the chemical effects of very high pressures. Techniques of separation and analysis are studied and used widely in the Division's research. In conjunction with the University of Melbourne, the Division operates the Microanalytical Laboratory which conducts analyses for research groups and private industry.

The Division of Chemical Engineering is concerned with the development of processes for industrial use and with research into the more fundamental aspects of chemical engineering operations. Development projects have included a study of economic methods for the desalination of sea water and bore waters, and the production of gas of high calorific value by the direct combination of hydrogen with brown coal. The Division also studies the separate operations common to many industrial processes which make up chemical engineering processes, such as fluidisation and mixing, grinding, and the separation of fine particles according to their size. Studies are also carried out in the more basic fields of fluid mechanics and transport properties, and of chemical reactions fundamental to chemical engineering operations.

An Ore Dressing Investigations Section was established at the University of Melbourne in 1934 to study the recovery of minerals from ores by different methods, including cyanidation, amalgamation, flotation, leaching and pressure leaching, and by gravity, electrostatic, and magnetic methods. In 1969 it was closed down, some of its research being transferred to the Division of Mineral Chemistry but most to the Division of Chemical Engineering.

### *Tribophysics*

In 1939 C.S.I.R. established the Lubricants and Bearings Section at the University of Melbourne to study wartime problems associated with friction and lubrication. Replacements for aircraft engines were unavailable in Australia, so the section developed methods of manufacture and testing of bearings, and some were actually produced at the University under the supervision of C.S.I.R. officers. Concurrently, ideas were developed which still form the basis of the understanding of frictional behaviour. At the end of the war, the study of lubricants and bearings was extended to cover all aspects of the study of metal surfaces and in 1948 the Section became the Division of Tribophysics ("rubbing physics").

The Division has contributed to the knowledge of the structure of metals and the properties of metal surfaces; experimental techniques have increased scientific knowledge of the relation of crystal defects to the strength, deformation, "working", and annealing of metals; studies of the physics and chemistry of solid surfaces have led to better understanding of friction and of surface catalysis and adsorption. In particular, the detailed geometry of surfaces

and the arrangement of atoms at the surfaces is now known. The Division's activities have become increasingly diversified, particularly in the direction of ceramic-type materials, and it now works over a wide range of materials science and technology, with heavy, but not exclusive, emphasis on surfaces.

#### *Physical metallurgy*

A Physical Metallurgy Section was founded in the Metallurgy Department of the University of Melbourne in 1946.

The Section has conducted research on the physical properties and oxidation of titanium and its alloys, and on the slow deformation of metals at elevated temperatures (known as "creep"). Much of this work has been concerned with the actual mechanisms of creep and of creep fracture, and with developing and using microscope techniques for this type of investigation. In 1971 the Section was amalgamated with the Division of Tribophysics.

#### *Dairy research*

A Dairy Research Section was established in 1939. During the war the Section worked with the Industrial Chemistry Division on problems of transport and storage of dairy products. One achievement was the development of a butterfat spread known as butter concentrate which kept well at tropical temperatures. In the immediate post-war years projects included the elimination of the washing step in butter making, the development of a milk powder suitable for use in bread, the manufacture of egg substitutes from milk, and the study of the chemistry of weed taints in butter. In 1955 the Section moved to new laboratories at Highett, and in 1962 it became the Division of Dairy Research. In 1971 the Division became the Dairy Research Laboratory of a new Division of Food Research which has other laboratories in Sydney and Brisbane.

The Laboratory carries out fundamental and applied research on milk and its constituents, the manufacture of dairy products, and the development of new foods designed to increase the demand for dairy products. A major project over the last 15 years has been the mechanisation of Cheddar cheese manufacture; plant developed in the Laboratory is now used widely in Australia and has been exported to the United States, Britain, New Zealand, and Holland. The Laboratory has also helped the cheese industry overcome problems associated with the maturation of rindless Cheddar in plastic film wrappers, and with the manufacture of non-Cheddar varieties of cheese, and it now supplies the industry with freeze-dried starter cultures. New methods have been developed for the manufacture of casein, for the production of entire milk proteins or co-precipitates, and for the manufacture of various recombined milk products, particularly recombined sweetened condensed milk. The Laboratory has shown that contamination of butter with copper can seriously affect its keeping quality, and that prevention of this contamination can lead to a substantial reduction of butterfat losses during churning. New products such as butter powder, ice-cream for dietetic uses, and a milk biscuit comparable in nutritive value to whole milk solids have been developed in the Laboratory to expand the use of milk solids. Fundamental research is carried out on the structure of milk proteins, the microstructure of dairy products, the action of rennin on casein, and the chemistry of those

substances which give dairy products their characteristic flavour and of those which cause abnormal flavours.

### *Building research*

Towards the end of the Second World War the Australian building industry faced many problems, and in 1944 a C.S.I.R. section began research into building materials. Its work was complementary to that of the Commonwealth Experimental Building Station (now a part of the Commonwealth Department of Works), established in 1944 to experiment with new ideas in building construction. In 1950 the Building Research Section became the Division of Building Research; its functions were broadened and it became responsible for long-term research on all aspects of building and its related engineering.

The Division has built up a programme of research into the properties, uses, and manufacture of concrete, clay products, stone, bituminous products, gypsum and gypsum products, glass, and organic materials such as paint and plastics. It devised processes for producing lightweight aggregate from Australian clays and shales; concrete made from this is much lighter than ordinary concrete but of equal strength and durability and is now widely used in construction. Fundamental and applied research on gypsum resulted in a great improvement in the properties of fibrous plaster. Early work on the manufacture of clay products led to the establishment of large, highly mechanised plants throughout Australia. A number of new ceramic products, many of them based on basalt, have been developed by the Division. One of the most promising of these is a low temperature coloured ceramic glass which can be applied to the exposed surfaces of concrete products.

The Division has made a study of architectural acoustics and this has led to the successful design of sound reinforcement systems in large halls and in open spaces such as the Sidney Myer Music Bowl in Melbourne. With the recent erection of special acoustical chambers, it has become possible to work on the many problems arising from the present trend to lightweight and open planned buildings. Basic work on the heating and cooling of buildings is also being undertaken.

In the structural field the Division has given attention to the behaviour of concrete flat plates and other concrete structures, resulting in greatly improved methods of design. In a number of cases the study of these structures has involved the construction of large models to enable the determination of such problems as the deflection of the structure or its resonant frequency and vibration under moving loads. The application of electronic computers to the design of structures is being studied with the ultimate aim of completely mechanising the process.

During the 1960s the Division extended its activities into the field of building operations and economics to study important problems relating to the management, organisation, and economics of the building industry. The Division has also entered the field of systems research to develop and apply systems techniques to the design and planning of civil engineering building projects.

### *Mechanical engineering*

In 1945 a small group was set up in Head Office to provide an engineering

service to Divisions. The group gained special expertise in environmental control as a research tool for both plant and animal studies and developed its own research programme on environmental control. This extended later into new fields such as the utilisation of solar energy. In 1955 the group became the Engineering Section and in 1963 the Division of Mechanical Engineering.

The Division now operates mainly in the fields of engineering, thermodynamics, and fluid dynamics. Its interests include controlled environment engineering, with emphasis on comfort cooling in tropical areas, heat and mass transfer processes, solar energy and thermal radiation, aerodynamics of fans and ducting, electronics and telemetering, and some aspects of agricultural engineering.

The controlled environment engineering projects cover studies of thermal design for air conditioning, the conditions required for human thermal comfort, the development of novel cooling systems for hot climates, and sponsored investigations for industry. The solar energy research programme includes water heating for domestic and industrial installations, solar distillation of salt water, and heating of air for industrial and low temperature drying processes. Aerodynamics research and development is being applied to the manufacture of fans, both large and small, and to mine ventilation.

Two aspects of agricultural engineering receive attention in the Division : the development of agricultural machinery and techniques, and the protection of stored wheat and similar commodities from insect and mould attack, particularly by the use of aeration to cool bulk grain.

#### *Forest products*

The Division of Forest Products was founded in 1928 to carry out research into the more effective use of Australia's timber resources. To do this, it has been necessary to study not only the applied problems which affect the industry, but also the fundamental aspects of the growth structure, chemistry, and properties of wood.

During the Second World War the Division worked on various defence projects involving timber. The Division's war effort included the testing of timber and plywood for use in aircraft construction, and work on tropic proofing, ammunition boxes, wood identification (particularly of New Guinea timbers), glue lamination, and standards.

The Division's work has made a notable impact on the Australian timber industry. Assistance to the sawmilling industry has helped to improve production rates, recovery, and quality of sawn timber. Large-scale production of high grade kiln-dried hardwood has followed improvements to kiln design and drying methods. Work on timber preservation has enabled the life of wood in contact with the ground, such as poles and posts, to be greatly extended. Studies of the peeling, drying, and gluing of veneers have enabled the plywood industry to produce a high quality product from a wide variety of local timbers. In addition, determinations of the mechanical properties of timber and the provision of design data have played an important part in promoting the efficient use of timber as a structural material.

In 1971 that part of the Division concerned with wood as a structural material was integrated with the Division of Building Research. The remaining

part of the Division of Forest Products, which was concerned with research for the pulp and paper industries, was integrated with the Division of Applied Chemistry.

#### *Applied geomechanics*

In 1955 a Soil Mechanics Section was established in Melbourne as a component section of the Division of Soils which has its headquarters in Adelaide. It became an independent Section within C.S.I.R.O. in 1958 and in 1967 it became the Division of Soil Mechanics. Its name was changed to the Division of Applied Geomechanics in 1970.

The Division undertakes basic and applied studies of the physical, chemical, mineralogical, and engineering properties of Australian soils and rocks. A major part of the research programme is concerned with design of road pavements; the mechanisms of moisture transfer beneath road pavements; and the design of openings in rock in relation to mining engineering. The Division is also concerned with the properties of soils as foundations for buildings, bridges, and other engineering structures. An instrument designed by the Division has provided foundation engineers with an improved technique for determining moisture potential in foundation soils. This enables the engineer to predict more accurately the effect of moisture changes on the ability of soils to support their loads.

New testing and design techniques for building foundations on troublesome expansive clays have been devised by the Division and are used by the Foundations Advisory Service of the South Australian Department of Mines. The factors contributing to the failure of earth dams have been studied and recommendations drawn up for construction methods which will prevent such failure from occurring. New methods developed by the Division for the quantitative definition of particle arrangements and structure of soils and rocks are leading to a better understanding of the influence of structure on the physical properties of soils and rocks. The Division has also developed a system for classifying, describing, mapping, and evaluating country as an aid to planning the design and construction of roads and other engineering structures.

#### *Atmospheric physics*

In 1945 the C.S.I.R. established a Meteorological Physics Section in Melbourne which became the Division of Meteorological Physics in 1955. In 1969 the Division's activities were strengthened by the formation in Melbourne of the Commonwealth Meteorology Research Centre, a joint venture operated by the Commonwealth Bureau of Meteorology and the Division. Following the incorporation of the Cloud Physics Section of the Division of Radiophysics, Sydney, into the Division of Meteorological Physics in 1971, the Division was re-named the Division of Atmospheric Physics and was grouped with the Division of Environmental Mechanics, Canberra, to constitute the C.S.I.R.O. Environmental Physics Research Laboratories.

The Division of Atmospheric Physics is concerned with the physical properties of the atmosphere, including those influencing weather and climate, such as turbulence in the lower layers of the earth's atmosphere and radiation from sun and sky. Other important studies in this field include the connection between sea surface temperature and rainfall, the measurement of

evaporation from all types of natural surfaces, and the use of tracers to map wind patterns at high levels. Special instruments for use in connection with these studies have been developed by the Division, including a long-term recorder for making various measurements such as wind velocity and water level, which can operate unattended for up to six months at a time and thus facilitate observations from remote areas.

The Division is the centre for radiation work in the World Meteorological Organisation's Region V (the south-west Pacific) and makes, on a continuous basis, measurements of various radiation quantities, including ultra-violet.

#### *Animal health*

Between 1925 and 1930 the Institute of Science and Industry appointed several veterinarians to work at the University of Melbourne's Veterinary Research Institute at Parkville on contagious bovine pleuropneumonia, tuberculosis in cattle, and black disease of sheep. In 1930 the C.S.I.R. created the Division of Animal Health with headquarters at Parkville. Apart from the research group working at Parkville, the Division had a team of scientists at the McMaster Laboratory, Sydney, and another group at a field station near Townsville. At the end of the war, the Division's interests were widened to include problems of animal husbandry, and the Division was renamed the Division of Animal Health and Production. In 1959 the Division was divided into three. Much of the work on genetics and physiology which was being carried out by the Division in New South Wales and Queensland passed to new Divisions—the Division of Animal Genetics and the Division of Animal Physiology. The Division of Animal Health retained the Animal Health Research Laboratory at Parkville, the McMaster Laboratory, Sydney, and the Veterinary Parasitology Laboratory, Brisbane.

One of the early achievements of the Division's Parkville Laboratory was the discovery that black disease of sheep was due to a bacillus which was stimulated into growth and invasions by lesions in the liver caused by the entry of young liver flukes; this work led to the development of an effective vaccine.

Pleuropneumonia in cattle was produced experimentally by workers at the Laboratory in the late 1930s. Subsequently a vaccine was developed which conferred a high degree of immunity on the cattle inoculated with it. The complement fixation test which was developed for detecting pleuropneumonia in "carrier" animals is now accepted internationally as the standard method of diagnosis. The Laboratory has now moved into research aimed at developing a more rapid and more specific test for tuberculosis in cattle.

Another important achievement was the discovery that toxaemic jaundice, a disease of sheep characterised by the occurrence of jaundice before death, was two separate diseases. Initially it was found that toxaemic jaundice was a manifestation of chronic copper poisoning caused by excessive copper intake. Subsequently it was shown that toxaemic jaundice could also be caused by the consumption of heliotrope, an annual summer-growing weed which was found to contain liver-damaging alkaloids. Further research revealed that sheep which were grazed on pastures with a low molybdenum and low inorganic sulphate content tended to store higher levels of copper in their livers and were more liable to chronic copper poisoning. Work on

another disease of sheep, enterotoxaemia, led to the development of a satisfactory vaccine.

In 1958 a Virology Section was established at Parkville. The Section isolated several livestock viruses which, although known overseas, had not been isolated in Australia before. They included infectious bovine rhinotracheitis, mucosal disease, sporadic bovine encephalomyelitis, a strain of Newcastle disease of low virulence, and a myxo virus—para influenza type III.

#### *Horticultural research*

In 1919 a Viticultural Research Station was established at Merbein, Victoria. The Station was financed by a levy based on acreage and imposed by the Vineyards Protection Board, by the sale of fruit, and by a grant from the Commonwealth Institute of Science and Industry. Investigations in the early years included fertiliser trials with currants, sultanas, and gordos; studies of insect pests and fungus diseases and their control; studies of the development and growth of the vine; and appraisals of routine vineyard practices in the district.

In 1927 the Station was taken over by the C.S.I.R. and became the Commonwealth Research Station. The work was expanded and investigations were conducted in New South Wales and South Australia. The main problem of the 1930s was soil salinity which was studied in all Murray River districts. The Station's findings in the fields of irrigation and drainage are the basis of current practice in virtually all the Murray irrigation areas. All phases of dried vine fruit production including processing were also investigated.

In the 1950s research was undertaken on vine nutrition, grape drying and processing, and fruitfulness and pruning effects in the sultana. Studies in field hydrology were expanded to cover the region from Kerang in Victoria to Renmark in South Australia. Research was commenced into the effect of plant parasitic nematodes on vines. In 1964 a new laboratory and headquarters were built in Adelaide and, together with the Merbein Station, were designated the Horticultural Research Section of the C.S.I.R.O. In 1967 the Section became the Division of Horticultural Research.

The emphasis of the work is now directed towards understanding and improving the performance of woody perennial fruit crops such as vines and fruit trees. Advances have included the selection of high yielding clones of the sultana vine, the development of vine pruning procedures to increase yield, the release of vine rootstocks which are resistant to nematode attack, and the development of improved quality control methods for the dried grape industry. Basic long range research is being conducted in the fields of vine and tree physiology, grape biochemistry, and nematology. Investigations are also being made into methods of mechanising grape harvesting.



## COMMONWEALTH RESEARCH FACILITIES\*

---

### AUSTRALIAN ROAD RESEARCH BOARD

The increase of motor vehicles in the first three decades of this century led to a vigorous growth in road building. Specialised road authorities were set up in each State before the Second World War to ensure that the most suitable and economical procedures would be employed in construction work. The particular characteristics of the Australian climate, terrain, and resources made local investigations essential, and the State authorities met as a national association to share their findings. However, urgent construction and maintenance work often had to be completed at the expense of sustained research, even while the fields for study broadened. Besides the traditional study of the physical ingredients, research included traffic engineering, which involved road layout, signals, vehicle characteristics, accident reduction, and human behaviour patterns. Changing land uses and new road networks also called for basic planning formulae to determine the patterns of transport and road expansion.

In 1960 the association founded the Australian Road Research Board. The Director in Melbourne had a total staff of ninety in 1971, while the members of the Board are the heads of the six State road authorities and the Director-General of the Commonwealth Department of Works, the Board being financed jointly by the Commonwealth and State Governments. The budget for 1970-71 was approximately \$1.1m. To give the Board a broad perspective an Advisory Council was appointed to consider when and how research projects should be undertaken, and to recommend additional investigations. The Board also has eight specialist committees which may co-opt staff from various university faculties if considered necessary. Thus the Human Factors Committee includes persons versed in traffic and mechanical engineering, traffic control, psychology, aviation medicine, pathology, statistics, and law. Other committees deal with traffic engineering, road transport planning, bituminous materials, soil stabilisation, pavement design and performance, the brittle fracture of bridge steel, and other bridge problems.

About twenty research fellows and their assistants in the universities are sponsored wholly or partly by the Board, which, before approving any research project, requires a detailed statement of objectives, the proposed line of investigation, and an estimate of cost; the Director may authorise smaller projects.

\* Excluding C.S.I.R.O

The Board's library contains details of research already done and in progress elsewhere. The Board has sponsored five National Road Research Conferences, the papers submitted having been published as "Proceedings". It also publishes the journal *Australian Road Research* for local and overseas circulation. This gives details of results from sponsored research studies and other Australian investigations which have helped to ensure economic road construction and to decrease the possible causes of accidents. A major example of the Board's work has been a two year "on the spot" determination of how far urban accidents are the result of road layout, vehicle design, and human behaviour, with an analysis of the types of fatality and casualty. Special bulletins have included research findings on the performance of various types of road rollers in compaction of pavement and underlying materials; a review of the functions of State road authorities and of the Board in national road planning and road works; an analysis of comparative national contributions and use of resources by the various transport media, with a discussion of relevant forms of taxation and finance for road purposes; and research data applicable to the design of road and street intersections.

#### AUSTRALIAN WOOL TESTING AUTHORITY

The Australian Wool Testing Authority was established in September 1957 by the Commonwealth Government at the request of the Australian wool industry. In July 1963 the Authority was reconstituted as part of the Australian Wool Board, but it functions independently to provide facilities for the testing of raw wool, processed wool, and manufactured wool products. Initial funds provided for testing purposes were \$36,000, with a professional and technical staff of four. The Authority consists of eight members appointed by the Board, of whom six represent major sections of the wool industry: the Australian Council of Wool Buyers; the Wool Scourers, Carbonizers and Fellmongers Federation of Australia; the Wool Textile Manufacturers of Australia; the National Council of Wool Selling Brokers of Australia; the Australian Wool Board; and the Commonwealth Scientific and Industrial Research Organization; there are also two members who are not directly connected with the wool industry. The Australian Wool Board contributes the capital funds although the Authority charges for its services and operates on a commercially self-supporting basis. Income is used entirely to offset capital and operational costs and to improve services. Testing laboratories and wool sampling offices have been established throughout Australia, and the textile testing facilities are located at North Melbourne.

The *Wool Industry Act* 1962 defines the Authority's functions, which are to carry out tests of wool and wool products and to issue certificates and make reports on these tests. The Authority's operations can be considered under three general divisions, namely, the testing of greasy wool, the testing of semi-processed wool, and textile testing.

Core sampling and testing greasy wool to determine clean fibre yields is the main activity. Since 1968 greasy wool transactions have been based on fibre diameter measurements in addition to yield testing. Woolbuyers who purchase auction lots and assemble them into shipping consignments engage

the Authority to sample and test wool, and to issue certificates which have been increasingly used as the basis for commercial transactions instead of the more traditional basis of invoicing on visually assessed yields. Fibre diameter, and to a lesser extent, fibre length and strength testing are being used to describe wool consignments more accurately, and increasing numbers of bales are being tested to provide guidance to buyers for their subsequent yield appraisals. The yield of each lot of greasy wool comprising a delivery on the Sydney Greasy Wool Futures Exchange is established by the Authority, and all wool currently being supplied to India under the Colombo Plan is also tested. Certificates issued by the Authority are accepted throughout the world, and meet the standards of accuracy laid down by the International Wool Textile Organization, the British Wool Federation, and the American Society for Testing and Materials.

The condition testing of scoured and carbonised wools was the earliest of the Authority's operations and this remains the second largest activity. In testing, the moisture content of a consignment is determined, and from this information a correct invoice weight is established. Certificates issued are used as the basis for sale. The Authority was first approved for listing as a Public Conditioning House by the International Wool Textile Organization in 1962, and is now also the Australian calibrating laboratory for Airflow fibre diameter testing instruments.

The Authority provides facilities for a wide range of textile tests to assist manufacturers of tops, yarns, fabrics, and garments. Quality control testing for the Wool Mark programme is carried out, and fibre fineness, length, and strength testing have been incorporated into the textile section's activities.

The Authority is a member of the appropriate committees of the International Wool Textile Organization and the Standards Association of Australia, and maintains close collaboration with the International Wool Secretariat and with Australian and overseas research and testing organisations. The Authority's research into the determination of commercial yields of greasy wool has made a significant contribution to the formulation of the International Wool Textile Organization's Method of Test and Core Testing Regulations. In 1971 the research and testing budget was \$1.1m, with a professional and technical staff of 200.

#### COMMONWEALTH BUREAU OF CENSUS AND STATISTICS

In 1959, a year after the integration of State and Commonwealth statistical services, the Victorian Office of the Commonwealth Bureau of Census and Statistics installed ICT mechanical data processing equipment comprising one tabulator, two sorters, and one reproducer summary punch. Supported by card punching and verifying machines, this equipment processed data covering a wide range of economic and social statistics, until increased statistical activity necessitated more processing plant and the Office acquired an additional tabulator in 1962. About this time, the Bureau began feasibility studies to examine the potential of modern computer equipment as a possible replacement for the mechanical data processing plant. Tenders were called in 1962 for the supply of equipment comprising a central system located in Canberra with, initially, satellite systems in the five mainland State capitals; subsequently this was expanded to include Tasmania. The equipment was to

be used to process the economic and social statistical data collected by the Bureau, as well as some accounting and administrative records of other government departments. The installation of this Australia-wide high speed digital computer complex took place over two years, beginning in June 1964 in Canberra, where Control Data 3600 and 3300 computers were located; 3200 and 160A computers were installed in Sydney and in Melbourne, and 3200 computers in each of the other three mainland States. As a result of rapid expansion and the conversion to computer processing, the Bureau purchased additional equipment in 1967, and in Melbourne this included a Control Data 3300 computer system. All three Melbourne computers are now backed by a full range of peripheral devices, including mass storage and interrogation devices supported by a data preparation pool containing over fifty card and paper tape punching and verifying machines and a magnetic tape encoder.

As part of the Australia-wide network, the Bureau's Melbourne Computer Service Centre fulfils two main functions: the applications section offers a systems analysis, design, and programming facility to service the Bureau's own data processing requirements; and the operations section provides an advanced computer processing facility, operating as a service bureau on a continuing basis, both for the Bureau and other government departments. By 1971 the Centre had a staff establishment of 140.

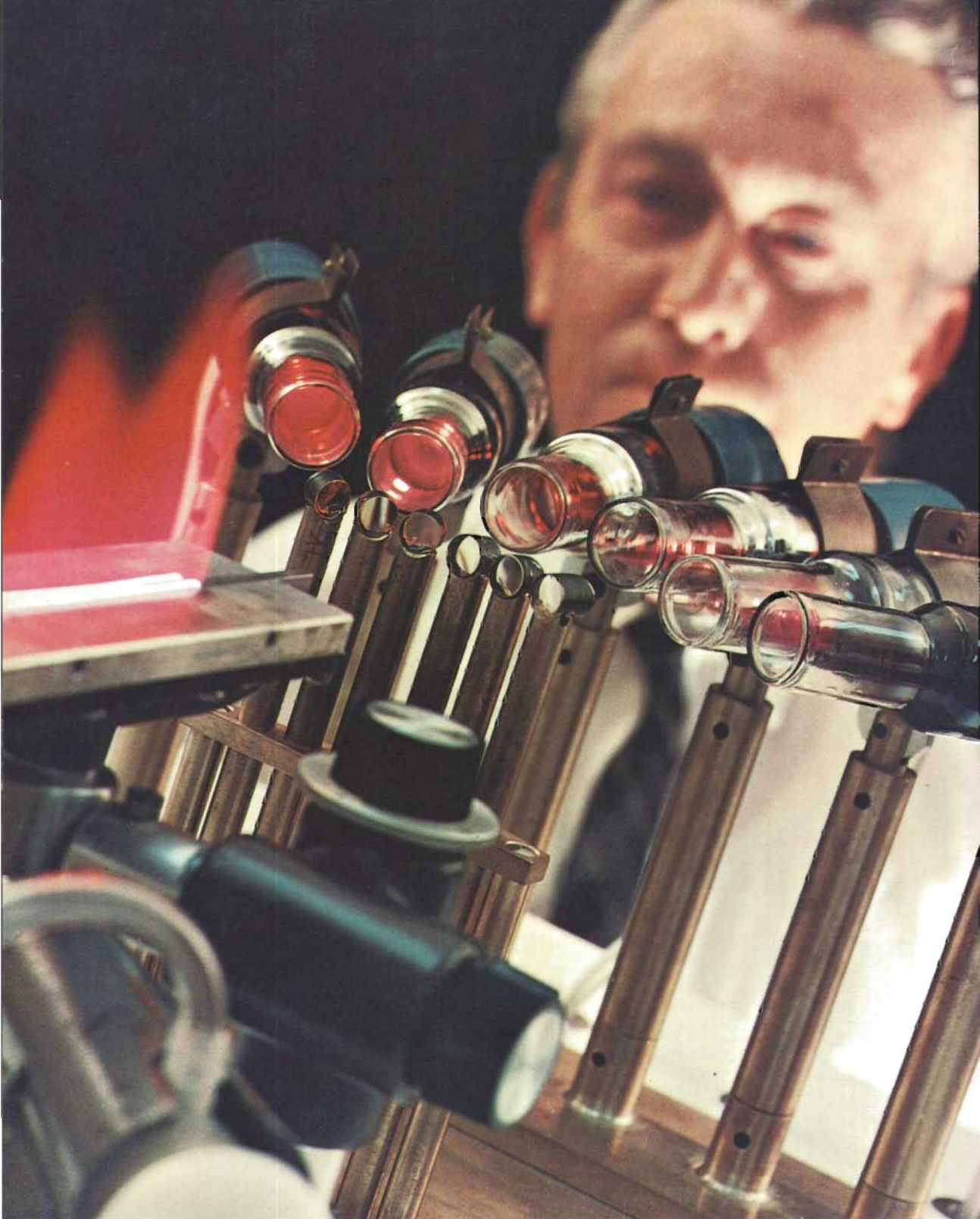
#### COMMONWEALTH BUREAU OF DENTAL STANDARDS

Australian research in dental materials began in 1934 at the University of Melbourne in association with the Dental School, work being concerned initially with the metallurgy of dental amalgams, and later also covering other materials and instruments used in dental practice. Financial assistance came from a variety of local sources until the National Health and Medical Research Council subsidised the work from 1939.

The value of the Materials Testing Laboratory was demonstrated by the research and testing carried out during the Second World War for the Armed Services and various government departments. As a result, it was considered highly desirable to establish the Laboratory officially on a national basis, a view which was reinforced by the increasingly widening scope of investigations in the fields of dental materials and instrumentation. Accordingly, the Bureau of Dental Standards was established in 1947 within the Commonwealth Department of Health, with a professional and technical staff of six; it is one of the few establishments devoted to the study of dental materials. Although now formally dissociated from it, the Bureau was accommodated by the University of Melbourne as a temporary measure until a suitable site was found.

Because of the diverse nature of dental materials, a wide range of scientific knowledge is required, and the disciplines of chemistry, physics, and metallurgy are represented (in 1971) in the professional and technical staff of eight persons. The Bureau provides consultative and testing services to the dental profession and associated trades, and to hospitals and other public instrumentalities. This involves considerable research work on new products and techniques as well as on improvements in existing ones.

The Bureau also conducts original research on dental and allied materials, instruments, techniques, and processes; develops, in collabora-



The atomic absorption spectrometer developed in Victoria by the C.S.I.R.O.  
C.S.I.R.O.



The prototype Nomad aircraft, designed and produced in Melbourne, on a test flight.

*Department of Supply*

The Australian designed and developed Ikara missile leaving the launcher of an R.A.N. vessel

*Department of Supply*

Surveyor from the Victorian-based Antarctic Division of the Department of Supply at Mawson Station, Antarctica.

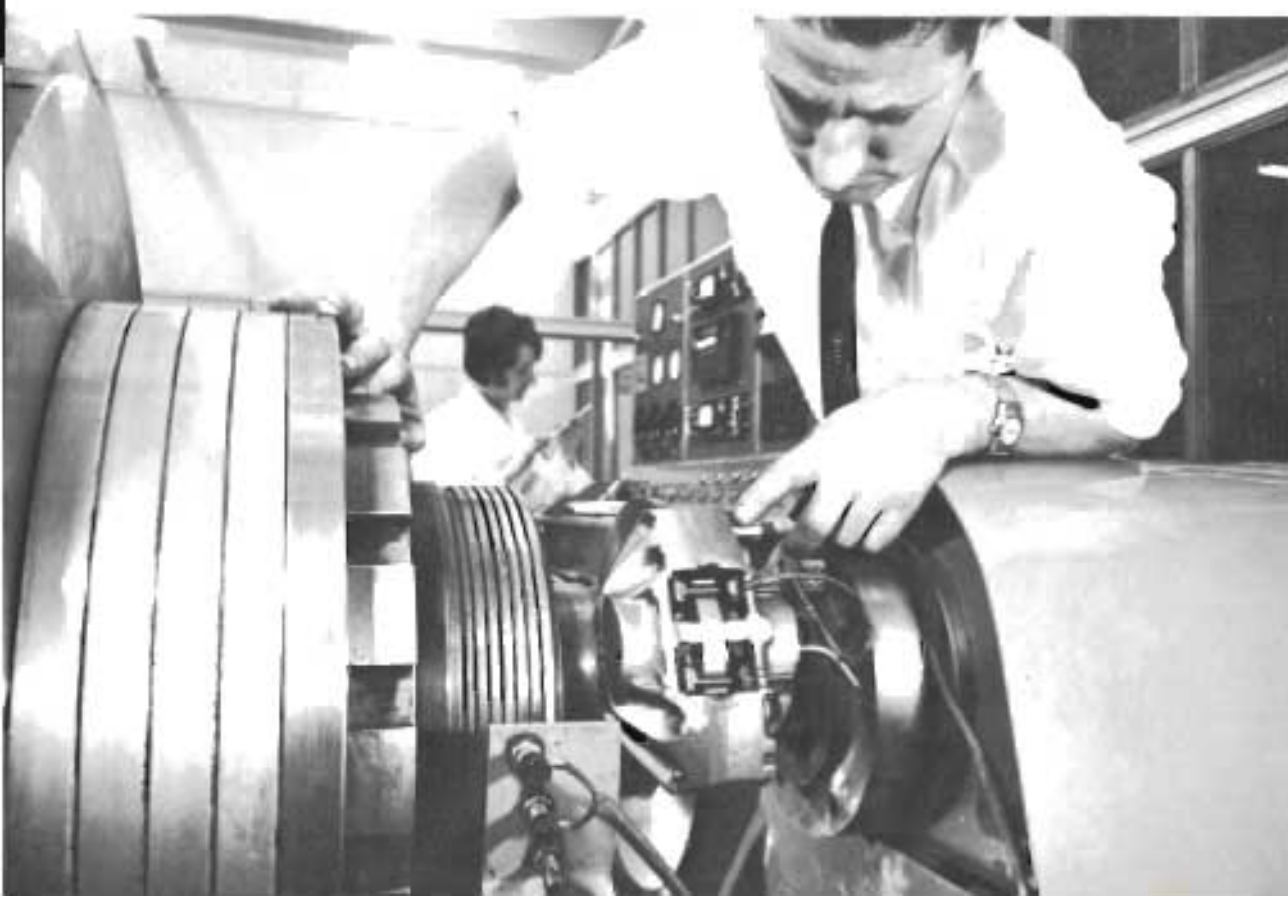
*Department of Supply*





Accelerated weathering tests on plastics, dyestuffs, and pigments are carried out at research laboratories at Ascot Vale.

*ICI Australia Ltd*



Setting up a disc brake assembly on a heavy duty inertia brake dynamometer for a high speed test.

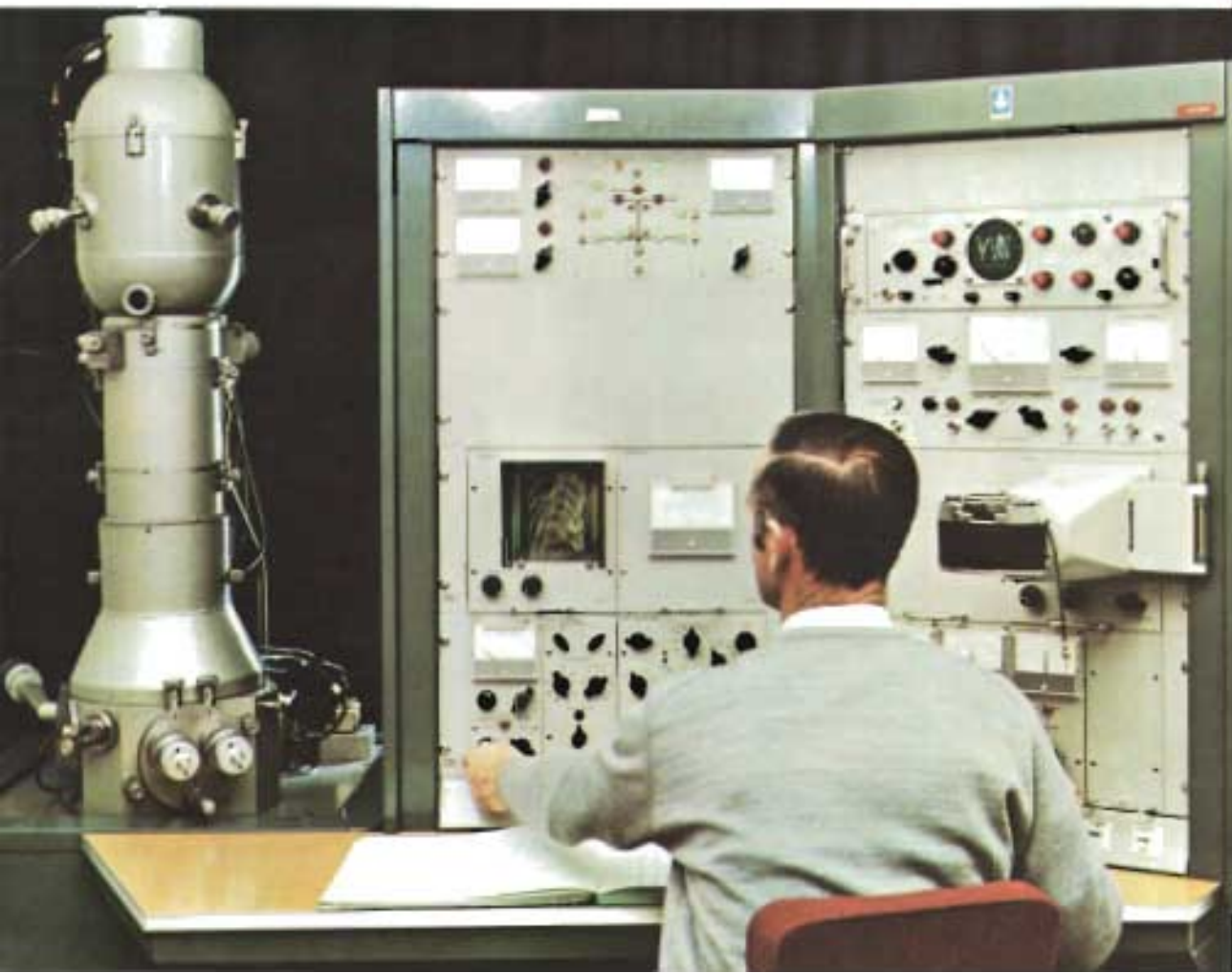
*Repra Ltd*

Preparation of pigment dye emulsion for experimental application to wool fabrics.

*C.S.I.R.O.*

This stereoscan electron microscope is used to study the effects of shrink-proofing treatments and mechanical processing on wool fibres.

*C.S.I.R.O.*





tion with the Standards Association of Australia and the Australian Dental Association, specifications on dental materials and instruments; makes regular systematic surveys on dental materials on sale to the profession; and provides a consultative service and testing facilities for manufacturers and distributors of dental products to assist them in improving materials. The Bureau has also made investigations and tests of medical and surgical supplies and equipment.

The major fields of investigation and publication have covered gypsum products including casting investment materials, orthodontic wires, dental amalgam alloys, cements, impression materials, and synthetic resins. The Bureau has also assisted in the preparation of over thirty Australian Standards which are used for assessing the quality of local dental products. They are also the basis of the accreditation programme conducted by the Australian Dental Association to ensure that dental products consistently meeting the requirements of the relevant standard can be accepted as Certified Products. Lists of these are made available to the dental profession. The Bureau also participates in the preparation of international standards for dental products, through both the *Fédération Dentaire Internationale* and the *International Organization for Standardization*, and it assists in the training of dental students, nurses, and technicians. It also provides facilities for postgraduate training and research.

#### COMMONWEALTH BUREAU OF METEOROLOGY

The climate of a locality can be defined only by means of accurate observation, with standard instruments, over a long period of time. Meteorological observations began in Melbourne in 1840, and were published in the *Government Gazette of New South Wales*, but as the exact type of instruments used, and their exposure, are not known, the results are not accepted as part of the official record. Following Separation in 1851 observations ceased, but were resumed in 1855 under the Lands Department. Stations were established in Melbourne and at about twenty places in different districts of the Colony. In 1858 Professor Neumayer began five years of hourly observations in Melbourne, and in 1859 all meteorological stations in the Colony were placed under his control. By 1863 regular observations were made at eight stations, at Melbourne, Ararat, Ballarat, Bendigo, Cape Otway, Gabo Island, Port Albert, and Portland, and there were twenty-four other stations where rainfall alone was measured.

Following Professor G. Neumayer's return to Europe, control of meteorological observations passed to the *Astronomical Observatory* in Melbourne which continued with this work until 1907, by which time the number of observing stations in Victoria had increased to 940, of which 86 measured temperature as well as rainfall. On 1 January 1908 all meteorological services in the various States were placed under the control of a *Commonwealth Meteorologist*. In Victoria, the initial professional and technical staff numbered twelve. Although there was little addition to the number of observing stations in the following sixty years, a greater variety of elements was measured, including sunshine, evaporation, and radiation. Many self-recording instruments have also been installed for the continuous measurement of rainfall, temperature, humidity, and air pressure. Since 1957 meteorological data has been processed and tabulated by mechanical and electronic equipment.

Before forecasts of future weather can be prepared, it is necessary to know the current state of the atmosphere over a wide area. In 1875 the Melbourne Observatory began issuing a daily bulletin of telegraphic reports about the existing weather over the Colony. The first Australian Meteorological Conference was held in Sydney in 1879, followed by a second in Melbourne in 1881, where the heads of the colonial weather departments of Victoria, New South Wales, South Australia, and New Zealand agreed upon the interchange of daily weather information. The other Colonies joined the scheme, and from 1881 a weather chart was prepared by the Melbourne Observatory each day, Sundays excepted, copies being posted at a number of public places in the city. Synopses of the weather over Australia and forecasts for Victoria accompanied the chart, and newspapers commenced the daily publication of forecasts.

As radio communication developed, ships were able to receive the latest weather forecasts, and eventually in the 1920s broadcasting brought forecasts and warnings to the general public. Until 1939 forecasts in Australia were prepared on the basis of daily reports received at 9 a.m. only, with a very limited network of observations at 3 p.m. In April of that year daily reporting networks were established for 6 a.m. and noon. Further extension in the following years led to the present system of reports every three hours, except at midnight, on every day of the year, while forecasts are prepared for the public four times a day and for shipping twice a day. The development of aviation necessitated detailed forecasts for flights. A meteorological office was opened at Essendon Airport in 1937, and offices were established during the Second World War at Laverton, East Sale, and Mildura, the first two of the latter three being at Royal Australian Air Force bases. The increase in light aircraft led to another office being opened at Moorabbin Airport in 1968. A meteorological office was opened at Tullamarine (Melbourne Airport) in 1970, and in 1971 this became the Bureau's main aeronautical office in Victoria.

Winds in the upper atmosphere can be measured by a free hydrogen balloon tracked by a theodolite. Hydrogen balloon flights began in Melbourne in 1921, and at Mildura and East Sale during the Second World War. The measurement of temperature in the upper air proved more difficult. In the 1930s a plane flew daily from Point Cook to measure the temperature and humidity at each thousand feet of altitude. However, it was not until the development of the radio-sonde, which automatically transmitted the observations to a ground station, that satisfactory operational measurements could be made. The first regular radio-sonde flights in Victoria began at Laverton in 1943. The use of radar has enabled balloons to be tracked in all conditions, whereas visual tracking by theodolites is limited by cloud; radar can also detect falling rain. Windfinding radar was installed at Laverton in 1949 and at Mildura in 1963, while a large radar capable of measuring rainfall intensity was installed in the Melbourne office in 1964; it has both dual control and display at the University of Melbourne. The first weather satellite was placed in orbit in 1960 by the United States of America. The first satellites were experimental, but since 1964 operational satellites using visual and infra-red techniques for both day and night observation have been launched. Cloud pictures are obtained directly from the satellite by a station at Werribee for interpretation by meteorologists.

The Bureau's functions as defined by the Commonwealth *Meteorology*

*Act 1955* are to take and record meteorological observations, to forecast weather, to issue warnings and supply meteorological information, to advance meteorological science by research, and to furnish advice on meteorological matters.

In recent years staff have been employed as consulting meteorologists in investigations (frequently in co-operation with other authorities) in such fields of applied meteorology as hydrometeorology (the development of flood forecasting schemes and the estimation of maximum rainfall), agrometeorology (effects of weather on productive plants and animals), and the meteorological aspects of bush fires. A standards laboratory for meteorological instruments is maintained in the Central Office in Melbourne for the use of the Bureau throughout Australia. The Central Office carries out meteorological research and has worked on the development of forecasting techniques, the problems of clear-air turbulence, extended range forecasts, and mathematical models of the atmosphere suited to the Australian region for use by computer. A computer was installed in Melbourne in 1968, and this is used to prepare analyses and prognoses of weather in the southern hemisphere. It will eventually be linked with computers in Washington and Moscow as part of World Weather Watch, as ultimate understanding of the processes at work in the earth's atmosphere will only come with continued international co-operation. In 1971 the Bureau's professional and technical staff stationed in Victoria numbered 382.

A Department of Meteorology was established at the University of Melbourne in 1936 and the C.S.I.R.O. established a Division of Meteorological Physics in Melbourne in 1948. The Commonwealth Meteorology Research Centre commenced operation in 1969, jointly operated by the Bureau and the C.S.I.R.O. Division of Atmospheric Physics. The Centre studies the detailed structure of the atmosphere and its changes as they affect the surface level weather patterns, and in its first year of operation it produced 24 hour experimental forecasts for the whole of the southern hemisphere. In 1971 the Centre's staff comprised seven research scientists, fourteen other professional officers, and two technical staff.

#### COMMONWEALTH RADIATION LABORATORY

In 1925 the Commonwealth Department of Health made a statistical study of the incidence of cancer mortality in Australia. An Advisory Committee set up in 1927 recommended that ten grams of radium should be purchased at a cost of about £100,000, and in 1929 the Commonwealth Department of Health established a Radium Laboratory at the University of Melbourne to act as custodian of the radium purchased, to ensure its safe and equitable use, to provide a radon service, and to advise on physical aspects such as dosimetry and the precautions necessary in handling radium and radon.

In 1935 it was renamed the Commonwealth X-ray and Radium Laboratory and extended its activities to include all physical aspects of the use of X-rays in treatment of cancer, and an X-ray section was established in the University's Department of Natural Philosophy. Portable clinical X-ray dosimeters were calibrated in terms of an established standard, so establishing uniformity of dosage to patients in radiotherapy centres in Australia. As the work of the Laboratory increased, new accommodation became essential and a specially designed building was erected in the University

grounds. By 1972 it was used as one of six occupied by the Laboratory.

The activities of the Laboratory were further extended in 1939 to include investigations into the physical aspects of diagnostic radiology, and again in 1946 to include the procurement and distribution of all radioactive isotopes for use in Australia in medicine, industry, and research. The responsibilities for those isotopes to be used in industry and research were relinquished in 1961, but the Laboratory still retained the responsibility for the supply of isotopes used in medical diagnosis, treatment, and research. In 1969 it became possible for users of isotopes for medical research to purchase directly from the Australian Atomic Energy Commission or through the Australian representatives of overseas suppliers. Radiochemical and low-level measurement sections were established in 1961 for the collection and analysis of data on radioactive materials present in the environment, including radioactive fall-out from the testing of nuclear weapons. In 1968 this work was supplemented by the installation of a whole-body monitor at the Laboratory.

In 1965 the Director of the Laboratory was appointed under the Commonwealth *Weights and Measures (National Standards) Act* 1960–1964 as an agent authorised to establish and maintain national standards for the measurement of X-rays, gamma rays, and radionuclides. The Laboratory has maintained a Commonwealth Standard of Exposure to X-rays since 1968, and is working to create other standards and improve existing ones. An advisory service on all aspects of radiological protection (including a film-badge service) to ensure that exposure to ionising radiations is kept below the acceptable maximum, has always been an important part of its work. By 1971 the professional and technical staff had increased to 43, with a budget of over \$1m. In 1972 it became the Commonwealth Radiation Laboratory.

#### COMMONWEALTH SERUM LABORATORIES COMMISSION

Serious wartime shortages in supply of vaccines and antitoxins led the Commonwealth Government in 1916 to establish a central Australian institute to produce these drugs of standardised quality and at low cost. This institute, the Commonwealth Serum Laboratories, operated for about 1½ years in temporary quarters in the original building of the Walter and Eliza Hall Institute of Medical Research, Melbourne, but in 1918 it transferred to new, specially designed buildings erected on a site at Royal Park where smallpox vaccine had been continuously produced from 1881, originally under direction from the Victorian Government. From earliest days senior staff performed some tertiary teaching functions for outside bodies in the newer disciplines involved, and a substantial amount of research under local conditions was necessary. By August 1918 capital expenditure on the new laboratory buildings, stables, and animal houses at Royal Park was found to have greatly exceeded the original estimate of £15,000.

The Commonwealth Serum Laboratories was originally under the control of the Quarantine Service which, until its transfer to the newly established Commonwealth Department of Health in 1921, was part of the Department of Trade and Customs. The Laboratories continued as a division of the Department of Health until the Commonwealth *Serum Laboratories Act* 1961 established the Commonwealth Serum Laboratories Commission.

Many important overseas discoveries in medicine, biology, and biochemistry have affected laboratory activity. The discovery of insulin by Banting and Best in 1922, of penicillin by Fleming and Florey in 1943, and of poliomyelitis vaccine by Salk in 1954 are outstanding examples. There have also been many other important although less spectacular achievements for preventing, diagnosing, and treating disease, and as a result some diseases which were common fifty years ago are now virtually non-existent in Australia: in 1932 there were over 7,000 cases of diphtheria in Victoria, with 166 deaths; there are practically no deaths today from this cause.

Rapid developments in pathology and public health have increased the demand for new biologicals; this has resulted in continuous expansion, often accelerated by sudden demands. For instance, during the influenza epidemic of 1918-1919 the original staff of thirty was more than trebled, and again during the Second World War the Laboratories produced greatly increased quantities of vaccines, antitoxins, and blood products. From 1939 to 1945 the staff increased from 240 to 620, substantial additions being needed for the production of penicillin from 1944 and for influenza virus vaccine from 1945. In 1971, 950 persons were employed, and the scientific staff included about 130 professionally qualified persons, among whom are fellows and members of about forty different learned professional societies and associations. Members of the staff are serving on thirty national and international expert committees.

One of the products of the first year of operation was tuberculin for the testing of animals, and shortly afterwards antitoxins and vaccines for veterinary use were produced. The Laboratories now carry out extensive veterinary research and prepare a wide range of products including antitoxins, vaccines, antibiotics, and diagnostic agents for veterinary use.

The products of the Commonwealth Serum Laboratories fall under the following headings: antisera for therapeutic and prophylactic use—antitoxins, antivenenes, and other antisera; vaccines—bacterial, viral, and toxoid; hormones—insulin, human growth hormone, and follicle stimulating hormone; blood products—albumins, gamma globulins, clotting factors (human blood products are prepared in collaboration with the Australian Red Cross Society); antibiotics—a wide range of penicillins and other antibiotics; clinical and laboratory diagnostic agents—agglutinating and precipitating sera, blood grouping sera, bacterial antigens and suspensions, C.F. (“complement fixing”) agents, etc.; bacteriological and tissue culture media; allergen extracts; bacterial cultures, tissue cultures, and living virus preparations; products made to special requirements of doctors and veterinarians, and special products for the Commonwealth Department of Health for immunisation purposes. Veterinary products are also produced in most of these categories. Several of these products, including influenza virus (sub-unit) vaccine, and snake, spider, tick, stonefish, and sea wasp antivenenes have resulted directly from original research at the Laboratories, and many others have been adapted and developed to meet local requirements.

The Laboratories are also responsible for preparing, holding, and distributing a wide range of low volume products in the interests of public health. On several occasions the Laboratories have been called on to deal with outbreaks of infectious diseases such as cholera, typhoid, and plague in

Asian countries, and have also supplied products on a large scale to Britain and the United States of America.

In 1970-71, \$964,000 was spent on research. The Laboratories now occupy 27 acres of land at Royal Park, about one third of which is under cover, and 1,527 acres at Woodend, where the larger animals are kept.

#### DEPARTMENT OF SUPPLY

The Commonwealth Department of Supply's primary responsibility is for the supply of war material, including aircraft, from both government establishments and private industry, and for related research and development. In 1971 in Victorian establishments 11,000 persons, including 800 professional scientists, engineers, chemists, and metallurgists, were employed, with more than 3,800 qualified technicians, draftsmen, and tradesmen. Defence projects and tasks allocated by the Department to private industry engage additional professional and skilled resources.

#### *Aeronautical Research Laboratories*

Aeronautical research in Australia began with Lawrence Hargrave's work in the 1880s, but for fifty years it was mainly exploratory. The necessity for aeronautical research was recognised, however, after the establishment of the government aircraft factories in the 1930s, and in January 1939 the first laboratory was established in Melbourne as a division of the Council for Scientific and Industrial Research (C.S.I.R.). The first group of buildings was completed at Fishermens Bend in April 1940, and work began with nine professional officers and seven supporting staff. Work was carried out on aircraft design, including aerodynamics, structures, materials, and power plants, and a wind tunnel was brought into use in December 1941.

During the Second World War important research covered structural and aerodynamic assistance in the design of aircraft such as the Boomerang, Wackett Trainer, and CA.15; the use of Australian timbers for aircraft structures; the testing and evaluation of captured Japanese engines; the organisation and control of the R.A.A.F. Flight Research and Development Unit; the simplification of aircraft materials specifications; and the evaluation of Australian aircraft steels, then being produced for the first time. Important pioneer work was also carried out on fatigue and the life of aircraft structures.

By the end of the war the Laboratories were clearly committed to defence projects, and in February 1949 were transferred from the C.S.I.R.O. to the Department of Supply and named the Aeronautical Research Laboratories. The number of staff had risen to 245, of whom 65 were professional officers, and the annual budget for 1948-49 was \$3.9m. The terms of reference were to undertake research and development work on specific defence projects; to act as consultants and make investigations for the Armed Services, government departments, and industries engaged on defence work; and to join with the Australian Aeronautical Research Committee to promote and review the progress of aeronautical research in Australia, and to keep abreast of international advances in aeronautical and guided weapons research.

Since the war the Laboratories have carried out significant work on fatigue and the life of aircraft structures, and have developed special methods for testing the magnitude and frequency of wing and structural loads. Crash safety has also been investigated, and studies have been made of the heating of supersonic aircraft, and of their engine problems. The facilities for aerodynamic research include three major wind tunnels operating, respectively, at subsonic, transonic, and supersonic speeds. These are used for work in problems of air flow, as research support for new aircraft and missile designs, and in the solution of air operating problems. Basic and applied research has included the practical application of chromium alloys for turbine blades; turbine blades have also been developed for high temperature operation, while a turbine has been designed to operate on types of readily obtainable coal. High-strength aluminium alloys have also been developed for air frames, and the dangerous brittle fracture phenomenon in metals is now better understood.

The Laboratories have developed combustors to burn fuels such as high ash coal, heavy residual oils, distillates, and other special fuels, including silver iodide in acetone for cloud seeding operations. They have also contributed to elucidating various human engineering problems, and have been concerned with operations research on the effective deployment of weapons, transport, supplies, and other resources for the three Armed Services. Research and development associated with guided weapons has included mathematical modelling and dynamic studies, and a major contribution has been the Ikara anti-submarine weapons project, a joint activity of the Department of Supply and the Royal Australian Navy. The Laboratories were responsible for co-ordinating the work on the missile and overall system performance. The Laboratories consist of five research and development divisions: Structures, Aerodynamics, Materials, Mechanical Engineering, and Systems, together with their engineering support facilities. The Laboratories are recognised internationally as a leading aeronautical research establishment.

In 1971-72 expenditure at the Laboratories was \$5.5m and the staff totalled 590 including 440 professional and technical personnel.

#### *Defence Standards Laboratories*

The origin of the Defence Standards Laboratories can be traced to the establishment of a Chemical Adviser's Branch of the Defence Department at Victoria Barracks in 1910. In 1916 it was reorganised and enlarged to include physics and metallurgy, and renamed the Central Research Laboratories. Six years later the Laboratories moved to Maribyrnong and in 1925 the title Munitions Supply Laboratories was adopted; the present name dates from 1950.

An important early task was to provide adequate standards of measurement for the munitions industry, involving work in the field of metrology. These standards, developed and verified at the National Physical Laboratory in England, became the first official Commonwealth Standards of Measurement, and the Laboratories remained their custodian until 1938 when responsibility was assumed by the National Standards Laboratory. At this

time development was slow, but during the next twenty years activities increased, and a scientific consultative and testing service was provided for the Armed Services, munitions production establishments, and industries manufacturing defence requirements, while specifications were tested for Service Inspection Authorities. These activities increased during the Second World War, as did work to maintain the accuracy of metrological and pyrometric instruments, and the number of employees rose to more than 900. By September 1944 the Laboratories were able to offer assistance to secondary industries changing from munition to civil production.

Post-war projects included the design and manufacture of optical components for student microscopes. With the experience acquired in making and testing optical munitions the Laboratories were able to produce objectives, eyepieces, and sub-stage condensers, and in 1967 assisted an Indian establishment in this field. Studies have also been made of new and improved materials, methods, processes, and equipment of known or potential defence interest, while collaboration continues with industry in technological matters. Other major fields of research include abrasion, chromium alloys, electrophotography, explosives, the fracture of metals and fragmentation of projectiles, the metallurgy of welds, the microbiological contamination in aircraft fuels, the physics of high-energy lasers, plastics and elastomers, the precise measurement of physical quantities (mass, length, time, force, temperature, and electrical quantities), the structure of organic compounds, thermocouple alloys, and the underwater protection of naval vessels from corrosion and fouling.

In 1971-72 expenditure at the Laboratories was \$6.5m and staff totalled 750 including 500 professional and technical personnel.

#### *Antarctic Division, Melbourne*

The Division, which was formed in 1948 within the Department of External Affairs, is responsible for the management, co-ordination, and logistic support of the Australian National Antarctic Research Expeditions. Until 1954 operations were confined mainly to maintaining scientific stations at Heard Island (established 1947), and Macquarie Island (established 1948), and expeditions were supervised by scientists from other Commonwealth departments and the universities. A major phase of exploration, settlement, and scientific investigation followed the charter of the vessel *Kista Dan* in 1953, and within a decade explorations, surveys, and traverses, involving ship-borne and land-based aircraft, had covered the coastline and the main features of the Australian-claimed section of Antarctica. Stations were established at Mawson (1954), Davis (1957), and Casey (1969), while between 1959 and 1969 Australia also operated an American station at Wilkes. A Scientific Branch responsible for programmes in upper atmospheric physics, cosmic ray physics, glaciology, biology, and medical science was also established, and other research programmes conducted in Antarctica include meteorology, topography, earth sciences, and cartography. In 1968 the Division was transferred to the Department of Supply.

In 1971-72 expenditure by the Division was \$3.3m and staff totalled 170 including 80 stationed in Antarctica and at Macquarie Island.



*Production establishments*

The Department's defence production establishments in Victoria, indeed defence production in Australia, date from the Victorian Government's acceptance in 1888 of an offer from the Colonial Ammunition Company to establish a factory for the supply of small arms ammunition. The firm was established at Footscray and initially manufactured .45 inch Martini-Henry ammunition but by 1900 had changed over to .303 inch Lee-Enfield ammunition for supply to colonial governments in Australia. The firm continued to operate after Federation in 1901 until it was taken over by the Commonwealth Government in 1921. Other establishments were set up progressively by the Commonwealth Government: ordnance factories at Bendigo and Maribyrnong, explosives and filling factories at Albion and Maribyrnong, marine engine works at Port Melbourne, the clothing factory at Coburg, and aircraft factories at Fishermens Bend and Avalon. The Department is responsible for the supply of a wide range of munitions, aircraft, guided missiles, clothing, vehicles, etc., to the Armed Services. Supply is arranged either from the government factories or from private industry.

The Ammunition Factory produces complete rounds of small arms ammunition and components for larger calibre gun ammunition including cartridge cases, fuses, and primers. The Factory has introduced statistical quality control procedures and precision screw thread grinding for tools and gauges. The Explosives and Filling Factories produce the various types of explosive compositions and propellants required for gun ammunition, rockets, and guided missiles. The Ordnance Factories are equipped to produce heavy ordnance equipment, such as naval guns and gun mountings; large turbine gears; shells; rocket motors for guided missiles; trailers and tank transporters; and other items requiring heavy engineering capacity. As well as work for the Armed Services, the Bendigo factory produces large heavy engineering items for the coal, cement, and steel industries. A factory established at Echuca during the Second World War to manufacture ball bearings was later sold to private industry.

The Engine Works at Port Melbourne provides an engine repair, testing, and consultant service for certain classes of ships in Australian waters, and heavy machining capacity for maintenance tasks, in addition to the manufacture of certain types of reciprocating steam and marine diesel engines. The Aircraft Factory produces aircraft and guided weapons. These included Beaufort and Beaufighter aircraft during the Second World War, and Lincoln, Canberra, and Mirage aircraft during the post-war period. Design of the Jindivik target aircraft for use in connection with missile development was a notable achievement. Since the first fully operational Jindivik in 1952, more than 400 have been produced for Australia, the United Kingdom, the United States, and Sweden. The Avalon establishment, which contains airfield facilities, is responsible for final assembly and preparation for flight of aircraft manufactured at Fishermens Bend, either by the Government Aircraft Factory or the Commonwealth Aircraft Corporation Pty Ltd. A major contribution has also been made in the development and production of the Malkara anti-tank and Ikara anti-submarine guided missile systems. The introduction of several aspects of advanced technology has been pioneered

in Australia, including the use of metal bonding in aircraft and missile structures. Facilities include numerical control path machining centres. Major activities cover the manufacture of airframe and engine spare parts; the overhaul, repair and modification of military aircraft and engines for the R.A.A.F., R.A.N., and the Army; and the reconditioning and servicing of aircraft instruments and other ancillary equipment.

The Clothing Factory makes uniforms and clothing for the Armed Services, the Postmaster-General's Department, and for some other Commonwealth authorities at its premises at Coburg; these replaced earlier factories at South Melbourne and Brunswick.

In 1971-72 the Supply production establishments employed 7,500 persons, including 3,000 professional and technical staff; the production from the establishments for the year exceeded \$50m.

#### FORESTRY AND TIMBER BUREAU

Forestry activity on a national scale began in 1907 when the Commonwealth Department of Health prepared an extensive list of harmful insects to be kept out of Australia by quarantine, and in general these precautions have proved reasonably successful. In 1922 several pioneer surveys, including reconnaissance of the forest resources of Papua and New Guinea, of the Australian Capital Territory, and of Norfolk Island were carried out, and in 1924 it was decided to establish a Commonwealth Forestry Bureau and an Australian Forestry School.

During the Second World War the Controller of Timber managed the supply of timber and Australian species replaced imports which were no longer available. The Commonwealth *Forestry Bureau Act* 1930 was replaced by the Forestry and Timber Act in 1946 which established the headquarters of the Forestry and Timber Bureau in Melbourne. It took over the functions of the former Commonwealth Forestry Bureau and of the Controller of Timber, and was transferred to Canberra in 1953, although until 1967 the Timber Control functions continued to be exercised in Melbourne by the Timber Supply Economics Branch. It regularly produced a summary of timber supply and consumption data for industry, helped to improve safety precautions, and established a Logging Research Section to reduce logging costs. In 1958 the Forestry and Timber Bureau established a Research Station at Traralgon in co-operation with A.P.M. Forests Pty Ltd to work on tree breeding and the genetics of *Pinus radiata* and Gippsland eucalypts. By 1971 professional and technical staff numbered seven, with a research budget of \$50,000.

In 1961 the wood wasp, *Sirex noctilio*, a pest greatly feared by Australian foresters, was found in a plantation of *Pinus radiata* in the Melbourne area. Meetings were held in Melbourne early in 1962 to prepare for a National Sirex Fund which was approved by a Premiers' Conference in that year. Since then much important work to contain this insect has been done, and time has been gained for the introduction of parasites, which promise to reduce the significance of the wood wasp in softwood plantations.

#### POSTMASTER-GENERAL'S DEPARTMENT

The Research Laboratories of the Postmaster-General's Department, established in 1923 to study and advise on the use of new equipment

following the development of the thermionic valve, first worked on trunk line communication and voice frequency repeaters. Efficient communication between the main centres of population was then the prime requirement of the P.M.G.'s Department. This work eventually incorporated carrier equipment, at first three-channel and later twelve-channel, and culminated in the provision in 1935 of the multi-channel submarine cable facilities from Apollo Bay in Victoria to Tasmania; this completed the interconnection by telephone of all the States.

From 1928 to 1935 the Laboratories were involved in planning and establishing the national broadcasting service; the introduction of new antenna designs and new fabrication techniques provided a much greater area of non-fading reception than had been available with the conventional antennae of that time. The Mont Park short wave reception centre, developed by the Laboratories, enabled the Australian Broadcasting Commission by 1936 to incorporate items from the Empire station at Daventry, England, as regular features of the national programmes. The Laboratories participated in the development of the short wave complexes at Lyndhurst, and later at Shepparton.

In the late 1930s research activities were expanded to aid the engineering division of the Department; this dealt with factors such as corrosion, equipment deterioration, and materials selection and analysis.

During the Second World War research facilities were oriented towards military needs, including the investigation of substitutes for scarce materials, the development of materials for tropical conditions, and the refinement of radar techniques. During this period the Laboratories were also concerned with the establishment of the short wave complex, Radio Australia, at Shepparton and with the provision of a VHF radio link between the mainland and Tasmania. In 1945 they provided the Victorian time service, previously the responsibility of the Melbourne Observatory, and expanded it to provide standard frequency and time services to major centres throughout Australia.

Immediately after the war the staff of 130 used its capacities to overcome war-caused arrears of development in the Postmaster-General's Department. Advances in techniques had resulted in the telecommunication frequency spectrum being increased by a factor of 300; the introduction of broadband radio links allowed the Laboratories to continue work in the fields of radio propagation and radio meteorological phenomena, facilitating such projects as the microwave radio link from Adelaide to Perth; and the increase in capacity and capability of Australian industry stimulated the manufacture of electronic equipment in Australia, necessitating advice from the Laboratories on the standards required.

In the early 1950s the Laboratories, through research on television transmission techniques and coaxial cable transmission systems, prepared standards applicable to the introduction of television in 1956 and for coaxial cables in the early 1960s. The Laboratories also investigated the characteristics and uses of new materials such as plastics for insulation and sheathing, and of new equipment such as crossbar switching equipment, as well as techniques and standards to ensure reliability. Projects in 1971 related to the introduction of digital transmission systems, electronic switching techniques, the use of satellite communication in the remote areas of

Australia, and the use of solid state amplifiers for economy in subscriber line networks.

Because of the importance of telecommunications research the Laboratories maintain close liaison with relevant faculties in universities; the publication of reports on the scientific and technical work of the staff and the organisation of conferences and symposia are two means of facilitating this aim. The organisation in 1971 consisted of 36 divisions with a staff of 423 including 117 engineers and 28 scientists; it occupied about 142,000 sq ft of floorspace in eight buildings in and around Melbourne, with equipment valued at over \$6m and a research budget of \$4m.

#### TOOLANGI GEOPHYSICAL OBSERVATORY

The Toolangi Geophysical Observatory operated by the Bureau of Mineral Resources, Geology, and Geophysics, comprises two separate sections, the Magnetic Observatory and the Seismological Observatory.

On 1 May 1858 Professor G. Neumayer began the first regular geomagnetic observations in Victoria at a site in Melbourne's Flagstaff Gardens. Since then magnetic observations or recordings have been continued with few interruptions. The three elements—declination, horizontal intensity, and inclination—were observed visually every hour for five years, but the site became unsuitable because of nearby blasting and building activities, and in 1862 the variometers were transferred to the Botanic Gardens. In 1866 the Magnetic Observatory received a photographic recording magnetograph and new control instruments from England, and operations began in 1867 under the direction of the Government Astronomer, R.L.J. Ellery. The magnetograph was transferred in 1877 to the basement of a building which still exists in the grounds of the former Melbourne Observatory, where recordings were continued until 1919.

After 1913 the records became very disturbed during the daytime because of electric trams, and when Dr J. Baldwin took over the Observatory in 1915, he began intensive surveys for an alternative site. Eventually the present site at Toolangi, about 40 miles north-east of Melbourne, was chosen, and installations were completed in 1919 when recordings began. In January 1939 bushfires destroyed the magnetograph building and the instruments. The buildings were replaced by the present underground vault and a new set of instruments was installed; these are still operating continuously. The Commonwealth acquired the Observatory from the Victorian Government in 1943 and the Commonwealth Solar Observatory, Mount Stromlo, administered the station. The Bureau of Mineral Resources took over the Observatory in 1946 and has operated it since then. Under the Bureau's jurisdiction, several improvements have been made in equipment, buildings, and methods. The old instruments have been replaced and new buildings have been erected, while data are now being reduced with the aid of electronic computers.

Earthquake recordings in Victoria began in 1902 when a Milne seismograph, recording on a strip of photographic paper 22 inches by 3.5 inches, was installed in a basement of the original Melbourne Observatory; this was used until December 1927 when a new Milne-Shaw seismograph, which is still recording, replaced it. In 1951 the Seismological Observatory added Wood-Anderson instruments, and these operated, together with the

Milne-Shaw, until 1956 when a 3-component short period Benioff seismograph was received. This high sensitivity instrument is still in use at Toolangi, where it can be operated at its maximum magnification of about 180,000. A set of long period instruments was installed in October 1963 to supplement the short period ones, so that a complete set of instruments is in continuous operation. Auxiliary equipment, such as precise timing and crystal controlled power supplies, is included in the installation. About 1,400 tremors are recorded annually. The staff establishment for 1970-71 comprised two geophysicists, two technical officers, and a computing assistant, together with a supporting budget of \$9,000.

## STATE RESEARCH FACILITIES

## CANCER INSTITUTE

Following a report from an Interim Committee, the Cancer Institute was created by Act of Parliament in 1948. The Act also provided for an agreement with Tasmania, and clinics at the Royal Hobart and Launceston General Hospitals were placed under Institute control. The Institute seeks to carry out research into the causation, prevention, diagnosis, and treatment of cancer ; provide outpatient and inpatient hospital treatment at the Institute ; and provide for the teaching of undergraduate and postgraduate medical students, medical practitioners, nurses, technicians, and physicists.

The Institute is governed by a Board consisting of *ex officio* members, namely the Medical Director, Manager, and Assistant Medical Director of the Institute, as well as the Director of the Commonwealth Radiation Laboratory and representatives of the Ministers of Health in Victoria and Tasmania, the Anti-Cancer Council of Victoria, the University of Melbourne, and the general teaching hospitals in Melbourne. The Board delegates wide administrative powers to an Executive Committee. The Peter MacCallum Clinic of the Institute is an approved public hospital under the National Health Act.

The Institute began within the Radiotherapy Department of the Royal Melbourne Hospital, but because it lacked accommodation and facilities, one of its first developments was the Visiting Nursing Service, which began in 1950. Accommodation was subsequently provided in what was previously the Queen Victoria Hospital building in William Street.

One of the first tasks of the Institute was to assemble staff and equipment for a complete radiotherapy service ; the greatest demand at that time was for patient treatment facilities. In 1950 the total number of staff was five, but by 1970 it had reached 748. The rapid overall growth of these facilities, especially from 1958 to 1968, is illustrated by increasing expenditure and patient admissions. In 1958 expenditure was \$990,000, 2,440 new patients were seen, and 64,648 treatments were given. By 1968 the respective figures were \$2.42m, 5,857, and 90,914.

Activities now include a complete hospital service to both outpatients and inpatients suffering from cancer ; consultative and treatment service for all general and special hospitals in the metropolitan area ; a consulting service for regional base hospitals in the country ; and superficial therapy service in either remote or densely populated areas of Victoria. Fully supportive diagnostic services, including pathology, biochemistry, medical physics,

diagnostic X-ray, radio-isotopes, and clinical investigation are provided. The Institute maintains an outpatient transport service for those unable, on medical grounds, to use public transport, and a Visiting Nursing Service for cancer patients in the metropolitan area. Country patients can also avail themselves of hostel accommodation.

Together with the Royal Melbourne Institute of Technology, the Institute trains therapy radiographers and medical nucleographers, and there is a postgraduate school for radiotherapeutic nursing. Undergraduate and post-graduate medical education is carried on as a clinical school of the University of Melbourne.

Major developments have included improved treatment techniques using radioactive substances and radiation equipment ; the introduction of four megavoltage units in the 4-10 MeV range and the investigation of super voltage units in the 35-50 MeV range ; and the association of the scientific departments and research activities for higher degrees with the University of Melbourne. An airborne consulting service has also been made available to country hospitals.

Research activities have covered many fields. Biological research includes the histological and ultra-structural studies in auto-radiography and radiation effects, cell culture studies, cytology, and biochemistry studies in measurement and growth rate. Endocrine research has also been carried out, and includes the analysis of cortico steroids and keto steroids, associated with the "discriminant factor" in breast cancer, while in the field of medical physics, investigations have covered the pure and applied sciences including activation analysis, tumour localisation and measurement, dosimetry, scanning and diagnostic techniques, and computer planning. Barotherapy (high oxygen tension studies), is another activity, and clinical research, including the use of radio-isotopes and haematological studies, is being undertaken. It is estimated that the Institute will ultimately provide inpatient accommodation of 600 beds, together with fully supporting services at both the clinical and research level. In 1971 the Institute's professional and technical research staff numbered 35, with a research budget of \$186,000.

#### COUNTRY ROADS BOARD

When the Country Roads Board was established in 1913, the existing system of roads and bridges was inadequate. However, the development of improved and economical methods of construction was accelerated in the early 1920s when a laboratory was set up in conjunction with the University of Melbourne to carry out tests on stone and bitumen. This was not entirely satisfactory, and in 1928 the Board set up its own laboratory in the Exhibition Buildings with a staff of two. For the next ten years, activity was confined to elementary control testing of gravel and bitumen, and to research on the local application of soil and gravel testing methods then being developed in the United States of America. During the same period the Board's engineers developed methods of low cost road construction, as well as techniques and plant for bituminous surface treatment of roads. During the Second World War the staff gained experience of pavement design for airfield construction, and in 1948 the California Bearing Ratio method of pavement design was adopted with modifications for local conditions ; it is still used.

In 1963 the laboratory, now the Materials Research Division, was moved from Carlton to a modern building at the new head office at Kew. The greater space and improved facilities not only permitted a substantial increase in control testing, but also original research. The finding of deposits of road making material has long been an important function of the laboratory. Since 1961 seismic methods of checking the depth and hardness of rock in road cuttings and in bridge foundations have been widely used, and since 1963 electrical resistivity techniques have been used in the search for suitable road making sands. Modern sampling and testing equipment is used in foundation engineering studies on undisturbed soil samples to ascertain the possible amount of settlement of embankments. While facilities for routine strength tests on steel have been available for many years, the metallurgical laboratory established in 1965 now provides for the complete metallurgical investigation of steel used in bridges or in failed parts of mechanical plant. It also carries out research on the welding characteristics of new types of steel.

To provide objective methods for measuring surface characteristics of pavements, instruments which measure unevenness in road surfaces have been modified and fitted with electronic recording equipment. Slipperiness, or the tendency of certain stones to polish, is measured according to British Standard methods, while the strength of pavements is assessed by measuring the deflection of the surface when it is loaded by a wheel carrying the maximum legal load. The Division has co-operated with the Standards Association of Australia in developmental work such as the preparation of specifications and test methods for traffic line paints, materials for reflective signs and markings, bituminous products, cement concrete, and related materials.

The number of persons employed on materials research in 1971 averaged twelve and the annual research and development budget was approximately \$100,000.

#### DEPARTMENT OF AGRICULTURE

In 1872 the Department of Agriculture replaced the Board of Agriculture, and soon afterwards took over a stock inspection branch comprising a chief inspector and district sheep inspectors. As disastrous losses were then common in the plant industries as well as in the Colony's flocks and herds, the earliest activities were directed towards disease control. A chemist and an agricultural chemist were appointed in 1873 and 1886, respectively, the latter beginning field experimentation ; in the early years the Department's work was primarily inspectorial and experimental. However, phylloxera, rusts, grasshoppers, and codling moth continued to take a heavy toll ; this resulted in the establishment of a Royal Commission on Vegetable Products in 1891. Subsequently, the Department appointed an entomologist and a vegetable pathologist, the first plant pathologist in Australia. Between them they produced five books, five handbooks, 48 articles, and 188 papers. Superphosphate came into use later, and by 1901, 370 field trials were being conducted. Further developments included experimental farms at such places as Wyuna and Whitfield, and the establishment of Government Cool Stores at East Burwood, Ringwood, Diamond Creek, Tyabb and, subsequently, Victoria Dock. Research into primary industries increased



with the establishment of the Rutherglen Research Station, and the State Research Farm at Werribee in 1912. The Department has progressively used new equipment, including electron microscopes, automatic analysers, gas chromatographs, spectrophotometers, and computers.

In 1911 the Department's staff numbered 362, and between 1872 and 1911 the total expenditure on research was about £182,500; from 1912 to 1946 the Department spent about £600,000 on research, while between 1947 and 1968 the total amount rose to \$14.7m. The total number of staff was 750 in 1947, and was over 2,000 in 1971.

Pasture improvement studies began with permanent topdressing experiments at Rutherglen Research Station in 1912, and these have continued at a steady rate, particularly since the 1920s. By 1971 over one quarter of the State consisted of improved pastures. Since 1930 an underlying feature of Victoria's development has been the scientific improvement of its native pastures by the introduction of new species, notably subterranean clover and ryegrass, by topdressing with fertilisers (mainly superphosphate), and by general developments in grazing management.

Associated with this development has been the clover-ley system of farming, i.e., a period during which a paddock is under clover pasture rather than fallow or crop. This restores and improves soil fertility, and heavy yielding cereal crops with higher grain quality can be grown more efficiently. Following the adoption of this system in the higher rainfall cropping districts, further research indicated that barrel medic and other legumes could extend similar benefits to areas which were too dry for subterranean clover.

Improved pastures have been the most important contribution to Victoria's higher animal production since the Second World War. During the 1960s research work in this sphere has largely aimed at increasing yields of meat and wool to the acre. Experiments at the Pastoral Research Station at Hamilton and elsewhere indicate that there is still great potential for increased stock numbers in Victoria. Complementary research includes the utilisation of pastures and conserved fodder by stock, the survival of lambs and other young animals, and improved breeding methods. In recent years there has been a great increase in the amount of research work with cattle and with the possibilities of dairy-beef production. Artificial insemination, especially in the dairying industry, is being used widely in conjunction with herd recording to build up a State population of high-producing cows. With reference to animal health, the Department of Agriculture's TB eradication scheme has reduced the incidence of tuberculosis in dairy cattle, and the HYPAR process, with its hysterectomy-produced piglets, has been used for producing pneumonia-free herds. In the poultry industry the random sample laying test has continued to improve the efficiency of egg-layer performance.

Plant breeding research has considerably improved crop yields. The breeding programme for cereals, initiated at Dookie Agricultural College about 1890 and continued at the State Research Farm, Werribee, has produced several outstanding cereal varieties which have added to the yield and quality of grain produced in the State; for many years more than 95 per cent of Victoria's wheat acreage has been

sown to varieties bred at Werribee. The additional yield from these varieties is valued at several million dollars a year. Insignia, released to farmers in 1946, was for many years the most popular wheat variety in Australia and is still sown in some areas. The Department's geneticists have also bred high yielding varieties of other crops including oats, barley, linseed, tomatoes, and stone fruits. Associated with this breeding programme has been the introduction and testing of plants from other countries; varieties of tobacco and potatoes now grown are examples. The testing of new plant varieties on research stations and farmers' properties has always been a major part of the Department's applied research work.

Scientific research work into other features of plant production, such as nutrition, has also contributed to Victoria's productivity. Outstanding results following the general introduction of superphosphate early in the century were followed later by the favourable response of plants to small amounts of zinc during the early 1930s, mainly on the dark Wimmera soils, and later to small amounts of molybdenum, mainly in areas of the central highlands. Favourable responses to cobalt and copper have been recorded in some of the light sands. Research has also contributed to the more intensive high cost horticultural industries. Modern investigations in this field began in the mid-1920s. The Department pioneered fruit cool storage studies and established horticultural research stations at Tatura in 1937, Scoresby in 1946, Mildura in 1954, and Frankston in 1962. Experiments have also sought to determine the best root stocks and soil management practices to increase productivity of fruit trees, and to investigate improved methods of pruning, mechanical harvesting, the selection of optimum harvesting dates, and pre-cooling of fresh produce. Other important results of horticultural research have included the appropriate applications of nitrogen and phosphate to produce a 30 per cent increase in canning-peach yields; the critical irrigation times to improve watering efficiency and increase fruit yields; the virtual elimination of pre-harvest drop of fruit in apples and pears; and the selection and breeding of new tomato varieties.

Progress in the control of plant diseases, pests, and weeds has also contributed to improvement in quality and increasing production. An outstanding example is the control of viruses, especially those in strawberries, whose average yields, as the result of virus-free clones, have been raised from some 15 cwt to nearly four tons to the acre during recent years. Another is the virtual elimination of seed borne diseases from the lettuce crop. The Department has also worked on the control by new chemicals of weeds, pests, and diseases. With the increasing use of new chemicals, advanced analytical techniques have been developed to analyse minute residues in food products. Other methods of pest control include the genetic control of the field cricket and of rust in wheat, the biological control of red scale in citrus, and the agronomic control of skeleton weed.

Pioneer work in irrigation research has included some early experiments with irrigated pasture at the State Research Farm, Werribee, in the 1920s. Subsequently, notable work was done in reclaiming land in northern Victoria in areas which had been rendered valueless by salt. An Irrigation Research Station was established at Kyabram in 1959.

## DEPARTMENT OF CROWN LANDS AND SURVEY

Since the Second World War, there have been rapid developments in surveying instruments and techniques, largely due to the development of electronics, but before this time, even though survey instruments had been improved and refined, the fundamental methods had remained unchanged for over two centuries. The Department of Crown Lands and Survey, which was originally the sole survey authority in the State, still remains the largest surveying establishment, with approximately 45 licensed surveyors on its staff.

Although the accuracy of the early surveys came under criticism, the surveyors must be credited for the speed with which the country was opened up under the most difficult conditions. In this period, although theodolites had been developed for more than 100 years, their use was rare. Surveyors preferred the circumferenter, which permitted more rapid work but was subject to greater inaccuracies than was the theodolite. The circumferenter consisted simply of a sighting vane over a graduated circle which could be oriented by a compass needle. Distances were also subject to large inaccuracies, being measured with a Gunter's chain, which was nominally 66 ft long, and consisted of 100 links of iron wire interconnected by small rings for flexibility.

Theodolites of the period were very cumbersome with horizontal circles of up to 24 inches in diameter, and were generally reserved for triangulation surveys, which consisted of a precisely measured base line on to which was built a network of triangles whose angles were observed by theodolite. The positions of all stations could then be computed. The system required the position of at least one station to be fixed by astronomical observations. This classical method of triangulation was developed over 100 years previously and continued until after the Second World War. Although techniques for angular observations using theodolites had been perfected to give relatively high precision, accurate base line measurements presented many difficulties. One of the early triangulation surveys in Victoria, carried out to co-ordinate the surveys in the Melbourne district, used pine measuring rods to establish the base. For the geodetic triangulation of Victoria, begun in 1858, a five mile base line was measured using 10 ft iron measuring bars, previously standardised in England. Elaborate precautions were taken to protect the bars from direct sunlight, and the techniques employed resulted in a highly precise base measurement. The actual base line measurement, not including clearing, took four months to complete. A repeat measurement over a two mile section of the line gave agreement to better than half an inch or a relative agreement of approximately four parts in a million.

Gradually, the linear accuracy of ordinary surveys was improved. First the 66 ft long broad steel band by Chesterman replaced the Gunter's chain, to be followed in the 1870s by thin steel bands of up to 300 ft length. The major achievement in precise distance measurement was the development of a tape of low coefficient of thermal expansion composed of a steel alloy called Invar. This tape was developed overseas in 1896 and was being used in Victoria by some Departmental surveyors by about 1910. By this time the Army had taken over the topographic mapping and triangulation, and its Survey Section employed the new Invar tapes to

establish base lines. Accuracy of 1 part in 500,000 was achieved, but this still involved considerable time and labour.

Between the two world wars the major achievement in Europe came from Heinrich Wild, who revolutionised theodolite design with the introduction of the glass arc. Theodolites designed by Wild in the early 1920s were well ahead of their time, and remain today among the world's leading theodolites of their type, both in design and precision. Generally, however, there was lack of communication between countries and progress was limited. Certainly in Victoria it was a very static period, although this could also partly be accounted for by the depression of the 1930s.

In the early 1950s the first electronic distance measuring (E.D.M.) instruments for surveying purposes were produced overseas. The Geodimeter, based on a light wave principle, could measure a distance of more than 20 miles to an accuracy of better than six inches; the Tellurometer, an instrument based on a radio wave principle, is capable of measuring lines up to 100 miles in length with a comparable accuracy. The Victorian Department of Crown Lands and Survey was among the first organisations in Australia to enter the E.D.M. field and to apply the electronic computer to surveying computations. By 1971 the Department was equipped with eight Tellurometer units and two electro-optical distance measuring units, and its techniques were virtually completely computer oriented.

Both world wars have contributed greatly to the development of photogrammetry for mapping. It was shortly before the Second World War that elementary photogrammetric techniques were introduced to Victoria through the Australian Survey Corps. After the war a mapping section was established in the Department, Wild stereoplotters were purchased, and more advanced techniques introduced. These instruments, which had been developed in 1937, made possible the plotting and contouring of maps direct from aerial photographs. The Department has since followed overseas trends and by 1971 was equipped with modern photogrammetric instruments valued at more than \$500,000 and employed the latest techniques of analytical photogrammetry. Overseas research is moving more and more towards complete automation, not only in photogrammetry but in the complete mapping process. The first automatic equipment from overseas has now arrived in Australia, and the next decade could see significant advances in mapping.

#### EPIDEMIOLOGICAL RESEARCH UNIT, FAIRFIELD HOSPITAL

As the exotic diseases hospital of the Victorian Health Department, Fairfield Hospital provides a centre for treatment of severe manifestations of infectious diseases with the best available medical knowledge, and offers ideal opportunities for the study of the agents responsible for infectious disease and its spread in the community (epidemiology).

Proposals for an Epidemiological Research Unit were first made in 1954. Part-time research workers were to be employed, so that only a minimum number of additional staff and new buildings would be necessary, with key personnel carrying out both routine diagnostic work and research. However, grants from the National Health and Medical Research Council and from private individuals made possible the purchase of

special equipment and the employment of additional trained staff. The total number of laboratory staff was therefore increased, as well as the proportion of those with special technical skills. In 1969 there were eight research workers. The unit ceased operations in June 1970.

The initial activities of the unit were concerned solely with bacteriological problems such as streptococcal disease, brucellosis, and leptospirosis. The occurrence of leptospirosis as an important human and animal disease in Victoria was first recognised when investigations were carried out with the assistance of a district veterinary officer in Gippsland. An extension of microbiological activity into virology did, however, become necessary during 1954 and 1955 as a result of rapid developments in diagnostic techniques, many of which were applied for the first time in Australia by the laboratory. Since then, research activities have tended to be virological rather than bacteriological with special emphasis on clinical medicine. Papers describing epidemiological studies of diseases such as poliomyelitis, virus meningitis, influenza, croup, bronchiolitis, hepatitis, gastroenteritis, and rubella have been published, and in 1965 the unit was appointed as the World Health Organization reference laboratory for virus diseases in the southern Pacific area, thus providing international exchange of epidemiological information.

#### FISHERIES AND WILDLIFE DEPARTMENT

The development of the Fisheries and Wildlife Department as a research and management organisation effectively began in the 1940s. Before Federation the responsibility for fisheries and wildlife was vested in the Department of Trade and Customs and from 1901 in the Department of Public Works; in 1909 these activities were transferred to the Department of Agriculture. Until then there was little more than limited enforcement work and stream stocking. A separate office for the Fisheries and Game Branch (as it was then called) was established in 1913 when the group came under the control of the Chief Secretary, and until 1940 activities were mainly centred on the acclimatisation programme which had begun in the 1870s. Trout were distributed from hatcheries at Ballarat and Geelong, a small government hatchery, and a number of small hatcheries operated by local angling clubs throughout the State. In 1933 a trout licence was introduced at a cost of 5s per season. In 1940 the branch consisted of eleven persons and the total budget was £10,500.

The appointment of the first biologist in 1941 resulted in bream fishery research at the Gippsland lakes, leading to the first Victorian fisheries management regulations based on scientific observations. Information on trout food and growth was also collected and plans were formulated for a large trout hatchery and research station near Eildon; in 1946 the first temporary buildings of the Snobs Creek Freshwater Fishery Research Station and Hatchery were erected. In 1947 the Port Phillip Bay fisheries were studied extensively with particular reference to snapper, and these studies foreshadowed a relatively short term but lucrative scallop fishing industry. In 1948 research was expanded to cover mammals and birds, resulting in more knowledge and better management of quail, water-rats, koalas, and fish-eating birds. Enforcement was also increased by the appointment of six new inspectors in that year. By 1950 the staff of the branch

had increased to 40 and the annual budget had reached a figure of \$82,000 of which about \$5,000 was spent on research. From 1950 to 1952 research was conducted into Murray fishes, trout, and pond culture, and in 1953 the need for research into game was recognised by the appointment of a Biologist (Game Birds). Research into ducks resulted in the game licence being introduced in 1959, and in that year 34,863 shooters took out the \$2 licences, a wildlife reserves system was established, and the programme was expanded with the appointment of the State Wildlife Reserves Investigation Committee.

Following the appointment of a Scientific Superintendent at the Snobs Creek Station in 1952 several basic problems relating to the culture of trout under Australian conditions were overcome, and by 1956 large numbers of trout were being produced and released into streams and lakes. Further additions to the research staff, particularly on other wildlife, resulted in a new research wing being opened in 1959. By 1960 the total number of staff had risen to 121 and the annual budget was slightly in excess of \$500,000 of which approximately \$100,000 was devoted to research.

Since 1959 the Serendip Wildlife Research Station near Lara has been developed to demonstrate that farming and wildlife are not incompatible; research work at the Station includes the rehabilitation of declining species of birds, including water fowl. In a report by the State Development Committee on the fishing industry in Victoria, major recommendations were aimed at securing development of the fishing industry and led to the creation of the Commercial Fisheries Council in 1961.

There has been increasing interest in studies of the total environment since 1962, and this broad ecological approach provided the basis for the beginning of the Port Phillip Bay study in 1968. This programme, undertaken in co-operation with the Melbourne and Metropolitan Board of Works and the universities, aims to establish the environmental *status quo* of Port Phillip Bay, so that any changes produced by the discharge of effluents into the Bay can be assessed.

At the beginning of 1971 the total staff was over 200, and approximately one half of the annual operating budget, which exceeded \$1.2m, was devoted to research. A new and spacious research facility, the Arthur Rylah Institute for Environmental Research, was opened at Heidelberg in 1970.

The Fisheries Act, amended in 1967 and re-enacted in 1968, increased licence fees for some commercial fisheries and created a Fisheries Research Fund into which these fees are paid. The 1968 Act further provided that these funds should be applied towards research, management, and development of commercial fisheries, including extension services and education for fishermen.

#### FORESTS COMMISSION

Transport changes have had far reaching and lasting effects on forest industries. Logs from the mountain and foothill forests were once moved to the sawmill by bullock team, and along the Murray River they were carried by barge. This primitive transport gave way to steam-powered traction engines and winches, and then to trucks and tractors. The construction of a network of roads over most forest regions of the State has brought all Victorian forests within economic range of the Melbourne market, and provides quick access to areas for fire protection and recreation.

Trial pulpings of eucalypt wood for paper making were made very early in this century, but were unsuccessful as they used the technology developed in the northern hemisphere for long fibred softwood species. The first economic pulping process for short fibred eucalypt wood was developed in the 1930s. In 1937 the first commercial sulphate pulp mill was established on a pilot scale at Maryvale ; it proved so successful that operations were rapidly expanded. This process used wood material which previously had no market at all and was merely left in the forest to hinder the growth of new stands. The market for pulp products has increased to such an extent that 30 per cent of Victoria's wood harvest is now pulped and five mills are engaged in the manufacture of paper pulp, hardboards, and particle boards.

A major technological advance in Victorian forestry during the last century was the selection of *Pinus radiata* for extensive planting. This species was introduced into Victoria in 1857, and the Forestry Department began experimental plantings at Macedon in 1873. By 1910 the ability of *Pinus radiata* to outgrow other exotic species over a wide range of sites was apparent, and several plantations had been started. These developed into large-scale projects in the 1960s and by 1971 annual plantings approached 17,000 acres. This has been made possible by the use of planting machines which were introduced in 1950; one machine can plant eight times as many trees as one man in a day.

In 1958 a long-term research project to breed improved strains of *Pinus radiata* was begun. Trees which appeared to be superior were selected and are still being tested for their ability to pass on their desirable qualities. The seed from orchards of selected parent trees will be used for future Forests Commission plantations.

The disastrous bushfires of 1939 stimulated improved fire control methods. In the early days isolated fire fighters worked with rakes and beaters, but modern fire fighters are now equipped with tankers and bulldozers and are in contact with fire headquarters by two-way radio, using a State-wide radio network controlled from a central radio station in Melbourne. Helicopters are used to ferry men and equipment as well as to observe fires. Aerial bombing of small fires with fire retardant chemicals has brought speedy control measures to rough country.

Major research into the regeneration of eucalypt forests began in the mid-1950s. Scientific studies of the flowering and seeding habits of native species, their seed germination, and seed bed requirements are now well documented. Unreliable methods of natural seeding are being replaced by controlled artificial seeding from light planes or helicopters, and fire and bulldozers are being used to help prepare suitable seed beds.

The Commission has used computers since 1958 to process forest survey data. Volumes of wood of suitable qualities are quickly calculated, allowing more field work to be carried out by the Commission. Computers are also used to analyse the results of experimental work and to plan the management of forests. Aerial photographs now help the forest assessor with the location and estimation of timber volumes. Mathematical models to simulate forest growth provide forest managers with better estimates of the produce which will be available, thus leading to greatly improved forest planning.

Supplies of naturally durable hardwoods of pole quality for telephone and electricity transmission lines are declining, but research by the C.S.I.R.O.'s Division of Forest Products established that the less durable timber of other eucalypts was suitable for poles if treated with preservative. Two treatment plants were established in the 1950s to treat poles of less durable hardwood species such as messmate and stringybark, and many smaller plants have been established in Victoria to treat pine wood for various end uses, particularly for farm fence construction and poles.

Forests Commission research activities during 1971-72 involved 21 professional officers and ten support staff at a budgeted expenditure of \$290,000 including wages and salaries. The principal research activity areas cover forest management, silviculture, biology, pathology, entomology, hydrology, and fire research.

#### GAS AND FUEL CORPORATION

The Victorian gas industry was established in 1857 with the commissioning of a bench of hand-stoked horizontal retorts on the site of the present Gas and Fuel Corporation's West Melbourne works. Until 1929 gas was produced by the carbonisation of bituminous coal using an English process developed in 1808, and developments were primarily associated with the improvement of retort design and the introduction of mechanical handling. In 1929 the carburetted water gas process was introduced, but the advancement of the industry up to this time was based mainly on overseas research and development. In 1927 Dr R. S. Andrews began research and development work; investigations made to improve tar for road making led to the important Bitural process being developed. From 1930 until 1936, when imported bitumen prices were lowered, making local production uneconomic, this process made a valuable contribution to the supply of road making materials. Investigations also resulted in the development and construction of cyclic plant to gasify black coal completely at atmospheric pressure, using a three generator system (the 3G process); the first 3G plant began to operate in 1939, to be followed by a second, larger plant in 1942. In Melbourne the newly formed National Gas Association (now the Australian Gas Association) first formulated an Australian standard in 1932 for the design and performance of gas appliances, these codes providing a basis for the national scheme now in operation.

During the early 1930s Dr Andrews began investigations into the use of Victorian brown coal resources for town gas production, examining characteristics of the brown coal and analysing overseas developments for possible application in Victoria. This research led to the establishment in 1956 of the Lurgi Pressure Gasification Plant at Morwell, the first of its type outside eastern Europe. Extensive investigation on the carbonisation of Victorian brown coal was carried out in co-operation with the University of Melbourne, culminating in the production of a high-grade char.

During the Second World War the Victorian gas industry plants extracted motor fuel from syphon liquor, produced sodium formate and sodium oxalate, extracted sodium ferrocyanide and sodium thiosulphate from spent oxide, and produced ammonium thiocyanate from gas works liquor.

In the post-war years there was considerable expansion in gas utilisation research. Projects included the investigations of kitchen ventilation, the development and exploitation of the power flueing technique, the



development of a direct flame contact heater giving considerably improved paper machine output, and the development of equipment to allow the use of tempered refinery gases as a fuel in glass works.

In 1966 the Corporation concentrated its research and testing facilities in a new laboratory at Port Melbourne. Staff in the laboratory undertook studies into the practical problems of combustion of natural gas and prepared the way for the conversion of gas appliances. Since conversion, research and development has aimed at improving appliance designs and techniques for installation, and at ensuring that the most efficient procedures and materials are available for the distribution of natural gas.

#### INSTITUTE OF MENTAL HEALTH RESEARCH AND POSTGRADUATE TRAINING

The Mental Health Research Institute of Victoria was established in 1955 within the Mental Health Authority. With an initial professional and technical staff of five and an undefined research budget the Research Institute has developed as an autonomous unit, as well as acting in catalytic and supportive roles for research developments through individual researchers within the Authority as a whole. At any one time there are 30 to 40 research projects in progress. In order to carry out a mental health education programme, the Institute's buildings are linked with the Mental Health Authority Library and with a mental health museum.

The Parkville Psychiatric Unit of the Institute operates with the University of Melbourne to provide undergraduate and postgraduate teaching, and the Institute's activities are linked with the University of Melbourne's Department of Psychiatry and other university departments, and with such organisations as the Victorian Marriage Guidance Council and the Family Council of Victoria. Specific research activities are also supported by organisations such as the National Health and Medical Research Council, the Social Sciences Research Council, and by private sources.

The Institute has been concerned mainly with compiling data relative to psychiatric morbidity in Victoria, and has been operating a cumulative case register since the Population Census in 1961. Data on psychiatric and mental hospital admissions, discharges, and deaths are processed, and bulletins are published analysing various aspects of specific psychiatric disorders and their treatment. The Commonwealth Bureau of Census and Statistics has assisted with these analyses by providing computer facilities. In 1969, to recognise the growing educational activities, the name of the Institute was changed to the Institute of Mental Health Research and Postgraduate Training, Victoria.

Major areas of research have included the epidemiology of mongolism (Down's syndrome) and other congenital anomalies of the central nervous system, and the occurrence of mongolism has been linked with the epidemiology of infectious hepatitis. The hypothesis of virus-chromosome interaction as a cause of congenital anomalies has been formulated, and immunological studies are being developed to test this theory. In addition to the potential of the mongolism studies, two new methods of treatment in psychiatry have been originated through the medical staff of the Mental Health Authority:

the lithium treatment of mania, and the treatment of enuresis with imipramine.

Altogether, some 400 research projects were processed and 750 papers published by Mental Health Authority personnel before 1970. Total health and social surveys in a rural town and in a Melbourne suburban area, carried out in association with the three Victorian universities, have provided data on the prevalence of specific mental and physical disorders in the community and their relation to social and familial factors. Other studies have been carried out on alcoholism, the mental ill-health of immigrants, Aboriginal adolescents, deserted mothers, and other mentally vulnerable groups. Suicides and attempted suicides have been the subject of a number of studies, as well as the social causes and consequences of schizophrenia in Victoria, prevalence patterns of mental retardation, community attitudes to mental illness, and many other topics in the field of mental health research.

The Institute has aimed to establish links between medical research and the biological, behavioural, and social sciences. In 1971 the Institute had a professional staff of seventeen and its budget was financed through the Mental Health Authority and other sources mentioned above.

#### MELBOURNE AND METROPOLITAN BOARD OF WORKS

The Melbourne and Metropolitan Board of Works has about 850 miles of large diameter underground steel water mains transferring water from the catchment areas and distributing it in the metropolis. These mains are exposed to attack by stray electric current from the traction systems, and evidence from recording instruments shows that these hazards are very widespread and extend as far as Mt Little Joe near Warburton, but it is difficult to assess the actual damage on the mains. The Board adopts two major practices to minimise electrolytic attack. Steel mains are coated with coal-tar enamel and wrapped with asbestos felt, providing an insulating coating against stray current. In addition, a system of electric drains is installed between the Board's pipes and the traction system to conduct the stray current back to its point of origin, instead of allowing it to casually escape and so corrode the main.

The Board, in order to meet its own requirements, began the manufacture of coal-tar enamel for pipe coating and lining in 1934. Since then the Board's staff, by plasticising the enamel, by using inert wrapping materials in and over the coating, and by using granular backfills such as sand and dusty toppings, has overcome coating-distortion due to soil stresses, and cracking and splintering due to cold conditions, two defects which were earlier apparent. Investigations now centre on various combinations of wrapping material and degrees of plasticising in relation to resistance of the coating to soil stress damage. Overhardening and unpleasant fumes associated with the hot application of the material have been substantially reduced due to elimination of the more volatile constituents in currently produced enamel. Application of enamel has always been more cumbersome and difficult for joints of the smaller diameter new mains, and for perforation repairs of old mains. To overcome both of these difficulties, heavy plastic materials which can be applied more easily as either adherent coatings or sleeves are being investigated. Research is also being carried out into the contamination of water due to leaking of materials from pipe linings.

The Board has conducted hydrological experiments for some years in three small forestry areas at Coranderrk near Healesville. Overseas research in hydrology shows that substantial gains in water yield may be obtained, without detriment to the water quality, by correct manipulation of the catchment forest cover, but the Board wishes to be certain that similar results can be obtained locally before departing from present established catchment management policies. In its experiments, weirs have been established on three perennial streams. Designs were based on installations used successfully at the major American hydrology station at Coweeta, North Carolina. Catchment information, including streamflow, silt load, rainfall, water quality, and soil moisture has been obtained to establish correlation between the three catchments before any disturbance of the catchment growth is undertaken. The catchments will be treated experimentally; one area will be logged in accordance with normal forest practice, followed by the establishment of a mass regeneration crop of young eucalypts; the second will be logged on a more selective basis, with natural regeneration only; and the third will be retained as a control area. This should furnish information on the water economy in relation to a mature forest catchment, and the effect of a young regenerated forest on catchment yield.

Studies on the dissipation of energy in a high-velocity jet to determine a system suitable for feeding service reservoirs in residential areas have demonstrated that a fixed-cone jet-dispersion valve, discharging to the atmosphere, can be used under controlled conditions without causing excessive vibration, noise, spray, or cavitation problems.

Over the years the Board has extensively studied the corrosive effects of hydrogen sulphide in sewerage systems, with particular reference to its action on concrete. Slime growth in main sewers is a major source of sulphide generation, and a detailed examination is being made of the influence of hydraulic shear stress on the slimes at the conduit wall.

Investigations have also covered the service behaviour of 4 inch diameter vitrified clay sewers by using an experimental trench box, pipes being laid under various conditions of bedding, depth, trench width, and superimposed loading. From this the Board has determined the most suitable bedding material and laying procedure to minimise the beam loads applied to the pipes and ascertained the shear load which has to be carried by a flexible joint. This work, combined with additional information obtained from the study of various flexible jointing systems, provided the rational basis for the design of a rubber ring joint for 4 inch vitrified clay pipes; the joint specifications have been incorporated in the relevant Australian Standard Specification. The work is being extended to include the behaviour of 9 inch diameter pipes, and this will enable the rational design of joints for vitrified clay pipes of up to 12 inch diameter.

An environmental study was begun in 1968 with the Fisheries and Wildlife Department on the ecology of Port Phillip Bay. The programme includes a mathematical model study of the Bay's tides, currents and water movements, the meteorological effects, and the exchange of waters with the ocean. Current and tidal measurements were used to verify the model's simulations, and dispersals and concentrations were investigated by means of dyes and chemical sampling.

In conjunction with the Board, the Fisheries and Wildlife Department is studying the marine ecology, requiring extensive sampling and laboratory identification, and the Botany School of the University of Melbourne and the Department of Zoology at Monash University have conducted research into the incidence, distribution, and growth of specific plants and animals within the Bay. The study was co-ordinated by a Committee of representatives of the Board, the Fisheries and Wildlife Department, and the Port Phillip Authority, with the Health Department participating as an observer.

The Board, in co-operation with the State Rivers and Water Supply Commission, is investigating the possible uses of the reconditioned water to be discharged from the South-eastern Purification Plant. The work covers industrial use, agricultural use, and use for groundwater recharge.

#### NATIONAL MUSEUM OF VICTORIA

The National Museum of Victoria carries out research in zoology, geology, and anthropology; ensures the progress and preservation of collections which are the basis of this research; and by means of an educational programme of exhibits and publications, publicises the results of research. The National Museum, so named because Victoria was then an independent Colony, began on 1 March 1854, and its first field research expedition set out four months later. In 1856 the Museum was moved from the La Trobe Street Assay Office to the University of Melbourne, where it came under the control of Professor (later Sir) Frederick McCoy, who in 1858 was formally appointed Director and who carried out notable research on the natural history of both the present (*Prodromus of the zoology of Victoria*) and the past (*Prodromus of the palaeontology of Victoria*).

Professor (later Sir) Baldwin Spencer, who became Director in 1899, devoted much attention to anthropology. His classic Aboriginal research and his collections of artefacts made by fully tribalised Aborigines are exceptionally valuable. He was apparently the first anthropologist to use the two new instruments, the kinematograph and the phonograph, for recording data. Spencer realised the need for conservation, and in 1907 he suggested a committee for advising the Government on fauna protection and national parks. The active collecting programme has resulted in the preservation of many species and localities. The many thousands of scientific type specimens are the control points of the nomenclature of the animals of the present and the past. In succeeding years the number of museum curators was increased, and the research work extended; by 1968 eighteen scientific workers were employed. In 1906 the first *Memoir* was issued, and it is now an annual publication.

In 1967 the Trustees established a scientific fund to supplement the government expenditure on research. The Annual Report for 1967-68 listed thirty-five scientific papers published by members of the staff both in Australia and overseas. Much has been done to increase knowledge of marsupials, rodents, and bats, while the herpetologists have increased the understanding of snakes and lizards. Bird research has included the study of wrens, thornbills, and bush larks, and terns and other sea birds, while recently new lines of investigation have included the osteology and the

ecology of birds. The extensive research collection is used by workers in many other institutions.

The investigation of invertebrates has made a major contribution to the field of molluscs. Macpherson and Gabriel published a book entitled *Marine molluscs of Victoria*, and this is a complete and authoritative study. Many contributions to research have been made by honorary associates of the Museum, especially in the department of invertebrates, where large collections of polyzoa, hydroids, sponges, and molluscs, have been brought together. A notable research project was the Port Phillip Survey of physical and biological features, the first volume of reports being published in 1966 and the second in 1971. Some of the basic work on Australian termites was carried out in the National Museum which also worked on ants and forecast problems associated with Argentine ants. The Museum has studied butterflies, cicadas, stone flies, caddis flies, and click beetles, while two honorary workers have elucidated the taxonomy and habits of Victorian spiders. Another significant contribution has been a study of freshwater crayfish and yabbies.

In geology, palaeontological research has been notable, both by curators and honoraries. The development of the knowledge of the stratigraphy of Victoria once depended largely on the palaeontological work done in the National Museum which has published *Foraminifera*, *Australasian fossils*, *The book of fossils*, *Open air studies in Australia*, and over 300 scientific papers on fossils and associated subjects. Fossil man was also studied following the discovery of the Keilor cranium in 1940 and the Green Gully human remains in 1965. In mineralogy and petrology, important research has been carried out on Holocene marine sediments and on beach sands.

Anthropologists have investigated the wide range of Aboriginal artefacts, and assisted in their classification. Aboriginal camping sites, cave art, and history have received considerable attention; the collection of Aboriginal skeletal remains is extensive, and has been the basis of research by physical anthropologists.

The Museum Library contains many rare publications and is an essential research tool.

#### ROYAL BOTANIC GARDENS AND NATIONAL HERBARIUM OF VICTORIA

The primary function of a botanic garden is to provide a source of material for scientists studying genetics, cytology, and the evolution of plants. Other attractions, such as recreation and enjoyment, are necessarily secondary. Healthy plant specimens, representative of world-wide horticultural areas, are introduced, together with fresh species and cultivar material from climatic areas similar to the native environment. These provide new research and horticultural materials, as well as economic plants of some value. The presentation of this plant material in landscaped form gives the garden scientific, educational, and recreational value.

The Royal Botanic Gardens in Melbourne was founded in 1845 to provide a collection of trees and shrubs largely imported from overseas. The early settlers of Victoria had no information on the possible value and use of native trees, and it was natural to introduce familiar species, the use of which was at least partly understood.

Apart from early plantings of deciduous trees by the early curators, the first scientific contributions were acquired during the directorship of Dr (later Baron Sir Ferdinand) von Mueller. Trees which he considered might be suitable for industrial culture or acclimatisation were planted in a "pinetum", a term which is common on early plans of the Gardens. Many hundreds of conifers from all parts of the world were planted in the early 1860s, and many of the large trees still there remain from these early plantings. Among the species introduced about this time was *Pinus radiata* from California, a tree which quickly adapted itself to local conditions, and which has since become the major Australian softwood tree. An excellent specimen of the Monterey Cypress, *Cupressus macrocarpa*, was also introduced, originally as a shelter for the coastline, on well-drained sandy soils. There is a well known specimen of the Cedar of Lebanon, *Cedrus libani*, now a well matured veteran of the Gardens. It has not, however, generally proved to be as successful here as in its native land, where it is a useful building timber. The Swamp or Bald Cypress, *Taxodium distichum*, is the tallest tree in the Gardens, having reached a height of 120 ft in approximately eighty years. This is a short time when compared with its estimated life span of over 1,000 years in its native home in the eastern United States of America, but its importance depends upon rapid growth in wet conditions, thus providing an economic timber for building. These are but a very few of the large number of species of trees with a potential commercial value.

The century-old principle of plant introduction from overseas has continued over the years. In 1967-68 approximately 800 trees and shrubs were added to the collections of the Gardens, many of them quite new to the local environment, and it will be many years before their potential becomes apparent. Two groups of medicinal plants numbering several hundred specimens were also planted over 50 years ago, and are now a source of instruction and research for pharmacy students. In the wider field of chemistry, the native plant section of the Gardens is of particular interest to industrial chemists as a source of new drug and chemical compounds.

The National Herbarium, established in 1853, is situated within the grounds of the Royal Botanic Gardens, of which it is a vital part in providing service to the public and to government authorities. It is basically a collection of dried plants, systematically named and arranged for research purposes and for the identification of plant specimens submitted by the community. The science of systematic botany always requires reference to old plant material as well as library information, so that the correct storage and maintenance of plant specimens collected by early explorers and scientists is most important. The National Herbarium communicates the results of the scientific study of any plant problem by reference to the correct botanical name. At the present time the Herbarium houses over one and a half million sheets of specimens collected from all parts of the world. About one half consists of Australian plant species, a collection which is unequalled anywhere else.

The original Herbarium, which stood in the Domain about halfway between the Shrine of Remembrance site and the present Herbarium building, was built in 1857 to accommodate the botanical collections of Mueller, the Government Botanist, and to house his private collection formed from 1840

onwards. Mueller later presented this collection to the State. Through exchanges overseas, and by collecting within Australia, Mueller rapidly built up the collection until it became, and still is, the basis of the most scientifically important herbarium in Australia.

Over 95 per cent of the non-Australian collection was laid down before 1900, and some specimens were collected before the beginning of the eighteenth century. This material, and many of the pre-1900 specimens, are not merely of great historic value but are also of considerable scientific importance, containing as they do much type material, so that the Herbarium is the ultimate source of reference for nomenclature of a very considerable number of overseas as well as Australian species. There is a large suite of duplicate types of original Australian collectors: Preiss' suites of Western Australian material are virtually complete and are of great scientific significance. Of the overseas material the famous Sonder collection is the most important. Purchased in 1887 by the Victorian Government on the recommendation of Mueller, it consists of more than 200,000 sheets of specimens, and contains numerous overseas types or duplicate types. Some of these duplicate types, owing to war damage to European herbaria, now form the master material for world nomenclature. The sheets of type specimens in the non-Australian section of the collection number more than 10,000, and could well be about 30,000 when the whole collection is thoroughly investigated and named. One of the major problems confronting botanists with this overseas collection is that about 20 per cent of the labels need to be deciphered for the name of the collector and place of origin. To assist in this, photocopies of the labels, and specimens of the handwriting of over 700 overseas collectors, mostly of the eighteenth century, have recently been obtained.

The library of the Herbarium complements its collections. It is very rich in works published before 1900, and these are now of great intrinsic and scientific value. Many of these were a gift from Mueller.

Realising the inadequacy of the old building in the Domain, Sir Macpherson Robertson presented the present Herbarium building in 1934. It is situated on Birdwood Avenue, at the south-west corner of the Botanic Gardens, and the Government has made a special appropriation for housing the material.

#### SCIENCE MUSEUM OF VICTORIA

In 1869 the Governor of Victoria appointed a commission to investigate the promotion of technological and industrial instruction in the Colony. In its report the Commission criticised the stagnation of the mechanics institutes, of which there were about eighty, deplored the virtual absence of any scientific teaching in schools, and recommended that an Industrial and Technological Museum be established to provide scientific aid to industry as well as a lecture centre for science and technology training. The administrations of the Public Library, the National Gallery, the National Museum, and the new Museum were then fused under one corporate body of trustees. The Museum was located in the Great Hall, built for the 1866 Exhibition at the rear of the Public Library, and J. Cosmo Newbery headed the staff. Lecture courses in applied

chemistry and physics, astronomy, physiology, food preservation, botany, and geology were instituted and the first enrolments totalled 2,216. Practical classes were also held in telegraphy, chemistry, metallurgy, and assaying, and by 1876 a new lecture hall and laboratories had been provided.

During this time a significant amount of scientific research was carried out in the Museum. In 1891 the Scientific Superintendent visited Germany to arrange the testing and evaluation of the La Trobe valley brown coal. He reported favourably on its qualities, notably its property of cohesion which permitted the manufacture of briquettes without a binding agent, but it was not until 1912 that his advocacy of exploitation was heeded.

The Museum also conducted a campaign against food adulteration and contamination in the late 1870s. Routine analyses were made of foods on sale, and cases of fraudulent adulteration or the presence of poisons, both of which were common, were publicised. As there were no pure food laws before John Ashburton Thompson's Australia-wide campaign in the 1890s, this work was far-seeing and important.

Towards 1900 there was a temporary lull in development. The lecture programme had ended in 1887 following the establishment of the Working Men's College, and the Museum's existence was endangered by the financial crisis of 1892 with the consequent curb on public spending. As a result of these economies, plans to expand the National Museum's accommodation at the University of Melbourne were abandoned, and that Museum was transferred to the large Russell Street gallery, built for and housing the Industrial and Technological Museum, whose collections with the exception of the mining exhibits were placed in storage.

However, efforts were made to re-establish the Museum, and in 1912 the trustees agreed to allocate the Queen's Hall to the Museum as soon as the new large domed building was occupied by the Public Library. From 1915 onwards the new Industrial and Technological Museum developed steadily under R.H. Walcott, a mineralogist who had been appointed curator in 1899 and who was particularly interested in the economic minerals section; his interests also included other aspects of applied science, such as the motor car, powered flight, radio transmission and reception, X-rays, and plant breeding. He also accepted for the Museum the historic Duigan aeroplane and other important items. In the late 1930s the Museum increased its professional staff from two to five. The *Catalogue of Firearms*, now a collector's item, was produced, and the *Thermopylae* model was purchased for £100. The astronomical observatory service to the public began in 1947.

At the end of the Second World War the trustees and Government realised that museum management would need to be changed in response to scientific developments. Parliamentary Acts of 1944 and 1949 separated the single trust into four component bodies, and several distinguished scientists were appointed as trustees. The name Museum of Applied Science was adopted. During the 1950s the exhibits were expanded, a radiocarbon dating laboratory was established, a lecturer (foreshadowing the present education service) was appointed, and the north-west wing was built. By 1960 there were nine professional staff, and the Museum had become the Institute of Applied Science. In 1971 it became the Science Museum of Victoria, with a staff including nine





An experiment with a video test pattern at the P.M.G. Research Laboratories.

*Postmaster-General's Department*



Megavoltage radiotherapy unit in use at the Cancer Institute.

*Cancer Institute*



Early X-ray research equipment at the Ballarat School of Mines and Industries.

*Ballarat Institute of Advanced Education*



The protein sequencer — a machine developed in Melbourne to determine protein structures.

*St Vincent's School of Medical Research*

Research workers preparing pathological specimens for microscopic examination.

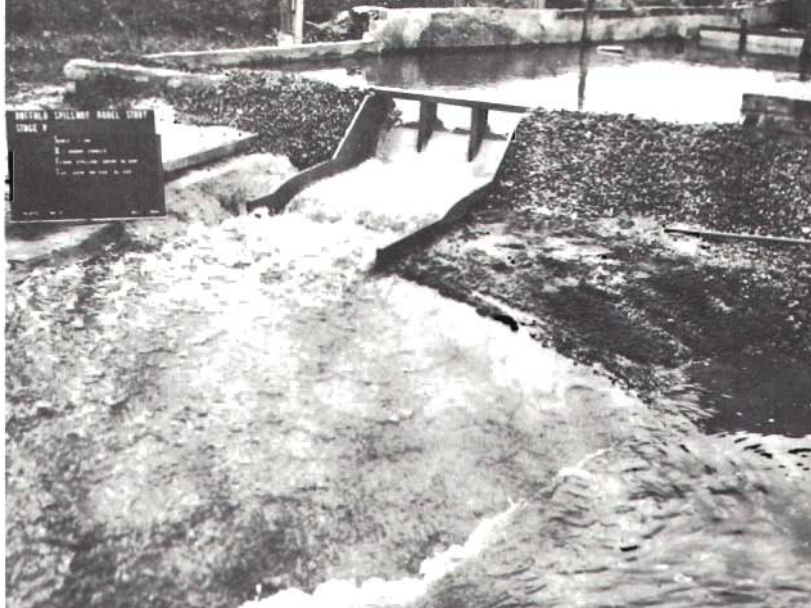
*Walter and Eliza Hall Institute of Medical Research*





Impact testing of the protective frame on a tractor at the University of Melbourne's tractor testing station at Werribee.

*University of Melbourne*



A test model of the Lake Buffalo spillway.  
*State Rivers and Water Supply Commission*

Scientists conducting research on vine fungus infestation at the C.S.I.R.O. Horticultural Research Station, Merbein.

*Gordon De'Lisle*





Pine seedling lifting unit operating at the Longford nursery of A.P.M.  
*Australian Paper Manufacturers Ltd*

professional, nine technical, and seven education officers, and a display budget, excluding salaries, of \$22,000. The education service, initiated in 1962 with the seconding of the first teacher from the Education Department, has developed, and the H. V. McKay Planetarium, established in 1965, has become a prominent Museum activity. Most important has been the expansion of the Museum's area from 35,000 sq ft to 62,000 sq ft as a result of the National Gallery's move to new premises in 1968; this has enabled the Museum to develop displays and service facilities. Further detailed information for the period 1870 to 1970 is to be found in W. Perry's *The Science Museum of Victoria*, a history published by the Museum in 1972.

#### SOIL CONSERVATION AUTHORITY

From its inception in 1950 the Soil Conservation Authority has directed its resources towards the solution of ecological problems basic to the achievement of soil conservation. Appropriate systems of land use and management are necessary to ensure that soil is conserved, and that deterioration will not occur, even if the chosen use is sustained indefinitely. Land studies are made, therefore, to ascertain how various kinds of erosion have occurred, to determine what preventive adjustments must be made, and to provide better methods for erosion control. For reclamation of badly eroded land, an understanding of the modified environment produced by erosion is necessary so that appropriate plants and fertilisers can be selected for revegetation.

By developing and using special methods for classifying, mapping, and describing Victorian land resources, the interrelation is shown of the various features which determine the characteristics of an area such as climate, topography, parent materials, soils, hydrology, and vegetation. From this information it is possible to assess the potential productivity and the capability of the land, and the likely hazards of various forms of land use. The Authority has already studied more than 50 per cent of the State, and the information is being made available in published reports. Areas which have been covered include the Mallee, the Grampians, western Victoria and the Otways, and the catchments of the Hume, Goulburn, Broken, Kiewa, and Campaspe Rivers and Glenmaggie Creek.

The determination of land use in proclaimed water supply catchments to ensure their continued value is an important function of the Authority, providing information to decide whether particular forms of land use could lead to soil erosion and to the subsequent deterioration of water quality. Further information to formulate management procedures which will ensure the best possible water yield, and its annual distribution, is obtained from long term hydrological experiments to determine the effects which different forms of land use and management will have on water use and water yield in relation to rainfall. Hydrological experiments have been carried out at Reefton in the Upper Yarra catchment, at Stewarts Creek near Daylesford, at Parwan near Bacchus Marsh, and at Long Corner Creek near Myrtleford. The Authority is investigating the relative effects of different kinds of vegetative cover such as pine and eucalypt forest and grass, and of different timber harvesting methods in a high rainfall forest.

Many plants have been tested for providing vegetative cover for the reclamation of eroded areas, for covering bare soil which occurs on embankments and batters as a result of engineering construction, and for areas damaged by the extraction of road making materials.

There have also been studies into the effect of grazing on the potentially unstable vegetation of alpine areas, and on the dry forest areas in the north central part of the State to determine whether certain areas of unalienated Crown land could support useful pasture cover if cleared and developed. The Authority has also conducted pasture establishment trials.

Areas where dry land salting is a problem are parts of the Mallee and the Western District, and of central Victoria. Investigations show that increasing salinity of soils in the lower parts of certain kinds of catchments is also becoming more widespread, and that it occurs because the best use is not being made of the rain falling on the land. Faulty utilisation causes excessive seepage flow to particular parts of the catchment, and salting occurs unless grazing is controlled to maintain plant cover. If plant cover is not maintained, the excess water evaporates, leaving small amounts of salt in the soil. This gradually accumulates, so providing undesirable conditions. Research workers are studying systems of land use which make better use of water and prevent seepage, and have tested useful salt-tolerant pasture species. Some of these are now being used to reclaim affected areas for productive use.

Tunnel erosion is associated with certain kinds of soils such as exist at Navarre, at Heathcote, and at Parwan near Bacchus Marsh. The factors which cause tunnel erosion, a peculiar form of subsoil erosion, have now been sufficiently identified for economic reclamation, and where the areas are not too badly affected, desirable systems of land use and management to prevent its occurrence can be introduced. For instance, the investigation of earthworks such as diversion banks or farm dams on soils which are prone to tunnelling has led to methods of preventing, or at least effectively reducing, their chance of failure. Other investigations have helped to overcome the problem of leaking dams, where the soils normally do not lend themselves to water storage. Current investigations into the mechanical processes involved in the erosion of gully heads promise to provide a sound basis for developing improved methods of control. Similarly, gully morphology (the study of the relationship between gully dimensions and the frequency and magnitude of flood flows) will provide information about methods of preventing soil erosion. This work has been supported by laboratory investigations into the physical and chemical properties of soils. In addition to the Authority's investigation of physical problems, economic studies have been made to give landowners a better understanding of erosion and its effect on land values.

About fifteen persons have been responsible for the Authority's research work, which has been valuable in solving practical problems.

#### STATE ELECTRICITY COMMISSION

The State Electricity Commission of Victoria was constituted in 1919, but its scientific connections had begun earlier. In 1917 a Committee under the chairmanship of the late Dr Herman (then Director of the Geological Survey of Victoria) recommended the development of Victoria's brown

coal resources for power production. While he was in charge of the Commission's briquetting and research functions, Dr Herman pioneered many developments in brown coal briquetting, preparation, and utilisation. The problems associated with brown coal also attracted attention outside the organisation, and significant contributions were made by consultants from the C.S.I.R.O. in defining coal properties and characteristics, and in solving operational problems. Before a centralised research facility was established in 1962, small scientific groups had worked in various locations such as the laboratory at the first "temporary" power station at Yallourn, the Fuel Research Laboratory at Richmond, and a section within the Production Department. In 1962 the Commission appointed a Chief Scientific Officer, and the dispersed scientific effort was brought together into a Scientific Division at the Herman Central Scientific Laboratory, Richmond. The laboratory building, which contains over 30,000 sq ft of laboratory and office space, was occupied in 1964 by sections performing chemical, metallurgical, fuel technological, and engineering investigations. At 30 June 1971 the personnel in the Scientific Division comprised 52 professional, 27 technical, and 28 supporting workers. The accumulated capital investment at that date was over \$1.5m, and the annual operating expenses were almost \$1.1m. The present range of facilities at the Herman Laboratory includes work in X-ray emission and diffraction spectroscopy, electron and optical microscopy, high speed photography, and electronics.

The Scientific Division has connections with other units inside and outside the Commission, is associated with long term planning of power and fuel projects, and supplies background information for assessing alternative developmental programmes. It provides functional direction for laboratories in operating units such as power stations, and uses facilities such as electronic data processing services and operational plant in the field for experimental purposes. There is also liaison with local, national, and overseas organisations. Work on methods for expressing quality factors, used as a tool in the assessment of brown coal resources in Victoria, has resulted in procedures which have been of considerable interest to other brown coal or lignite users in America, Germany, and the U.S.S.R.

The brown coal assessment programme has stimulated the development of instrumental (and to a large extent, automated) methods of analysis. In particular, pioneering work on the application of X-ray emission spectrography to the measurement of chemical elements directly on samples of the coal itself was performed in the Laboratory. Also, in collaboration with the inventors of the method in the C.S.I.R.O., the range of applicability of atomic absorption spectrophotometry has been greatly extended. Instruments, both analytical and metrological, have been developed for operational use, resulting in novel applications of optical, sonic, and thermometric principles.

A study of fundamental aspects of the aerodynamics of combustion systems and of elements of plant associated with them is increasingly producing new information and methods of improvement. One invention, an aerodynamic device for concentrating solid particles in a gas stream, could find wide industrial application. These studies, in conjunction with others on heat transfer characteristics in brown coal fired boilers, are contributing internationally to the theory and practice of combustion.

A growing field of research is in the relationship between operational

activities and the environment in which they are conducted, including air pollution control, micro-meteorological studies, and the disposal of waste products (heat, coal ash, chimney emissions) from power stations. Metallurgical research with original aspects is conducted into the properties of materials used under high temperature conditions in boilers and turbines in power plants.

In science and technology generally, as distinct from organised scientific research, the Commission has undertaken a wide range of activities. The need for an original approach dates back to the first plant installations at Yallourn, when modifications to combustion equipment were required at a late stage to deal with coal which was found to have a very high moisture content. Other properties of coals have required special provisions to be made in design and operations. Geological studies of the brown coal deposits have led to the assessment of reserves, stratigraphic correlations between seams (this latter also being assisted by petrological and palynological observations), and the development of mining strategies.

#### STATE RIVERS AND WATER SUPPLY COMMISSION

After the separation of Victoria from New South Wales in 1851, land settlement expanded considerably, especially as a result of the 1869 Land Act. The 1881 and 1883 Water Conservation Acts expressly provided for irrigation works, but the 1886 Act, which vested in the Crown the right to the use and control of all surface waters in the Colony, was the most far-reaching. It enabled public works to be commenced under its authority, and elected trusts could now carry out works with government money; these trusts made considerable progress until 1900 when many of them failed because revenue could not be collected. In 1905 the Water Act established water conservation and distribution on a continuing and stable basis. This Act constituted the State Rivers and Water Supply Commission, and abolished all irrigation trusts with the exception of the First Mildura Irrigation Trust. The Commission thus became responsible for the management of nearly all the State's rural water resources.

A particular facet of the Commission's operations has been the laboratory and field investigations of methods, materials, and equipment. These are basically grouped under general engineering research, the operations of the Engineering Laboratories and the Werribee Hydraulic Experimental Station, and the work which, since 1952, has been done by the Irrigation Research Branch.

Research has been a major aspect of the Commission's engineering activities for many years, the most noteworthy developments having been in the areas of soil mechanics, water testing, statistical hydrology for estimating maximum flood discharges for use in dam design, and hydraulic research. Investigations have also included problems associated with the installation and use of asbestos cement and plastic pipes, metal corrosion in hydraulic structures, design and operation of channel structures, and design and calibration of water measuring devices.

The testing of materials and manufactured components used in water conservation works and distribution systems has always been important. The Commission's original facilities, then known as the Testing Branch, were enlarged in 1921 when additional staff were appointed to hasten the testing



of pipes and fittings, cement, and concrete, and to carry out systematic analyses of State waters. In 1924 the Commission acquired its first large concrete testing machine which subsequently carried out tests for many construction authorities. One interesting project in those early years was the study of algal growths in reservoirs, particularly those in Lake Hume in 1929. The investigation of soil mechanics for earth dam design and construction dates from 1939, and was particularly important for these purposes. In 1942 the Testing Branch became the Engineering Laboratories.

The present laboratory building at the Commission's Head Office was first used in 1962. Extensive facilities are provided for the testing of soils, rocks, cement, and concrete, as well as a wide range of other materials and manufactured articles. Comprehensive water testing facilities, including chemical and bacteriological laboratories, are also provided.

The scope of the Laboratories' work can be gauged by the range of activities during 1970-71. These included the bacteriological testing of 4,400 water samples (including samples from supplies to 230 Victorian towns); biology and limnology studies on water storages; chemical analyses of 4,000 water samples from storages, rivers, and distribution systems; 450 concrete tests; inspection of 200,000 ft of cast iron, concrete, and steel pipes, 130,000 ft of asbestos cement pipes, and 200,000 ft of plastic pipes; and soil tests from 64 localities for dam sites for the Commission, waterworks trusts, and farms. Another major activity is participation in the preparation of Australian standards for water supply materials.

The complex hydraulics of water in dams and distribution channels is not always subject to complete resolution by computation and it is frequently necessary to make tests for this purpose by using scale or functional models. For many years this was done by individual officers of the Commission, but in 1935 models were made at the University of Melbourne of the Yarrowonga Weir spillways and a little later at a temporary Commission testing station at Bacchus Marsh.

In 1948 the Commission's present Hydraulic Experimental Station was established at Werribee for developing and calibrating hydraulic measuring devices, and for the testing of scale and functional models of dam components (especially spillways and outlets), channel layouts, and channel structures of many types. The station was built around an unused reservoir and water tower in an area of about 10 acres, and was provided with 6,000 sq ft of covered testing space, a pump house, workshops, a store, and offices. This station has been gradually extended and its total pump capacity has now reached 16 cu ft per second. Research is carried out into peculiar flow problems and the development of new types of structures and equipment for special purposes; recent activities also included testing for other organisations. Past work has included studies of flow through rockfill dams for the Commonwealth Government (Sirinumu Dam, Papua), the Queensland Government (Borumba Dam), and harbour and river models for Victorian authorities. The Werribee Experimental Station is officially registered with the National Association of Testing Authorities. As examples of the station's work, in recent years discharge ratings were obtained for standard Dethridge meters and proposed new models, major pipelines were calibrated, flow tests were made of the Nillahcootie spillway, and model studies were made of major culverts on

the Mokoan project. A model of Dandenong Creek was constructed for use in flood studies for the Dandenong Valley Authority.

The Commission's irrigation research and advisory programme began in 1950. It has worked towards finding ways of reducing water wastage either in the supply systems or on the farm itself, and there has been a significant increase in water delivery efficiencies in irrigation areas. In the Goulburn system, for example, loss of water in distribution has been reduced from 55 to 30 per cent over a 15 year period.

Significant improvements have included better channel maintenance through use of chemical weedicides, control of leakage through channel gates with neoprene sealing strips, more accurate measurement of water to farmers, better irrigation equipment (including improved water control structures and completely automatic irrigation systems) and better drainage of irrigated lands through water table control. The success of these research developments has caused a marked change in emphasis from research to application, and as a result, advisory activities have been extended for irrigation farmers.

#### VERMIN AND NOXIOUS WEEDS DESTRUCTION BOARD

In 1951 a scientist was appointed to undertake the first research work in the Department of Crown Lands and Survey on vermin (bird and animal pests) and noxious weeds (plant pests). By 30 June 1958 six research workers were employed. Annual research budgets increased from \$5,000 in 1951 to about \$175,000 between 1962 and 1968. In 1959 the Vermin and Noxious Weeds Destruction Board was established, and in 1962 it established the Keith Turnbull Research Station at Frankston as its research headquarters. Modern research facilities had been provided at a cost of \$1m to 30 June 1968, and by 30 June 1973 approximately \$1.2m will have been expended on these facilities. The annual budget for research at 30 June 1971 was about \$275,000. A research staff of fourteen scientists, assisted by technical assistants, was employed at that date.

Between 1951 and 1968 a major research project was the study of myxomatosis for rabbit control. This work grew particularly after 1957 when it concentrated on genetic resistance, the virulence of myxoma strains, and after 1968 on the rabbit flea. The results have yielded considerable knowledge of the insect vectors which spread myxomatosis, and of the biology and ecology of the main mosquitoes involved in spreading this disease.

From 1954 to 1968 studies into the use of the poison 1080 for vermin control increased, particularly in district or group poisonings, aerial baiting of rabbits and dingoes, trials in control of sparrows and starlings, and the use of grain-based pellets for rabbit control. The results of this work on the compound 1080, together with myxomatosis, contributed to the high death rate of the rabbit (approximately 90 per cent) during the early 1950s. A significant contribution was also made between 1960 and 1964 to the control of sparrows and starlings. These had both been proclaimed vermin birds and were causing economic losses to the poultry industry. Another significant contribution has been the research on the food habits and parasites of the fox and dingo.

Research on noxious weeds has been directed to such plants as the blackberry, ragwort, Cape tulip, artichoke thistle, St John's wort, furze, golden thistle, prairie ground cherry, African feather grass, wild garlic, and Paterson's curse ; to the persistence of herbicides in soils ; and to noxious weeds of concern to cereal growers. Skeleton weed and amsinckia, for instance, are being controlled, and the cost of dealing with skeleton weed is being reduced each year. Glasshouse studies and a project on the ecology of blackberry species have also been initiated.

Chemical weedicides have helped to control noxious weeds. Susceptible varieties of blackberries have been controlled by means of 2,4,5-T and picloram, and ragwort control has advanced with the use of hormone weedicides. Aerial spraying has been adopted as a means of speedily covering large areas.

# 6

## INDUSTRIAL RESEARCH AND DEVELOPMENT FACILITIES

---

### INTRODUCTION

Scientific and technological development by industrial organisations in Victoria includes research and its technical application to various processes.

The organisations mentioned in this chapter do not completely cover such work in Victoria, but illustrate the various types of activity carried out in many industrial fields. Some industrial projects in other States are derived from organisations whose head offices are located in Victoria ; similarly, many industrial techniques used in Victoria are based on research work done in other States and overseas but which, nevertheless, is adapted to local conditions.

As this chapter is wide in scope and coverage, its treatment is brief. For this reason the length of sections is not related to the importance of research and development undertaken by the organisations described, nor can the various headings do more than indicate their general characteristics.

### COMPUTERS

In 1949 the C.S.I.R.O. commenced the design and construction of the CSIRAC, Victoria's first computer. It began operating in 1951, and was installed at the University of Melbourne in 1955 for the processing of scientific data. Since 1950 the attraction of potential benefits expected to be gained by the application of computers in commerce and industry has provided much of the impetus which has resulted in the proliferation of computing equipment, computer manufacturers, and the extensive use to which computers are now committed. Today, directly or indirectly, computers permeate most aspects of everyday life, having been accepted as a necessary tool by most government authorities, universities, research and educational institutions, and hospitals, as well as by many branches of private enterprise throughout the business community.

The growth of computer usage in Victoria is illustrated by the increase in the number of digital computers in operation, from eleven in December 1960 to 381 by 30 June 1971.

Computer technology, through its ability to increase the capacity of high speed core storage at a decreasing cost per unit, its development of high capacity random access storage devices such as magnetic discs, its marked improvement in the performance of magnetic tape and of peripheral devices for input and output operations, and its ability to link remote

terminals direct to a central computer, has enabled computer processing to be introduced into many new areas. An early example of this technology in Victoria was provided in 1967 by the centralised Totalizator Agency Board system for continuous processing of betting transactions from its agencies throughout the State. The growing use of data transmission has now made possible computer-to-computer links between computing equipment located in Victorian provincial centres and Melbourne as well as with other capital cities. An example of the many alternatives which this development offers is seen in the ability of a computer user, linked by a remote terminal located in a Melbourne suburb to a computer in Melbourne, to have access to a further computer linked to that in Melbourne but itself located in, say, Canberra or Sydney.

Increasing use is being made of computers in the field of education and information services generally, at universities, colleges of advanced education, high schools, and libraries. Computerised information storage and retrieval systems have been in use for a number of years in the libraries of establishments of the Commonwealth Department of Supply, such as at the Aeronautical Research Laboratories at Fishermens Bend and the Defence Standards Laboratories at Maribyrnong. Since the 1960s there has been an increasing use of computers in medical and biological research. Recent developments in the field of "health screening" techniques have assisted in reducing routine decision-making by physicians by producing a "biomedical profile" of the patient; the method varies from the use of automated diagnostic equipment linked to a computer to computer processing of questionnaires completed by patients.

Until 1970 most computing equipment was imported into Australia, but recently a movement to manufacture in Australia small and "mini" computers has begun. This development has been further enhanced by the decision of some computer manufacturers to manufacture certain peripheral equipment in Australia. Figures from surveys indicate that while the majority of computer users have preferred to lease rather than purchase their computer equipment outright, a growing number has begun to use computer and associated automatic data processing facilities offered by computer service bureaux. These organisations have increased both in number and in the range and variety of the service facilities offered.

The increasing use of computers in Victoria, as elsewhere, has brought not only great benefits but also new problems. Among these have been the possible adverse social effects resulting from certain fears, for example, invasion of privacy and retrenchment of staff. Within the computer industry attention has been focussed on ways of overcoming such fears by attempting to draw up an industry code of ethics and lay down professional standards, by achieving greater productivity through more effective managerial control, and by defining and establishing the educational facilities necessary to train and equip persons with the skills needed in this industry.

The introduction of computers has resulted in the creation and rapid expansion of new occupations in systems analysis, programming, computer operating, and data processing. The Department of Labour and National Service estimates that some 8,000 people will be employed in automatic data processing operations in Victoria in 1973 compared

with over 5,000 who were employed in that field in 1969. Surveys by that Department indicated that some displacement of staff has occurred as a result of computer facilities but that most of those affected transferred to other positions in the same organisation; less than 4 per cent of those displaced were actually retrenched.

The increase in the number of computers initially resulted in a shortage of automatic data processing staff, especially systems analysts and programmers. While much has already been done in providing courses to overcome this problem, continued involvement by educational institutions, computer suppliers, and computer users is necessary to determine the most appropriate type of training for automatic data processing occupations.

In Victoria, installations in the fields of government, commerce, and industry include large computers for the Victorian Government and the Victorian Office of the Commonwealth Bureau of Census and Statistics; a complex, commenced in 1970, for the State Savings Bank of Victoria, then judged to be the largest "real time" network banking system in Australia; computerised reservations systems for the major airlines; and the first fully-automated hump shunting system in Australia which was installed for the Victorian Railways in 1970. The Postmaster-General's Department has operated a small research computer and a large general purpose computer in Melbourne for some years, and a nation-wide common-user data transmission network is planned, with Melbourne as one of the two major centres. That Department also uses a computerised cable-testing system. The Commonwealth Bureau of Meteorology in Melbourne makes extensive use of computer techniques in connection with the World Weather Watch, and at the Commonwealth Meteorology Research Centre produces 24 hour experimental forecasts for the whole southern hemisphere; it also hopes to improve the accuracy of short-range forecasts by the use of computers. In 1971 the State Electricity Commission of Victoria installed the first industrial process computer designed and built in Australia to monitor two 350 megawatt turbines at the Yallourn "W" Power Station.

#### GLASS AND CONSTRUCTION MATERIALS

The origins of *Australian Consolidated Industries Ltd* date back to the beginnings of the glass industry in Victoria, which was established in 1872 when Alfred Felton and Frederick Grimwade founded The Melbourne Bottle Works Company (which became Australian Glass Manufacturers in 1915, then part of another company of the same name formed in 1922, and renamed Australian Consolidated Industries Ltd in 1939). There were thirty-two employees in South Melbourne, mainly to provide bottles for the pharmaceutical products which they handled. Production was at first manual, and skilled tradesmen were brought from Europe. Lines were limited and as most bottled beer was then imported, the main products were medicine bottles and marble-stoppered aerated water bottles. Seamless wine and brandy bottles were produced later by turning the bottles in moulds during blowing operations. Pale green and amber were the only colours manufactured. The industry at first depended on imported supplies of some of the necessary materials, notably soda ash; sand, the bulk ingredient of glass, was available locally, but the bottle stoppers had to be imported. In 1890 operations were transferred to a larger site at Spotswood where rail access and wharf loading facilities were available.

Improvements were gradually introduced and clear white glass was produced ; in 1908 crown seals replaced corks for the first time in Australia. Increasing mechanisation helped to satisfy new demands for food and beverage containers, especially during the First World War when imports ceased. Between the wars, glass production for the food, drink, medical, and cosmetics industries developed, while specialised support became more readily available from engineering and chemical services. With minor exceptions all local requirements were supplied, even during the Second World War when engineering and allied facilities were diverted into munitions production. Dependence on overseas sources has diminished in recent years as raw materials and plant items have become available in Australia. South Australia now supplies soda ash, while sand, lime, fuel, industrial gases, and other goods and services are provided locally.

Sheet glass production to supplement New South Wales supplies began near Dandenong in 1962 in conjunction with British interests. Materials and other manufacturing facilities were then available, and a significant market was already constituted in Victoria, which now also supplies other States. Principal consumers include the construction, automotive, and furniture industries. In 1971 plans were announced for the construction of a plant at Dandenong to produce clear flat glass by the new float process invented by British technologists. Sheet glass production in Victoria will then be phased out.

In conjunction with American interests, a factory was established near Dandenong in 1960 to produce fibreglass. Although the industry had already been established in New South Wales, within three years all Australian manufacturing was being carried out at this new plant. Fibreglass is manufactured in two basic forms : wool and textile filaments. Wool, produced for thermal insulation and noise suppression, is used in home and industrial building, household appliances, industrial piping, motor vehicles, and air-conditioning. Textile filaments are used in the production of yarns for weaving into industrial and decorative fabrics. In industrial grades, fibreglass is used as the reinforcing material in plastics, as in large containers, boats, motor car bodies, and other articles where strength and dimensional stability are required.

*Australian Gypsum Ltd* has operated quality control laboratories and carried out developmental studies since it was formed in 1930. The central laboratory, built in 1962, concentrated on quality problems ; fundamental as well as applied research did not begin until 1965. Earlier research was of an applied type dealing with quality variables and their correction, and development work was concerned mainly with satisfying market requirements for fire-rated constructions and partition systems. There are now three groups within the company working on research and development problems and employing a large number of technicians, namely, a basic research section, a product development division, and a process development section. The company has a technical exchange agreement with the United States Gypsum Company of Chicago.

Most of the basic research is concerned with the chemistry and physics of the gypsum crystal, its conversion to hemi-hydrate, and the re-hydration to gypsum. Photomicrographic, gas absorption, differential thermal analysis, and exothermic and conductimetric techniques have been developed to

assist these investigations. Recent research, and process and product development, has centred on mineral and glass wool fibres. Work is also carried out on teaching equipment such as chalk and plasticine.

To keep pace with present building trends, a completely new range of plasterboard jointing cements, plasterboard adhesives, trowelling plasters, and pottery plasters has been formulated and marketed since 1963. The increased demand for complete and reliable technical data on new products and systems led to the construction of a pilot fire test furnace (a duplicate of the unit of the Commonwealth Experimental Building Station), the construction of sound test rooms to American Society for Testing and Materials Standards, and the purchase of an Instron unit. Since 1959 the company has designed and built several plaster mills and plasterboard plants incorporating innovations and improvements developed and implemented by the process development section. This section also examines new methods for the production of plaster, plasterboard, and cast plaster products, and carries out pilot plant studies to evaluate and perfect these processes.

As a result of research and development a wide range of building products is now manufactured. The compressed strength of casting plaster has been increased, and other characteristics improved in quality. Plasterboard is now lighter but stronger than in 1959. In 1960 one jointing system but no adhesive systems were available; there are now many jointing and adhesive systems in use. A wide variety of dry-wall construction and cementitious plaster spray systems have fire ratings from 1 to 3 hours. Dry-wall constructions can achieve sound isolations ranging from 28 to 56 decibels. Most of these systems have been developed since 1964.

*Humes Ltd* began as a small private company which first manufactured concrete pipes in Adelaide in 1910, and at Maribyrnong, Victoria, in 1915. As the result of several original innovations the "Hume Process" for centrifugal manufacture of concrete pipes was developed and led to the formation of the Hume Pipe Co. (Aust.) Ltd in 1920. The process rapidly became established in Australia and overseas. In 1923 the group began the manufacture of steel pipes, and a new company, Hume Steel Ltd, was established in Melbourne for the formation and welding of steel pipes and tubes. In 1952 these two companies merged to form Humes Ltd, with activities embracing most aspects of concrete and steel pipes, and structural work. In October 1970 the company structure changed and its steel pipe making activities were amalgamated with those of Tubemakers Ltd with the formation of a separate associated company, Steel Mains Pty Ltd. In early 1971 a part of the organisation, the Vitrified Clay Division, became part of another associated company, Vitclay Pipes Pty Ltd, formed in conjunction with other clay pipe manufacturers.

The company, with its associates and subsidiaries, has developed vitrified clay pipes and products, plastic pipes and products, structural steel work, reinforcement manufacture, and asbestos cement sheeting and pipes. The resulting application of original work has included improvements and developments arising from the original spun pipe patents; the combination of low frequency vibration with centrifugal spinning of concrete products; the use of linings of various materials, as well as the incorporation of plastic sheeting in spun concrete pipes; plant and equipment for the manufacture of



concrete pipes and for the automatic manufacture of welded steel reinforcement for pipes ; development of processes, plant, and equipment for the continuous and intermittent manufacture of steel pipes ; developments in automatic and semi-automatic welding processes and equipment from the pioneering work of the 1920s to the most recent processes ; the lining, by centrifugal processes, of steel pipes with a variety of materials for protective purposes; the application of rubber ring jointing to steel pipe lines ; and the design, manufacture, and construction of large scale penstocks for hydro-electric installations.

In the earlier years, technical developments were a function of the company's operative divisions, but in 1955 a special experimental section was established to work on various aspects of concrete technology. In 1968 the research and development department was created, embracing the earlier concrete experimental section and extending into steel research and development in conjunction with the steel division, and some aspects of plastics and plastic pipes in conjunction with subsidiaries in those fields.

There are about 4,700 employees in the parent and subsidiary companies, of whom some 42 are engaged in research and development. Research expenditure for the year ending June 1971 was approximately \$380,000. These figures do not include the associated companies.

*Rocla Concrete Pipes Ltd* was founded at Sunshine, Victoria, in 1920. Early this century, as Australia did not have ready supplies of cast iron, wrought iron, or steel (the traditional pipe making materials), new concrete pipe making methods were developed, including a centrifugal or "spinning" process. Thus Victoria, now a world leader in concrete pipe technology, has been the centre of significant developments for the past fifty years. Manufacturing methods developed in Victoria are now used in about thirty overseas countries.

Soon after the Second World War the company improved the manufacture of high quality concrete pipes with the introduction of the roller suspension process. This is a refinement of the centrifugal process and utilises a high quality steel mould containing a reinforcement cage suspended on a horizontal spindle and slowly rotated, while concrete with a low water/cement ratio is fed into the mould mechanically. The spindle is rotated at speeds much slower than in the centrifugal process, the concrete being compacted against the internal surface of the mould by the spindle, thus combining the effects of compression, vibration, and centrifugal force. As the durability of concrete pipes is improved by the use of low water/cement ratio concrete, the process has certain inherent advantages and is usually used with water/cement mixes around 0.3, among the lowest in any type of concrete production.

Compaction of concrete within the pipe wall is only one of two basic requirements for the manufacture of reinforced concrete pipe. The other is the making of steel reinforcing cages, which are placed within the mould before the introduction of the concrete, and are usually fabricated from high tensile steel within accurate limits. The first cage welding equipment was patented by the company in 1945. The latest such equipment enables reinforcing cages to be fabricated up to 130 inches in diameter. Since the Second World War pre-stressed concrete pipes have also been produced by a process in which a dense high quality core pipe is made, then

wrapped with high tensile steel wire and coated with concrete.

The Rocla processes for roller suspension pipe making, cage reinforcement welding, and pre-stressing are in use in 22 countries under licence agreements. Agreements have also been made with various countries for the supply of pipe-making machines, for fabricating reinforcements, and for incidental subsidiary operations. The company has six concrete pipe factories in Victoria : two are in Melbourne ; the others are at Traralgon, Heywood, Stratford, and Wodonga. About 400 persons are now employed, of whom eight are concerned with research work. In 1970-71 expenditure on research projects was \$220,000.

*Bricks* were among the earliest imports into Victoria but by 1837 were produced locally. At this time brickmaking was a simple manual process. Alluvial clay was won and prepared by hand, shaped into bricks in wooden moulds, dried in the open air, and fired in clamps or earth kilns consisting of unfired bricks mixed with fuel ; horse-powered mixers and simple extrusion machines were introduced later. The main sources of raw materials were the pockets of alluvial clay found in the valleys of the Yarra and its tributary streams. By 1856 brickmaking machines powered by stationary steam engines had been introduced, and in 1870 steam power for milling the clay and shaping the bricks was combined with firing in a Hoffman kiln. The increase in power brought about by the steam engine made it possible to mill and shape harder shales and clays, while the flexibility and efficiency of the Hoffmann kiln improved the uniformity and economics of the firing process. This type of kiln, invented in 1858, was chamberless and was constructed in the form of a ring with a chimney in the middle. High thermal efficiency resulted from its system of flues and dampers, which allowed combustion gases from the firing zone to be drawn through the freshly set green bricks and so dry them off.

This pattern of brickmaking continued until 1960, although the process was adapted from time to time to take advantage of technological advances in other fields : electric motors began to replace steam engines between 1900 and 1905, and motor transport facilitated the cartage of raw materials and finished products. The greatest technical advance came with the introduction of stoker firing with oil or coal and the mechanical handling of bricks in the Hoffmann kilns. First introduced at Ballarat in 1953, these improvements were introduced later in Melbourne, with the result that labour problems eased due to better working conditions, and output increased by at least 50 per cent. Technical modifications of the existing processes probably delayed the widespread adoption of the modern extrusion and tunnel kiln plants, the first of which appeared at Colac in 1951. By 1965 extruded bricks accounted for about half the total production in Victoria and the percentage has risen since. The extrusion method of brickmaking gives much higher output per man hour than the press method, and the bricks can be given a wide variety of surface finishes. The tunnel kiln, although not as efficient thermally as the Hoffmann kiln, gives more even firing throughout the setting, allows more efficient use of mechanical handling methods in the works, and provides better working conditions.

Until about 1900, bricks were the major structural building material, and although they now occupy a less dominant place, they are still a sensitive indicator of social and economic conditions. A peak of brick

consumption was reached in the late 1880s, when brickyards produced up to 278 million bricks annually for a population of about 1.1 million. Production then fell rapidly to 48 million in 1894, and although it rose as economic conditions improved, it was not until 1962 that the 1890 figure for gross production was reached again. The increase in brick production was accompanied by an extension of the range and variety of colours and finishes. The earliest Melbourne bricks, made from surface clays, were pink through brown to black, often with black slag pits where iron bearing minerals had fused during firing. Later, the machine-pressed bricks produced from the weathered shales were predominantly red, or if overburnt, dark red to black. Small numbers of white or light-coloured bricks were produced as early as the 1850s, probably with Campbellfield clay which was also used for the cream bricks so popular after 1950. In the modern extrusion plants, the equipment used for grinding and mixing the raw material also allows accurate batching of additives, notably manganese dioxide, giving a range of grey and brown colours when mixed with clays which burn naturally to creams, pinks, and reds. There have also been changes in the use of bricks. Thick walls laid in English, Flemish, or Colonial bond have given way to much thinner walls, usually laid in stretcher bond. In buildings above three storeys, and in houses, bricks are now seldom used as the sole structural support, but where brick load-bearing walls are used, or where brick walls are used to stiffen framed buildings, the stresses in the brickwork are generally higher than was the case in the earlier, more massive, form of construction.

As these changes necessitated more technical information, the *Brick Development Research Institute* was established in 1962 to provide information and to initiate research. The institute has only had a professional and technical staff of three, but annual expenditure has risen from \$22,500 in the first year of operation to almost \$41,000 in 1970-71, and activities have been extended beyond Victoria to include Queensland and Tasmania.

#### CHEMICAL PRODUCTS

*Albright and Wilson (Australia) Ltd* began production at Yarraville in December 1940 making phosphoric acid and sodium phosphates for use in the food industry. The phosphoric acid was initially made from phosphorus imported from Canada, but from 1942 onwards phosphorus was also produced at Yarraville by the electrothermal reduction of phosphate rock.

A novel continuous process for making phosphoric acid from phosphorus was developed at the Yarraville factory, which had a number of advantages over the conventional methods then in use, leading to its adoption in other factories of the Albright and Wilson Ltd group in Canada, and by manufacturers in the U.S.A., Mexico, and Argentina. Also at the Yarraville factory, the company later developed an improved single-stage process for making sodium tripolyphosphate, an important component of synthetic detergents. In 1971 the rights to this process were purchased by a Philippines company, who selected it in preference to other processes which had been investigated elsewhere.

In another company factory at Box Hill (then the Gardinol Chemical Company) some original work on detergents was being done at about the same time, the most notable achievement being the development, in association

with the C.S.I.R.O., of a new detergent for wool, with important applications in hospital practice. The company has also pioneered the manufacture of a number of detergent raw materials in Australia, including a biodegradable detergent for wool scouring.

The company's products, phosphates, surface active agents, and surface coatings, have wide industrial application, the promotion of which requires continuous technical investigation and development. This kind of work has been prominent since the introduction of food phosphates 30 years ago, when much work had to be done to establish the best formulations to suit Australian flour, to the present day when recent developments covered by patent applications have included optical brighteners and waterproof coatings for masonry.

*Berger Paints Victoria Pty Ltd* is located at Coburg and has a manufacturing capacity of 2 million gallons of surface coating annually. A great deal of new equipment has been installed, including high speed pigment dispersion equipment which has practically displaced ball milling. The company manufactures a wide variety of coatings, formulated in the surface coatings laboratory, including polymers such as alkyds, epoxies, acrylics, and amines, and conducts paint tests to ensure performance in a number of areas. Some tests are long term, others are accelerated, and others are specialised to meet specific requirements or conditions. Exterior products, for instance, are subjected to long term exposure tests and panels are regularly evaluated to check performance. Years of exterior exposure testing can, however, be compressed into a few days or weeks in the weatherometer in which panels are subjected to controlled heat, water wetting, and ultra violet light exposure, simulating normal outdoor exposure. After individual requirements are formulated and instrumental controls applied, stringent tests are carried out for corrosion, blistering resistance, and adhesion, while other specialised tests determine acid and alkali resistance, marring, and discolouration. As user specifications determine the manufacture of many products, close technical links are maintained with customers such as the automobile and appliance industries, the Master Painters' Association, the Master Builders' Association, and the Timber Development Association.

The company was the first to manufacture ready mixed paint in Australia and since then has been responsible for originating many other new developments in paint technology.

*The Commonwealth Industrial Gases Ltd (C.I.G.)* was formed in 1935 by the union of the Australian Oxygen Company (founded in 1910 in Victoria by the late Sir Russell Grimwade) with similar companies in other States. In 1971 the company's oxygen production plant in Melbourne had a capacity of 56,000 cu ft per hour, or 50 tons per day.

Although the original purpose of oxygen production was for oxy-acetylene welding and cutting, the company has developed production of a wide range of industrial gases in addition to oxygen, the chief being acetylene, nitrogen, hydrogen, argon, and in the medical field, nitrous oxide, together with a large range of gas mixtures which can be produced to individual specifications. Industrial oxygen and nitrogen and medical oxygen are now being widely distributed in liquid form and are used very extensively in the chemical industry for food freezing, refrigerated food transport, and scientific

research in the cryogenic\* field. An automatic plant has been established at Altona to supply nitrogen to various components of the Altona petrochemical complex; any failure of the plant and the reason for it is conveyed to the Preston works by a telemetering device.

In 1920 the E.M.F. Electric Company Pty Ltd (which became a part of C.I.G. in 1939) was formed. It was originally concerned only with the production of arc and resistance welding equipment, and it began producing arc welding electrodes in 1923. The first all-welded gas holder was constructed for the Melbourne Gas Company in 1920, and shortly after the first all-welded railway bridge was constructed for the Victorian Railways. Arc welding processes have now become common in the construction of buildings, bridges, pipelines, etc. In 1922 a small factory was established for the manufacture of gas welding and cutting equipment, and later added the production of spray painting equipment and medical anaesthetic and resuscitation equipment. This equipment factory, as part of the C.I.G. group, had about 1,000 employees in 1971, while the total staff of the C.I.G. organisation in Melbourne was 1,800.

The origins of *Drug Houses of Australia Ltd* (D.H.A.) include the partnership formed by Alfred Felton and Frederick Grimwade in 1867. High freight rates and delivery delays for imported drugs at that time led to the establishment in the early 1870s of chemical works at Port Melbourne, where the products included disulphide of carbon, manufactured as a rabbit poison under contract to the Victorian Government, and sulphuric acid. Felton Grimwade's activities expanded rapidly in the late 1870s, necessitating a new laboratory and drug mills in West Melbourne. To ensure regular bottle supplies, the company founded Victoria's first glass bottle works in 1872.

In 1851 Joseph Bosisto had opened a pharmacy in Richmond, which was later expanded by the addition of a laboratory to investigate the chemical and medicinal properties of Australian plants, especially the eucalypts. In this he was assisted by Mueller, the Victorian Government Botanist. From 1854 Bosisto extracted the oil at his Dandenong and Emerald distilleries, refining and bottling it at Richmond. By the 1880s eucalyptus oil had become the first distinctively Australian substance in the British Pharmacopoeia. Felton Grimwade became the chief distributor of eucalyptus oil when export to England commenced, and participated with Bosisto in the formation of a company to operate a distillery near Dimboola.

The Felton Grimwade laboratory investigations in early years included the examination of procedures to determine the composition of malt and eucalyptus oil, and work on bismuth, honey, rum, tobacco, and other substances. The late Sir Russell Grimwade was actively associated with the company's research work from 1903 until after the Second World War.

At the outbreak of the First World War "Feltons" found difficulty in maintaining supplies of essential drugs. The search for substitutes initiated work on the extraction of chemical by-products from tar, and included new processes in carbolic acid extraction. Further investigations were carried out in the field of essential oils, especially eucalyptus oil, which by the 1920s was used not only for medicinal purposes but also for industrial

\* Cryogenics—the research and scientific aspect, as distinct from the commercial (refrigeration) aspect, of low temperature production.

processes, these being chiefly in mineral flotation. These investigations indicated that a wide range of compounds could be extracted from eucalypts by careful selection of species and more advanced methods of distillation. Indigenous and exotic plants were cultivated at Emerald for the extraction of essential oils and drug alkaloids, a work which was to be greatly extended during and following the Second World War.

In 1929 the company had initiated the formation of the Drug Houses of Australia (D.H.A.) group, enabling principal Australian pharmaceutical companies to survive the strong overseas competition of the 1930s and to adapt their products and procedures to match advances in pharmacology and medical science. Included in the group was the Felton Grimwade Dental Company Pty Ltd, and J. Bosisto and Company Pty Ltd was taken over in 1951. Felton Grimwade had also been associated with the precursors of such companies as Commonwealth Industrial Gases Ltd and Carba Industries Ltd.

During the Second World War, D.H.A. was able to produce many drugs in short supply, especially those of herbal origin, largely due to the cultivation of drug plants near Frankston. The project was sponsored by the Commonwealth Medical Equipment Control Committee, with aid from C.S.I.R., the State Departments of Agriculture, and the universities. Experiments carried out included drying of plant material, distillation of essential oils, and extraction of alkaloids from drug plants (including colchicine, squills, hyoscyamine, belladonna, atropine, and digitalis); the problem of extracting morphine from opium was also solved. Hyoscine, used to prevent travel sickness, was extracted from several species of a native Queensland plant, *Duboisia*, 500 million doses of hyoscine hydrobromide being airfreighted to allied countries.

*Dulux Australia Ltd* was originally incorporated in Victoria in 1918 and initially used naturally occurring raw materials for paint manufacture, testing their performance under practical conditions. By the late 1920s professional staff had been appointed to establish a scientific background to product uniformity and formulating practice.

Between 1930 and 1950 petroleum solvents, synthetic pigments, and synthetic resinous materials were adopted in the manufacture of rapid drying finishes used on electrical appliances, motor vehicles, pre-coated venetian blind strip, and linings for food cans. A central laboratory was established where chemists developed new processes and products and devised methods for measuring properties. Particular skills were developed in inorganic chemistry (pigments and phosphate coatings), polymer chemistry, chemical engineering, and in the measurement of viscosity and flow, the latter being essential for the scientific understanding of the application of paints and the formation of a continuous film on surfaces. The microbiology of fermentation was investigated to explain poor yields of white lead in the stack process; this was traced to bacteria generating extremely high temperatures in the stack, thus inhibiting or killing normal fermentation micro-organisms. Although this process was replaced in 1948 by a continuous precipitation process, an interest in microbiology has been maintained for development of fungus-resistant paints using low levels of toxic additive.

Naturally occurring materials have been virtually eliminated from the widening range of industrial finishes since 1950, with new types of

chemically reactive materials now being used. This has led to equipment changes for storage, reticulation, and manufacturing operations, and to further expansion of research and development. A new laboratory and practical trials annexe was erected at Clayton in 1960. Since 1965 major research studies have covered the development of coatings in which the evaporation loss in the drying process can be reduced to a small proportion of solvent, or water only, thus cutting costs and minimising atmospheric pollution. Results of this work are covered by patents which have been issued overseas and in Australia. Visual colour matching to a reference standard has posed a problem because it is time consuming and an excessive number of pigments may have to be used, depending on the skill of the colour matcher. To overcome this problem, colour measurement instruments and a computer are now being used to standardise output. Since 1969 extensive research has been carried out in the field of emulsion polymerisation, resulting in practical non-aqueous dispersion coatings for production line finishing of automobiles and the preparation of microscopic vesiculated polymer beads possessing unusual pigment properties. These developments represent significant technical changes which are expected to earn royalties from overseas licensing. There were 125 research employees in 1971, when the annual research budget reached \$900,000.

*ICI Australia Ltd* at the time of its incorporation in 1928 as Imperial Chemical Industries (Australasia) Ltd had only a small range of manufactures. The most important production was that of blasting explosives and accessories such as safety fuses, mainly carried on at Deer Park where such operations had begun in 1875. In 1939 synthetic ammonia was manufactured there for the first time in Australia, and following the outbreak of the Second World War the company entered into many other new projects. Some of them were for the development of relatively straightforward inorganic chemicals such as bleaching powder, chlorates and perchlorates, and stannic chloride and titanium tetrachloride, while others involved an increasing complexity of organic chemistry. Plants for the manufacture of aniline and diphenylamine were installed at Yarraville to enable the production of phenothiazine for anthelmintic purposes. This and other organic chemicals, phthalic anhydride, beta-naphthol, and rubber accelerators were later produced in New South Wales. At Yarraville the company produced a number of chlorinated hydrocarbons, and at Deer Park the sulphur drug, sulphamerazine. The commercial synthesis of sulphamerazine rested almost entirely on research by the company and the University of Adelaide.

After the Second World War strong competition from new factories financed by overseas capital forced the increase of research and development facilities, and in 1954 the company established the Merrindale Biological Research Station near Croydon. Laboratories, a library, and greenhouses provided good facilities in which to study problems of plants, animals, insects, and fungi; research investigations on the cattle tick were made in the D'Aguiar area near Brisbane. In 1956 the establishment of a large research laboratory at Ascot Vale contributed to the improvement of manufacturing and analytical techniques and the development of new products and processes. A plastics technical service and development laboratory was constructed close to the main laboratory for testing plastic materials, for adapting them to the needs of local processors, and for assisting

customers in using new materials and grades of polymers. Other specialised development laboratories to deal with dye-stuffs and pigments, water treatment, and surfactants were incorporated in the main laboratory block, until such time as their growth would justify separate establishments. Pilot plant facilities were established near the explosives factory at Deer Park, and many chemicals have been made there for the first time in Australia. Development work on high explosives and explosive compositions, which necessitate special buildings and wide areas for safety, has proceeded in the explosives factory grounds since the 1930s.

Important contributions have also been made to world science. For example, the beginning of polyethylene production in Australia presented problems for the accurate determination of impurities in the ethylene feed stream. Specialists in the field of chromatography regard the invention of the flame ionisation detector, discovered in 1957 by Dewar and McWilliam during one of the company's programmes of analysis improvement, as a major advance in the field of chromatography. This device is found in practically every laboratory dealing with organic chemistry, and in many on-line analysers in the petrochemical industry, where it has conferred advantages of speed, accuracy, and sensitivity impossible before the 1960s. Research has also resulted in a commercial synthesis for an important member of the dipyrindyl group, which has achieved world-wide use for weed control and as a foliage desiccant.

Animal medicines, particularly anthelmintics, have been the subject of continuous work. The discovery by Belgian chemists of tetramisole for the removal of worms from sheep and cattle initiated notable work here, both on synthetic routes to the drug and also to its resolution into two isomers, in one of which (the laevo form) all the biological activity is present. It was then possible to convert the inactive residue into the active form. This permitted the introduction of the drug in an injectable form. Within six years the dose rate of drug for deworming animals had been reduced from about 700 milligrams per kilogram of body weight (for phenothiazine) to 7 milligrams per kilogram, and with much higher biological efficiency.

Other research has covered surfactant effects, important for the formulation of paints and for the stabilisation of foam compositions, and the pioneering of a new route based on ethylene, as a starting material for polyvinyl chloride, a field in which the company holds one of the early patents. A new form of beta-phthalocyanine blue pigment was also produced.

Some long range research, in collaboration with the parent company in Britain, has been done on the synthesis of nylon intermediates. The use of radiation-induced polymerisation, using a captive cobalt source, resulted in the production of highly specialised copolymers now applied in radio-immuno assays and for making polypeptides. Other uses for radiation-formed polymers are for the manufacture of resins used in a new water desalination process. This work was done in conjunction with a medical research group from C.S.I.R.O.

In 1971 the total staff was 220, with 100 graduates, and equipment and buildings were worth \$3m. The annual research budget was \$2.4m.

*Kodak (Australasia) Pty Ltd* originated from the amalgamation in 1908 of Baker and Rouse Pty Ltd with the Eastman Kodak Company (Rochester, U.S.A.). Thomas Baker, who pioneered the photographic industry in



Australia, was manufacturing photographic plates in 1884 and built the Austral Works in 1886 at Abbotsford with his partner J. J. Rouse who marketed the goods. The company's research laboratory was founded in 1930 to set analytical standards and test photographic raw materials. Plant chemists were required to supervise and develop the preparation of the light-sensitive layers known technically as emulsions. Objectives in emulsion manufacturing were to increase the sensitivity of emulsions to light and thus reduce exposure time, to extend and control the sensitivity of emulsions to various colours of the spectrum by use of suitable dyes (sensitisers), to increase emulsion-keeping stability, and to improve the reproductibility of photographic characteristics. It was also necessary to investigate the processing of exposed photographic emulsions by formulating chemical components for developing, fixing, stabilising, and bleaching when designing new emulsions. Engineers and physicists designed instruments to measure the photographic characteristics of various products, controlled manufacturing standards, and provided data, using the tools of photometry, spectrophotometry, radiometry, colorimetry, and mathematical analysis.

During the 1930s the company produced a number of panchromatic films (sensitive to all colours, not just blue and green as previously). These films were many times more sensitive to light than any previous products. A new coating machine to apply accurate and even thicknesses of emulsion was built, and in 1936 colour film was first processed at Abbotsford.

During the Second World War research was directed towards maintaining photographic standards of basic requirements, and increasing the output of aerial films for reconnaissance, special films and papers for military mapping and reproduction, and X-ray films for medical services. A new system (V-mail) to microfilm letters sent by air was introduced to conserve freight space. Post-war technology was directed towards more sensitive X-ray films, new films for graphic reproduction, the manufacture of colour films and papers, new methods of document copying, and automatic techniques for rapid machine processing. In 1954 the first of a new series of very high contrast materials was introduced for reproduction in printing processes, replacing the hand coated collodion plates then in use for photo-engraving. In 1960 these products were coated on a special non-shrink dimensionally stable polyester base, virtually ending the use of glass plates. In 1959 a "chemical transfer" system had been introduced for producing single or multiple copies of typed, written, or printed originals.

The manufacture of colour reversal films in Australia began in 1952, providing colour transparencies for projection as slides or as movies. Later, a negative-positive colour system (colour film and paper) made possible the production of colour prints from colour films exposed in simple cameras. These colour products, some requiring the application of more than ten consecutive carefully controlled thin layers (with a combined thickness of less than a thousandth of an inch) represented considerable advances in chemical engineering technology, especially as these complex operations are done in darkness.

A new manufacturing plant was completed at Coburg in 1961. It included an enlarged research laboratory with a staff of about seventy scientists, technicians, and instrument makers, with some research being conducted in fields not necessarily directly connected with the photographic process. For example, a sensitive method which had been evolved for determining

minute quantities of mercury has proved useful as a prospecting tool for mining operations, analysis of fungicides, air and water pollution investigations, and other non-photographic purposes. Special emulsions were formulated and processing equipment introduced for rapid automatic large-scale processing of professional and aerial films, and in 1967 a new system was developed enabling X-ray films to be processed within 90 seconds.

By 1971, 150 professionally qualified chemists, physicists, engineers, and mathematicians were employed by the company, and in order to keep abreast of domestic and export photographic needs more than \$1m is spent each year on research and development in Victoria.

*Monsanto Australia Ltd* carries out research and development mainly directed towards the adaptation of overseas products and manufacturing processes to Australian conditions. In addition, some research of a more basic and exploratory nature is undertaken. The company first began operations at its West Footscray site in 1941, when it concentrated on the manufacture of phenol (by the sulphonation method) and salicylic acid and its derivatives, the most important of these being acetyl salicylic acid, better known as aspirin. War-time conditions brought about an extension into other pharmaceuticals, particularly in the manufacture of sulphadiazine for the Armed Forces. Sulphaguanidine, the preferred drug against dysentery, was brought rapidly into production by adapting an American process to Australian conditions. Later, sulphadiazine, and one of the well known antibiotics, chloramphenicol (chloromycetin), were also produced. However, the main work has covered industrial chemicals, plastics, raw materials, and agricultural and veterinary chemicals.

In 1943 the company acquired Excelite Resin Pty Ltd of Footscray, producers of phenolic resins and moulding powders. These operations needed formaldehyde, which was produced at a new plant at West Footscray from 1944. In 1947 the manufacture of phenolic plastics was consolidated and expanded at West Footscray.

In 1953 the company began the commercial production of polystyrene, initially based on imported styrene monomer. Shortly afterwards, plans were made for the manufacture of 2,4-D acid and its derivatives (used as weed killers), for fungicides and rubber accelerators. By 1955 important anthelmintics such as phenothiazine, polyvinyl acetate emulsions for plastic paints, and polyester resins for use in reinforced fibreglass products, were being produced. In 1958 the acquisition of two other companies added the range of amino formaldehyde resins and moulding powders to the manufacturing activities. Although this work was largely concentrated in New South Wales, Victorian operations and sales benefited, as they did when another subsidiary, located in New South Wales, began producing styrene monomer in 1961, largely for consumption in polystyrene. Another subsidiary, Australian Fluorine Chemicals Pty Ltd, in which Monsanto and Conzinc Riotinto of Australia were equal partners, was formed in 1960 for the manufacture at Rozelle, N.S.W., of fluorocarbons used as refrigerants and aerosol propellants. During the following years Monsanto's interest in chemicals for primary production was greatly expanded, and an agricultural division was established. In 1968 the company shut down its original phenol plant at West Footscray and began operations in a new plant which produces acetone in addition to phenol, using benzene and propylene as raw materials.

In 1969 and 1970 major expansions were made to manufacturing facilities for styrene polymers and phenol formaldehyde resins, and Monsanto became the first Australian manufacturer of styrene acrylonitrile (SAN) copolymers, a range of rubber anti-degradants based on acetone and polymeric plasticisers. In 1971 a subsidiary at West Footscray commenced manufacturing styrene butadiene latex used in the manufacture of non-woven carpets and paper coatings. At the present time a plant is under construction to manufacture a range of rubber anti-degradants based on paraphenylene diamine.

In 1971 the company employed 75 scientific and technical personnel in its laboratories at West Footscray, with a research and development budget of \$800,000.

*Nicholas Pty Ltd* originated in 1915 when George R. Nicholas began experiments on the acetylation of salicylic acid. During the First World War the supply of aspirin and other urgently needed materials was cut off, so the Commonwealth Government encouraged production in Australia. Nicholas and a colleague produced pure acetyl salicylic acid, and as a result were granted a licence to manufacture. Tablets were first produced on a hand press at his pharmacy. Owing to the increasing demand for acetyl salicylic acid, Nicholas joined with Monsanto Ltd to form the Southern Cross Chemical Company, which later became Monsanto Australia Ltd.

Modern research laboratories were added to the Nicholas factory in South Melbourne in 1939, and qualified chemists were appointed in order to extend the range of products. War conditions again increased the demand for a number of pharmaceutical substances while at the same time limiting their importation. Vitamin A was among the substances for which an Australian source of supply was required. A research team at the University of Melbourne, working in conjunction with the C.S.I.R.O., had found that the Australian snapper shark had a liver rich in vitamin A. Having promoted the catching of snapper shark in Bass Strait and adjacent waters, Nicholas built a plant in Melbourne to extract vitamin A from the livers. This was the foundation of the pharmaceutical division of the company, and in 1945 the agricultural and veterinary division was formed to manufacture and market vitamin supplements for livestock.

Experiments were also undertaken to produce various synthetic drugs of which the supply had been interrupted by the war, and which were urgently needed by the Armed Forces. The company established a synthetic organic chemical factory, and considerable quantities of synthetic drugs were made. During this war-time venture it obtained much valuable experience in chemical synthetic work and special packaging techniques. More than 837 million tablets were made under defence contracts, including salt tablets, "jungle green" dye for camouflage nets, etc., atebirin, aspirin, sulphaguandine, mepacrine, water sterilisers, and vitamins.

After the war there was further expansion and diversification and an enlarged research programme was also undertaken. The laboratories synthesised new substances which the Pharmacology Department at the University of Melbourne then tested. This led to the discovery of the analeptic substance, bemegrade, which is used as a barbiturate antagonist throughout the world. In 1955 the Nicholas Institute for Medical and Veterinary Research was established at Sherbrooke to carry out chemical, pharmacological, and

veterinary research. In 1962 the pharmacological research was transferred to the associate company in England, and chemical and veterinary research continued at Sherbrooke and at Chadstone, with special emphasis on the application of chemicals to the control of internal and external parasites of sheep, cattle, and poultry.

The production and chemical laboratories were moved to a new building at Chadstone in July 1957. Recent company reorganisation as Nicholas International Ltd has resulted in further extension of research activities. In 1971 at Chadstone and Sherbrooke the company had a staff of ten university graduates and twelve other technically qualified associates engaged in research, development, and quality control of pharmaceutical, household, toilet, and veterinary products.

*Nylox Corporation Ltd* originated as the Australian Moulding Corporation in 1927, and from 1932 to 1966 operated as Moulded Products (Australasia) Ltd. By 1971 the company had five factories in Victoria and four in other States, also overseas manufacturing subsidiaries and joint ventures. It employed approximately 2,600 persons and had a product range of more than 10,000 items, most of which were intermediates or components for other industries. The company uses most of the plastics materials in its processing methods, which include calendering, coating, extruding, winding, casting, foaming, and laminating. During the early 1930s the company gave priority to research and development work, although very little plastics research was then being carried out in Australia. Only two materials, phenol formaldehyde and urea, were in common use, but the quantities used were very small. Technical help came from overseas through materials suppliers. However, a laboratory was established with a staff of three chemists who worked with plastics materials not then in common use and developed an understanding of their possibilities.

During the Second World War the factory and its personnel were entirely devoted to defence needs. Earlier laboratory work now showed its value and the company was quickly able to supply vinyl insulated signal wire, reinforced mouldings, safety helmets, and hot dip coatings to protect arms and metallic equipment. Full-time work for the Armed Forces covered chemical investigations into such raw materials as PVC (polyvinyl chloride) resins, plastisols, adhesives, ethyl cellulose, styrene, acrylic polymers, and phenolic resins from sugar. The technique of spiderwebbing army equipment was also established, and a method for impregnating propellers with cellulose acetate was developed. Basic development work was done on clear phenolic resins, and a new fungus-resistant, match-striking surface, based on PVC, was introduced for the Armed Forces in the Pacific. The first work in Australia was done on PVC-paste resins, and original work was carried out on prosthetics. Ethyl cellulose hot dip coatings were also developed, and a PVC garden hose introduced to the Australian market.

After the war the range of power and communication cables reached proportions demanding specialisation, and the company therefore built a factory at Lilydale, together with a testing, research, and development laboratory. Special studies were undertaken, including those to determine the insulations least favoured by rats and termites. Development work on new types of heat stabilisers for PVC resin and investigations into the mechanism of thermal degradation of PVC were carried out, as well as the

development of screenprinting inks and fast drying rotogravure inks for high speed printing. The corporation's first PVC coated fabrics were formulated and produced, and a laminating machine was built which transformed the vinyl coated fabrics industry in Australia; the first Australian-made crystal film was developed, and an improved coupling for hoses and conduits was patented. A non-toxic sheet and tubing, having world-wide acceptance in blood transfusion applications, was also produced. Important developments have also been made in the production of coated fabrics for footwear and apparel. Wide thermoplastic sheet and a new sandwich type packaging board are extruded by a modern plant. Recent products for the automotive industry include crash padding and other moulded components for improved safety.

Until recently emphasis has been on quality control and performance improvement. Work since 1968 has included projects on the gas-liquid chromatographic analysis of ABS (acrylonitrile butadiene styrene) terpolymer residual volatiles comparable with world-wide standards; a dry blend technique of processing plasticised emulsion polymers; a flexible all-thermoplastic cable for mining applications; a concealed hinge incorporating a self-catch mechanism; an integral flange moulded into the ends of large bore polypipe sections: the first Australian-produced polyurethane coated fabrics; and the first Australian-manufactured thickwalled clear non-toxic tubing. Rheological studies have led to advances in extrusion of large bore pipe and in general compounding. To cope with the technical aspects involved in originating and improving plastics products, there are three sites at which testing, research, and development take place: central quality control, testing, research, and development are carried out at Mentone; electrical testing and development for the cables industry at Lilydale; and fabrics testing, analysis, and development at Deer Park. In 1971 these sites employed about 80 persons, of whom 55 were engaged in specific research and development projects.

#### INDUSTRIAL METALS AND MACHINERY

##### *Mineral technology*

Victoria became an independent colony in 1851 just before one of the richest alluvial goldfields in the world was discovered at Ballarat. In the following fifty years over half of Australia's gold output came from Victoria. The Edwards' Pyrite and Ore Reduction Co. of Ballarat designed the original mechanical rotating furnace, leaching vat, and chlorine generator, which were acclaimed as among Victoria's major technological contributions to Australia's gold mining industry. The continuing impact of Victoria on Australian mineral development has had little to do with its gold production. In 1885 the newly formed Broken Hill Proprietary Company Ltd established its head office in Melbourne. Its directors, many of them pastoralists, ventured into mining fields which others shunned. Their outlook, shared with leaders of Melbourne's brewing industry, was responsible for new mines in Broken Hill, Cloncurry, and Mount Lyell; their successors, many of whom are their direct descendants, have added to the tradition of mineral management so effectively that 60 per cent of Australian-based mining and exploration companies now have their headquarters in Melbourne.

Innovation has flourished in the atmosphere created by these men. In 1901 Potter's Sulphide Ore Treatment Ltd was established in Collins Street to develop C.V. Potter's answer to the problem of floating the valuable zinc sulphide away from the worthless gangue of the Broken Hill tailing dumps. In 1904 De Bavay's Treatment Company developed an alternative approach on which was founded the Amalgamated Zinc (De Bavay's) Ltd in 1909; from this grew the Electrolytic Zinc Company of Australasia Pty Ltd in 1916. Two years later this new company and the Broken Hill Associated Smelters Pty Ltd jointly established a research station in South Melbourne; in 1920 G. K. Williams, a young Melbourne mining graduate, commenced a study of the desilverising of lead in this laboratory. His work culminated in an investigation at Port Pirie which gave Australia, and the world, the first industrial process for the continuous refining of lead. Since that time Melbourne-based companies have been responsible for initiating and developing projects which have added significantly to the general technological development of the Australian mineral industry.

A professional interest in technical subjects accompanied the early development of skills and techniques in the Victorian minerals industry. In 1892 the Annual Conference of the Amalgamated Mining Managers' Association meeting at Ballarat accepted the proposal of a Broken Hill delegation that the Australasian Institute of Mining Engineers should be formed. At the 1893 inaugural meeting in Adelaide two Victorians were elected to the Council; in 1897 the Institute set up its headquarters in Melbourne where in 1919 it changed its name to the Australasian Institute of Mining and Metallurgy. Typical of its contributions to mineral development was its publication in 1938 of *Principles of flotation*, by Dr I. W. (later Sir Ian) Wark. This book, which records the results of ten years' research, sponsored by six mining companies, in the University of Melbourne, has become a classic in world metallurgical literature.

Victoria was the first recipient of a Commonwealth mineral research grant when the Advisory Council of Science and Industry sponsored work on gold at Bendigo in 1916. Practical benefits from this type of work were marginal, but in 1940 Dr Wark fostered a new approach to research when he was appointed Chief of the C.S.I.R. Division of Industrial Chemistry. Dividends from this Division include the technology for treating Australian uranium ores and the development of the atomic absorption spectrophotometer which is now widely used in geochemical prospecting; the Division has grown into a complex of Melbourne-based laboratories whose annual expenditure on mineral research exceeds \$2m.

For many years Victoria's only major mineral resource besides gold seemed to be brown coal; discovered in 1857 it was first successfully exploited commercially in 1917 when the Department of Mines commenced open cut recovery from the extensive Morwell fields. In 1924 this operation was taken over by the State Electricity Commission, which in the same year commenced the production of briquettes and the generation of electricity at Yallourn.

From 1956 until the introduction of natural gas in 1970 Melbourne had been supplied with gas generated from Morwell brown coal in a Lurgi total gasifying plant. The technical foundations which led to the adoption and modification to this process were provided by the Gas and Fuel Corpora-

tion and the University of Melbourne. Investigations within the State Electricity Commission and the University of Melbourne led to the decision to form a char-making industry based on La Trobe valley brown coals. The presence of adequate reserves of brown coal at Anglesea was one of the factors responsible for the construction of an aluminium smelter at Point Henry by Alcoa of Australia Ltd in 1963. The discovery of natural gas in 1965, and of oil in 1966, off the Gippsland coastline has set the stage for Victoria's next major contribution to the development of Australia's mineral resources. This has involved the provision of production platforms at the well sites, refining facilities, pipe lines to convey the gas and crude oil, gas treatment and crude oil stabilisation facilities, and the securing of markets for the various products.

---

*Alcoa of Australia Ltd* was incorporated in Victoria in 1961 with the aim of establishing an integrated Australian aluminium production industry. A subsidiary company mines and refines bauxite in Western Australia, producing alumina (aluminium oxide). Most of the alumina is exported, and the rest is sent to the Alcoa works at Point Henry, near Geelong, where it is smelted, cast, and semi-fabricated into rolled and extruded products.

By 1964 Point Henry was producing 40,000 tons of aluminium annually; by the end of 1969 an increase in smelting capacity had more than doubled the design capacity to 90,000 tons. This was matched with similar increases in the associated manufacture of carbon anodes, and in casting and semi-fabricating facilities. A fully mechanised 5,000 ton extrusion press was installed and adapted to meet local requirements for a wide range of alloys and products for industries including building, transport, and agriculture. Auxiliary equipment to handle sections from the press included a 400,000 lb stretching machine, and additional heat treatment furnaces. Other expansion included a new 72 inch sheet mill, a new 72 inch width foil mill, auxiliary slitting machines, and furnaces to cater for the increasing domestic demand for a wide range of high quality sheet and foil products.

To provide the necessary large quantities of low-cost electricity the company's own 150 MW generating station was built on the Anglesea brown coal field; this has operated since 1969.

*The Broken Hill Proprietary Company Ltd* (B.H.P.) has had its head office in Melbourne since 1885 although most of its production activities have been located outside Victoria. Until recently, research activities have also been carried on outside Victoria in the steelmaking towns of Newcastle, Port Kembla, and Whyalla. However, as world steel competition increased in the late 1960s, it became desirable to integrate research on the properties of steel products more closely, locating forward planning at head office in Melbourne. A research laboratory was therefore established in Melbourne, and a director appointed to co-ordinate all research activities throughout Australia. In 1965 a 25 acre site was acquired in Clayton, near Monash University and the C.S.I.R.O. laboratories. Construction of the first two laboratory buildings with a total area of 76,000 sq ft (1½ acres) was completed in late 1968, and by 1971 these laboratories employed 130 persons

on an annual operating budget in excess of \$1m. It is unusual in the world steel industry for laboratories to be so isolated from the nearest steelmaking centre. This has not presented any outstanding difficulties, and as Melbourne is a centre for metals research, major benefits have arisen from interaction with university and government laboratories. In addition, location in a capital city has facilitated recruitment of research staff. The B.H.P. Melbourne research laboratories are responsible for long term product research. This primarily involves research into the improvement of existing steels, the introduction of new steels, and the development of new ways of using steels. This work is closely co-ordinated with the steelmaking centres and with the marketing division in the Melbourne head office.

In 1971 the two completed laboratory buildings contained equipment valued at more than \$1m, and included some of the most advanced tools available for examination of steel. A three storey air-conditioned building contains small-scale apparatus for the physical and chemical study of steels, including a high resolution electron microscope, an electron probe micro-analyser, and X-ray diffraction equipment; there are also precision machines for measuring the strength properties of steels. This building also contains the library, administration, canteen, and computer facilities. The second building contains the heavy plant, including a workshop, pilot plant facilities, equipment for making steels, and for rolling or forging them to shape. These facilities essentially constitute a miniature steelworks, capable of melting up to one hundredweight of steel in either air or vacuum, and of transforming it into sheet, rods, and other products, suitable for further testing. Research also covers the surface properties of steel and the prevention of corrosion by alloying and surface treatment. To assist these studies the laboratory grounds contain an atmospheric corrosion testing compound in which the resistance to corrosion of steel in a light industrial environment can be assessed. This testing station is augmented by other stations in different environments throughout Australia.

The *Commonwealth Aircraft Corporation Pty Ltd* was established in 1936 to undertake the design and manufacture of aircraft and aircraft engines. During the Second World War the corporation produced 1,400 aircraft, and provided repair and engineering support facilities for Australian and American aircraft in the Pacific area. During the immediate post-war period aircraft produced included the Winjeel trainer, Avon Sabre jet fighter, and the Ceres cropduster.

The most notable change in post-war front line military aircraft has been the almost exclusive use of jet engines. To 30 June 1971 the corporation had produced 570 jet engines of four different types—Nene, Avon, Atar, and Viper—for installation in Australian-produced Vampire, Sabre, Canberra, Mirage, and Macchi aircraft. Two major local engine developments have included the production and fabrication of blades and vanes for the jet engines, and the fabrication of the highly specialised sheet metal components forming a significant proportion of modern jet engines. Engine vanes are usually precision castings produced by the "lost wax process", but an alternative precision casting process has been developed where part size precludes wax patterns.

Almost 1.5 million compressor blades have been produced in aluminium, bronze, and stainless steel alloys, and approximately 163,000 turbine blades



have been forged in heat and creep resisting alloys, the majority being of the "close forged type", with airfoil forged precisely to finished size. Of the 87,000 turbine nozzle guide vanes manufactured, most have been cast, while the more advanced air-cooled type are produced in sheet metal involving the precision forming and welding of modern heat resisting alloys. The local manufacturing content of all jet engines produced in Australia is approximately 90 per cent, and this includes the specialised components associated with engine mounted fuel systems and burners.

The changes in airframe assembly and production techniques have been less radical, although special facilities had to be installed for the sealing of the Mirage's integral fuel tanks and for the checking of its wing section shapes. Some new sheet metal forming techniques have been developed for producing the plane's large external tanks.

The corporation at present produces the Macchi MB326H trainer for the Royal Australian Air Force with a local content of at least 90 per cent structural components. Wheels, brakes, tyres, and several hydraulic components are also locally produced. The growing importance of hydraulic services in modern aircraft has necessitated the expansion of the corporation's facilities, a very important area being the power-operated flying controls for the Mirage aircraft. All this has resulted in less dependence on overseas supply and ensures vital engineering and manufacturing support for the aircraft throughout its expected service life.

Since 1961 the corporation has been responsible for the design and manufacture of several Ikara anti-submarine missile launcher and handling systems for the Royal Australian Navy. Recently the corporation became the Australian distributor for Cessna aircraft. The number of staff engaged on research for 1970-71 was 35; research expenditure was approximately \$230,000.

The *Cyclone* group of companies had its origin in a partnership formed in Melbourne in the early 1890s, and known as The Beekeepers' Supply Coy. In 1898 the partnership acquired the Australian rights to manufacture and market a fabricated wire fence produced by the Cyclone Fence Company of the United States of America, and the Cyclone Woven Wire Fence Company was formed, producing the first Australian fabricated fence.

The group has continued to develop varying types and specifications of fabricated fence to meet the technical and economic needs of rural industry. It has also produced and marketed a range of prefabricated rural buildings, including shearing sheds, hay sheds, and implement sheds, and fabricated structural steel for industrial and multi-storeyed buildings. In 1937 the group introduced tubular steel scaffolding to Australia. It also caters for the householder, producing a large range of car-ports, clothes hoists, playground equipment, hand and garden tools, special forgings, and metal windows. In 1926 the group pioneered the manufacture of insect screening in Australia and has since developed and manufactured insect screening and other meshes in various metals and in fibreglass. The wire cloth division also produces a wide range of meshes for industrial purposes. Victorian establishments manufacture a full range of the group's products with the exception of fabricated structural steel. Product development is a continuing process and a staff of executives seek and develop new products for both the local and export markets. During the

year ended 30 June 1968 this activity was recognised by the Australian Industrial Research and Development Grants Board which made a grant of \$24,000. Cyclone now employs 2,455 persons in all States of the Commonwealth and the Territory of Papua and New Guinea. During 1970-71 research and development staff in Victoria numbered seven, with a supporting budget of \$68,500.

*General Motors-Holden's Pty Ltd* has a technical centre at Fishermens Bend, officially opened in 1964, and built at a cost of \$7m. It incorporates facilities for research, product design, engineering, and testing; it divides into two main sections, engineering and styling, each with its own workshops. Since the first Holden was produced at Fishermens Bend in 1948, the car has been fully designed in Australia.

In the rig test laboratories, tests are made to determine the endurance of the vehicle's components, including those which are produced by suppliers to the company. A more recent development has been the establishment of the research and development section of the engineering department, where studies are made of design trends, propulsion systems, and other long range developments. Work within this department has resulted in a research vehicle called the Holden Hurricane. This is an experimental aerodynamic wedge-shaped mid-engined car less than 40 inches high.

The proving ground at Lang Lang in Gippsland is a 2,167 acre test area for all products designed and engineered in the technical centre. For 24 hours each day, six days a week, prototype Holdens are driven on a specially prepared test track over bad roads, simulated outback tracks, and mud and water stretches. At the proving ground the safety design test centre incorporates advanced equipment devised for safety testing, including an impact sled, a crash barrier, and a special tyre testing machine.

*Hecla Electric's Pty Ltd's* electrical activities began in 1899 with the design and manufacture of Australia's first electric radiator incorporating carbon filament lamps. The work led to the development of nickel-chromium-iron alloy wires so that heating elements could be made without the use of the glass enclosures of the earlier form; in conjunction with ceramic supports for the wires, increased wattages and a greater heat output became possible. The firm then began producing a wider range of heating appliances, such as kettles, irons, toasters, and industrial and commercial appliances. The large-scale manufacture of electric blankets commenced in the 1960s. The organisation adopted the name Hecla in 1918 and was incorporated as Hecla Electric's Pty Ltd in Melbourne in 1922. Since 1969 it has been a member of the Hecla Rowe Ltd group of companies. Research is carried out by its research and development division. In 1971 the company had six development engineers, one design engineer, and three other research and development staff.

*International Harvester Company of Australia Pty Ltd* was formed in 1912 with its initial activities confined to importing farm machines and selling them on the Australian market. By 1939 local testing of all imported equipment became essential, and in that year, therefore, the company purchased 47 acres at Corio, near Geelong, initially erecting a small drawing office and a workshop for engineering purposes. Five persons were employed, simple agricultural implements were designed,

and prototypes were assembled in the workshop. Testing was done in the field, and to ensure that all local conditions would be taken into account, the engineering group went to central New South Wales, South Australia, and Victorian rural areas.

During the Second World War the Commonwealth Government encouraged research into the design and production of food growing and harvesting implements. At the end of the war the company's engineering group, in addition to adapting imported machinery for local use, had designed a wide range of machines for use in Australia. They covered a variety of products, ranging from cultivating to harvesting equipment and including mowers and rakes. One of the most notable local achievements was the design of a header harvester, a scarifier, and a cultivator drill. In 1949 the company's first Australian-made tractor was produced at the Geelong works, and extensions were also made at Geelong for engine testing. A motor truck testing staff was added, and other components were tested in operating conditions on the road. In 1950 work began at Dandenong on the construction of the first plant to be built exclusively for the manufacture and assembly of trucks in Australia. When the building was completed in 1952, the motor truck engineering staff moved to Dandenong, although truck testing on the road continued, and a special fleet was established for this purpose. At first, work was confined to adapting imported trucks to local conditions, but in the early 1950s a vehicle for use by the Army was designed with the assistance of the Commonwealth Government. This was the first truck to be completely designed and manufactured in Australia, and was the basis for the first commercial truck of Australian design and manufacture; by 1971 it was available in more than thirty models.

In 1957 the company established another engineering group to carry out research on construction equipment: this group has been located at the Port Melbourne works since 1958. A proving ground of 2,556 acres was purchased in 1961 at Wormbete, near Anglesea. This automotive proving ground contains many rigorous courses, including a truck chassis twist course, a motor truck test loop, a loader test area, and a tractor test loop.

The product engineering centre was also erected at Geelong in 1961. Facilities included a testing laboratory, drawing office, workshop, and prototype assembly area, five dynamometers, a stress test laboratory, and a rig test laboratory, in addition to a hydraulic and electrical laboratory. In 1962 all engineering groups moved into the product engineering centre. The Dandenong works and Port Melbourne works used a resident engineering group, and the engineering department employed over 200 persons responsible for the development of a wide range of trucks, tractors, and farm equipment, as well as construction and industrial equipment.

*Johns and Waygood Ltd* was founded by Peter Johns in 1856 who imported iron sections for structural fabrication and prefabricated iron houses. In 1888 he converted his business into a public company. Peter Johns was already manufacturing hydraulic lifts when a new enterprise, Richard Waygood and Company of Great Britain, entered the field in 1888. By 1891 the Waygood business was in difficulties and Peter Johns bought their interests in Victoria, South Australia, and Tasmania, and a year later the company's name became Johns and Waygood Ltd.

Expansion continued, and in 1966, after the amalgamation with the Perry Engineering Company Limited of South Australia, the name was changed to Johns and Waygood Perry Engineering Ltd.

The company employed 6,000 people in 1971, of whom 1,670 were in Victoria, and is established throughout Australia with its head office in Melbourne. Its main products are structural steelwork, steel platework, alloy iron and steel castings, forgings, mining machinery, lifts, escalators, mechanical and hydraulic presses, hydraulic motors, storage tanks, pressure vessels, security equipment, and commercial laundry equipment.

In Victoria, research and development on structural work includes the development of equipment for use in inspecting the guys on radio and television masts, and tests on strength of socketing at the ends of such guys. The latter is related to the effect of bond, using different types of wire rope, and of varying the geometry of sockets. The company has also conducted a series of tests to investigate the effect of pickling and galvanising on steel edges cut by shearing, sawing, and oxy-cutting, and subjected to tension. Tests have also been carried out on fillet welds and butt welds containing imperfections, in order to examine the effect on strength.

The lift division has been predominant since the industry began its development in the early 1880s. Some techniques and designs developed by the company have included the introduction in 1925 of "precision control", which ensured accurate floor registration irrespective of load or driver skill; the installation in 1926 of the first high-speed variable-voltage gearless lifts outside the United States of America; the erection of the first Australian lift test tower in South Melbourne in 1926 to facilitate the testing of designs for increasing speeds and heights in lift equipment; and the introduction of a patented form of "collective control" in 1930 to "store" automatically all registered calls for answering in correct sequence. High-pressure oil-operated hydraulic lifts were developed in the early 1950s for heavy duty goods or short travel passenger applications, and in 1964 the first "demand" group control system was introduced, whereby the operation of a bank of lifts is completely monitored for optimum performance throughout the service period.

The mechanical division has been associated with the wool industry since the 1890s, and since the 1950s has been involved in continuous research into the design of dumping presses. In 1952 the high speed oil-operated dumping press was developed and introduced to the industry with marked success. In 1962 the first automatic wool dumping press was developed and supplied to the industry, followed in 1964 by the first high density automatic wool dumping press. Following the success of these presses which reduce 27 cu ft bales down to 9 cu ft, the company developed a unitising press which compresses and automatically bands five 12 cu ft bales into a unit not exceeding 84 inches by 32½ inches by 29 inches. Twenty-one of these units can be neatly loaded in a minimum of time into a standard I 50 shipping container, each container thus carrying 105 bales.

Forge-weld steel grid flooring for industrial plants, boiler rooms, and power generating centres has been marketed in Australia for some years. In 1969 the company drew up specifications and assisted a specialised manufacturer in the development of a new high capacity automatic electric forge-welding machine for the production of this type of steel grid flooring.

The machine commenced production in the Trafalgar workshops in 1970 and is operating successfully.

Research into the machining of asbestos cement pipes led to the development and manufacture, from 1947 to 1965, of a number of fully automatic pipe turning lathes for local and export use.

Over the past five decades continuous research has been carried out to develop overhead electric travelling cranes and "stiff-leg" derrick cranes in order to keep abreast of requirements and to meet industry's changing needs.

*McPherson's Ltd* manufacturing interests include production of a wide range of bolts and nuts and other fasteners; machine tools and special machines; pumps; cast iron and non-ferrous castings; metal-cutting tools such as twist drills, taps, and dies; files, rasps, and cutlery; chilled iron shot and grit; friction brake materials; and dust extraction equipment. The company established a Central Testing and Research Department in 1938 to provide technical and development services to its works and to those of subsidiary and associated firms in the group.

The new department consisted initially of a metallurgical and chemical laboratory, and during the Second World War these facilities were made available to many other companies working on defence contracts. The laboratory was an Approved Test House recognised by the defence services inspection authorities, and subsequently it became one of the first industrial laboratories registered by the National Association of Testing Authorities. In 1946 an engineering research laboratory was established, and later metallurgical laboratories were set up for quality control purposes in individual manufacturing plants.

Until 1948 the department directed its efforts towards improving technical control of materials and processes in the various manufacturing plants including the development of improved cast irons for machine tools, heat treatment practices for cutting tools, and heat treatment and electroplating controls for fasteners. This type of work has been continued, but since the establishment of the engineering research laboratory, development has expanded into mechanical and production engineering. Initially work was concentrated on evaluation and improvements in performance of metal cutting tools and on investigation of design features and behaviour of lathes.

Of particular interest in metallurgical and chemical investigations was the development of the practice of carbon restoration in the heat treatment of high strength bolts. This was achieved in the early 1950s, when the technique was unique in Australia and rare overseas.

Recent achievements in the engineering research field have included the development over a period of 2½ years research of the Macson Numerically Controlled Machining Centre, the first tape controlled machine tool designed in Australia, which provides control on three axes, a rotary work table, and ample power for heavy metal removal rates; design of special purpose numerically controlled, and other, machines; the development of formulations and manufacturing techniques for railway brake blocks, and the design of special dynamometer equipment for the study of friction characteristics; the development of an automatic unit for assembly greasing and inspection of ball bearings on pump shafts; the development of improved plant and equipment for chilled iron shot and grit production; and the development of bolting practices.

In 1970-71 the department employed nearly fifty mechanical and production engineers, metallurgists, chemists, and technical assistants, and had an annual budget of about \$370,000.

*Massey-Ferguson (Australia) Ltd* was formed comparatively recently, but its Australian origins date back to 1884 when the development of the stripper-harvester by H. V. McKay marked the beginning of Victoria's leadership in the Australian farm machinery manufacturing industry. McKay's machine, the first to combine the functions of reaping, threshing, and winnowing grain from the standing crop, was officially credited with reducing harvesting costs by two thirds before 1900. This economic advantage paved the way for the broad acre production of grain and made possible Australia's emergence as a major wheat exporter. The first six stripper-harvesters were produced by McCalman and Garde at North Melbourne in 1885. Later McKay established a manufacturing base at Ballarat, initially converting strippers to harvesters which performed the winnowing function previously carried out separately. In 1895 McKay produced the first of the improved "Sunshine" harvesters, which were to simplify crop-gathering and eliminate the drudgery of the hand-winnowing machine. In 1902, when drought had affected the home market, 200 harvesters were dispatched to Argentina as the first known export of Australian farm machinery. More than 10,000 machines were sold there before First World War shipping difficulties forced the cessation of this trade. The inability to obtain rail freight concessions and impending labour problems were responsible for the factory's move to Braybrook Junction (now Sunshine), where McKay had purchased the Braybrook Implement Works in 1906-07. The settlement was renamed Sunshine in 1908.

Subsequent development by designers produced the one-way disc, the header which could gather storm-flattened crops previously lost, and the combined seed drill and cultivator known as the Suntyne. McKay had built a prototype self-propelled harvester with a 24 ft cut in 1909, and a tractor in 1916. An outstanding product of 1917 was the Sundercut, a stump-jump disc plough-cultivator, which opened up much of the Mallee scrub country for wheatgrowing. In 1924 the Taylor auto-header was developed. This was the forerunner of the modern self-propelled machines which have made possible speedy inexpensive harvesting with minimal manpower, and it was followed later by a binder, an original wire-tie pick-up hay baler, and a multi-float drill-cultivator with optional detachable disc or tine float units. The major contribution since 1945 to farm mechanisation has been the research, engineering development, manufacture, and commercial introduction of the sugar cane harvester, a machine which combines the base cutting, topping, chopping, and loading of sugar cane in a continuous operation. These "chopper" machines, which made a basic change in cane harvesting and virtually eliminated hand cutting, were designed expressly for the Australian small farm. The company has produced farm machinery, tractors, and construction equipment, the farm machinery being exported to many countries.

In February 1955 the family interests of H. V. McKay Pty Ltd were sold to Massey Harris-Ferguson, now Massey-Ferguson.

*RepcO Ltd's* research and development began in 1922 when a short-

age of replacement parts for motor vehicles from overseas prompted the design and manufacture of pistons and piston pins to satisfy the demands of the engine repair trade. Since 1961 the major share of the company's research and development work has been carried out at its Research Centre at Dandenong. Most of the manufacturing divisions also operate testing and research laboratories.

In the course of manufacture of a wide range of automotive components and accessories as original equipment and replacement parts for motor vehicles made in Australia and overseas, the company has developed a range of special purpose machine tools of its own design. Much of this has proved suitable for companies operating in developing countries. A recent important development has been the cold extrusion method used in producing critical engine components. The company's research teams have designed a range of high-speed, high-efficiency hydraulic machines for producing a range of small components including piston pins. The process eliminates many machining operations and material waste. A similar cold forming process has revolutionised the production of ring gears.

The company has developed a method of manufacturing clutch diaphragms for original vehicle and replacement components, and processes of production for use in Australia and overseas. The company also pioneered the development of an aluminium-tin automotive engine bearing, which is produced and used overseas. Continuous research on braking components has improved brake calipers, brake drums and discs, and a range of control valves to ensure efficient braking on heavy equipment.

Repco's range of specialised automotive engine reconditioning and engine servicing equipment, as well as hand tools, supplies motor trade requirements in Australia and overseas. Some items, such as the off-the-car wheel balancer, have higher sales in overseas markets than they do in Australia. The latest off-the-car wheel balancer developed by the company incorporates what is really a built-in computer, and it does not need highly trained personnel for its operation. Equipment for accurate wheel alignment to service the front-ends of motor cars was developed in the early 1950s for a special racing car developed by the company. A notable research project carried out by the organisation was the production of grand prix engines which won world championship honours in 1966 and 1967.

The latest significant project is the Repco-Spinner developed in Repco research laboratories from a C.S.I.R.O. concept. Utilising a revolutionary principle for the production of yarn, it is twelve to fifteen times faster than conventional equipment, and is smaller, lighter, and easier to operate and maintain. Released in 1971, it has already attracted world-wide attention and sales in many countries.

In 1970-71 the company invested \$525,000 and employed 43 persons in research and development work.

*Vickers Ruwolt Pty Ltd* had its origin in Charles Ruwolt's windmill construction and general engineering business founded in Wangaratta in 1902. Charles Ruwolt Pty Ltd was formed in 1908, and began manufacturing bucket dredges for alluvial gold mining to replace the rather crude machines on wooden pontoons used until that time. The first dredge to be designed and built was entirely of steel, and had a total weight of 470 tons.

It was capable of digging to a 30 ft depth, and had an average capacity of 50,000 cu yd a month. This machine proved so satisfactory that better facilities became necessary and the factory moved to its present site in Victoria Street, Richmond, in 1912. Between 1908 and 1921 twenty-eight complete dredges were built, ranging from 470 to 1,800 tons in weight, with dredging capacity of 175,000 cu yd a month to a depth of 50 ft. Many of these machines were exported to the Federated Malay States, and some of them were still in operation in 1971.

To meet the demand for the rugged and hard wearing parts essential for the successful operation of a dredge, a steel foundry was opened in 1913 working on the Tropenas converter process. By 1971 the foundries had an area of 120,000 sq ft and made steel castings up to 33 tons in weight. In 1928 the first of the four electric furnaces, which is still in operation, was designed and erected.

During the Second World War the company was the co-ordinating contractor for the production of 25 lb gun howitzers, the first gun being put through its proof firing trials within nine months of the start of production. In all, over one thousand of these guns were made. In addition, production included one hundred and twenty-eight 17 lb tank attack guns, sixty-eight 200 hp diesel engines with fuel injection pumps and atomisers, several million 3-inch mortar bombs, and almost a million 2 lb armour-piercing shot. The steel foundry also supplied castings and ingots made to rigid specifications.

In 1946, to increase planing capacity, it was decided to obtain a large electrically operated planer of open-sided construction. As no overseas manufacturer had made an open-sided planer of the size required at that time, one was designed and produced by the company. The research staff has designed and produced other special machines, furnaces, and equipment which have been used by the machine shop foundries and the structural and boilermaking departments.

A large and comprehensively equipped chemical and physical laboratory has played an important part in many activities. Since 1963 more emphasis has been placed on research and development, and a programme has been instituted to contribute to technological development in mineral processing and, in particular, general engineering, such as heavy hydraulic machinery. In 1968 a research and development company was formed to evaluate industrial requirements and to carry out research in many areas, and machines have been produced for such diverse industries as mineral processing and brewing. By 1971 trade with Malaysia was continuing and sales had been made to the Philippines, South America, and to European countries. The company employed 35 professional engineers, and, in addition to its main factory in Richmond, had a machine shop at Nunawading and a non-ferrous foundry at Moorabbin. In 1970-71 seven full-time and several part-time persons were engaged in research projects, with a supporting budget of approximately \$200,000.

#### TEXTILES AND LEATHER

*Fibremakers Ltd* manufacturing operations were established at Bayswater in 1958 by the parent company, British Nylon Spinners, which supplied the technological resources. Since that time the Bayswater company has grown substantially and by 1971 produced a wide range of both nylon and



polyester products. This growth has stimulated increasing advances in the company's technological investigation and development work, both contributing to, and benefiting from, the association with overseas companies of the ICI group. This association is formally covered in an annual international research and development conference in which the company participates. As the Australian environment, with its severe climatic conditions, presents special problems in all textile end-uses covering apparel, domestic, industrial, and defence requirements, the company's technological efforts have been concentrated on specific Australian problems.

In 1971 the company's technical establishment, divided into two major areas, the technical services department and the development department, comprised 72 persons of whom 26 were graduates.

The technical services department is involved in quality control, and in efficiency investigation and development work on all manufacturing aspects, with the aim of ensuring high standards of quality and uniformity. It is also responsible for chemical and physical analytical work and for statistical services. Much of the modern apparatus in use has been custom built, and other items of apparatus such as the atomic absorption spectrometer have provided modern and effective analytical techniques. All its work has been co-ordinated with the overall company use of computers for recording and investigating.

The development department is concerned with the investigation and development of new processes, products, and plant, in many cases involving the development of textile uses of products. This work has ranged from processes for fine yarns suitable for ladies hosiery and flimsy articles of clothing, to high tenacity industrial yarns suitable for heavy industrial tow-ropes. This work involves an understanding of polymer molecular structures and the investigation of the engineering, physics, and chemistry involved in converting amorphous polymer into oriented textile fibre. Other examples of development projects on new products have been work on yarns of differential dyeing properties and work on yarns of modified geometry. Another project has been the development of larger packages (bobbins), which involved not only an increase in size, but detailed attention to the complex tension characteristics of the yarn. The work of the department also requires a knowledge of the textile operations involved in conversion of these products into their various end-uses, involving processing, weaving, tufting, knitting, and the dyeing and finishing trades. The company is also engaged in productivity research, and this has resulted in an increase in manufacturing capacity.

Leather research in Victoria was sparse and fragmented before 1965. The only tannery with a tradition of independent research was that of *Michaelis-Hallenstein Pty Ltd* (now trading as *Michaelis Bayley Ltd*) which has maintained a small research group for the past 40 years. This group has published the results of work on fermentation in vegetable tanning liquors, on pioneering applications of ion exchange resins to the investigation of tanning liquors, and on the measurement of adhesion of finish. Particular interest was taken in the influence of the vertical fibre defect of hides on leather properties, a paper on the subject attracting world-wide recognition in 1959. Although other Victorian tanneries did not undertake research on their own account during this period most of them were subscribers to the Australian Leather Research

Association which was established in New South Wales in 1946 and carried out research over the succeeding 15 years.

Research connected with the leather industry in the C.S.I.R. and C.S.I.R.O. during this period included a small group which was established in the Division of Industrial Chemistry to carry out research on felling-mongering. This group was the forerunner of the present Division of Protein Chemistry of the C.S.I.R.O., which resumed research into leather in 1965. Another group in the former Division of Forest Products has been working since 1950 on the fundamental organic chemistry of tannin extracts from different woods and has made valuable contributions to this field.

Following the cessation of the activities of the Australian Leather Research Association, a number of tanners requested C.S.I.R.O. to undertake leather research on a wider scale. As a result of this proposal the Leather Industry Research Association was incorporated in 1964 with a membership comprising all of the larger and most of the smaller tanners. The C.S.I.R.O. Division of Protein Chemistry agreed to establish a Leather Research Section with an annual budget of \$88,000 for a period of five years and this came into operation early in 1965. Of the annual budget, one half was contributed by the Leather Industry Research Association and the remainder by the Commonwealth Government. The group has a research staff of six with supporting technical assistants. The initial five year agreement has been renewed for a further term.

The principal avenues of research have related to improvements in the methods of preservation and unhairing of hides; the development of new methods of utilising zirconium salts and chrome-zirconium complexes in tanning; gaining a better understanding of the binding of chromium to collagen; investigations of the mechanisms of drying of leather and of practical improvements to this process; and the development of processes by which the properties of leather may be improved by impregnation with polymers. Processes developed in the Leather Research Section have been adopted by the industry. A method for the short-term preservation of green hides without the use of salt has found wide application, and a new method of drying has proved so promising that a full-scale commercial dryer using these principles has been installed in a Melbourne tannery.

#### FOOD TECHNOLOGY

*Carlton and United Breweries Ltd* was formed by the amalgamation of the six leading breweries in Victoria in 1907. Brewing in Victoria began soon after European settlement, but imported English ales and beers were more popular. By the 1870s colonial beer was beginning to compete, and the value of imported beer decreased from £300,000 in 1860 to £75,000 in 1872. The adoption of Dr Hansen's ideas on the use of yeast cultures in the 1870s firmly established the brewing industry. Fierce competition between brewers forced many out of business, and only thirty-seven breweries were still operating in 1907, compared with 126 in 1871.

Brewing is a highly technical process demanding the use of high quality raw materials and extensive routine control, research, and development. Each stage of the company's brewing process is monitored by control panels, as well as by samples being submitted to the control laboratory.

The company employed its first laboratory worker in 1908 to give monthly reports on the quality of the beer; in 1971, 80 persons were employed in the research and control laboratory, and the research budget was \$300,000. Early research was concerned with the setting of brewery standards. One of its by-products was the investigation into the flotation method of treating ores. From 1923 to 1956 the laboratory was responsible for developing measurement techniques for critical parameters. The development of the Clendinnen Haze Meter, which has continued in use in the company's plants, was of particular importance for the measurement of beer clarity; other techniques included those to determine the carbon dioxide content of beer, and to analyse hop resins. In 1958 the research laboratory began to investigate and identify the chemical compounds responsible for the flavour and aroma of beer, and this led to the development of the company's hop extract process. The hop extract processing plant, built at a cost of more than \$1m, received the annual award of the Society of Chemical Industry of Victoria in October 1966. The extract has been exported to south-east Asia and planned for manufacture in Europe and the United States. The company has also developed new and improved varieties of hops. Experiments since 1950 have led to the development of two varieties of the hop plant which meet the requirements of both grower and brewer, and by 1971 these represented much of the Victorian hop crop.

More recently, the laboratory has sought to define an objective flavour profile for beer and to correlate it with subjective testing. It has investigated various aspects of all raw materials and their more efficient utilisation, and close contact has been maintained with the Barley Improvement Research Scheme which is supported by the brewing and malting industries as well as by the Governments of Victoria and South Australia. The laboratory also carries out studies of the company's pure culture yeast and its behaviour under varying conditions, with particular reference to processing changes and the potential advantages of continuous processing. Research generally has led to a greater understanding of beer composition, and over 250,000 samples are checked each year in the control laboratories.

Engineering work included the development, in conjunction with Vickers Ruwolt Pty Ltd, of automatic rotary beer cask fillers which fill six to nine casks a minute (averaging 8,000 gallons an hour).

*H. J. Heinz Co. Australia Ltd* carried out little research in Australia on food technology before 1951 as most fundamental information was obtained from overseas affiliates. At that time there was a research staff of seven and the total budget was \$20,000. In 1970 the professional and technical staff numbered 28, all of whom were variously qualified between the levels of chemist, food technologist, and laboratory technician, and the research budget was \$220,000. Recent developments have included increasing the vitamin assay to include vitamins A, B<sub>1</sub>, B<sub>2</sub>, C, folic acid, niacin, and carotene, and the production of a nutritive data sheet which gives the analyses of all the company's baby foods and which can be used by the medical profession to determine children's diets. Nutritional research experiments, using microbiological growth study techniques, evaluate the protein content of ingredients in baby foods. Research methods have determined the trace metal content of foods by the use of the atomic absorption spectrophotometer developed by the C.S.I.R.O., and the measure-

ment of residual pesticide has been determined by gas chromatography. Other work has involved the development of statistically acceptable sampling levels for the quality of raw materials, involving about 95 per cent of bulk receipts; this has been of particular significance in can sampling using parameters established overseas which have been adapted to Australian conditions. Specifications have also been established for all incoming raw materials and one result has been the recognition and elimination of bacteriological defects associated with prepared fish.

Research into recipe formulation has made possible the bulk preparation of some basic ingredients, the use of which simplifies operations and increases efficiency. Another important development has been the industrial adoption of the steam injection method of food processing, which allows food to be cooked almost instantly by exposing individual particles to high temperature steam. Decentralised quality control laboratories check "in process" work and have accelerated production flow. Emphasis on food technology has contributed towards new products, 22 being introduced in 1970

*W. S. Kimpton and Sons Pty Ltd* (now trading as *KMM Pty Ltd*) was founded by W. S. Kimpton, who in 1875 was operating a steam-powered stone roller flour mill in Fitzroy. It was destroyed by fire, and in 1888 a new roller flour mill, which extracted white flour more efficiently, was built at Kensington. Although fundamental operations have not changed, roller mill machinery and ancillary equipment have become safer and more efficient. The company engaged a fully qualified chemist early in 1936 and established the first fully equipped mill laboratory in Australia for specialised flour testing and analysis, and for test baking. While quality control was the main activity, some cereal research of an *ad hoc* and long term nature was carried out, and the latter included a study of the diastatic activity of Australian wheats during the period 1937 to 1942.

In 1938 the company produced pelleted stock feeds and in 1941 began the construction of the first fully integrated continuous flow stock feed plant in Australia. Increased research work ensured that the feeds were of high nutritional standard, and a small experimental farm was purchased at Bayswater in 1939 for feeding experiments in conjunction with laboratory analysis. At the beginning of the Second World War the laboratory staff consisted of five persons, two of whom were qualified chemists. The company assisted the Nutrition Committee of the National Health and Medical Research Council in research on the nutritional value of Australian flour and bread, with special reference to vitamin B<sub>1</sub>, for which a satisfactory assay method was established by 1943. In 1944 a research chemist was employed and a microbiological method of assaying was eventually adopted for vitamin B<sub>2</sub>; surveys were made of the vitamin B<sub>2</sub> levels of cereals and of many of the ingredients required for foodstuffs manufacture. As quantity production of many commoner vitamins was becoming feasible, assaying became increasingly important. Nutritional evaluation has been made of stock feed ingredients, and chemical assay methods were developed for vitamin B<sub>2</sub>, vitamin A, methionine, cystine, tryptophan, lysine, and tocopherols, and polarographic methods for trace elements such as copper, zinc, and cobalt.

By 1959 the problems of diminishing local and export markets for flour

led the company to pioneer the Australian development of a new method of flour processing—air classification. This involved secondary treatment of white flour by further high speed grinding and subsequent particle size separation to produce flour fractions of much higher or much lower protein than the parent flour. Production of the high protein fraction was of particular value for Victorian bakers since flour protein levels are generally below those considered desirable for production of high quality bread. The low protein fraction provided a new flour of interest to many industrial users, and which was also suitable, after chlorination, for high-ratio cakes and sponges. In 1952 the company was the first in Victoria to carry out research on high-ratio flours and to produce them in commercial quantities.

The company established further stock feed factories at St Arnaud in 1956, Echuca in 1961, and Corowa in 1968, and during 1967 the plant at Kensington was modernised and converted to a continuous batch-weigh process in order to improve precision of blending and uniformity. In 1963 a larger experimental farm of about 40 acres was established at Lyndhurst.

Research and development has tended to be integrated with control and service work but in 1969, following a merger between W. S. Kimpton and Sons Pty Ltd, J. Minifie Pty Ltd, and McLennan and Co. Pty Ltd, a separate research and development division was formed with three major sections, animal nutrition, analytical and chemical research, and product development.

In 1970–71, fifteen persons were engaged full-time and two part-time in research and development, and the annual operating budget was about \$120,000. The total number of staff engaged in research and quality control work was 31 and the annual net expenditure was about \$170,000.

*Kraft Foods Ltd* was founded in 1908 as Fred Walker and Company. Initially research work was directed towards the maturing and processing of cheese and the development of a yeast extract by the autolysis of brewers yeast. Shortly before the Second World War, staff was appointed for investigatory work in bacteriology at Allansford and in chemistry at Melbourne, and in 1944 a separate research laboratory with a staff of five was established. Work in Melbourne at this time was in two main fields: studies on B complex vitamins, and an investigation of the action of emulsifier salts in cheese processing. The former led to a better understanding of the thermal instability of thiamine and to the establishment of microbiological methods for the assay of B vitamins and amino acids. Considerable progress was also made towards an understanding of the mode of action of emulsifier salts on cheese protein during processing. In 1939 starter failures owing to the presence of phage were occurring in cheese factories, and Australian pioneering work on bacteriophage was carried out at Allansford in the 1940s. Preventive measures were developed and work on phage relationships of starter organisms began.

By 1954 there were seventeen persons engaged in research and development, and with increasing diversification more attention was being given to product development and food technology. The new laboratories at Port Melbourne were also occupied, and these have since been extended several times. During the 1950s packaging problems and product development became important, rindless cheese was introduced into Australia, and Swiss cheese manufacture re-introduced. The development of large blocks of cheese

(400 lb and over) was a technical and economic advance. Significant advances have been made in the knowledge of phage relationships of cheese starters, the technology of cheese processing, the study of milk and cheese proteins, and the understanding of flavour problems encountered in cheese and yeast extract. A mechanical cheese making process has also been developed and patented, while technological development has taken place in instrumentation, automation, and machine design. The company's recently developed products have included cheese types not previously made (Swiss, Edam, Gouda, Cheshire, etc.) as well as jellies, conserves, refrigerated dough products, peanut butter, and new salad dressings.

In 1970-71 the total staff engaged in research and development numbered 62, of whom half were graduates or diplomates. The facilities included laboratories equipped with modern instruments specially directed towards gas chromatography, spectrography, and absorptiometry, and pilot plant equipment for technological studies.

#### PAPERMAKING

Papermaking was already well established in overseas countries before Victoria's settlement, but was essentially a craft industry with no significant research or development. The first paper mill in Victoria was built in 1868 on the south bank of the Yarra River near Princes Bridge. This later became the Melbourne mill of *Australian Paper Manufacturers Ltd* (A.P.M.) and continued production until it was closed in 1968. The first scientific study of native eucalyptus species for the manufacture of paper pulps was begun in 1919. The investigations were extended in the early 1920s by a group which became the nucleus of the Forest Products Division of the Council for Scientific and Industrial Research (C.S.I.R.) in 1926. Despite the opinions of overseas consultants, local interests were optimistic about the prospects of using eucalypt pulp for paper production, and in the late 1920s the company, together with other paper and some mining companies, arranged for the conduct of pilot-scale and semi-commercial trials by C.S.I.R. staff. Ultimately this led to two new and independent companies being established to manufacture printing papers (*Associated Pulp and Paper Mills Ltd*) and newsprint (*Australian Newsprint Mills Pty Ltd*) in Tasmania, and to A.P.M. establishing a mill at Maryvale, Victoria.

With established markets for strong wrapping papers and packaging materials, A.P.M. found suitable pulpwood sources in the forests of western Gippsland, and it was here that the largest pulping operation in Australia began when the Maryvale mill started production in 1939. Most early investigation of eucalypt pulping used the (acid) sulphite process, but at Maryvale the alkaline kraft process was introduced. This process produces a strong grade of pulp but requires comparatively large quantities of alkaline chemicals. Fortunately, efficient process equipment for chemical recovery was developed overseas in the early 1930s, and this proved suitable for eucalypt pulping.

In 1936 A.P.M. formed a small research department with a staff of five to develop and utilise indigenous raw materials and it occupied laboratories in the grounds of the Fairfield mill in Melbourne. This department undertook systematic and detailed studies of chemical pulping which contributed not

only to the establishment of the Maryvale mill, but also to the development of a process for making paper wood cellulose and a more highly refined alpha cellulose board. These were basic requirements for production of nitro-cellulose by the Commonwealth Munitions Department and more than 10,000 tons of paper wood cellulose for explosives were produced at Maryvale during the Second World War. After the war attention was directed to the provision of softwood pulp which forms the larger part of the fibre requirement for strong grades of wrapping papers and container boards. The company initially experimented with growing New Zealand flax (*Phormium tenax*) as a perennial crop, but abandoned this approach in 1951 in favour of establishing large scale pine plantations on a long term basis. A forestry research group was established in 1957 and has conducted a continuing study into establishment techniques, soils, plant nutrition, and silviculture.

After 1950 the market for packaging materials expanded rapidly. Several new paper and board machines were installed, and between 1958 and 1968 new pulping plants were built in Tasmania, Queensland, and Victoria to meet the increased demand. In addition the company, in conjunction with Cellulose Australia Ltd, built an integrated pulp and tissue paper mill at Millicent, South Australia. These installations differ considerably in scale and process. Each was developed after extensive research for a type of pulp meeting the specific requirements of the paper to be manufactured from it, and the Tasmanian project would not be economic but for the development by A.P.M. of pulp in pelleted form for bulk handling.

A major innovation has been made in the basic method of forming multi-ply paper sheets or "paperboards". This began with the English development of a new type of paperboard making machine known as Inverform, and was the first basic departure in paper and board making equipment for over a hundred years. Although the equipment brought new problems, it did offer special advantages in productive versatility. In 1960 the first commercial machine was installed, and after further research and development three more large machines, incorporating major design improvements evolved by the company, were installed. The company became a major world producer of Inverform products, and the bulk of its board production has come from these machines.

The early years of the research department witnessed fundamental studies in lignin and cellulose chemistry. Research findings in cellulose chemistry, in paper sheet formation, and in several other fields have been published. Since 1950 research and development work has included instrumentation, paper physics and pulp processing, hydraulics, paper sheet formation, printing and packaging, new product development, and, in more recent times, operations research and systems engineering. In 1971 more than 50 graduates were employed on research and development work which is centred in the research laboratories adjacent to the Fairfield mill. The research and development budget was approximately \$1m in 1971.

#### RUBBER

*Dunlop Australia Ltd* began in 1899 as a small Melbourne factory producing cycle tyres, largely by hand. J. B. Dunlop had invented the first

practical pneumatic motor car tyre in Britain in 1888, and production of car tyres began in Melbourne in the early 1900s; other goods manufactured by the company before the First World War included garden hoses, diving suits for the pearling industry and other maritime products, rubber parts of various types for the automotive industry, inflatable rubber cushions, flat transmission belting, and tennis balls.

In 1926 the company made the first aircraft tyres produced in Australia. Tractor tyres and other products were gradually introduced and a self-sufficient industry developed between the two world wars. In 1934 the Dunlopillo process, a practical foamed rubber produced directly from latex without passing through the coagulation stages, was developed by Dunlop in England. During the 1930s the introduction of more advanced materials with special properties such as synthetic rubbers and textile materials made rubber technology more complex, and to deal with the problems the company established a development and research department. Rubber shortages during the Second World War led to the development of a synthetic rubber technology by the United States petroleum industry, and the company benefited from this knowledge in its manufacturing processes in Australia; an increase in the number of graduate scientists and engineers resulted in the expansion of skills to overcome difficulties in the mixing, adhesion, and vulcanisation of this material. The development of textile and rubber combinations drew more attention to aspects of textile technology within the framework of the rubber/textile composite materials.

During the decade following the Second World War the development of batteries, tubeless tyres, collapsible rubber tanks, and industrial products, together with a wide field of footwear technology using rubber-like materials, made it necessary to extend research beyond the applied techniques used previously. In the later 1950s more advanced research laboratories were built and major areas of investigation included chemical research, the development of instrumental analytical techniques, the study of the physical characteristics of pneumatic tyres, and the study of adhesion in many different fields. The rapid growth of the automotive industry during the 1960s has led to the development of radically different types of tyres for local conditions. The development and research department has been working on new products and materials, including new techniques for making battery containers, and has undertaken studies in textile characteristics and textile bonding. In the second half of the 1960s the company concentrated on expanding the manufacture of automotive, aircraft, and industrial products, and footwear, apparel, and sports goods. Research and development expenditure throughout the group in 1971 exceeded \$2m.

The *Olympic* group of companies was founded in 1922 when F.E. (later Sir Frank) Beaurepaire opened the Beaurepaire Tyre Service Pty Ltd to retread and retail tyres. The group in 1971 comprised a holding company, Olympic Consolidated Industries Ltd, and four operating subsidiaries: The Olympic Tyre and Rubber Co. Pty Ltd, Beaurepaire Tyre Service Pty Ltd, Olympic Cables Pty Ltd, and Olympic General Products Pty Ltd. The group activities included manufacturing and marketing new and retreaded tyres and tubes; batteries; power, telecommunications, and control cables; steel cord and fabric conveyor belting; transmission belting; vee-ropes and pulleys; nylon extrusions, mouldings, and castings; footwear soling; thermal



insulation materials, fabrications, constructions, and installations; flexible polyurethane foams; expanded polystyrene; acoustic ceiling tiles; rubber flooring; and other industrial rubber and plastic products.

The tyre company introduced many innovations to retreading methods and undertook special research during the Second World War on the application of synthetic rubbers. Olympic introduced the first Australian rubber inner tubes to be compounded with carbon black as a filler. These tubes were characteristically black and replaced the previous red rubber tubes which used a clay-type filler.

Rigid performance specifications for service aircraft in the Second World War stimulated research on aircraft tyres and enabled them to be manufactured in Australia. The techniques for custom retreading of aircraft tyres were greatly improved to ensure full use of scarce imported raw materials, and led to the manufacture of high quality retreadable tyres for major types of aircraft. In 1955 the introduction of tubeless tyres based on overseas designs at first increased the incidence of premature tyre failure caused by tread separation, but these failures were largely overcome by extensive development programmes designed to meet the more extreme service conditions in Australia. The commencement of the manufacture of radial ply tyres in Australia in 1964 was also based on overseas designs, but again adaptation was required to meet local conditions.

In 1967 Australian tyre manufacturers adopted general performance standards in line with overseas trends for passenger car tyres. With the growing number of cars having a capacity for sustained high speeds, tyres capable of running at speeds of over 100 mph were being developed and a maximum performance rating was specified for each type of tyre. In 1964 the tyre company installed an indoor dynamometer to test tyres at speeds of up to 180 mph under controlled conditions; this has helped to develop high speed tyres for production-line cars. To overcome the problems of hard stump residues which have led to frequent holding of tractor tyres during ploughing, the company developed a range of wire cord reinforced tractor tyres.

Recent developmental work has concentrated on the energy losses produced in tyres during running. This involves the testing of car and truck tyres and analysing their components, thus revealing factors which influence energy losses. The increasingly high horsepower output of modern automotive engines can then be fully utilised. Allied to this work has been the evaluation of the wet-skidding resistance of tyres by a highly-instrumented trailer technique. Through gradual development, results from these projects are providing increasingly higher levels of tyre performance.

The group pioneered the Australian manufacture of vulcanised rubber insulated cables in 1940, and extended its manufacturing operations to a wide range of cables during the Second World War. Since then many new methods of cable manufacture have been introduced for a wide range of power cables, overhead conductors, and telecommunications cables (including the first manufacture in Australia of a coaxial cable).

Important research work resulted in the development of a method of manufacturing steel cord reinforced conveyor belting on a continuous rotary vulcanising machine. This process, patented in 1967, has prompted overseas manufacturers to take up manufacturing rights.

## EPILOGUE

---

### VICTORIA, FEDERATION, AND BEYOND

Henry Heylyn Hayter concluded his first *Victorian Year Book* with these words:

The careful student of its [the *Year Book's*] pages will, I feel assured, find therein ample indication, that in spite of a few blots which point to the conclusion that here, as elsewhere, the social system is not without its imperfections, the evidences of active progress and present prosperity are such as are rarely to be found recorded in the statistical annals of so young a country.

After another hundred years the question inevitably arises: What do the statistical annals demonstrate in 1973 in a country no longer quite so young? The answer is not simple: it is for the historian to take the basic facts here recorded and elicit a demonstrable interpretation from them. This centenary *Year Book* will end on a more modest note: to point to important developments which will enable Victoria's past to be considered in full perspective. Development—the concept around which this book has been planned—will now appear in the context of a much longer time span. This book has not been content to begin merely in 1873: its treatment has deliberately begun with the foundation of settlement in 1834. For this reason it has encompassed Hayter's work and if it proves necessary to modify his assessments, the more facile wisdom of hindsight will not denigrate them.

Before the gold discoveries two events significantly pointed to the young community's assessment of itself. The first was the request for political self-determination, and when this was parried by the Colonial Office with the offer of an elected seat on the New South Wales Executive Council, the settlers showed a mordant sense of humour in electing Earl Grey, the Colonial Secretary in London, as their representative. The second was the vocal and successful opposition to receiving convicts. Those ticket-of-leave men who came to the District were looked on askance. Both reactions suggest a community which had strong feelings about being loyal and, at the same time, free and set on planning its own destiny.

Representative government was, in fact, granted a matter of months before the discovery of gold, and the latter event undoubtedly proved the overriding catalyst in the history of Victoria. The social and economic consequences which gradually unfolded from it are recorded elsewhere; but as demographic facts are the basis of statistical annals, the variety of nations and social classes represented on the goldfields is worth noting. Many of

these people returned home either richer or poorer, but the event of the discoveries in itself put Victoria "on the map". And it was this which brought such numbers of talented men (there was a scarcity of women in the early days) to the Colony, much to the benefit of succeeding generations. The contributions made by settlers from the British Isles—who constituted by far the largest part of the population—are past numbering. Lowland Scots had already brought capital for the pastoral industry; English merchants were to supplement this in building a wider economy; the Irish Bar sent men of distinction who would play a prominent part in establishing Victoria's legal and political framework; and each group brought religious and social traditions whose effects were to be pervasive and profound, and which would determine much of the Colony's subsequent social fabric. The arrivals from Britain were supplemented by those from other countries: a Polish count exploring eastern Victoria; a Swiss and a French family pioneering the wine industry and bringing its products wide acclaim; two Germans, founding the study of Victoria's flora and geophysics, respectively; later, two Canadians pioneering irrigation in the arid north-west; the list could go on. The total effect was to produce a closely knit cultural life which was linked to that of Britain and, to a lesser extent, of the rest of Europe. This culture was alive to the intellectual movements of the nineteenth century; and concrete expression of it was given in the foundation of a University, a Public Library, a Royal Society, and a National Gallery, all within a decade of the discovery of gold.

This was the "active progress and present prosperity" of which Hayter wrote in 1873; it was to grow immensely over the next twenty years as the first generation of native-born Victorians came to expand the economy with the help of British capital. "Marvellous Melbourne" indeed grew to be a city of dignity and substance which proudly displayed her achievements in her public buildings, homes, and the International Exhibition of 1880. The growth which reached its apogee in the late 1880s was based on rural and urban prosperity, including speculation in land and shares. When the financial crisis in the early 1890s was compounded by drought and failing markets, the Colony suffered a blow from which it never really recovered until the end of the Second World War, if outward recovery is to be judged by the relative comparisons of building and immigration.

The years in between gave rise to social trends whose effects have finally emerged in the present generation—the first born since the end of the Second World War and that which views the State's history from the vantage point of the present.

The misery and hardship caused by the economic recession of the 1890s was the worst in Victoria's history; it contributed to the emigration which by 1902 made Sydney, not Melbourne, the most populous capital city in Australia. Yet in this same decade it was Victoria which provided the political spark and momentum towards the Federation of the Australian Colonies, partly as a result of political leadership and partly as an attempt to alleviate the Colony's plight by looking to the wider opportunities which Federation was considered to confer. Its very achievement, however, raised political and economic themes, variations on which have been and still are the subject of constant debate, while the location of the Commonwealth Parliament and all of the Commonwealth Departments in Melbourne

from 1901 until 1927 contributed to Melbourne's special standing in Australia. Victoria's development, like that of the other States, has been shaped by her geographical location and her own social fabric ; to reconcile these factors with the aims of Federation has not been easy, especially as Australia came to be more significant in international affairs.

It is a truism to point to the Anzacs at Gallipoli in 1915 as the first manifestation of Australia as a nation, or to the call for American assistance in 1942 as the first official acknowledgment of Australia's Pacific bearings ; the effects of these national developments on Victoria were subtle and less than clear.

Pending the historian's appraisal of the inter-war period it is worth drawing together some of the threads which came to be woven into the pattern of the last fifty years. The period of the 1920s and 1930s is important, being marked by two psychological traumas : the effects of the First World War and those of the depression. Yet if the full understanding of the period is still shrouded in some mists of uncertainty, this is because to historians it is too recent to yield a faithful perspective, while to the younger generation it has, at least until recently, appeared remote and irrelevant.

The First World War had both a unifying and divisive effect on Victoria. It was unifying in so far as, like the rest of Australia, Victoria was made to feel spiritually part of what Federation had sought to express in constitutional terms ; divisive because for many years the effects of the conscription controversy lingered and the State's male population tended to be divided into "returned men" and others. "Returned men" (that is, from the war) received substantial employment preferences and sought to express the comradeship experienced under the adversity of war in such associations as the Returned Servicemen's League, Legacy, and Toc H. General Sir John Monash, Victoria's most eminent personage at the time, symbolised these values.

The decade immediately following the war was one of guarded optimism, based on moderate prosperity together with the expectation of rural expansion and industrial growth. In the late 1920s the State's value of production from secondary industry for the first time exceeded that from primary industry. Then the shadows of the depression fell on every section of the community.

The farmers were severely affected by low prices, but of all those who became unemployed, the city people were perhaps the hardest hit. Unemployment shattered the self-respect of those affected and civic morale sagged. Men felt that these things should not be, but only gradually came to look to government rather than to voluntary action as a corrective to the economic and social ills of the time. However, the unsettled political conditions of those years were not propitious, even though the Premiers' Plan, for all the turbulent reactions it raised, gave some sense of national direction. When the Country Party gained and held the balance of power in Victoria for many years after 1935, there were developments in marketing, irrigation, roads, and rural settlement, although at the expense (in retrospect) of metropolitan public services and education.

However, these two decades saw glimmerings of achievements, many of which found fulfilment much later : planned immigration ; metropolitan

planning ; voluntary bodies to help the physically and mentally handicapped ; cancer and virological work ; the building of the new Royal Melbourne Hospital ; the appointment of a salaried Vice-Chancellor to modernise the administration of the University of Melbourne ; the construction of a new interstate passenger train ; the growth of modern journalism under Sir Keith Murdoch, as well as his patronage of the arts, leading to the imported 1938 art exhibition ; vigorous seasons of music with overseas and returned local performers ; the formation of the National Theatre movement ; and the quiet preparation of artists who were to become notable.

The effects of the depression gradually waned and economic confidence began to return by the mid-1930s. The absence of strong political leadership was counterbalanced by the presence of some industrial leaders who had an almost prophetic vision of Victoria's and Australia's potential. Essington Lewis, W. S. Robinson, and others in Melbourne sowed and nurtured the seeds of much of Australia's later development in steel, non-ferrous metals, paper, and—just in time for the outbreak of war—the local aircraft industry. These men shared a vision of a greatly strengthened Australia fulfilling her role as a dominion in the British Empire.

Perhaps at the time none of these achievements and aspirations appeared significant, but when viewed in retrospect, they are seen as significant preparatory endeavours. The Second World War was to act as a catalyst for these endeavours and to bring many of them to fruition after the war—a fulfilment denied to those who had experienced only the 1920s and 1930s.

By the end of the 1940s Victoria was able to plan reconstruction and economic expansion, which in the case of the Victorian Railways was appropriately named Operation Phoenix.

In the 1950s the Commonwealth's migration programme became the basis of very rapid industrial growth which (with some vicissitudes) continued into the 1960s. By the end of that decade migration began to wane, but the demographic effects of this were to some extent balanced by the children of the post-war families who now began to form families of their own. By 1970 the general interest in the community had begun to change from economic development as such to a wider consideration of social requirements not only for economic growth but for what came to be described as the "quality of life". Thus the first stage of the Arts Centre was completed in 1968. Education began to loom large. Already in the 1960s social demands required two new universities and by the end of the decade the financial claims of every type of education became a matter of public concern, including the planning of a fourth university. Social and medical services, transport planning, land use, and the general husbanding of natural resources became electoral themes of political significance, just as tariffs and the power of the Legislative Council had been a hundred years earlier.

Two economic events stood out behind this changing emphasis: the discovery of oil and natural gas offshore in Bass Strait and the increasingly uncertain markets for Victoria's rural industries. At the beginning of the 1970s the ultimate effects of these events could not yet be discerned.

Thus, although economic expansion may recently have become some-

what more muted, the long term development has been clearly established in the preceding chapters. The first post-war generation is now applying its mind to the affairs of the State ; the general social outlook has changed here as elsewhere; the cultural life of the State has been enriched by the imposition of migration on an established social fabric; and Victoria, as indeed Australia, is aware of a shrinking world as a result of advances in transport and communications. These latter emphasise the differences from the Victoria of Hayter's day ; the involvement of the community in wider cultural movements emphasises the similarities. How far Victoria in its 130 years has matched other countries "in active progress and present prosperity" is a matter to be judged from other annals as well as from the preceding chapters.

## PREFACE

---

Pages 762 to 1066 of this 1973 *Victorian Year Book* contain statistical tables which, in previous editions, have appeared in the body of the text. They update these tables and are printed in the same sequence as in the 1972 *Victorian Year Book*. For convenience of reference they are also divided into the same ten parts as the 1972 edition (see table of contents). This presentation of statistics aims to maintain statistical continuity with previous editions and to serve as a bridge linking them to future editions. As the descriptive context of these tables has had to be omitted for reasons of space, page references are given to the 1972 edition so that readers may readily consult the accompanying text of that edition if they wish to do so.

The statistical tables contain the latest figures available at the time the book goes to press. However, because of the time required for various phases of editing and printing, later information on a particular topic is often available in other publications.

Rounded figures sometimes cause small discrepancies between totals and the sums of components. Yearly periods shown as, e.g., "1971", refer to the year ended 31 December 1971; those shown as, e.g., "1970-71", refer to the year ended 30 June 1971. Other yearly periods are specifically indicated.

Readers requiring the main statistical information of the *Year Book* in a concise form are referred to the *Victorian Pocket Year Book* which is usually published in July of each year. Copies can be obtained from the Victorian Office of the Bureau.

## 1

## PHYSICAL ENVIRONMENT

## GEOGRAPHICAL FEATURES

## Area

(1972 : page 29)

## AUSTRALIA—AREA OF STATES AND TERRITORIES

State or Territory	Area	Percentage of total area
	sq miles	
Western Australia	975,920	32.88
Queensland	667,000	22.47
Northern Territory	520,280	17.53
South Australia	380,070	12.81
New South Wales	309,433	10.43
Victoria	87,884	2.96
Tasmania	26,383	0.89
Australian Capital Territory	939	0.03
Total Australia	2,967,909	100.00



Rivers

(1972 : pages 43-5)

VICTORIA—SCHEDULE OF MAIN STREAM FLOWS

Div.	Basin	Stream	Site of gauging station	Catchment area (square miles)	Year gauged from	Annual flows in '000 acre ft			
						Mean	No. of years	Max.	Min.
IV. Murray-Darling Division	1	Murray	Jingellic, N.S.W.	2,520	1890	1,933	76	4,978	549
		Mitta Mitta	Tallandoon	1,840	1935	1,063	30	2,613	316
			Tallangatta	2,000	1886	1,147	49	3,460	203
	2	Kiewa	Kiewa	450	1886	518	80	1,684	144
	3	Owens	Wangaratta	2,250	1941	1,308	25	3,367	271
	4	Broken	Goorambat	740	1887	205	79	887	15.5
	5	Goulburn	Murchison	4,140	1882	1,795	84	6,139	516
	6	Campaspe	Elmore	1,240	1886	192	78	667	0.6
	7	Loddon	Laanecoorie	1,610	1891	205	75	660	8.9
8	Avoca	Coonoor	1,000	1890	63	76	321	3.8	
15	Wimmera	Horsham	1,570	1889	104	77	479	0	
II. South East Coast Division	22	Snowy	Jarrahmound	5,000	1907	1,682	42	3,254	766
	23	Tambo	Bruthen	1,030	(a) 1906	179	29	575	50
	24	Mitchell	Glenaladale	1,530	1938	764	28	1,779	325
	25	Thomson	Cowwarr	420	1901	325	50	553	142
	25	Macalister	Glenmaggie	730	1919	477	47	1,277	181
	26	La Trobe	Rosedale	1,600	(b) 1901	777	51	2,634	362
	28	Bunyip	Bunyip	268	(c) 1908	124	47	246	56
	29	Yarra	Warrandyte	899	1892	685	48	1,215	265
	30	Maribyrnong	Keilor	500	(d) 1908	91	35	266	3
	31	Werribee	Melton	446	(e) 1917	68	49	259	5.3
	32	Moorabool	Batesford	430	(f) 1908	58	16	149	2.5
	33	Barwon	Winchelsea	370	(g) 1922	115	33	412	25
	35	Carlisle	Carlisle	30	(h) 1930	32	31	71	14.5
36	Hopkins	Wickliffe	540	(i) 1921	28	34	103	1.4	
38	Glenelg	Balmoral	606	(j) 1889	117	60	439	2.5	

Source : *River Gaugings to 1965*, State Rivers and Water Supply Commission.

Note	Years excluded in estimating mean	Note	Years excluded in estimating mean
(a)	1924-25 to 1937-38	(f)	1921-22 to 1945-46
(b)	1919-20 to 1936-37	(g)	1933-34 to 1943-44
(c)	1951-52	(h)	1943-44 to 1946-47
(d)	1933-34 to 1955-56	(i)	1933-34 to 1943-44
(e)	1952-53	(j)	1933-34 to 1938-39

CLIMATE

(1972 : pages 49-68)

Victoria

(1972 : pages 49-62)

VICTORIA—DISTRIBUTION OF AVERAGE AND ANNUAL RAINFALL

Rainfall (inches)	Area ('000 square miles) (a)					
	Average	1967	1968	1969	1970	1971
Under 10	..	32.1	1.5	..	0.1	..
10-15	19.7	21.7	8.8	8.9	9.9	9.5
15-20	13.4	13.7	16.6	26.1	17.6	17.2
20-25	15.7	8.3	17.1	13.4	8.8	13.4
25-30	15.8	7.0	15.9	10.0	11.9	13.2
30-40	14.2	4.7	14.8	17.7	16.2	17.2
Over 40	9.1	0.4	13.2	11.8	23.4	17.4

(a) Total area of the State is 87,884 square miles.

## VICTORIA—MEANS OF CLIMATIC ELEMENTS: SELECTED VICTORIAN TOWNS

Locality	Legend (a)	Years of record	January	February	March	April	May	June	July	August	Sep.	October	Nov.	Dec.	Annual
Mildura	{ (1)	23	68	93	98	55	123	93	107	105	103	120	97	81	1,143
	{ (2)	23	32.3	30.8	28.2	23.2	18.6	16.0	15.1	17.0	20.2	23.7	27.0	29.6	23.5
	{ (3)	23	16.7	16.2	13.8	10.0	7.4	5.3	4.3	5.2	7.3	9.9	12.0	14.5	10.2
Swan Hill	{ (1)	85	75	88	89	93	134	144	123	132	121	135	97	96	1,327
	{ (2)	69	31.5	31.1	27.8	22.8	18.2	14.8	14.3	16.2	19.3	22.9	26.8	29.8	22.9
	{ (3)	63	15.3	15.4	12.9	9.6	6.8	4.8	4.1	4.8	6.6	8.9	11.6	13.9	9.6
Horsham	{ (1)	96	82	103	98	128	184	201	179	188	177	169	129	114	1,752
	{ (2)	61	29.8	29.8	26.6	21.4	17.1	13.9	13.3	14.9	17.8	21.1	24.9	27.8	21.6
	{ (3)	62	13.3	13.5	11.4	8.6	6.3	4.6	3.9	4.6	5.7	7.5	9.9	11.9	8.4
Nhill	{ (1)	83	79	92	87	116	162	190	179	185	170	158	115	111	1,644
	{ (2)	64	29.6	29.2	26.4	21.4	17.2	14.2	13.6	15.1	17.9	21.1	24.9	27.8	21.6
	{ (3)	65	12.8	13.0	10.9	8.2	6.1	4.3	3.4	4.1	5.4	7.2	9.3	11.6	8.0
Ballarat	{ (1)	59	136	189	181	218	266	249	279	300	290	266	220	210	2,804
	{ (2)	60	25.0	24.7	21.9	16.3	13.3	10.6	9.9	11.3	13.9	16.7	19.6	22.3	17.2
	{ (3)	59	10.6	11.6	9.9	7.5	5.8	4.2	3.4	3.9	5.0	6.4	7.7	9.4	7.1
Hamilton	{ (1)	99	127	128	165	214	269	290	289	301	286	257	199	181	2,706
	{ (2)	83	25.6	25.5	22.9	18.7	15.1	12.7	11.9	13.1	15.3	17.6	20.6	23.2	18.6
	{ (3)	83	11.3	11.9	10.5	8.5	6.8	5.2	4.4	4.9	6.0	7.1	8.4	10.0	7.9
Warrnambool	{ (1)	72	124	139	183	227	299	292	330	316	276	247	205	174	2,812
	{ (2)	66	21.9	22.0	20.9	18.4	15.8	13.8	13.2	13.9	15.4	17.2	18.8	20.4	17.7
	{ (3)	66	12.7	13.2	12.1	10.3	8.6	6.8	6.1	6.6	7.6	8.8	10.0	11.5	9.5
Bendigo	{ (1)	108	124	131	143	154	211	241	219	219	208	202	145	129	2,126
	{ (2)	103	29.5	29.1	25.9	20.9	16.2	12.9	12.1	13.8	16.8	20.3	24.2	27.3	20.8
	{ (3)	101	14.1	14.3	12.3	9.1	6.5	4.8	3.8	4.5	6.1	8.2	10.4	12.5	8.9
Echuca	{ (1)	91	97	106	129	130	164	178	160	165	153	169	118	112	1,681
	{ (2)	87	30.9	30.4	27.2	22.1	17.3	14.1	13.3	15.1	18.2	22.1	26.0	29.0	22.1
	{ (3)	86	15.3	15.3	13.1	9.5	6.7	4.9	4.1	4.9	6.6	8.9	11.3	13.7	9.6

Alexandra	(1)	91	158	144	200	203	252	287	284	292	261	277	221	192	2,771
	(2)	48	29.3	29.3	26.0	20.5	15.9	12.1	11.7	13.8	17.1	20.3	23.8	27.3	20.6
	(3)	48	11.2	11.7	9.4	6.3	4.3	2.8	2.5	2.9	4.3	6.1	8.0	9.9	6.6
Kyneton	(1)	95	148	155	182	215	294	355	324	328	290	273	204	197	2,965
	(2)	71	27.3	26.8	23.7	18.3	13.9	10.7	9.9	11.6	14.9	18.1	21.9	25.0	18.5
	(3)	65	9.8	10.2	8.4	5.6	3.6	2.3	1.6	1.9	3.3	4.8	6.7	8.6	5.6
Geelong	(1)	99	118	147	160	177	196	192	179	188	202	203	186	157	2,105
	(2)	60	25.1	24.9	23.2	19.8	16.6	14.1	13.6	14.8	16.9	19.3	21.4	23.2	19.4
	(3)	61	13.1	13.8	12.5	10.3	8.1	6.2	5.3	5.8	7.0	8.5	10.1	11.9	9.4
Mornington	(1)	79	168	160	190	243	276	280	279	275	281	275	232	203	2,862
	(2)	37	24.8	24.8	23.1	19.2	16.1	13.4	12.7	13.7	15.8	18.0	20.3	22.8	18.7
	(3)	35	13.1	13.7	12.7	10.7	9.0	7.2	6.3	6.7	7.9	9.4	10.7	12.1	9.9
Omeo	(1)	90	197	208	212	181	206	226	208	213	243	283	238	246	2,661
	(2)	86	26.3	25.8	23.1	18.7	14.2	10.8	10.1	12.1	15.3	18.5	21.8	24.5	18.4
	(3)	85	9.3	9.6	7.8	4.8	2.2	0.9	-0.1	0.6	2.7	4.6	6.4	8.3	4.8
Wangaratta	(1)	91	138	150	184	185	223	288	254	249	231	247	180	169	2,498
	(2)	67	31.0	30.6	27.3	22.1	17.3	13.6	12.7	14.4	17.6	21.1	25.4	28.8	21.8
	(3)	66	14.9	14.8	12.1	8.3	5.4	3.9	3.3	4.1	5.8	8.2	10.8	13.3	8.8
Yallourn	(1)	20	175	239	208	246	388	329	325	390	349	343	331	275	3,598
	(2)	20	24.9	24.1	22.6	18.7	14.5	12.5	11.7	12.9	15.3	17.6	19.6	21.9	18.0
	(3)	20	12.5	13.2	12.1	9.6	7.5	6.0	4.7	5.4	6.6	8.3	9.4	11.1	8.8
Sale	(1)	26	173	180	214	185	239	195	164	206	197	274	258	231	2,516
	(2)	24	25.2	24.7	23.1	19.9	16.3	13.9	13.3	14.6	16.7	18.8	20.7	22.8	19.2
	(3)	24	12.3	13.0	11.4	8.5	6.3	4.4	3.5	4.2	5.5	7.7	9.1	11.1	8.1
Bairnsdale	(1)	63	240	198	252	201	205	219	199	188	223	273	248	265	2,711
	(2)	63	24.6	24.7	23.1	20.3	17.0	14.3	13.8	15.2	17.4	19.6	21.6	23.4	19.6
	(3)	62	12.2	12.6	11.2	8.5	6.0	4.3	3.5	4.2	5.9	7.8	9.4	11.2	8.1
Orbost	(1)	86	269	235	266	283	282	326	265	232	269	311	264	300	3,302
	(2)	29	25.1	24.9	23.6	20.6	17.3	14.9	14.4	15.6	17.5	19.4	21.2	23.4	19.8
	(3)	27	12.6	13.2	11.8	9.2	6.7	5.1	4.0	4.6	5.9	8.1	9.8	11.4	8.5

(a) Legend : 1. Average monthly rainfall in points : 100 points = 1 inch. (For all years of record to 1969.)  
2. Average daily maximum temperature (°C.) (For all years of record to 1969.)  
3. Average daily minimum temperature (°C.) (For all years of record to 1969.)

VICTORIA—RAINFALL IN DISTRICTS  
(inches)

Year	District							
	Mallee	Wimmera	Northern	North Central	North-eastern	Western	Central	Gippsland
1962	11.29	17.69	18.85	27.77	33.78	25.99	26.07	31.41
1963	16.15	18.55	20.66	30.46	35.49	25.87	28.36	35.61
1964	16.14	25.02	20.93	34.40	40.27	38.69	35.40	37.99
1965	11.76	15.25	15.36	25.83	25.80	24.67	25.09	26.28
1966	12.48	16.47	20.28	31.97	41.26	29.35	32.08	38.97
1967	5.10	8.71	9.46	16.06	17.62	16.43	17.09	23.33
1968	13.68	19.68	20.93	34.66	39.51	33.54	28.84	34.04
1969	16.05	17.45	18.94	27.17	34.56	26.72	26.13	36.01
1970	14.44	18.64	20.29	33.20	39.10	33.72	36.87	44.16
1971	15.12	22.35	20.83	35.07	34.94	35.62	33.43	34.34
Average (a)	12.87	17.94	18.45	27.91	34.12	28.45	29.25	33.94

(a) Average for 58 years 1913 to 1970.

VICTORIA—ANNUAL RAINFALL VARIATION

District	Average annual rainfall (a)	Standard deviation	Coefficient of variation
	inches	inches	per cent
1. West Gippsland	36.11	5.71	15.8
2. West Coast	30.33	4.96	16.4
3. East Central	35.12	5.82	16.6
4. Western Plains	24.80	4.41	17.8
5. East Gippsland	30.43	5.58	18.3
6. West Central	23.85	4.68	19.6
7. Wimmera South	19.37	3.86	19.9
8. Wimmera North	16.14	3.35	20.8
9. North Central	27.91	6.08	21.8
10. Upper North	19.99	4.68	23.4
11. Upper North-east	43.66	10.43	23.9
12. Lower North-east	30.33	7.28	24.0
13. Mallee South	13.62	3.48	25.6
14. Lower North	16.81	4.57	27.2
15. Mallee North	11.81	3.41	28.9

(a) Average for 58 years 1913 to 1970.

**Melbourne**  
(1972 : pages 63-6)

**MELBOURNE—MEANS OF CLIMATIC ELEMENTS**

Meteorological elements	Spring	Summer	Autumn	Winter
Mean atmospheric pressure (millibars)	1014.8	1013.2	1018.3	1018.7
Mean temperature of air in shade (°C.)	14.3	19.3	15.3	10.1
Mean daily range of temperature of air in shade (°C.)	10.3	11.7	9.6	7.8
Mean relative humidity at 9 a.m. (saturation=100)	64	61	72	81
Mean rainfall (inches)	7.29	6.07	6.68	5.84
Mean number of days of rain	40	25	34	44
Mean amount of evaporation (inches)	10.28	17.34	8.13	3.79
Mean daily amount of cloudiness (scale 0 to 8) (a)	4.8	4.2	4.7	5.1
Mean daily hours of sunshine	6.0	8.0	5.2	3.9
Mean number of days of fog	1.5	0.6	6.2	11.5

(a) Scale 0 = clear, 8 = overcast.

**MELBOURNE—YEARLY MEANS AND EXTREMES OF CLIMATIC ELEMENTS**

Meteorological elements	1967	1968	1969	1970	1971
Mean atmospheric pressure (millibars)	1018.1	1014.5	1017.5	1015.8	1014.2
Temperature of air in shade (°C.)—					
Mean	15.3	15.6	15.2	15.1	15.5
Mean daily maximum	20.0	20.1	19.7	19.4	19.8
Mean daily minimum	10.5	11.2	10.8	10.7	11.0
Absolute maximum	40.7	43.7	38.7	37.3	38.7
Absolute minimum	1.2	1.8	-0.8	0.6	-0.1
Mean terrestrial minimum temperature (°C.)	9.2	9.8	9.8	9.2	9.4
Number of days maximum 37.8°C. and over	5	8	3	..	1
Number of days minimum 2.2°C. and under	4	3	3	3	6
Rainfall (inches)	13.06	20.96	24.60	31.63	30.65
Number of wet days	106	141	137	153	154
Total amount of evaporation (inches) (a)	55.15	59.56	56.60	57.68	59.19
Mean relative humidity (saturation=100)	63	63	65	61	64
Mean daily amount of cloudiness (scale 0 to 8) (b)	4.4	4.8	4.7	4.5	4.9
Mean daily hours of sunshine (c)	6.5	6.4	5.8	6.3	5.9
Mean daily wind speed km/h	9.5	10.0	11.6	11.4	12.2
Number of days of wind gusts 63 km/h and over	46	79	41	61	69
Number of days of fog	24	3	7	9	7
Number of days of thunder	3	12	8	12	13

(a) Evaporation measured by Class A Pan.

(b) Scale 0 = clear, 8 = overcast.

(c) Since 1968 sunshine has been measured at Laverton.

## GOVERNMENT AND ADMINISTRATION

## CONSTITUTION

(1972 : pages 69--72)

*Governor*Major-General Sir Rohan Delacombe, K.C.M.G., K.C.V.O., K.B.E., C.B.,  
D.S.O., K.StJ.*Lieutenant-Governor*

Sir Henry Arthur Winneke, K.C.M.G., O.B.E.

## MINISTRIES

(1972 : pages 72-3)

VICTORIA—MINISTRIES FROM 1943<sup>(a)</sup>

Ministry and name of Premier	Date of assumption of office	Date of retirement from office	Duration of office (days)
Albert Arthur Dunstan	18 September 1943	2 October 1945	746
Ian Macfarlan	2 October 1945	21 November 1945	51
John Cain	21 November 1945	20 November 1947	730
Thomas Tuke Hollway	20 November 1947	3 December 1948	380
Thomas Tuke Hollway	3 December 1948	27 June 1950	572
John Gladstone Black McDonald	27 June 1950	28 October 1952	855
Thomas Tuke Hollway	28 October 1952	31 October 1952	4
John Gladstone Black McDonald	31 October 1952	17 December 1952	48
John Cain	17 December 1952	31 March 1955	835
John Cain	31 March 1955	7 June 1955	69
Henry Edward Bolte	7 June 1955	23 August 1972	6,288
Rupert James Hamer	23 August 1972	Still in office	

<sup>(a)</sup> See also complete list since responsible government in 1855 in Appendix A.

## VICTORIA—62ND MINISTRY AT 30 SEPTEMBER 1972

*From the Legislative Assembly*

The Hon. R. J. Hamer, E.D.	Premier, Treasurer, and Minister of the Arts
The Hon. L. H. S. Thompson	Deputy Premier and Minister of Education
The Hon. Sir George Reid, Q.C.	Attorney-General
The Hon. E. R. Meagher, M.B.E., E.D.	Chief Secretary and Minister of Forests
The Hon. J. C. M. Balfour	Minister for Fuel and Power and Minister of Mines
The Hon. J. F. Rossiter	Minister of Health
The Hon. V. F. Wilcox	Minister of Transport

VICTORIA—62ND MINISTRY AT 30 SEPTEMBER 1972—*continued*


---

The Hon. W. A. Borthwick	Minister for Conservation, Minister of Lands, and Minister of Soldier Settlement
The Hon. J. A. Rafferty	Minister of Labour and Industry
The Hon. I. W. Smith	Minister for Social Welfare and Minister for Youth and Recreation
The Hon. R. C. Dunstan, D.S.O.	Minister of Water Supply and Minister of Public Works
The Hon. A. H. Scanlan	Minister without portfolio and Assistant Minister of Education

*From the Legislative Council*

The Hon. Sir Gilbert Chandler, K.B.E., C.M.G.	Minister of Agriculture
The Hon. V. O. Dickie	Minister of Housing and Minister for Aboriginal Affairs
The Hon. Murray Byrne	Minister for State Development and Decentralization, Minister for Tourism, and Minister of Immigration
The Hon. A. J. Hunt	Minister for Local Government

---

## JUDICIARY

(1972 : pages 73-4)

## VICTORIA—SUPREME COURT AT 1 JANUARY 1973

*Chief Justice*

The Honourable Sir Henry Arthur Winneke, K.C.M.G., O.B.E.

*Puisne Judges*

The Hon. Thomas Weetman Smith	The Hon. George Hermann Lush
The Hon. Sir George Augustus Pape	The Hon. Clifford Inch Menhennitt
The Hon. Sir Alexander Duncan Grant Adam	The Hon. Hibbert Richard Newton
The Hon. Sir Douglas Macfarlan Little	The Hon. Francis Robert Nelson
The Hon. Urban Gregory Gowans	The Hon. Kevin Victor Anderson
The Hon. Oliver James Gillard	The Hon. William Charles Crockett
The Hon. John Erskine Starke	The Hon. William Kaye
The Hon. Edward Hamilton Esler Barber	The Hon. John Gerald Norris
The Hon. Murray Vincent McInerney	The Hon. Benjamin James Dunn

---

## VICTORIA—JUDGES OF THE COUNTY COURT AT 1 JANUARY 1973

George Leo Dethridge (*Chairman*)

Trevor George Rapke	Thomas Bernard Shillito
Hubert Theodore Frederico	John Philip Somerville
Norman Alfred Vickery	William Joseph Martin
Arthur Charles Adams	Ian Gray
Dermot William Corson	Alec James Southwell
John Xavier O'Driscoll	Joseph Raymond O'Shea
James Herbert Forrest	James Galvin Gorman
Clive William Harris	Robert John Davern Wright
Eric Edgar Hewitt	Geoffrey Michael Byrne
Gordon Just	Harold George Ogden
Roland John Leckie	Nubert Solomon Stabey
Ivan Frederick Charles Franich	Bruce Finlay McNab

---

## STATE PARLIAMENT

(1972 : pages 74-96)

## Members of the State Parliament

(1972 : pages 79-81)

*Political parties*

In the following pages political party affiliations of Members of State Parliament are indicated thus :

- (ALP) Australian Labor Party  
 (CP) Country Party  
 (IND LAB) Independent Labor  
 (LP) Liberal Party

VICTORIA—LEGISLATIVE COUNCIL : MEMBERS ELECTED 30 MAY 1970  
 (Term of office commenced 27 June 1970)

Member	Province	Number of electors on rolls	Number of electors who voted	Total percentage of electors who voted
Byrne, Hon. Murray (LP)	Ballaarat	60,232	57,781	95.93
Clarke, Hon. Michael Alastair (CP)	Northern	59,797	57,607	96.34
Dunn, Hon. Bernard Phillip (CP)	North-Western	47,475	45,585	96.02
Eddy, Hon. Randolph John (ALP)	Doutta Galla	126,260	118,183	93.60
Garrett, Hon. Raymond William, A.F.C., A.E.A. (LP)	Templestowe	148,433	140,895	94.92
Granter, Hon. Frederick James (LP)	Bendigo	63,239	60,246	95.27
Gross, Hon. Kenneth Samuel (LP)	Western	60,281	58,329	96.76
Hamer, Hon. Rupert James, E.D. (LP) (a)	East Yarra	121,326	112,982	93.12
Hamilton, Hon. Harold Murray, E.D. (LP)	Higinbotham	122,449	115,714	94.50
Hauser, Hon. Vernon Thomas (LP)	Boronia	152,109	144,618	95.08
Jenkins, Hon. Owen Glyndwr (LP)	South-Western	95,644	91,408	95.57
Kent, Hon. Daniel Eric (ALP)	Gippsland	85,763	81,221	94.70
Nicol, Hon. Graham John (LP)	Monash	124,218	114,453	92.14
O'Connell, Hon. Geoffrey John (ALP) (b)	Melbourne	112,014	102,045	91.10
Swinburne, Hon. Ivan Archie (CP)	North-Eastern	55,008	52,293	95.06
Thomas, Hon. Herbert Arthur (ALP) (c)	Melbourne West	133,584	107,891	80.77
Walton, Hon. John Malcolm (ALP)	Melbourne North	112,869	107,092	94.88
Ward, Hon. Hector Roy (LP)	South-Eastern	150,158	142,464	94.88

- (a) The Hon. Rupert James Hamer, E.D. resigned to contest the by-election for the Legislative Assembly Electoral District of Kew held on 17 April 1971. At a by-election held on the same day the Hon. Haddon Storey (LP) was elected in his stead.
- (b) The Hon. Geoffrey John O'Connell died on 20 April 1972. The Hon. Ivan Barry Trayling (ALP) was declared elected unopposed in his stead on 9 June 1972.
- (c) Elected on 24 October 1970 at a by-election following the decision on 4 September by the Court of Disputed Returns that Mr R. W. Walsh's election on 30 May 1970 was void. The figures shown are for the by-election.



VICTORIA—LEGISLATIVE COUNCIL : MEMBERS ELECTED 29 APRIL 1967  
(Term of office commenced 15 July 1967)

Member	Province	Number of electors on rolls	Number of electors who voted	Total percentage of electors who voted
Bradbury, Hon. Archibald Keith (CP)	North-Eastern	53,354	50,822	95.25
Campbell, Hon. William Montgomery (LP)	East Yarra	120,066	112,116	93.38
Chandler, Hon. Sir Gilbert Lawrence, K.B.E., C.M.G. (LP)	Boronia	126,475	119,885	94.79
Dickie, Hon. Vance Oakley (LP)	Ballaarat	59,203	56,984	96.25
Elliott, Hon. Douglas George (ALP)	Melbourne	118,436	106,948	90.30
Fry, Hon. William Gordon (LP)	Higinbotham	118,025	110,970	94.02
Galbally, Hon. John William, Q.C. (ALP)	Melbourne North	113,880	108,465	95.24
Gleeson, Hon. Stanley Edmond (LP)	South-Western	89,727	85,131	94.88
Grimwade, Hon. Frederick Sheppard (LP)	Bendigo	62,300	59,061	94.80
Houghton, Hon. William Vasey (LP)	Templestowe	127,304	120,162	94.39
Hunt, Hon. Alan John (LP)	South-Eastern	127,426	120,893	94.87
Knight, Hon. Alexander Wilson (ALP)	Melbourne West	118,501	111,267	93.90
McDonald, Hon. Stuart Richard (CP)	Northern	58,242	56,463	96.95
Mack, Hon. Sir Ronald William (LP) (a)	Western	58,880	56,955	96.73
Mansell, Hon. Arthur Robert (CP)	North-Western	47,390	45,431	95.87
May, Hon. Robert William (CP)	Gippsland	82,057	77,746	94.75
Thompson, Hon. Lindsay Hamilton Simpson (LP) (b)	Monash	121,916	113,298	92.93
Triповich, Hon. John Matthew (ALP)	Doutta Galla	120,799	112,775	93.36

- (a) The Hon. Sir Ronald William Mack died on 12 February 1968. At a by-election held on 6 April 1968 the Hon. Clive Alexander Mitchell (CP) was elected in his stead.  
(b) The Hon. Lindsay Hamilton Simpson Thompson resigned to contest the election for the Legislative Assembly Electoral District of Malvern held on 30 May 1970. At a by-election held on 20 June 1970 the Hon. Charles Allen Moir Hider (LP) was elected in his stead.

President : The Hon. Raymond William Garrett, A.F.C., A.E.A.

Chairman of Committees : The Hon. Graham John Nicol.

Clerk of the Parliaments and Clerk of the Legislative Council : Alfred Reginald Bruce McDonnell, Esquire.

VICTORIA—LEGISLATIVE ASSEMBLY : MEMBERS ELECTED 30 MAY 1970

Member	District	Number of electors on rolls	Number of electors who voted	Total percentage of electors who voted
Amos, Derek Godfrey Ian (ALP)	Morwell	24,058	22,872	95.07
Balfour, Hon. James Charles Murray (LP)	Narracan	22,567	21,518	95.35
Billing, Norman Alexander William, K.StJ. (LP)	Heatherton	32,629	31,056	95.18
Birrell, Hayden Wilson (LP)	Geelong	23,051	21,916	95.08
Bolte, Hon. Sir Henry Edward, G.C.M.G. (LP) (a)	Hampden	17,990	17,289	96.10
Bornstein, David Leon Frank (ALP)	Brunswick East	23,750	21,947	92.41
Borthwick, Hon. William Archibald (LP)	Monbulk	29,096	27,389	94.13
Broad, Henry George (CP)	Swan Hill	18,726	17,936	95.78
Burgin, Cecil William (LP)	Polwarth	18,320	17,745	96.86
Christie, Hon. Sir Vernon (LP)	Ivanhoe	26,654	25,031	93.91
Clarey, Reynold Arthur (ALP) (b)	Melbourne	24,656	22,393	90.82
Crellin, Maxwell Leslie (LP)	Sandringham	25,657	24,138	94.08
Curnow, Esmond Julian (ALP)	Kara Kara	16,875	16,363	96.97
Dixon, Brian James (LP)	St Kilda	25,768	23,604	91.60
Doube, Hon. Valentine Joseph (ALP)	Albert Park	22,740	21,003	92.36
Doyle, Julian John (LP) (c)	Gisborne	24,174	22,862	94.57
Dunstan, Hon. Roberts Christian, D.S.O. (LP)	Dromana	23,027	21,612	93.86
Edmunds, Cyril Thomas (ALP)	Moonee Ponds	25,266	24,044	95.16
Evans, Alexander Thomas (LP)	Ballaarat North	24,137	23,206	96.14
Evans, Bruce James (CP)	Gippsland East	19,368	18,289	94.43
Fell, Robert William (ALP)	Greensborough	36,330	34,654	95.39
Floyd, William Laurence, O.B.E. (ALP)	Williamstown	28,171	26,702	94.79
Fordham, Robert Clive (ALP)	Footscray	24,472	23,236	94.95
Ginifer, John Joseph (ALP)	Deer Park	37,093	35,489	95.68
Goble, Mrs Dorothy Ada (LP)	Mitcham	29,303	27,777	94.79
Hayes, Geoffrey Phillip (LP)	Scoresby	40,486	38,594	95.33

VICTORIA—LEGISLATIVE ASSEMBLY: MEMBERS ELECTED 30 MAY 1970—*continued*

Member	District	Number of electors on rolls	Number of electors who voted	Total percentage of electors who voted
Holding, Allan Clyde (ALP)	Richmond	21,339	19,602	91.86
Jona, Walter (LP)	Hawthorn	24,974	23,081	92.42
Kirkwood, Carl (ALP)	Preston	24,293	23,000	94.68
Lewis, Edward Wallace (ALP)	Dundas	18,433	17,828	96.72
Lewis, William John (ALP)	Portland	18,641	18,033	96.74
Lind, Alan Alfred Campbell (ALP)	Dandenong	32,802	31,418	95.78
Lovegrove, Denis (ALP)	Sunshine	25,557	24,227	94.80
Loxton, Samuel John Everett (LP)	Prahran	25,827	22,899	88.66
McCabe, James Edmund (LP)	Lowan	18,553	18,020	97.13
MacDonald, James David (LP)	Glen Iris	24,992	23,339	93.39
McDonald, Russell Stanley Leslie (CP)	Rodney	19,245	18,562	96.45
McLaren, Ian Francis, O.B.E. (LP)	Bennettswood	27,469	26,164	95.25
Maciellan, Robert Roy Cameron (LP)	Gippsland West	18,666	17,812	95.42
Manson, Hon. James Williamson (LP)	Ringwood	31,471	29,948	95.16
Meagher, Hon. Edward Raymond, M.B.E., E.D. (LP)	Frankston	36,809	34,601	94.00
Mitchell, Hon. Thomas Walter (CP)	Benambra	19,016	18,077	95.06
Moss, Hon. George Colin (LP)	Murray Valley	19,498	18,419	94.47
Mutton, John Patrick (IND LAB)	Coburg	23,289	22,138	95.06
Rafferty, Hon. Joseph Anstice (LP)	Glenhuntly	27,796	25,903	93.19
Reese, William Frederick Llewellyn (LP)	Moorabbin	27,405	26,118	95.30
Reid, Hon. Sir George Oswald, Q.C. (LP)	Box Hill	36,217	34,516	95.30
Ross-Edwards, Peter (CP)	Shepparton	20,041	19,274	96.17
Rossiter, Hon. John Frederick (LP)	Brighton	24,721	22,991	93.00
Rylah, Hon. Sir Arthur Gordon, K.B.E., C.M.G., E.D. (LP) (d)	Kew	25,807	23,998	92.99
Scanlan, Hon. Alan Henry (LP)	Oakleigh	25,162	23,889	94.94
Shilton, Leslie Victor (ALP)	Midlands	23,127	21,767	94.12
Simmonds, James Lionel (ALP)	Reservoir	26,854	25,650	95.52
Smith, Aurel (LP)	Bellarine	24,485	23,408	95.60
Smith, Hon. Ian Winton (LP)	Warrnambool	19,091	18,462	96.71
Stephen, William Francis (LP)	Ballaarat South	23,073	22,085	95.72
Stokes, Russell Newton (LP)	Evelyn	21,211	20,062	94.58
Suggett, Robert Harris (LP)	Bentleigh	26,642	25,449	95.52
Tanner, Sir Edgar Stephen, C.B.E., E.D. (LP)	Caulfield	26,691	24,433	91.54
Taylor, Alexander William, E.D. (LP)	Balwyn	27,124	25,326	93.37
Taylor, James Allister (LP)	Gippsland South	19,770	18,679	94.48
Templeton, Thomas William, J.P. (LP)	Mentone	26,925	25,302	93.97
Thompson, Hon. Lindsay Hamilton Simpson (LP)	Malvern	25,836	23,398	90.56
Trethewey, Robert Hugh (LP)	Bendigo	23,715	22,746	95.91
Trewin, Thomas Campion (CP)	Benalla	18,504	17,737	95.85
Trezeise, Neil Benjamin (ALP)	Geelong North	25,206	23,981	95.14
Turnbull, Campbell (ALP)	Brunswick West	23,067	21,901	94.95
Wheeler, Kenneth Henry (LP)	Essendon	26,398	25,180	95.39
Whiting, Milton Stanley (CP)	Mildura	18,690	17,801	95.24
Wilcox, Hon. Vernon Francis (LP)	Camberwell	24,742	22,948	92.75
Wilkes, Frank Noel (ALP)	Northcote	24,180	22,686	93.82
Wilton, John Thomas (ALP)	Broadmeadows	34,766	33,228	95.58
Wiltshire, Raymond John (LP)	Syndal	35,111	33,611	95.73

- (a) The Hon. Sir Henry Bolte resigned on 23 August 1972. At a by-election held on 7 October 1972 Mr Thomas Leslie Austin (LP) was elected in his stead.
- (b) Mr Reynold Arthur Clary died on 9 May 1972. Mr Barry Owen Jones (ALP) was declared elected unopposed in his stead on 9 June 1972.
- (c) Mr Julian John Doyle resigned on 4 October 1971. At a by-election held on 11 December 1971 Mr Athol George Guy (LP) was elected in his stead.
- (d) The Hon. Sir Arthur Rylah resigned on 5 March 1971. At a by-election held on 17 April 1971 the Hon. Rupert James Hamer, E.D. (LP) was elected in his stead.

Speaker : The Hon. Sir Vernon Christie.

Chairman of Committees : Sir Edgar Stephen Tanner, C.B.E., E.D.

Clerk of the Legislative Assembly : John Harold Campbell, Esquire.

**Number of Parliaments and their duration**

(1972 : pages 81-2)

**VICTORIA—DURATION OF PARLIAMENTS  
AND NUMBER OF SITTINGS OF EACH HOUSE**

Number of Parliament	Period	Duration of Parliament (a)	Sittings			
			Legislative Assembly		Legislative Council	
			Number of sittings	Percentage of sittings to duration	Number of sittings	Percentage of sittings to duration
		days				
Thirty-eighth	1950-1952	865	131	15.1	81	9.4
Thirty-ninth	1952-1955	852	92	10.8	61	7.2
Fortieth	1955-1958	1,038	139	13.4	99	9.5
Forty-first	1958-1961	1,059	150	14.2	103	9.7
Forty-second	1961-1964	1,015	149	14.7	112	11.0
Forty-third	1964-1967	980	146	14.9	119	12.1
Forty-fourth	1967-1970	1,002	152	15.2	124	12.4

(a) Calculated from the date of opening to the date of dissolution of the Parliament.

**Cost of parliamentary government**

(1972 : page 82)

**VICTORIA—COST OF PARLIAMENTARY GOVERNMENT  
(\$'000)**

Period	Governor		Ministry	Parliament		Electoral	Royal Commissions, Select Committees, etc.	Total
	Salary	Other expenses (a)		Salaries of members	Other expenses (b)			
1967-68	20	294	90	870	828	154	41	2,297
1968-69	20	231	116	1,039	1,052	164	66	2,688
1969-70	20	218	168	1,138	1,184	506	114	3,349
1970-71	20	218	146	1,294	1,655	357	193	3,883
1971-72	20	254	403	1,183	1,339	101	175	3,475

(a) Includes salaries of staff and maintenance of house and gardens.

(b) Includes cost of members' railway passes, parliamentary staff, and maintenance.

## State Acts passed during 1971

(1972 : pages 83-8)

## VICTORIA—ACTS PASSED BY STATE PARLIAMENT, 1971

- 
- |      |  |  |
|------|--|--|
| 8090 | Municipal Association (Amendment) Act amends the <i>Municipal Association Act</i> 1907   |  |
| 8091 | Transfer of Land (Duplicate Certificates) Act amends the <i>Transfer of Land Act</i> 1958 with respect to duplicate Crown grants and certificates of title, and for other purposes   |  |
| 8092 | Firearms Act amends the <i>Firearms Act</i> 1958   |  |
| 8093 | Geelong Land (Special Grant) Act provides for the revocation of certain land in the City of Geelong temporarily reserved as a site for municipal buildings and for the grant thereof to the president, councillors, and ratepayers of the Shire of Barrabool, and for other purposes | 8103   |
| 8094 | Churchill Water and Sewerage Works Act makes provision concerning certain water and sewerage works at Churchill, and for other purposes  | Marketing of Primary Products (Amendment) Act amends the <i>Marketing of Primary Products Act</i> 1958 and repeals the <i>Tobacco Leaf Marketing Board (Appointment of Manager) Act</i> 1966   |
| 8095 | Superannuation (Railway Service) Act makes further provision with respect to the superannuation benefits of certain officers in the railway service, amends the <i>Superannuation Act</i> 1958, and for other purposes   | 8104   |
| 8096 | Vermin and Noxious Weeds (Amendment) Act amends the <i>Vermin and Noxious Weeds Act</i> 1958   | Gas and Fuel Corporation (Geelong Gas) Act makes provision with respect to a proposed offer by the Gas and Fuel Corporation of Victoria for the shares in the Geelong Gas Company, and for other purposes  |
| 8097 | Police Regulation (Amendment) Act amends the <i>Police Regulation Act</i> 1958   | 8105   |
| 8098 | Snowy Mountains Engineering Corporation (Victoria) Act relates to the performance of work within Victoria by the Snowy Mountains Engineering Corporation   | Local Authorities Superannuation (Disability Benefits) (Commencement) Act amends the <i>Local Authorities Superannuation (Disability Benefits) Act</i> 1970  |
| 8099 | Albert Park Land Act provides for closing of part of Bridport Street at Albert Park in the City of South Melbourne, and for other purposes   | 8106   |
| 8100 | Local Government (Municipalities Assistance Fund) Act amends section 250 of the <i>Local Government Act</i> 1958   | Building Societies (Amendment) Act makes further provision with respect to the establishment and operation of building societies, amends the <i>Building Societies Act</i> 1958, and for other purposes  |
| 8101 | Health (Tuberculosis Arrangement) Act amends Part VII of the <i>Health Act</i> 1958 and the Fifth Schedule thereto   | 8107   |
| 8102 | Presbyterian Church of Australia Act varies the trusts of property in Victoria held for the purposes of the Presbyterian Church of Victoria and to enable certain arrange-   | Survey Co-ordination (Place Names) Act amends the <i>Survey Co-ordination Act</i> 1958 with respect to the naming of places, and other purposes  |
|      | ments entered into between the Presbyterian Churches of New South Wales, Victoria, Queensland, South Australia, Tasmania, and Western Australia to be carried into effect, and for other purposes  | 8108   |
|      |  | Howard Florey Institute of Experimental Physiology and Medicine Act establishes a body corporate under the name of the Howard Florey Institute of Experimental Physiology and Medicine, and for other purposes   |
|      |  | 8109   |
|      |  | Superannuation (Transitional Provisions) Act makes further provision with respect to the application of the additional benefits provided for certain officers in the railway service by the <i>Superannuation (Railway Service) Act</i> 1971, and for other purposes   |
|      |  | 8110   |
|      |  | New Broken Hill Consolidated Limited Act authorises New Broken Hill Consolidated Limited to become a company deemed to be incorporated with New Broken Hill Consolidated Limited an existing company within the meaning of the <i>Companies Act</i> 1948 of the United Kingdom, determines the amount that will be paid to the State of Victoria in lieu of duties |

VICTORIA—ACTS PASSED BY STATE PARLIAMENT, 1971—*continued*

- that may have been payable under the *Stamps Act* 1958, and for other purposes
- 8111 Litter (Proceedings for Offences) Act amends the *Litter Act* 1964 with respect to proceedings for certain offences against that Act and for purposes connected therewith
- 8112 Justices (Service of Summonses) Act amends the provisions of the *Justices Act* 1958 relating to the service of summonses by post, and for other purposes
- 8113 Stock (Artificial Breeding) (Amendment) Act amends the *Stock (Artificial Breeding) Act* 1962
- 8114 Alcoa of Australia (W.A.) N.L. Act makes provision with respect to the conversion of Alcoa of Australia (W.A.) N.L. to a public company with limited liability and purposes connected therewith
- 8115 Victoria Institute of Colleges (Amendment) Act amends the *Victoria Institute of Colleges Act* 1965
- 8116 Cemeteries (Fawkner Crematorium and Memorial Park) Act amends the *Cemeteries Act* 1958
- 8117 Trustee Companies (Equity Trustees) Act varies the restrictions imposed in relation to the capital and shares of the Equity Trustees Executors and Agency Company Limited, amends the Second Schedule of the *Trustee Companies Act* 1958, and for other purposes
- 8118 Parliamentary Superannuation Act amends *The Constitution Amendment Act* 1958 and the *Parliamentary Salaries and Superannuation Act* 1968 and makes provision with respect to the entitlement of former Members of Parliament to a pension
- 8119 Ehrenhaus Retail Bottled Liquor Licence Act grants a retail bottled liquor licence in respect of the premises at 249 Coventry Street, South Melbourne in the State of Victoria to the executors of the will of the late Maria Ehrenhaus and for other purposes
- 8120 Melbourne University Land Act provides for the revocation of certain Crown grants and reservations of lands at Carlton and provides for the grant of such lands to the University of Melbourne
- 8121 Forests (Bowater-Scott Agreement) Act ratifies, validates, approves, and otherwise gives effect to an agreement between the Forests Commission and Bowater-Scott Australia Limited with respect to the establishment of an industry for the manufacture of wood pulp from softwood timber obtained from forests under the control of the Forests Commission, and for other purposes
- 8122 Gas and Fuel Corporation (Pipelines) Act abolishes the Victorian Pipelines Commission, vests certain of the powers, duties, functions, and obligations of the Victorian Pipelines Commission in the Gas and Fuel Corporation of Victoria, and for other purposes
- 8123 Coal Mines (Pensions) Act amends Part III of the *Coal Mines Act* 1958 and for other purposes
- 8124 Crown Proceedings (Forfeited Recognisances) Act amends section 5 of the *Crown Proceedings Act* 1958 and section 18 of the *Children's Court Act* 1958
- 8125 Public Trustee (Amendment) Act amends the *Public Trustee Act* 1958 and for other purposes
- 8126 Geelong Waterworks and Sewerage (Rates) Act amends the *Geelong Waterworks and Sewerage Act* 1958
- 8127 Subordinate Legislation (Powers) Act makes further provision with respect to subordinate legislation
- 8128 Barley Marketing Act amends the *Barley Marketing Act* 1958
- 8129 Stamps (Credit Business) Act makes further provision with respect to the payment of stamp duty by certain persons carrying on credit business in Victoria, and for other purposes
- 8130 Land (Surrender to the Crown) Act authorises the surrender to the Crown of land held for certain public purposes
- 8131 Pipelines (Amendment) Act amends the *Pipelines Act* 1967 in order to make provision for the minor alteration of pipeline routes authorised under that Act and for other purposes
- 8132 County Court (Jurisdiction) Act amends the *County Court Act* 1958
- 8133 Grassmere Land Act provides for the vesting in the Crown of certain land at Grassmere, for the permanent reservation of part of that land for public purposes, for the proclamation as a road of the remainder of that land, and for other purposes
- 8134 Supply (Supplementary Estimates) Act supplies out of the Consolidated Fund the sum of thirty two million three hundred and fifty four thousand three hundred and fifty

VICTORIA—ACTS PASSED BY STATE PARLIAMENT, 1971—*continued*

- seven dollars to the service of the year one thousand nine hundred and seventy and one thousand nine hundred and seventy one
- 8135 Town and Country Planning (Amendment) Act amends the *Town and Country Planning Act 1961*, and for other purposes
- 8136 Seeds Act consolidates and amends the law relating to seeds
- 8137 Imperial Acts Application (Repeals) Act amends the *Imperial Acts Application Act 1922*
- 8138 Audit (Recovery of Overpayments) Act makes provision with respect to the recovery of overpayments made to certain persons, and for other purposes
- 8139 Evidence (Registration of Commissioners) Act makes provision for the registration of commissioners for taking declarations and affidavits under the *Evidence Act 1958*, and for other purposes
- 8140 Country Roads (Amendment) Act amends the *Country Roads Act 1958*
- 8141 Protection of Animals (Rodeos) Act amends the *Protection of Animals Act 1966*
- 8142 Soil Conservation and Land Utilization (Amendment) Act amends the *Soil Conservation and Land Utilization Act 1958*, and for other purposes
- 8143 Motor Car (Driving Offences) Act amends the *Motor Car Act 1958* and the *Crimes Act 1958* with respect to preliminary breath tests of drivers of motor cars, the use in evidence of blood tests and breath tests upon proceedings for offences against the said Acts, and for other purposes
- 8144 Fisheries (Amendment) Act amends the *Fisheries Act 1968*
- 8145 Appeal Costs Fund Act amends the *Appeal Costs Fund Act 1958*
- 8146 Scaffolding Act makes provision with respect to scaffolding, and for other purposes
- 8147 Liquor Control (Amendment) Act amends the *Liquor Control Act 1968*
- 8148 Supply (July to September) Act applies out of the Consolidated Fund the sum of one hundred and sixty five million and seventy seven thousand five hundred dollars to the service of the year one thousand nine hundred and seventy one and one thousand nine hundred and seventy two
- 8149 Local Government (Further Amendment) Act amends the *Local Government Act 1958*, the *Melbourne and Geelong Corporations Act 1938*, and the *Health Act 1958*, repeals the *Melbourne Buildings Act 1949*, and for other purposes
- 8150 Supply (Supplementary Estimates) Act applies out of the Consolidated Fund the sum of eight million nine hundred and seventy one thousand four hundred and twenty three dollars to the service of the year one thousand nine hundred and seventy one and one thousand nine hundred and seventy one
- 8151 Supply (October to December) Act applies out of the Consolidated Fund the sum of one hundred and eighty five million nine hundred and ninety six thousand eight hundred dollars to the service of the year one thousand nine hundred and seventy one and one thousand nine hundred and seventy two
- 8152 Police Regulation (Chief Commissioner) Act declares the office of Chief Commissioner of Police to be vacant, makes provision with respect to the appointment of a Chief Commissioner of Police, and for other purposes
- 8153 Groundwater Act amends Parts III and V of the *Groundwater Act 1969*
- 8154 Pay-Roll Tax Act imposes a tax upon employers in respect of certain wages, provides for the assessment and collection of the tax, and for purposes connected therewith
- 8155 Moonee Ponds (Queens Park) Land Act authorises the grant of leases in respect of certain land at Moonee Ponds in the City of Essendon, and for other purposes
- 8156 Commonwealth Places (Administration of Laws) Act amends the *Commonwealth Places (Administration of Laws) Act 1970*
- 8157 Stamps Act amends the *Stamps Act 1958* and for purposes connected therewith
- 8158 Mercy Private Hospital (Guarantee) Act authorises the Treasurer of Victoria to guarantee repayment of certain moneys proposed to be borrowed by the Sisters of Mercy Property Association, and for other purposes
- 8159 Daylight Saving Act promotes the greater use of daylight in certain months of the year and provides for matters incidental thereto.
- 8160 Co-operate Housing Societies (Indemnities) Act increases the aggregate liability for granting of indemnities under the *Co-operative Housing Societies Act 1958*

VICTORIA—ACTS PASSED BY STATE PARLIAMENT, 1971—*continued*

- 8161 Films Act consolidates and amends the law relating to films, and for other purposes
- 8162 Lotteries Gaming and Betting (Pre-Post Betting) Act authorises certain pre-post betting on the Melbourne Cup, amends the *Lotteries Gaming and Betting Act 1966*, and for other purposes
- 8163 Vegetation and Vine Diseases (Amendment) Act amends the *Vegetation and Vine Diseases Act 1958*, and for other purposes
- 8164 Melbourne and Metropolitan Board of Works (Amendment) Act amends the *Melbourne and Metropolitan Board of Works Act 1958*
- 8165 Statutory Salaries Act relates to the salaries, allowances, and fees of certain public officers, and for other purposes
- 8166 Newhaven Land Act authorises the granting of leases of land in the township of Newhaven, Parish of Phillip Island
- 8167 Land Act declares the rates of land tax for the year ending on 31 December 1972, and for other purposes
- 8168 Water Authorities Accident Insurance Act relates to policies of accident insurance in respect of certain authorities
- 8169 Building Societies (Special Advances) Act increases the maximum amount relating to special advances under the *Building Societies Act 1958*
- 8170 Juries (Compensation) Act amends the rate of compensation of jurors and fees for civil juries under the *Juries Act 1967*
- 8171 Coal Mines (Pensions Increase) Act amends Part III of the *Coal Mines Act 1958*
- 8172 Exhibition (Borrowing Powers) Act amends section 14 of the *Exhibition Act 1957*
- 8173 Sunday Entertainment (Cinematograph Films) Act amends section 5 of the *Sunday Entertainment Act 1967*
- 8174 Apprenticeship (Amendment) Act amends the *Apprenticeship Act 1958* and repeals certain provisions of the *Employers and Employees Act 1958*
- 8175 Labour and Industry (Shop Trading Hours) Act amends the *Labour and Industry Act 1958* in relation to shop trading hours, and for other purposes
- 8176 Gift Duty Act provides for the imposition, assessment, and collection of a duty on certain gifts, amends the Stamps Act, and for other purposes
- 8177 Aboriginal Lands (Amendment) Act amends the *Aboriginal Lands Act 1970*, and for other purposes
- 8178 Lutheran Church of Australia, Victorian District Incorporation Act incorporates the Lutheran Church of Australia, Victorian District, and for other purposes
- 8179 Police Regulations (Amendment) (No. 2) Act changes the ranks held by certain members of the Police Force of Victoria, amends the *Police Regulation Act 1958*, makes consequential amendments to other Acts, and for other purposes
- 8180 Railways (Amendment) Act amends the *Railways Act 1958*
- 8181 Statute Law Revision Act revises the Statute Law
- 8182 State Electricity Commission (Newport Power Station) Act makes provision with respect to the scheme for the extension of the State electricity generating system by the establishment of a power station at Newport
- 8183 Judges Salaries and Allowances Act relates to the remuneration of Judges of the Supreme Court and County Court
- 8184 Magistrates' Courts Act concerns the holding and constitution of Magistrates' Courts, the appointment, powers, duties, and protection of Stipendiary Magistrates, Justices, and Clerks of Magistrates' Courts
- 8185 Companies Act makes provision with respect to the disclosure of substantial shareholdings in companies, re-enacts provisions of the *Companies Act 1961* relating to accounts and audit and to take-over offers, amends the *Companies Act 1961*, and for other purposes
- 8186 Water (Amendment) Act amends the *Water Act 1958* with respect to water rights and drainage rating and for other purposes
- 8187 Essendon (Recreation Ground) Land Act authorises the granting of leases of certain land in the City of Essendon permanently reserved as a site for public recreation, and for other purposes
- 8188 Brotherhood of St. Laurence (Incorporation) Act dissolves St. Laurence Trust Proprietary Limited and St. Laurence Industries Pty. Limited, establishes a body corporate to be called the Brotherhood of St. Laurence, vests certain properties in such body corporate, and for other purposes

- 8189 State Forests Works and Services Act authorises expenditure on works and services and other purposes relating to State forests
- 8190 Evidence (Boards and Commissions) Act amends the *Evidence Act* 1958, makes provision with respect to privileges and immunities in relation to inquiries by boards and commissions and for other purposes, and amends the *Coal Mines Act* 1958
- 8191 Public Authorities (Contributions) (Amendment) Act amends the *Public Authorities (Contributions) Act* 1966
- 8192 Road Traffic (Penalties) Act increases penalties for certain traffic infringements
- 8193 Grain Elevators (Amendment) Act amends the *Grain Elevators Act* 1958, and for other purposes
- 8194 Flinders-street Station Area Re-development Act ratifies and approves an agreement relating to certain lands used for the purposes of the Flinders Street Railway Station and certain other lands used for railway purposes and makes provision in connection with the said agreement
- 8195 Buninyong (Recreation Reserve) Land Act authorises the granting of a lease of certain land at Buninyong permanently reserved as a site for public recreation, and for other purposes
- 8196 Health Services (Fees and Penalties) Act increases certain fees and penalties in the *Health Act* 1958, the *Clean Air Act* 1958, and for other purposes
- 8197 Motor Car (Breath Tests) Act amends Division 2 of Part VI of the *Motor Car Act* 1958 with respect to preliminary breath tests and breath tests for other purposes
- 8198 Instruments (Amendment) Act amends the *Instruments Act* 1958 and for other purposes
- 8199 Melbourne Harbor Trust (Amendment) Act amends the *Melbourne Harbor Trust Act* 1958, and for other purposes
- 8200 Revocation and Excision of Crown Reservations Act revokes the Crown grant of certain lands and the permanent reservations on certain lands, and for other purposes
- 8201 Yarragon Lands Exchange Act makes provision with respect to the surrender to Her Majesty of certain land in the township of Yarragon and the grant to the corporation of the Shire of Narracan of certain other land in that township
- 8202 Gift Duty (Rates and Rebates) Act provides a rebate of gift duty in respect of certain gifts of stock, plant, and land used for primary production, varies the rates of gift duty, amends the *Gift Duty Act* 1971, and for other purposes
- 8203 Stamps (Gifts and Settlements) Act amends the *Stamps Act* 1958 with respect to the duty payable on deeds of settlement or gifts, amends section 10 of the *Stamps Act* 1971, and for other purposes
- 8204 Eastern Freeway Lands Act relates to certain lands in the cities of Northcote, Kew, and Camberwell
- 8205 Land (Surrenders) Act amends the *Land Act* 1958
- 8206 Housing (Amendment) Act amends the *Housing Act* 1958, the *Co-operative Housing Societies Act* 1958, and for other purposes
- 8207 Land (Amendment) Act amends the *Land Act* 1958 and makes provision with respect to leases and licences
- 8208 Landlord and Tenant (Amendment) Act amends the *Landlord and Tenant Act* 1958
- 8209 Racing (Amendment) Act amends the *Racing Act* 1958 and the *Lotteries Gaming and Betting Act* 1966
- 8210 National Parks (Amendment) Act amends the *National Parks Act* 1970, and for other purposes
- 8211 Labour and Industry (Amendment) Act amends the *Labour and Industry Act* 1958
- 8212 Public Works and Services Act authorises expenditure on public works and services, and for other purposes
- 8213 Wheat Marketing Act amends the *Wheat Marketing Act* 1969 and for purposes connected therewith
- 8214 Public Works and State Development Committees Act makes provision for and concerns the protection of witnesses before the Public Works Committee and the State Development Committee, amends the *Public Works Committee Act* 1958, the *State Development Committee Act* 1958, and for other purposes
- 8215 Water Supply Works and Services Act authorises expenditure on works and services and other purposes relating to irrigation, water supply, drainage, sewerage, flood protection, and river improvement, and for other purposes



VICTORIA—ACTS PASSED BY STATE PARLIAMENT, 1971—*continued*

- 
- |   |   |
|---|---|
| <p>8216 Bees Act regulates the keeping of bees, prevents the spread of disease amongst bees, and for other purposes</p> <p>8217 Agricultural Colleges (Amendment) Act amends the <i>Agricultural Colleges Act 1958</i></p> <p>8218 Chiropodists (Registration) Act amends the <i>Chiropodists Act 1968</i></p> <p>8219 Portland Harbor Trust (Amendment) Act amends the <i>Portland Harbor Trust Act 1958</i></p> <p>8220 Harbor Boards (Amendment) Act amends the <i>Harbor Boards Act 1958</i></p> <p>8221 Veterinary Surgeons (Amendment) Act amends the <i>Veterinary Surgeons Act 1958</i></p> <p>8222 Scaffolding (Amendment) Act amends the <i>Scaffolding Act 1971</i></p> <p>8223 Stock Diseases (Composite Licences) Act enables the issue of composite licences for the purposes of section 15 of the <i>Stock Diseases Act 1968</i></p> <p>8224 Justices (Civil Proceedings) Act amends section 68 and section 101 of the <i>Justices Act 1958</i></p> <p>8225 Closer Settlement Act makes provision with respect to conditions in certain Crown grants, amends the <i>Closer Settlement Act 1938</i>, and for other purposes</p> <p>8226 Summary Offences (Amendment) Act amends section 24 and section 26 of the <i>Summary Offences Act 1966</i></p> <p>8227 Sewerage Districts (Amendment) Act amends the <i>Sewerage Districts Act 1958</i></p> <p>8228 Evidence (Documents) Act amends the <i>Evidence Act 1958</i> with respect to the use of documents as evidence in legal proceedings, and for other purposes</p> <p>8229 Mildura Irrigation and Water Trusts (Amendment) Act amends the <i>Mildura Irrigation and Water Trusts Act 1958</i></p> <p>8230 Farm Produce Merchants and Commission Agents (Employment) Act amends the <i>Farm Produce Merchants and Commission Agents Act 1965</i> with respect to persons who may be employed by licence holders</p> | <p>8231 Latrobe Valley (Amendment) Act amends the <i>Latrobe Valley Act 1958</i></p> <p>8232 Hire Purchase (Form) Act amends section 3 of and the First Schedule to the <i>Hire Purchase Act 1959</i></p> <p>8233 Poisons (Amendment) Act amends sections 5 and 56 of the <i>Poisons Act 1962</i></p> <p>8234 Geelong Harbor Trust (Amendment) Act amends the <i>Geelong Harbor Trust Act 1958</i></p> <p>8235 Eastern Railway Construction Act authorises construction of a line of railway to connect the railway from Melbourne to Clifton Hill with East Doncaster and for other purposes</p> <p>8236 Milk and Dairy Supervision (Amendment) Act amends the <i>Milk and Dairy Supervision Act 1958</i> and repeals the <i>Milk and Dairy Supervision Act 1942</i></p> <p>8237 Educational Grants (Amendment) Act amends sub-section (5) of section 2 of the <i>Educational Grants Act 1967</i>, and for other purposes</p> <p>8238 Railway Works and Services Act authorises expenditure on works and services and other purposes relating to railways</p> <p>8239 Education (Teacher Registration) Act makes provision for the registration of teachers in State schools, for the establishment of Divisional Registration Boards, a Teacher Registration Council, and for other purposes</p> <p>8240 Supply (Final Supplementary Estimates) Act applies out of the Consolidated Fund the sum of five million one hundred and five thousand three hundred and eighteen dollars to the service of the year one thousand nine hundred and seventy and one thousand nine hundred and seventy one</p> <p>8241 Appropriation Act applies a sum out of the Consolidated Fund to the service of the year ending on the thirtieth day of June one thousand nine hundred and seventy two and appropriates the supplies granted in this and the last preceding session of Parliament</p> |
|---|---|
-

## STATE ELECTORAL SYSTEM

(1972 : pages 90-6)

## General

(1972 : pages 90-4)

## VICTORIA—ELECTORS ENROLLED ON JOINT ROLL

At 30 June—	Number of electors enrolled	At 30 June—	Number of electors enrolled
1963	1,596,807	1968	1,759,803
1964	1,650,042	1969	1,789,153
1965	1,657,798	1970	1,852,023
1966	1,681,514	1971	1,857,354
1967	1,745,919	1972	1,890,666

## VICTORIA—LEGISLATIVE ASSEMBLY : AREAS OF DISTRICTS

(square miles)

State Electoral District (a)	Area	State Electoral District (a)	Area
Albert Park	7.50	Heatherton	27.34
Ballaarat North	805.00	Ivanhoe	7.00
Ballaarat South	1,160.00	Kara Kara	4,470.00
Balwyn	6.30	Kew	7.15
Bellarine	570.00	Lowan	6,590.00
Benalla	5,375.00	Malvern	4.36
Benambra	4,020.00	Melbourne	10.42
Bendigo	890.00	Mentone	8.40
Bennettswood	7.62	Midlands	2,520.00
Bentleigh	4.85	Mildura	8,670.00
Box Hill	19.60	Mitcham	8.20
Brighton	4.80	Monbulk	147.00
Broadmeadows	57.20	Moonee Ponds	4.80
Brunswick East	4.25	Moorabbin	6.69
Brunswick West	3.95	Morwell	1,150.00
Camberwell	5.00	Murray Valley	2,165.00
Caulfield	3.59	Narracan	1,190.00
Coburg	5.22	Northcote	5.72
Dandenong	44.80	Oakleigh	6.41
Deer Park	60.60	Polwarth	2,730.00
Dromana	780.00	Portland	4,500.00
Dundas	6,300.00	Prahran	3.31
Essendon	7.25	Preston	5.00
Evelyn	2,575.00	Reservoir	8.65
Footscray	7.15	Richmond	3.57
Frankston	61.80	Ringwood	48.80
Geelong	10.42	Rodney	2,335.00
Geelong North	12.58	St Kilda	3.05
Gippsland East	11,030.00	Sandringham	6.70
Gippsland South	2,900.00	Scoresby	56.00
Gippsland West	945.00	Shepparton	1,080.00
Gisborne	1,340.00	Sunshine	9.35
Glenhuntly	4.55	Swan Hill	5,885.00
Glen Iris	5.20	Syndal	13.50
Greensborough	48.30	Warrnambool	934.00
Hampden	4,430.00	Williamstown	12.49
Hawthorn	4.56		
		Total (b)	88,150.00

(a) See pages 771-2 for number of electors and sitting members.

(b) The officially recognised "land area" of the State is 87,884 square miles. The difference of 266 square miles between "land" and "electoral" area is due to the inclusion of coastal waters such as Western Port and Corner Inlet in the electoral descriptions.

VICTORIA—LEGISLATIVE COUNCIL :  
AREAS OF PROVINCES  
(square miles)

State Electoral Province (a)	Area
Ballaarat	5,505.00
Bendigo	4,452.00
Boronia	1,040.00
Doutta Galla	318.00
East Yarra	26.90
Gippsland	16,270.00
Higinbotham	33.54
Melbourne	25.83
Melbourne North	27.27
Melbourne West	603.00
Monash	22.46
Northern	9,055.00
North-Eastern	11,672.00
North-Western	20,680.00
South-Eastern	1,856.00
South-Western	4,042.00
Templestowe	431.00
Western	12,090.00
Total (b)	88,150.00

(a) See pages 770-1 for number of electors and sitting members.

(b) The officially recognised "land area" of the State is 87,884 square miles. The difference of 266 square miles between "land area" and "electoral area" is due to the inclusion of coastal waters such as Western Port and Corner Inlet in the electoral descriptions.

### Parliamentary elections

(1972 : pages 94-6)

### VICTORIA—VOTING AT GENERAL ELECTIONS FOR THE LEGISLATIVE ASSEMBLY

Year of election	Whole State		Contested Districts			
	Electors enrolled	Electors enrolled	Votes recorded		Informal votes	
			Number	Percentage of voters	Number	Percentage of total votes recorded
1952	1,402,705	1,119,486	1,047,671	93.59	18,991	1.81
1955	1,422,588	1,402,806	1,318,937	94.02	28,934	2.19
1958	1,478,065	1,478,065	1,392,813	94.23	24,760	1.78
1961	1,554,856	1,554,856	1,467,862	94.41	35,937	2.45
1964	1,635,311	1,635,311	1,543,778	94.40	35,631	2.31
1967	1,723,981	1,723,981	1,625,239	94.27	51,384	3.16
1970	1,827,595	1,827,595	1,728,362	94.57	55,141	3.19

NOTE. Detailed statistics are available in publications issued by the Chief Electoral Officer for Victoria.

## VICTORIA—PARLIAMENTARY REPRESENTATION

Year of election	Number of members of Legislative Assembly	Mean population	Average population per member	Number of electors enrolled on date of election	Average number of electors per member	Proportion of persons enrolled to total population
						per cent
1952	65	2,343,610	36,056	1,402,705	21,580	59.9
1955	66	2,520,481	38,189	1,422,588	21,554	56.4
1958	66	2,717,371	41,172	1,478,065	22,395	54.4
1961	66	2,926,075	44,334	1,554,856	23,558	53.1
1964	66	3,105,685	47,056	1,635,311	24,777	52.7
1967	73	3,277,131	44,892	1,723,981	23,616	52.6
1970	73	3,449,404	47,252	1,827,595	25,036	53.0

## VICTORIA—VOTING AT ELECTIONS FOR THE LEGISLATIVE COUNCIL

Year of election	Whole State		Contested Provinces			
	Electors enrolled	Electors enrolled	Votes recorded		Informal votes	
			Number	Percentage of voters	Number	Percentage of total votes recorded
1952	1,395,650	1,078,959	994,190	92.14	22,595	2.27
1955	1,430,130	1,216,010	1,112,951	91.52	23,189	2.08
1958	1,488,293	1,387,097	1,283,665	92.54	22,085	1.72
1961	1,554,856	1,554,856	1,467,482	94.38	46,697	3.18
1964	1,635,311	1,635,311	1,543,584	94.39	45,627	2.96
1967	1,723,981	1,723,981	1,625,371	94.28	59,895	3.69
1970	1,827,595	1,827,595	1,726,725	94.48	67,710	3.92

## COMMONWEALTH PARLIAMENT : VICTORIAN MEMBERS

(1972 : pages 96-7)

Political party affiliations of Victorian members of the Commonwealth Parliament are indicated thus :

- (ADLP) Australian Democratic Labor Party
- (ALP) Australian Labor Party
- (CP) Australian Country Party
- (LP) Liberal Party of Australia

AUSTRALIA—SENATE : VICTORIAN MEMBERS  
AT 1 JANUARY 1973

Senator	Retires
Brown, William Walter Charles ( <i>ALP</i> )	1977
Cormack, Sir Magnus Cameron, K.B.E. ( <i>LP</i> )	1974
Greenwood, Hon. Ivor John, Q.C. ( <i>LP</i> )	1977
Guilfoyle, Margaret Georgina Constance ( <i>LP</i> )	1977
Hannan, George Conrad ( <i>LP</i> )	1974
Little, John Albert ( <i>ADLP</i> )	1974
McManus, Francis Patrick ( <i>ADLP</i> )	1977
Poyser, Arthur George ( <i>ALP</i> )	1974
Primmer, Cyril Graham ( <i>ALP</i> )	1977
Webster, James Joseph ( <i>CP</i> )	1974

AUSTRALIA—HOUSE OF REPRESENTATIVES : VICTORIAN  
MEMBERS ELECTED 2 DECEMBER 1972

Member	Division
Bourchier, J. W. ( <i>LP</i> )	Bendigo
Bryant, Hon. G. M. ( <i>ALP</i> )	Wills
Cairns, Hon. J. F. ( <i>ALP</i> )	Lalor
Cass, Hon. M. H. ( <i>ALP</i> )	Maribyrnong
Chipp, Hon. D. L. ( <i>LP</i> )	Hotham
Crean, Hon. F. ( <i>ALP</i> )	Melbourne Ports
Erwin, Hon. G. D. ( <i>LP</i> )	Ballaarat
Fisher, P. S. ( <i>CP</i> )	Mallee
Fox, E. M. C. ( <i>LP</i> )	Henty
Fraser, Hon. J. M. ( <i>LP</i> )	Wannon
Garrick, H. J. ( <i>ALP</i> )	Batman
Gorton, Rt Hon. J. G., C.H. ( <i>LP</i> )	Higgins
Hamer, D. J., D.S.C. ( <i>LP</i> )	Isaacs
Hewson, H. A. ( <i>CP</i> )	McMillan
Holten, Hon. R. McN. ( <i>CP</i> )	Indi
Innes, V. E. ( <i>ALP</i> )	Melbourne
Jarman, A. W. ( <i>LP</i> )	Deakin
Jenkins, H. A. ( <i>ALP</i> )	Scullin
Johnson, L. K. ( <i>ALP</i> )	Burke
King, R. S. ( <i>CP</i> )	Wimmera
Lamb, A. ( <i>ALP</i> )	La Trobe
Lloyd, B. ( <i>CP</i> )	Murray
Lynch, Hon. P. R. ( <i>LP</i> )	Flinders
McKenzie, D. C. ( <i>ALP</i> )	Diamond Valley
Mathews, C. R. T. ( <i>ALP</i> )	Casey
Nixon, Hon. P. J. ( <i>CP</i> )	Gippsland
Oldmeadow, M. W. ( <i>ALP</i> )	Holt
Peacock, Hon. A. S. ( <i>LP</i> )	Kooyong
Scholes, G. G. D. ( <i>ALP</i> )	Corio
Snedden, Rt Hon. B. M., Q.C. ( <i>LP</i> )	Bruce
Staley, A. A. ( <i>LP</i> )	Chisholm
Street, Hon. A. A. ( <i>LP</i> )	Corangamite
Whittorn, R. H., C.B.E. ( <i>LP</i> )	Balaclava
Willis, R. ( <i>ALP</i> )	Gellibrand

## 3

## DEMOGRAPHY

## POPULATION

(1972: pages 106–39)

## Census populations 1947 to 1971

(1972: pages 107–12)

It should be recognised that in processing Australian census data for 13 million persons and 4.5 million households there are innumerable possibilities for error. As in other areas of statistics, much of the effort of statisticians is directed to devising procedures which prevent most errors from occurring or which detect and eliminate those which do occur. Despite such efforts it is impracticable to eliminate every inaccuracy but special steps such as editing and quality control procedures are taken to measure and control the level of such inaccuracy. Thus while some minor errors and discrepancies may be evident in the final results, it is unlikely that they would have any practical significance in the interpretation of the census data.

In the following tables Aborigines are included in population totals for 1966 and 1971, but excluded for earlier years. They are included in natural increase calculations from 1 January 1966. Aborigines are included in tables of population characteristics (pages 788–94) for 1971 only. All Censuses from 1933 onwards have been held on 30 June.

## AUSTRALIA—CENSUS POPULATIONS OF STATES AND TERRITORIES

State or Territory	Census				
	1947	1954	1961	1966	1971
New South Wales	2,984,838	3,423,529	3,917,013	4,237,901	4,601,180
Victoria	2,054,701	2,452,341	2,930,113	3,220,217	3,502,351
Queensland	1,106,415	1,318,259	1,518,828	1,674,324	1,827,065
South Australia	646,073	797,094	969,340	1,094,984	1,173,707
Western Australia	502,480	639,771	736,629	848,100	1,030,469
Tasmania	257,078	308,752	350,340	371,436	390,413
Northern Territory	10,868	16,469	27,095	56,504	86,390
Australian Capital Territory	16,905	30,315	58,828	96,032	144,063
Australia	7,579,358	8,986,530	10,508,186	11,599,498	12,755,638

AUSTRALIA—AVERAGE ANNUAL RATE OF INCREASE OF POPULATION  
DURING INTERCENSAL PERIODS  
(per cent)

State or Territory	Intercensal period			
	1947-1954	1954-1961	1961-1966	1966-1971
New South Wales	1.98	1.94	1.57	1.66
Victoria	<b>2.56</b>	<b>2.58</b>	<b>1.90</b>	<b>1.69</b>
Queensland	2.53	2.04	1.84	1.76
South Australia	3.05	2.83	2.41	1.40
Western Australia	3.51	2.03	2.58	3.97
Tasmania	2.65	1.82	1.18	1.00
Northern Territory	6.12	7.37	6.68	8.86
Australian Capital Territory	8.70	9.94	10.29	8.45
<b>Australia</b>	<b>2.46</b>	<b>2.26</b>	<b>1.91</b>	<b>1.92</b>

AUSTRALIA—NATURAL INCREASE

Period	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
ANNUAL AVERAGES									
1931-1940 (a)	22,159	<b>10,811</b>	9,880	3,716	4,396	2,438	32	138	53,570
1941-1950 (a)	34,041	<b>21,292</b>	15,681	8,003	7,006	3,768	131	472	90,394
1951-1960	43,607	<b>33,948</b>	20,980	11,554	10,930	5,523	468	946	127,956
1961-1970	43,346	<b>39,057</b>	20,727	12,369	11,517	5,124	1,170	1,964	135,274
ANNUAL TOTALS									
1967	39,228	37,112	19,956	11,315	11,244	4,319	1,394	2,025	126,593
1968	39,893	40,261	19,112	11,291	12,073	5,033	1,541	2,155	131,359
1969	45,371	42,059	20,790	12,640	13,404	5,136	1,789	2,491	143,680
1970	44,847	42,684	20,475	12,479	14,075	5,011	2,016	2,881	144,468
1971	56,775	<b>44,900</b>	23,631	13,310	16,433	5,026	2,195	3,442	165,712

(a) For the period September 1939 to June 1947 natural increase was calculated as the excess of births over civilian deaths.

AUSTRALIA—NATURAL INCREASE PER 1,000 OF THE MEAN POPULATION

Period	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
ANNUAL AVERAGES									
1931-1940 (a)	8.32	<b>5.87</b>	10.14	6.33	9.74	10.50	5.73	(b)13.18	7.92
1941-1950 (a)	11.53	<b>10.45</b>	14.35	12.50	14.02	14.83	11.86	(b)28.03	12.04
1951-1960	12.32	<b>13.20</b>	15.55	13.81	16.50	17.23	26.49	(b)26.63	13.71
1961-1970 (c)	10.30	<b>12.25</b>	12.54	11.57	13.58	13.84	23.78	21.05	11.78
ANNUAL TOTALS (c)									
1967	9.13	11.32	11.73	10.19	12.78	11.51	22.50	19.56	10.72
1968	9.14	<b>12.10</b>	11.04	10.06	13.18	13.25	22.81	19.21	10.93
1969	10.20	<b>12.41</b>	11.78	11.09	14.03	13.34	24.46	20.48	11.71
1970	9.90	<b>12.37</b>	11.40	10.77	14.16	12.91	25.42	21.85	11.53
1971	12.31	<b>12.79</b>	12.91	11.31	15.93	12.85	25.43	23.86	12.96

(a) For the period September 1939 to June 1947 natural increase was calculated as the excess of births over civilian deaths.

(b) Rates affected by special local features.

(c) Rates have been recalculated following the final revision of population estimates for dates after 30 June 1966.

## VICTORIA—SUMMARY OF INTERCENSAL INCREASES

Census Year	Persons				Males			Females		
	Popula- tion	Intercensal increase		Popula- tion	Intercensal increase		Popula- tion	Intercensal increase		
		Numeri- cal	Per- centage		Numeri- cal	Per- centage		Numeri- cal	Per- centage	
1901	1,201,070	(a)60,982	(a)5.35	603,720	(a)5,498	(a)0.92	597,350	(a)55,484	(a)10.24	
1911	1,315,551	114,481	9.53	655,591	51,871	8.59	659,960	62,610	10.48	
1921	1,531,280	215,729	16.40	754,724	99,133	15.12	776,556	116,596	17.67	
1933	1,820,261	288,981	18.87	903,244	148,520	19.68	917,017	140,461	18.09	
1947	2,054,701	234,440	12.88	1,013,867	110,623	12.25	1,040,834	123,817	13.50	
1954	2,452,341	397,640	19.35	1,231,099	217,232	21.43	1,221,242	180,408	17.33	
1961	2,930,113	477,772	19.48	1,474,395	243,296	19.76	1,455,718	234,476	19.20	
1966	3,220,217	290,104	9.90	1,614,240	139,845	9.48	1,605,977	150,259	10.32	
1971	3,502,351	282,134	8.76	1,750,061	135,821	8.41	1,752,290	146,313	9.11	

(a) Since 1891.

## AUSTRALIA—CENSUS POPULATIONS OF CAPITAL CITIES (a)

Urban centre	1947	1954	1961	1966	1971
Sydney	1,484,004	1,863,161	2,197,022	2,447,219	2,725,064
Melbourne	1,226,409	1,524,111	1,858,534	2,108,401	2,394,117
Brisbane	402,030	502,320	587,634	716,402	818,423
Adelaide	382,454	483,508	580,449	728,279	809,482
Perth	272,528	348,647	423,930	500,246	641,800
Hobart	76,534	95,206	110,217	119,469	129,928
Canberra	15,156	28,277	55,746	92,311	156,298
Total	3,859,115	4,845,230	5,813,532	6,712,327	7,675,112
Percentage of Australia	51	54	55	58	60

(a) Some of the apparent increase in the percentage of total population living in capital cities is due to periodic revision and extension of urban boundaries; in particular Census figures from 1966 onwards have been based on the "Linge concepts" explained on page 117 of the 1972 *Victorian Year Book*. Figures for 1961 in the above table have been revised in accordance with these concepts. An explanation of the concepts used in 1971 is contained in each of the Census Field Count Statements.

## VICTORIA—ANALYSIS OF INTERCENSAL INCREASES IN POPULATION

Intercensal period	Population at end of period	Total increase	Natural increase	Net migration (a)
1947 to 1954	2,452,341	397,640	192,741	204,899
1954 to 1961	2,930,113	477,772	256,420	221,352
1961 to 1966	3,220,217	290,104	190,070	100,034
1966 to 1971	3,502,351	282,134	202,777	79,357

(a) Net intercensal gain after deducting natural increase from total increase.



## VICTORIA—POPULATION IN STATISTICAL DIVISIONS

Statistical division	Census (a)				
	1947	1954	1961	1966	1971
Melbourne	1,341,382	1,589,185	1,984,815	2,230,793	2,503,450
West Central	82,109	106,499	129,070	146,976	161,530
North Central	55,381	68,377	63,858	64,846	63,039
Western	159,368	180,051	198,022	203,432	199,505
Wimmera	54,171	57,686	58,799	60,017	55,587
Mallee	52,770	58,070	62,952	65,021	63,816
Northern	121,759	139,977	156,364	167,317	171,815
North Eastern	60,260	78,866	86,406	86,719	86,134
Gippsland	91,400	128,531	149,051	155,796	158,142
East Central	32,250	37,058	36,167	36,312	37,030
Migratory	3,851	8,041	4,609	2,988	2,303
<b>Total</b>	<b>2,054,701</b>	<b>2,452,341</b>	<b>2,930,113</b>	<b>3,220,217</b>	<b>3,502,351</b>

(a) Figures from 1947 to 1966 have been adjusted to show population in statistical divisions as defined for the Census 30 June 1971.

## VICTORIA—COMPONENTS OF INTERCENSAL CHANGES IN POPULATIONS OF STATISTICAL DIVISIONS, CENSUSES 1961 TO 1971

Statistical division	Population at Census 1961	1961-1966		Population at Census 1966	1966-1971		Population at Census 1971
		Natural increase	Apparent net migration (a)		Natural increase	Apparent net migration (a)	
Melbourne	1,984,815	122,092	123,886	2,230,793	144,422	128,235	2,503,450
West Central	129,070	8,900	9,006	146,976	9,148	5,406	161,530
North Central	63,858	3,425	- 2,437	64,846	2,662	- 4,469	63,039
Western	198,022	13,181	- 7,771	203,432	9,911	- 13,838	199,505
Wimmera	58,799	4,014	- 2,796	60,017	2,773	- 7,203	55,587
Mallee	62,952	5,641	- 3,572	65,021	4,594	- 5,799	63,816
Northern	156,364	11,788	- 835	167,317	10,734	- 6,236	171,815
North Eastern	86,406	6,324	- 6,011	86,719	5,301	- 5,886	86,134
Gippsland	149,051	12,532	- 5,787	155,796	11,373	- 9,027	158,142
East Central	36,167	2,173	- 2,028	36,312	1,859	- 1,141	37,030
Migratory	4,609	..	- 1,621	2,988	..	- 685	2,303
<b>Total</b>	<b>2,930,113</b>	<b>190,070</b>	<b>100,034</b>	<b>3,220,217</b>	<b>202,777</b>	<b>79,357</b>	<b>3,502,351</b>

NOTE. In the above table, populations of statistical divisions in 1961 have been adjusted to conform with boundaries as defined at the 1971 Census. Figures shown for natural increase in the Melbourne, West Central, and East Central Statistical Divisions for the 1961-1966 period have been estimated. As changes affecting the North Central and Northern Statistical Divisions had only a slight effect on population, figures of components of increase for these divisions have been shown without adjustment.

Minus (-) sign denotes decrease.

(a) Total increase less natural increase.

VICTORIA—POPULATION OF VICTORIA, MELBOURNE STATISTICAL  
DIVISION, AND REMAINDER OF THE STATE

Census year	Victoria	Melbourne Statistical Division (a)		Remainder of State	
		Number	Percentage of Victoria	Number	Percentage of Victoria
1901	1,201,070	535,008	44.54	666,062	55.46
1911	1,315,551	643,027	48.88	672,524	51.12
1921	1,531,280	863,692	56.40	667,588	43.60
1933	1,820,261	1,094,269	60.12	725,992	39.88
1947	2,054,701	1,341,382	65.28	713,319	34.72
1954	2,452,341	1,589,185	64.80	863,156	35.20
1961	2,930,113	1,984,815	67.74	945,298	32.26
1966	3,220,217	2,230,793	69.27	989,424	30.73
1971	3,502,351	2,503,450	71.48	998,901	28.52

(a) Area as defined for Census, 30 June 1971.

VICTORIA—AGES (a) OF THE POPULATION : PERCENTAGE  
INTERCENSAL INCREASES, 1947 TO 1966

Age group (years)	Population at Census				Percentage increase		
	1954	1961	1966	1971	1954-1961	1961-1966	1966-1971
0-4	258,335	307,532	320,581	344,721	19.04	4.24	7.53
5-9	238,857	288,770	320,587	335,180	20.90	11.02	4.55
10-14	180,807	277,854	298,725	332,648	53.67	7.51	11.36
15-19	153,721	219,365	289,716	304,663	42.70	32.07	5.16
20-24	160,930	195,076	237,896	296,349	21.22	21.95	24.57
25-29	194,470	186,724	209,731	253,026	- 3.98	12.32	20.64
30-34	195,595	209,542	194,382	220,325	7.13	- 7.23	13.35
35-39	173,694	217,856	216,297	205,217	25.43	- 0.72	- 5.12
40-44	172,584	187,624	217,853	219,030	8.71	16.11	0.54
45-49	152,358	181,826	186,125	216,452	19.34	2.36	16.29
50-54	137,512	158,846	176,845	179,590	15.51	11.33	1.55
55-59	114,856	131,730	150,817	164,015	14.69	14.49	8.75
60-64	108,442	115,027	122,989	136,174	6.07	6.92	10.72
65-69	83,158	95,755	100,326	106,055	15.15	4.77	5.71
70-74	58,227	73,610	78,660	81,408	26.42	6.86	3.49
75-79	36,970	45,364	54,474	56,411	22.70	20.08	3.56
80-84	20,454	24,232	28,078	33,087	18.47	15.87	17.84
85-89	8,733	10,080	11,546	13,355	15.42	14.54	15.67
90-94	2,346	2,809	3,269	3,872	19.74	16.38	18.45
95-99	276	451	582	713	63.41	29.05	22.51
100 and over	16	40	47	60	150.00	17.50	27.66
Total	2,452,341	2,930,113	3,219,526	3,502,351	19.48	9.88	8.78
Under 21	861,456	1,133,379	1,280,838	1,376,188	31.57	13.01	7.44
21-64	1,380,705	1,544,393	1,661,706	1,831,202	11.86	7.60	10.20
65 and over	210,180	252,341	276,982	294,961	20.06	9.76	6.49

(a) Recorded ages, adjusted by distribution of unspecified ages.

Minus (-) sign denotes decrease.

See also introductory note on page 784.

VICTORIA—PROPORTIONS OF POPULATION IN AGE GROUPS (a)  
(per cent)

Age last birthday (years)	Census				
	1947	1954	1961	1966	1971
0-4	9.60	10.53	10.50	9.96	9.84
5-9	7.50	9.74	9.85	9.96	9.57
10-14	6.59	7.37	9.48	9.28	9.50
15-19	7.40	6.27	7.49	9.00	8.70
20-24	8.08	6.56	6.66	7.39	8.46
25-29	7.76	7.93	6.37	6.51	7.23
30-34	7.80	7.98	7.15	6.04	6.29
35-39	7.39	7.08	7.43	6.72	5.86
40-44	6.78	7.04	6.40	6.77	6.25
45-49	6.47	6.21	6.20	5.78	6.18
50-54	5.98	5.61	5.42	5.49	5.13
55-59	5.45	4.68	4.50	4.68	4.68
60-64	4.35	4.42	3.93	3.82	3.89
65-69	3.34	3.39	3.27	3.12	3.03
70-74	2.41	2.38	2.51	2.44	2.32
75-79	1.71	1.51	1.55	1.69	1.61
80-84	0.95	0.83	0.83	0.87	0.95
85-89	0.36	0.36	0.34	0.36	0.38
90 and over	0.08	0.11	0.12	0.12	0.13
All ages	100.00	100.00	100.00	100.00	100.00
Under 21	32.63	35.13	38.68	39.79	39.29
21-64	58.57	56.30	52.71	51.61	52.29
65 and over	8.85	8.57	8.61	8.60	8.42

(a) Recorded ages adjusted by distribution of unspecified ages.

VICTORIA—MASCULINITY (a) OF POPULATION IN AGE GROUPS (b)

Age last birthday (years)	Census				
	1947	1954	1961	1966	1971
0-4	104.59	104.78	105.02	105.11	104.46
5-9	104.07	104.76	105.43	105.02	105.46
10-14	103.13	104.00	104.70	105.30	104.98
15-19	101.93	105.11	105.38	104.31	105.01
20-24	98.04	108.47	106.81	102.55	99.81
25-29	97.47	108.93	108.48	105.65	103.20
30-34	97.11	105.66	110.07	107.07	105.45
35-39	100.75	102.26	105.67	108.37	105.09
40-44	105.25	105.37	102.83	104.26	106.75
45-49	99.81	107.60	103.42	102.15	103.53
50-54	92.13	102.83	104.90	100.88	100.17
55-59	93.81	92.01	102.96	102.16	98.17
60-64	89.07	85.99	88.45	96.54	93.82
65-69	84.45	83.43	77.79	80.03	87.28
70-74	77.44	75.41	73.81	68.62	70.44
75-79	75.56	68.96	66.56	63.31	58.71
80-84	72.51	62.29	58.24	54.66	51.80
85-89	64.41	59.77	51.28	46.45	43.68
90-94	56.93	50.10	47.76	39.88	33.79
95-99	50.76	35.29	37.50	33.79	34.53
100 and over	10.00	33.33	25.00	17.50	66.67
All ages	97.41	100.81	101.28	100.52	99.87

(a) Number of males per 100 females.

(b) Recorded ages adjusted by distribution of unspecified ages.

**Census 1971**  
(1972 : pages 113-22)

**VICTORIA—AGE DISTRIBUTION OF THE POPULATION**

Age last birthday (years)	Census 1966			Census 1971			Increase in persons 1966 to 1971
	Males	Females	Persons	Males	Females	Persons	
0-4	164,283	156,298	320,581	176,117	168,604	344,721	24,140
5-9	164,216	156,371	320,587	172,047	163,133	335,180	14,593
10-14	153,220	145,505	298,725	170,368	162,280	332,648	33,923
15-19	147,914	141,802	289,716	156,051	148,612	304,663	14,947
20-24	120,447	117,449	237,896	148,030	148,319	296,349	58,453
25-29	107,745	101,986	209,731	128,503	124,523	253,026	43,295
30-34	100,508	93,874	194,382	113,084	107,241	220,325	25,943
35-39	112,493	103,804	216,297	105,157	100,060	205,217	- 11,080
40-44	111,196	106,657	217,853	113,093	105,937	219,030	1,177
45-49	94,051	92,074	186,125	110,102	106,350	216,452	30,327
50-54	88,808	88,037	176,845	89,870	89,720	179,590	2,745
55-59	76,214	74,603	150,817	81,249	82,766	164,015	13,198
60-64	60,411	62,578	122,989	65,916	70,258	136,174	13,185
65-69	44,600	55,726	100,326	49,427	56,628	106,055	5,729
70-74	32,010	46,650	78,660	33,644	47,764	81,408	2,748
75-79	21,117	33,357	54,474	20,868	35,543	56,411	1,937
80-84	9,923	18,155	28,078	11,290	21,797	33,087	5,009
85-89	3,662	7,884	11,546	4,060	9,295	13,355	1,809
90-94	932	2,337	3,269	978	2,894	3,872	603
95-99	147	435	582	183	530	713	131
100 and over	7	40	47	24	36	60	13
<b>Total</b>	<b>1,613,904</b>	<b>1,605,622</b>	<b>3,219,526</b>	<b>1,750,061</b>	<b>1,752,290</b>	<b>3,502,351</b>	<b>282,825</b>
<b>Under 21</b>	<b>655,694</b>	<b>625,144</b>	<b>1,280,838</b>	<b>704,291</b>	<b>671,897</b>	<b>1,376,188</b>	<b>95,350</b>
<b>21-64</b>	<b>845,812</b>	<b>815,894</b>	<b>1,661,706</b>	<b>925,296</b>	<b>905,906</b>	<b>1,831,202</b>	<b>169,496</b>
<b>65 and over</b>	<b>112,398</b>	<b>164,584</b>	<b>276,982</b>	<b>120,474</b>	<b>174,487</b>	<b>294,961</b>	<b>17,979</b>
<b>Total</b>	<b>1,613,904</b>	<b>1,605,622</b>	<b>3,219,526</b>	<b>1,750,061</b>	<b>1,752,290</b>	<b>3,502,351</b>	<b>282,825</b>

Minus (—) sign denotes decrease.

See also introductory note on page 784.

## VICTORIA—NATIONALITY OF THE POPULATION

Nationality	Census 1966			Census 1971		
	Males	Females	Persons	Males	Females	Persons
<b>British (a)—</b>						
Born in Australia	1,249,368	1,289,560	2,538,928	1,329,148	1,375,481	2,704,629
Born outside Australia	255,273	219,718	474,991	284,306	251,990	536,296
<b>Total British</b>	<b>1,504,641</b>	<b>1,509,278</b>	<b>3,013,919</b>	<b>1,613,454</b>	<b>1,627,471</b>	<b>3,240,925</b>
<b>Foreign—</b>						
Dutch	8,655	7,394	16,049	6,048	5,324	11,372
German	8,529	6,903	15,432	6,302	5,261	11,563
Greek	26,104	27,337	53,441	27,819	28,280	56,099
Italian	37,499	34,030	71,529	35,981	32,963	68,944
Polish	2,838	2,414	5,252	1,410	1,307	2,717
U.S. American	1,790	1,265	3,055	2,466	2,086	4,552
Yugoslav	8,029	5,678	13,707	15,025	12,694	27,719
Other (including stateless and not stated)	15,819	11,323	27,142	41,556	36,904	78,460
<b>Total foreign</b>	<b>109,263</b>	<b>96,344</b>	<b>205,607</b>	<b>136,607</b>	<b>124,819</b>	<b>261,426</b>
<b>Grand total</b>	<b>1,613,904</b>	<b>1,605,622</b>	<b>3,219,526</b>	<b>1,750,061</b>	<b>1,752,290</b>	<b>3,502,351</b>

(a) All persons of individual citizenship status who by virtue of the *Nationality and Citizenship Act 1948* are deemed to be British subjects. For purposes of this table Irish nationality is included with British. See also introductory note on page 784.

## VICTORIA—BIRTHPLACE OF THE POPULATION

Birthplace	Census 1966			Census 1971		
	Males	Females	Persons	Males	Females	Persons
Australia	1,249,368	1,289,560	2,538,928	1,329,148	1,375,481	2,704,629
New Zealand	5,738	5,945	11,683	7,948	7,952	15,900
<b>Europe—</b>						
United Kingdom and Republic of Ireland	124,415	114,991	239,406	139,071	131,500	270,571
Germany	18,982	18,288	37,270	18,472	18,227	36,699
Greece	32,884	31,391	64,275	40,441	38,607	79,048
Italy	61,091	50,128	111,219	65,614	56,144	121,758
Malta	14,804	11,648	26,452	14,110	11,677	25,787
Netherlands	19,092	15,554	34,646	18,558	15,381	33,939
Poland	13,986	10,711	24,697	13,164	10,475	23,639
Yugoslavia	14,574	10,060	24,634	27,630	22,146	49,776
Other	31,082	24,496	55,578	32,502	26,739	59,241
<b>Total Europe</b>	<b>330,910</b>	<b>287,267</b>	<b>618,177</b>	<b>369,562</b>	<b>330,896</b>	<b>700,458</b>
<b>Other birthplaces</b>	<b>27,888</b>	<b>22,850</b>	<b>50,738</b>	<b>43,403</b>	<b>37,961</b>	<b>81,364</b>
<b>Grand total</b>	<b>1,613,904</b>	<b>1,605,622</b>	<b>3,219,526</b>	<b>1,750,061</b>	<b>1,752,290</b>	<b>3,502,351</b>

See also introductory note on page 784.

## VICTORIA—PERIOD OF RESIDENCE IN AUSTRALIA

Number of completed years of residence	Census 1966			Census 1971		
	Males	Females	Persons	Males	Females	Persons
Under 1	24,474	21,213	45,687	24,238	21,641	45,879
1	20,061	17,973	38,034	23,152	21,401	44,553
2	19,153	17,784	36,937	20,387	18,626	39,013
3	15,352	14,184	29,536	15,499	14,265	29,764
4	11,349	12,884	24,233	15,503	14,084	29,587
Under 5	90,389	84,038	174,427	98,779	90,017	188,796
5 and under 12	104,277	96,881	201,158	92,195	85,173	177,368
12 and over	161,959	128,470	290,429	199,444	170,422	369,866
Not stated	7,911	6,673	14,584	30,495	31,197	61,692
Born outside Aus- tralia	364,536	316,062	680,598	420,913	376,809	797,722
Born in Australia	1,249,368	1,289,560	2,538,928	1,329,148	1,375,481	2,704,629
Total	1,613,904	1,605,622	3,219,526	1,750,061	1,752,290	3,502,351

See also introductory note on page 784.

## VICTORIA—MARITAL STATUS OF POPULATION

Marital status	Census 1966			Census 1971		
	Males	Females	Persons	Males	Females	Persons
Never married—						
Under fifteen years of age	481,719	458,174	939,893	518,532	494,017	1,012,549
Fifteen years of age and over	344,297	260,301	604,598	357,626	268,004	625,630
Total never married	826,016	718,475	1,544,491	876,158	762,021	1,638,179
Married	725,320	722,266	1,447,586	803,203	804,701	1,607,904
Married but permanently separated	19,938	24,134	44,072	22,659	27,063	49,722
Widowed	32,875	128,311	161,186	34,402	141,767	176,169
Divorced	9,755	12,436	22,191	13,639	16,738	30,377
Total	1,613,904	1,605,622	3,219,526	1,750,061	1,752,290	3,502,351

See also introductory note on page 784.

## VICTORIA—RELIGION OF THE POPULATION

Religion	Census 1966			Census 1971		
	Males	Females	Persons	Males	Females	Persons
Christian—						
Baptist	19,469	21,950	41,419	19,357	22,396	41,753
Brethren	1,505	1,741	3,246	2,520	2,842	5,362
Catholic, Roman(a)	134,108	119,839	253,947	208,731	200,133	408,864
Catholic(a)	314,704	320,844	635,548	292,174	302,788	594,962
Church of England	455,772	467,306	923,078	434,106	458,462	892,568
Churches of Christ	18,560	20,703	39,263	15,089	17,861	32,950
Congregational	5,394	6,426	11,820	4,144	5,108	9,252
Lutheran	19,052	18,585	37,637	19,770	20,062	39,832
Methodist	135,296	144,004	279,300	121,962	134,096	256,058
Orthodox	52,279	48,108	100,387	72,801	67,799	140,600
Presbyterian	188,067	199,041	387,108	174,396	189,942	364,338
Protestant, undefined	22,046	22,410	44,456	54,505	58,846	113,351
Salvation Army	6,954	7,796	14,750	7,958	9,329	17,287
Seventh-day Adventist	3,220	3,929	7,149	3,421	4,218	7,639
Other	16,554	17,339	33,893	27,260	28,568	55,828
Total Christian	1,393,080	1,420,021	2,813,101	1,458,194	1,522,450	2,980,644
Non-Christian—						
Hebrew	15,456	15,602	31,058	14,899	15,218	30,117
Other	2,699	1,491	4,190	7,164	4,992	12,156
Total non-Christian	18,155	17,093	35,248	22,063	20,210	42,273
Indefinite	5,078	4,400	9,478	4,394	3,398	7,792
No religion	17,569	10,396	27,965	152,161	104,269	256,430
No reply	180,022	153,712	333,734	113,249	101,963	215,212
Grand total	1,613,904	1,605,622	3,219,526	1,750,061	1,752,290	3,502,351

(a) So described on individual census schedules.

See also introductory note on page 784.

## VICTORIA—INDUSTRY (a) OF THE POPULATION, CENSUS 1971

Industry group	Number			Percentage of employed		
	Males	Females	Persons	Males	Females	Persons
Agriculture, forestry, fishing, and hunting	77,579	18,070	95,649	7.96	3.81	6.60
Mining	5,287	855	6,142	0.54	0.18	0.42
Manufacturing	282,475	119,884	402,359	28.97	25.28	27.77
Electricity, gas, and water	24,467	2,178	26,645	2.51	0.46	1.84
Construction	93,047	5,212	98,259	9.55	1.10	6.78
Wholesale and retail trade	167,598	103,307	270,905	17.19	21.78	18.69
Transport and storage	59,585	8,336	67,921	6.11	1.76	4.69
Communication	21,447	6,818	28,265	2.20	1.44	1.95
Finance, insurance, real estate, and business services	57,845	41,858	99,703	5.93	8.83	6.88
Public administration and defence	52,675	16,373	69,048	5.40	3.45	4.76
Community services	60,138	90,840	150,978	6.17	19.16	10.42
Entertainment, recreation, restaurants, hotels, and personal services	27,410	37,841	65,251	2.81	7.98	4.50
Other and not stated	45,436	22,613	68,049	4.66	4.77	4.70
Total employed	974,989	474,185	1,449,174	100.00	100.00	100.00
Unemployed	14,078	9,739	23,817			
Total labour force	989,067	483,924	1,472,991			
Persons not in labour force	760,994	1,268,366	2,029,360			
Grand total	1,750,061	1,752,290	3,502,351			

(a) Industry is defined as the branch of productive activity, business, or service carried out by the establishment in which a person is employed. Establishments have been classified according to the Australian Standard Industrial Classification.

See also introductory note on page 784.

## VICTORIA—POPULATION BY LEVEL OF SCHOOLING, CENSUS 1971

Highest level attended	Number			Percentage		
	Males	Females	Persons	Males	Females	Persons
<b>Currently attending school—</b>						
Grades 1 and 2	102,387	95,889	198,276	5.85	5.47	5.66
Grade 3	36,518	34,276	70,794	2.09	1.96	2.02
Grade 4	36,266	34,185	70,451	2.07	1.95	2.01
Grade 5	35,237	33,248	68,485	2.01	1.90	1.96
Grade 6	34,416	32,812	67,228	1.97	1.87	1.92
Form 1	34,050	32,101	66,151	1.95	1.83	1.89
Form 2	33,712	31,970	65,682	1.93	1.82	1.88
Form 3	31,517	29,593	61,110	1.80	1.69	1.74
Form 4	25,028	23,355	48,383	1.43	1.33	1.38
Forms 5 and 6	26,200	24,539	50,739	1.50	1.40	1.45
<b>Total</b>	<b>395,331</b>	<b>371,968</b>	<b>767,299</b>	<b>22.60</b>	<b>21.22</b>	<b>21.91</b>
<b>Not currently attending school—</b>						
Grades 1 and 2	5,814	6,481	12,295	0.33	0.37	0.35
Grade 3	9,258	10,596	19,854	0.53	0.60	0.57
Grade 4	13,288	20,175	38,463	1.04	1.15	1.10
Grade 5	32,410	32,515	64,925	1.85	1.86	1.85
Grade 6	131,765	149,036	280,801	7.53	8.51	8.02
Form 1	51,274	54,594	105,868	2.93	3.12	3.02
Form 2	231,381	270,447	501,828	13.22	15.43	14.33
Form 3	160,780	154,609	315,389	9.19	8.82	9.01
Form 4	171,065	181,343	352,408	9.77	10.35	10.06
Forms 5 and 6	301,129	256,970	558,099	17.21	14.67	15.93
<b>Total</b>	<b>1,113,164</b>	<b>1,136,766</b>	<b>2,249,930</b>	<b>63.60</b>	<b>64.88</b>	<b>64.24</b>
<b>Child not yet attending school</b>	<b>178,447</b>	<b>170,780</b>	<b>349,227</b>	<b>10.20</b>	<b>9.75</b>	<b>9.97</b>
<b>Never attended school</b>	<b>7,393</b>	<b>9,494</b>	<b>16,887</b>	<b>0.42</b>	<b>0.54</b>	<b>0.48</b>
<b>Not stated</b>	<b>55,726</b>	<b>63,282</b>	<b>119,008</b>	<b>3.18</b>	<b>3.61</b>	<b>3.40</b>
<b>Total</b>	<b>1,750,061</b>	<b>1,752,290</b>	<b>3,502,351</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>



VICTORIA—PERCENTAGE AREA OF STATE AND POPULATION IN  
STATISTICAL DIVISIONS, CENSUS 1971

Statistical division	Per cent area of State	Males	Females	Persons	Percentage of population of State	Persons to the square mile
Melbourne	2.7	1,242,823	1,260,627	2,503,450	71.5	1,057.2
West Central	2.6	81,048	80,482	161,530	4.6	70.7
North Central	5.4	32,705	30,334	63,039	1.8	13.3
Western	16.3	99,543	99,962	199,505	5.7	13.9
Wimmera	13.9	27,785	27,802	55,587	1.6	4.6
Mallee	16.3	32,512	31,304	63,816	1.8	4.4
Northern	11.6	86,374	85,441	171,815	4.9	16.9
North Eastern	13.9	44,384	41,750	86,134	2.5	7.0
Gippsland	15.2	81,607	76,535	158,142	4.5	11.8
East Central	2.1	19,178	17,852	37,030	1.0	20.2
Migratory	..	2,103	200	2,303	0.1	..
Total	100.0	1,750,061	1,752,290	3,502,351	100.0	39.9

VICTORIA—PERCENTAGE OF POPULATION AND MASCULINITY IN  
URBAN AND RURAL AREAS (a)

Area (a)	Percentage of population				Masculinity (b)
	Census 1966		Census 1971		Census 1971
	Persons	Males	Females	Persons	
Major urban	68.7	71.1	72.2	71.6	98.3
Other urban	16.8	15.9	16.2	16.1	98.1
Rural	14.4	12.9	11.6	12.2	111.1
Migratory	0.1	0.1	0.0	0.1	1,051.5
Total	100.0	100.0	100.0	100.0	99.9

(a) Urban and rural in this table are determined on the basis of the "Linge concepts" explained under the heading *Delimitation of urban boundaries* on page 117 of the 1972 *Victorian Year Book*.

(b) Number of males per 100 females.

## VICTORIA—SUMMARY OF POPULATION

Area	Census populations		Intercensal variation	
	1966	1971	Numerical	Per cent
Urban Melbourne (See pages 797-8 for details)	2,108,401	2,394,117	285,716	13.6
Urban Geelong—				
Bellarine Shire (part)	6,584	8,766	2,182	33.1
Corio City (part)	33,297	36,614	3,317	10.0
Geelong City	18,129	17,836	— 293	— 1.6
Geelong West City	17,538	17,248	— 290	— 1.7
Newtown City	11,700	11,621	— 79	— 0.7
South Barwon Shire (part)	17,812	23,096	5,284	29.7
Total urban Geelong	105,060	115,181	10,121	9.6
Urban Ballarat—				
Ballaarat City (part)	41,048	39,358	— 1,690	— 4.1
Ballarat Shire (part)	10,245	12,566	2,321	22.7
Buninyong Shire (part)	(a)	1,074	1,074	..
Bungaree Shire (part)	(a)	322	322	..
Grenville Shire (part)	53	32	— 21	—39.6
Sebastopol Borough	4,966	5,268	302	6.1
Total urban Ballarat	56,312	58,620	2,308	4.1
Urban Bendigo—				
Bendigo City (part)	30,159	31,866	1,707	5.7
Eaglehawk Borough (part)	4,726	4,820	94	2.0
Marong Shire (part)	2,988	3,722	734	24.6
Strathfieldsaye Shire (part)	4,029	5,528	1,499	37.2
Total urban Bendigo	41,902	45,936	4,034	9.6
Urban Moe-Yallourn—				
Moe City	16,555	15,605	— 950	— 5.7
Morwell Shire (part)	537	229	— 308	—57.4
Narracan Shire (part)	1,880	1,808	— 72	— 3.8
Yallourn Works Area	4,250	3,221	— 1,029	—24.2
Total urban Moe-Yallourn	23,222	20,863	— 2,359	—10.2
Balance of urban population in Victoria	418,642	437,411	18,769	4.5
State summary—				
Major urban (b)	2,213,461	2,509,298	295,837	13.4
Other urban	540,078	562,830	22,752	4.2
Total all urban	2,753,539	3,072,128	318,589	11.6
Rural	463,690	427,920	— 35,770	— 7.7
Migratory	2,988	2,303	— 685	—22.9
Total Victoria	3,220,217	3,502,351	282,134	8.8

(a) Due to variations in area, no population estimates were made for these areas in 1966.

(b) Components are urban Melbourne and urban Geelong.

Minus (—) sign denotes decrease.

NOTE. The 1966 Census summary of population has been revised to include the Aboriginal population.

VICTORIA—URBAN CENTRES: NUMBER AND POPULATION IN GROUPS OF VARIOUS SIZES

Population size of urban centres	Census 1966			Census 1971		
	Number of urban centres	Population	Percentage of State population	Number of urban centres	Population	Percentage of State population
500,000 and over	1	2,108,401	65.5	1	2,394,117	68.4
100,000-499,999	1	105,060	3.3	1	115,181	3.3
50,000-99,999	1	56,312	1.7	1	58,620	1.7
25,000-49,999	2	50,555	1.6	(a) 2	56,464	1.6
20,000-24,999	1	23,222	0.7	1	20,863	0.6
15,000-19,999	4	66,891	2.1	4	70,533	2.0
10,000-14,999	4	47,638	1.5	6	72,579	2.1
5,000-9,999	16	122,688	3.8	(b) 14	102,255	2.9
2,500-4,999	26	83,144	2.6	(c) 28	90,685	2.6
2,000-2,499	9	19,917	0.6	11	24,336	0.7
1,000-1,999	47	63,797	2.0	43	61,480	1.8
Less than 1,000 (d)	8	5,914	0.2	7	5,015	0.1
<b>Total urban population</b>	<b>120</b>	<b>2,753,539</b>	<b>85.5</b>	<b>119</b>	<b>3,072,128</b>	<b>87.7</b>

500,000 and over	1	2,108,401	65.5	1	2,394,117	68.4
100,000 " "	2	2,213,461	68.7	2	2,509,298	71.7
50,000 " "	3	2,269,773	70.5	3	2,567,918	73.4
25,000 " "	5	2,320,328	72.1	5	2,624,382	75.0
20,000 " "	6	2,343,550	72.8	6	2,645,245	75.6
15,000 " "	10	2,410,441	74.9	10	2,715,778	77.6
10,000 " "	14	2,458,079	76.3	16	2,788,357	79.7
5,000 " "	30	2,580,767	80.1	30	2,890,612	82.6
2,500 " "	56	2,663,911	82.7	58	2,981,297	85.2
2,000 " "	65	2,683,828	83.3	69	3,005,633	85.9
1,000 " "	112	2,747,625	85.3	112	3,067,113	87.7
<b>Total urban population</b>	<b>120</b>	<b>2,753,539</b>	<b>85.5</b>	<b>119</b>	<b>3,072,128</b>	<b>87.8</b>

(a) Includes that part of urban Albury-Wodonga in Victoria (population 10,528). Total population of Albury-Wodonga—1966, 32,032; 1971, 37,931.

(b) Includes that part of urban Echuca-Moama in Victoria (population 7,505). Total population of Echuca-Moama—1966, 8,011; 1971, 8,631.

(c) Includes that part of urban Yarrowonga-Mulwala in Victoria (population 3,118). Total population of Yarrowonga-Mulwala—1966, 3,990; 1971, 3,980.

(d) Includes 8 centres in 1966 and 7 centres in 1971 having a population of less than 1,000.

VICTORIA—POPULATIONS OF CERTAIN URBAN CENTRES

Urban centre	Census populations		Percentage variation (i)	Urban centre	Census populations		Percentage variation (i)
	1966	1971			1966	1971	
<b>Urban Melbourne—</b>				<b>Urban Melbourne—</b>			
Altona	25,020	30,589	22.3	<i>continued</i>			
Berwick (a)	13,137	14,372	9.4	Footscray	58,832	57,810	- 1.7
Box Hill	54,534	54,635	0.2	Frankston (a)	38,718	58,048	49.9
Brighton	40,618	39,109	- 3.7	Hawthorn	36,728	37,571	2.3
Broadmeadows (a)	86,926	100,690	15.8	Heidelberg	63,932	68,013	6.4
Brunswick	52,018	51,560	- 0.9	Keilor (a)	40,430	54,936	35.9
Camberwell	99,913	98,302	- 1.6	Kew	32,819	32,564	- 0.8
Caulfield	76,119	81,865	7.5	Knox (a)	32,394	54,213	67.4
Chelsea	24,789	26,372	6.4	Lilydale (a)	13,232	26,792	102.5
Coburg	68,577	65,662	- 4.3	Malvern	50,061	50,560	1.0
Collingwood	22,469	21,022	- 6.4	Melbourne	76,006	75,830	- 0.2
Cranbourne (a)	143	909	535.7	Moorabbin	103,787	109,588	5.6
Croydon (a)	21,357	27,556	29.0	Mordialloc	28,078	29,753	6.0
Dandenong (a)	31,056	40,652	30.9	Mornington (a)	1,704	13,354	683.7
Diamond Valley (a)	20,997	34,439	64.0	Northcote	56,213	59,303	5.5
Doncaster and Templestowe (a)	33,383	59,561	78.4	Nunawading	74,578	90,702	21.6
Eltham (a)	14,115	18,026	27.7	Oakleigh	52,769	57,284	8.6
Essendon	58,258	57,583	- 1.2	Port Melbourne	12,591	11,705	- 7.0
Fitzroy	27,227	25,708	- 5.6	Prahran	54,658	56,766	3.9
Flinders (a)	(g)	13,135	..	Preston	89,775	91,584	2.0
				Richmond	32,532	28,341	- 12.9

VICTORIA—POPULATIONS OF CERTAIN URBAN CENTRES—*continued*

Urban centre	Census populations		Percentage variation (i)	Urban centre	Census populations		Percentage variation (i)
	1966	1971			1966	1971	
<b>Urban Melbourne—<i>continued</i></b>				<b>Other urban centres—<i>continued</i></b>			
Ringwood	29,141	34,751	19.3	Kilmore	1,096	1,475	34.6
St Kilda	58,138	61,203	5.3	Koroit	1,006	1,019	1.3
Sandringham	36,672	35,460	- 3.3	Korumburra	2,991	2,891	- 3.3
Sherbrooke (a)	9,999	15,383	53.8	Kyabram	4,645	5,081	9.4
South Melbourne	30,233	26,995	- 10.7	Kyneton	3,446	3,492	1.3
Springvale (a)	37,669	57,385	52.3	Lakes Entrance	1,851	2,591	40.0
Sunshine (a)	69,086	75,809	9.7	Lara	1,510	2,095	38.7
Waverley (a)	68,896	96,826	40.5	Leongatha	3,246	3,389	4.4
Werribee (a)	6,128	8,467	38.2	Leopold (h)	958	1,444	50.8
Whittlesea (a)	11,497	25,319	120.2	Lorne	958	1,412	46.8
Williamstown	30,449	30,055	- 1.3	Maffra	3,569	3,666	2.7
<b>Total urban Melbourne</b>	<b>2,108,401</b>	<b>2,394,117</b>	<b>13.6</b>	Mansfield	2,019	1,956	- 3.1
<b>Other urban centres—</b>				Maryborough	7,707	7,472	- 3.0
Albury-Wodonga (part) (b)	8,653	10,528	21.7	Melton (h)	1,684	4,511	166.6
Alexandra	2,014	1,864	- 7.4	Merbein	1,584	1,588	0.3
Anglesea	726	1,065	46.7	Mildura	12,934	13,198	2.0
Apollo Bay	957	829	- 13.4	Moe-Yallourn	23,222	20,863	- 10.2
Ararat	8,246	8,312	0.8	Mooroopna	2,570	3,534	37.5
Bacchus Marsh	3,707	4,137	11.6	Mortlake	1,248	1,266	1.4
Bairnsdale	7,960	8,552	7.4	Morwell	16,635	16,853	1.3
Baliarat	56,312	58,620	4.1	Mount Beauty	1,568	1,571	0.2
Barham-Koondrook (part) (c)	604	593	- 1.8	Murtoa	1,109	1,035	- 6.7
Beaufort	1,264	1,201	- 5.0	Myrtleford	2,545	2,741	7.7
Beechworth	3,555	3,119	- 12.3	Nathalia	1,369	1,277	- 6.7
Benalla	8,224	8,255	0.4	Nhill	2,251	2,109	- 6.3
Bendigo	41,902	45,936	9.6	Numurkah	2,770	2,582	- 6.8
Berwick	1,720	3,289	91.2	Ocean Grove—			
Birchip	1,147	1,041	- 9.2	Barwon Heads	3,144	4,016	27.0
Bright	747	858	14.9	Orbost	2,797	2,938	5.0
Broadford	1,605	1,534	- 4.4	Ouyen	1,645	1,564	- 5.0
Camperdown	3,540	3,477	- 1.8	Pakenham East	1,680	2,017	20.1
Casterton	2,492	2,175	- 12.7	Paynesville	611	1,368	124.1
Castlemaine	8,030	7,699	- 4.1	Portarlington	1,224	1,360	11.1
Charlton	1,605	1,403	- 12.6	Port Fairy	2,572	2,427	- 5.9
Churchill	1,233	2,416	96.8	Portland	7,022	8,216	17.0
Cobden	2,892	1,329	- 53.8	Queenscliffe	2,788	2,807	0.7
Cobram	2,069	3,191	10.3	Red Cliffs	2,439	2,245	- 7.9
Cohuna	2,069	2,136	3.2	Robinvale	1,430	1,547	8.9
Colac	9,499	10,362	9.1	Rochester	2,122	2,232	5.2
Coleraine	1,518	1,386	- 8.7	Rushworth	1,093	1,072	- 1.9
Corowa-Wahgunyah (part) (f)	390	390	0.0	Rutherglen	1,287	1,177	- 8.5
Corryong	1,665	1,402	- 15.8	Sale	8,708	10,436	19.8
Cowes	766	1,029	34.3	Seymour	5,505	5,779	5.0
Craigieburn (h)	1,337	1,337	0.0	Shepparton	17,488	19,410	11.0
Cranbourne (h)	2,437	2,437	0.0	St Arnaud	3,004	2,779	- 7.5
Creswick	1,658	1,756	5.9	St Leonards	297	2,475	732.0
Crib Point	1,829	1,915	4.7	Stawell	5,909	5,800	- 1.8
Daylesford	2,664	2,926	9.8	Sunbury	3,526	5,098	44.6
Dimboola	1,898	1,696	- 10.6	Swan Hill	7,398	7,712	4.2
Donald	1,626	1,448	- 10.9	Tatura	2,496	2,508	0.5
Drouin	2,655	2,954	11.3	Terang	1,991	1,730	- 13.1
Echuca-Moama (part) (d)	7,044	7,505	6.5	Torquay	1,477	1,937	31.1
Emerald (h)	1,591	1,591	0.0	Trafalgar	1,729	1,832	6.0
Euroa	2,789	2,679	- 3.9	Traralgon	14,080	14,666	4.2
Geelong	105,060	115,181	9.6	Warragatta	15,268	15,586	2.1
Hamilton	10,062	9,673	- 3.9	Warburton	1,545	1,583	2.5
Hampton Park	1,330	1,330	0.0	Warracknabeal	3,151	2,868	- 9.0
Hastings	1,136	1,897	67.0	Warragul	6,846	7,401	8.0
Healesville	2,683	3,129	16.6	Warrandyte	1,085	2,812	159.2
Heathcote	1,187	1,082	- 8.8	Warrambool	17,500	18,684	6.8
Heyfield	1,893	1,830	- 3.3	Werribee	8,233	12,872	56.3
Heywood	1,016	1,299	27.9	Wonthaggi	4,561	4,438	- 2.7
Horsham	10,562	11,045	4.6	Woodend	1,221	1,290	5.7
Inverloch	852	1,074	26.1	Yarra Junction	1,121	1,193	6.4
Kerang	4,164	4,103	- 1.5	Yarra Yarra	2,015	2,046	1.5
				Yarrowonga—			
				Mulwala (part) (e)	3,163	3,118	- 1.4
				Yea	1,084	1,055	- 2.7
				<b>Total other urban centres</b>	<b>621,631</b>	<b>678,011</b>	<b>9.1</b>

(a) Includes only that part of the local government area which is within urban Melbourne. The remainder is in each case included under "other urban" or is rural.

(b) That part of Albury-Wodonga in Victoria. See note (a) to previous table.

(c) That part of Barham-Koondrook in Victoria. See note (d) to previous table.

(d) That part of Echuca-Moama in Victoria. See note (b) to previous table.

(e) That part of Yarrowonga-Mulwala in Victoria. See note (c) to previous table.

(f) That part of Corowa-Wahgunyah in Victoria. See note (d) to previous table.

(g) Not part of urban Melbourne in 1966.

(h) Non-urban in 1966.

(i) Minus sign (-) denotes decrease.

**Population estimates**  
(1972: pages 122-9)

**AUSTRALIA—ESTIMATED POPULATION OF STATES AND TERRITORIES**  
**AT 31 DECEMBER 1971**

State or Territory	Area in square miles	Estimated population at 31 December 1971	Persons per square mile	Percentage of population in each State or Territory
New South Wales	309,433	4,652,200	15.03	36.04
<b>Victoria</b>	<b>87,884</b>	<b>3,536,948</b>	<b>40.25</b>	<b>27.40</b>
Queensland	667,000	1,852,320	2.78	14.35
South Australia	380,070	1,185,495	3.12	9.18
Western Australia	975,920	1,048,897	1.07	8.13
Tasmania	26,383	392,824	14.89	3.04
Northern Territory	520,280	88,319	0.17	0.69
Australian Capital Territory (a)	939	151,238	161.06	1.17
<b>Australia</b>	<b>2,967,909</b>	<b>12,908,241</b>	<b>4.35</b>	<b>100.00</b>

(a) Including Jarvis Bay.

**VICTORIA—ESTIMATED POPULATION**

Year	Estimated population, 31 December		
	Males	Females	Persons
1836 (25 May)	142	35	177
1840	7,254	3,037	10,291
1850	45,495	30,667	76,162
1860	330,302	207,932	538,234
1870	397,230	326,695	723,925
1880	450,558	408,047	858,605
1890	595,519	538,209	1,133,728
1900	601,773	594,440	1,196,213
1910	646,482	654,926	1,301,408
1920	753,803	774,106	1,527,909
1930	892,422	900,183	1,792,605
1940	947,037	967,881	1,914,918
1950	1,114,497	1,122,685	2,237,182
1960	1,453,815	1,434,475	2,888,290
1961	1,485,348	1,469,951	2,955,299
1962	1,511,418	1,499,625	3,011,043
1963	1,540,749	1,530,297	3,071,046
1964	1,573,966	1,563,955	3,137,921
1965	1,602,058	1,593,802	3,195,860
1966	1,627,787	1,622,056	3,249,843
1967	1,653,363	1,650,243	3,303,606
1968	1,679,213	1,677,614	3,356,827
1969	1,710,586	1,710,592	3,421,178
1970	1,739,916	1,742,115	3,482,031
1971	1,765,846	1,771,102	3,536,948

NOTE. Estimates of population from 1961 onwards include Aborigines.

## VICTORIA—POPULATION BY LOCAL GOVERNMENT AREA

Local government area	Population		Intercensal		Area at 30.6.1971 (sq miles)
	Census 1966	Census 1971	Numerical	Percentage	
MELBOURNE STATISTICAL DIVISION					
Altona City (c)	25,020	30,589	5,569	22.3	15.52
Berwick Shire (part)(b)	19,880	23,460	3,580	18.0	108.94
Box Hill City	54,534	54,635	101	0.2	8.30
Brighton City	40,618	39,109	— 1,509	— 3.7	5.28
Broadmeadows City	88,080	101,100	13,020	14.8	27.33
Brunswick City	52,018	51,560	— 458	— 0.9	4.10
Bulla Shire	5,711	8,243	2,532	44.3	163.00
Camberwell City	99,913	98,302	— 1,611	— 1.6	13.57
Caulfield City	76,119	81,865	5,746	7.5	8.49
Chelsea City	24,789	26,372	1,583	6.4	4.72
Coburg City	68,577	65,662	— 2,915	— 4.3	7.21
Collingwood City	22,469	21,022	— 1,447	— 6.4	1.84
Cranbourne Shire (part) (b)	9,307	12,511	3,204	34.4	153.69
Croydon City (c)	21,769	28,708	6,939	31.9	13.00
Dandenong City	31,700	40,883	9,183	29.0	14.00
Diamond Valley Shire	22,999	36,245	13,246	57.6	32.94
Doncaster and Templestowe City (c)	38,087	64,286	26,199	68.8	34.52
Eltham Shire	20,211	24,140	3,929	19.4	116.01
Essendon City	58,258	57,583	— 675	— 1.2	6.36
Fitzroy City	27,227	25,708	— 1,519	— 5.6	1.41
Flinders Shire	12,525	15,481	2,956	23.6	125.00
Footscray City	58,832	57,810	— 1,022	— 1.7	6.94
Frankston City (c)	42,085	59,410	17,325	41.2	27.28
Hastings Shire	7,280	8,927	1,647	22.6	112.00
Hawthorn City	36,728	37,571	843	2.3	3.77
Healesville Shire (part)(b)	5,136	5,223	87	1.7	108.88
Heidelberg City	63,932	68,013	4,081	6.4	12.50
Keilor City	43,398	55,616	12,218	28.2	37.91
Kew City	32,819	32,564	— 255	— 0.8	5.62
Knox City (c)	36,514	56,786	20,272	55.5	42.50
Lillydale Shire	24,494	36,162	11,668	47.6	153.50
Malvern City	50,061	50,560	499	1.0	6.15
Melbourne City	76,006	75,830	— 176	— 0.2	12.13
Melton Shire	2,559	5,974	3,415	133.5	173.91
Moorabbin City	103,787	109,588	5,801	5.6	19.77
Mordialloc City	28,078	29,753	1,675	6.0	4.71
Mornington Shire	10,217	14,289	4,072	39.9	35.00
Northcote City	56,213	59,303	3,090	5.5	6.60
Nunawading City	74,578	90,702	16,124	21.6	16.05
Oakleigh City	52,769	57,284	4,515	8.6	11.70
Port Melbourne City	12,591	11,705	— 886	— 7.0	4.11
Prahran City	54,658	56,766	2,108	3.9	3.69
Preston City	89,775	91,584	1,809	2.0	14.30
Richmond City	32,532	28,341	— 4,191	— 12.9	2.36
Ringwood City	29,141	34,751	5,610	19.3	8.79
St Kilda City	58,138	61,203	3,065	5.3	3.31
Sandringham City	36,672	35,460	— 1,212	— 3.3	5.78
Sherbrooke Shire	17,674	20,484	2,810	15.9	74.50
South Melbourne City	30,233	26,995	— 3,238	— 10.7	3.44
Springvale City	39,431	58,374	18,943	48.0	37.68
Sunshine City	69,264	76,427	7,163	10.3	30.89
Waverley City	69,845	97,033	27,188	38.9	22.61
Werribee Shire	18,380	25,116	6,736	36.6	258.00
Whittlesea Shire	16,713	30,327	13,614	81.5	231.00
Williamstown City	30,449	30,055	— 394	— 1.3	5.60
<b>Total Division</b>	<b>2,230,793</b>	<b>2,503,450</b>	<b>272,657</b>	<b>12.2</b>	<b>2,368.25</b>

For footnotes see page 805.

VICTORIA—POPULATION BY LOCAL GOVERNMENT AREA—*continued*

Local government area	Population		Intercensal change		Area at 30.6.1971 (sq miles) (a)
	Census 1966	Census 1971	Numerical	Percentage	
<b>WEST CENTRAL STATISTICAL DIVISION</b>					
Bacchus Marsh Shire	4,674	5,083	409	8.8	218.60
Ballan Shire	2,349	2,163	- 186	- 7.9	355.00
Bannockburn Shire	2,213	2,072	- 141	- 6.4	272.00
Barrabool Shire	2,914	3,471	557	19.1	229.00
Bellarine Shire	14,523	18,791	4,268	29.4	128.00
Bungaree Shire	2,207	2,514	307	13.9	88.00
Buninyong Shire	4,836	5,124	288	6.0	300.00
Corio Shire	36,222	40,544	4,322	11.9	270.00
Geelong City	18,129	17,836	- 293	- 1.6	5.19
Geelong West City	17,538	17,248	- 290	- 1.7	2.03
Gisborne Shire	2,311	2,917	606	26.2	107.40
Newtown City (c)	11,700	11,621	- 79	- 0.7	2.31
Queenscliffe Borough	2,788	2,807	19	0.7	3.28
Romsey Shire	2,516	2,575	59	2.3	239.00
South Barwon Shire	22,056	26,764	4,708	21.3	63.84
Total division (f)	146,976	161,530	14,554	9.9	2,283.65
<b>NORTH CENTRAL STATISTICAL DIVISION</b>					
Alexandra Shire	4,484	4,480	- 4	- 0.1	735.00
Broadford Shire	1,978	1,929	- 49	- 2.5	222.50
Castlemaine City	7,103	6,915	- 188	- 2.6	9.00
Creswick Shire	3,540	3,414	- 126	- 3.6	213.00
Daylesford and Glenlyon Shire	4,398	4,105	- 293	- 6.7	235.27
Kilmore Shire (f)	2,739	2,798	59	2.2	196.50
Kyneton Shire	5,970	5,959	- 11	- 0.2	280.00
Maldon Shire	1,953	1,759	- 194	- 9.9	216.00
Maryborough City	7,707	7,472	- 235	- 3.0	9.00
McIvor Shire (c) (e)	1,896	1,789	- 107	- 5.6	561.00
Metcalfe Shire	2,163	1,983	- 180	- 8.3	228.00
Newham and Woodend Shire	1,995	2,092	97	4.9	95.00
Newstead Shire	1,781	1,622	- 159	- 8.9	158.00
Pyalong Shire	456	439	- 17	- 3.7	233.00
Seymour Shire	11,272	11,103	- 169	- 1.5	366.65
Talbot and Clunes Shire	1,514	1,445	- 69	- 4.6	206.00
Tullaroop Shire	1,277	1,193	- 84	- 6.6	246.00
Yea Shire	2,620	2,542	- 78	- 3.0	528.35
Total division (f)	64,846	63,039	-1,807	- 2.8	4,738.27
<b>WESTERN STATISTICAL DIVISION</b>					
Ararat City	8,246	8,312	66	0.8	7.36
Ararat Shire	4,644	4,178	- 466	-10.0	1,411.92
Ballaarat City	41,661	39,778	-1,883	- 4.5	13.36
Ballarat Shire	12,246	14,405	2,159	17.6	184.00
Belfast Shire	1,857	1,643	- 214	-11.5	200.00
Camperdown Town	3,540	3,477	- 63	- 1.8	5.61
Colac City	9,499	9,679	180	1.9	4.20
Colac Shire	6,959	6,264	- 695	-10.0	563.00
Dundas Shire	3,923	3,667	- 256	- 6.5	1,337.60
Glenelg Shire	5,838	5,148	- 690	-11.8	1,383.00
Grenville Shire	1,692	1,802	110	6.5	326.00
Hamilton City	10,062	9,673	- 389	- 3.9	8.36
Hampden Shire	8,773	7,411	-1,362	-15.5	1,011.00
Heytesbury Shire (c)	8,202*	8,208	6	0.1	584.00
Koroit Borough	1,416	1,429	13	0.9	8.90

For footnotes see page 805.

VICTORIA—POPULATION BY LOCAL GOVERNMENT AREA—*continued*

Local government area	Population		Intercensal change		Area at 30.6.1971 (sq miles) (a)
	Census 1966	Census 1971	Numerical	Percentage	
<b>WESTERN STATISTICAL DIVISION—<i>continued</i></b>					
Leigh Shire	1,402	1,177	— 225	— 16.0	379.00
Lexton Shire	1,375	1,315	— 60	— 4.4	317.00
Minhamite Shire	2,824	2,503	— 321	— 11.4	527.00
Mortlake Shire	4,400	4,073	— 327	— 7.4	825.00
Mount Rouse Shire	3,042	2,693	— 349	— 11.5	548.00
Otway Shire (c)	3,888*	3,921	33	0.8	736.30
Port Fairy Borough	2,579	2,427	— 152	— 5.9	8.88
Portland Town (c)	7,022*	8,216	1,194	17.0	13.17
Portland Shire (c)	6,550*	6,439	— 111	— 1.7	1,421.17
Ripon Shire	3,520	3,212	— 308	— 8.8	592.00
Sebastopol Borough	4,966	5,268	302	6.1	2.73
Wannon Shire	4,059	3,646	— 413	— 10.2	763.40
Warrnambool City	17,500	18,684	1,184	6.8	11.08
Warrnambool Shire	7,506	6,859	— 647	— 8.6	613.00
Winchelsea Shire	4,241	3,998	— 243	— 5.7	495.70
Not incorporated (Lady Julia Percy Island and Tower Hill Lake Reserve)	..	..	..	..	3.30
<b>Total division</b>	<b>203,432</b>	<b>199,505</b>	<b>— 3,927</b>	<b>— 1.9</b>	<b>14,305.04</b>
<b>WIMMERA STATISTICAL DIVISION</b>					
Arapiles Shire	2,142	1,926	— 216	— 10.1	768.00
Avoca Shire	2,133	1,962	— 171	— 8.0	434.00
Dimboola Shire	5,907	5,013	— 894	— 15.1	1,899.00
Donald Shire	2,947	2,639	— 308	— 10.5	559.00
Dunmunkle Shire	3,952	3,544	— 408	— 10.3	597.00
Horsham City	10,562	11,045	483	4.6	9.28
Kaniva Shire	2,371	2,104	— 267	— 11.3	1,191.00
Kara Kara Shire	1,360	1,193	— 167	— 12.3	885.25
Kowree Shire	5,362	4,795	— 567	— 10.6	2,080.00
Lowan Shire	3,824	3,489	— 335	— 8.8	1,036.00
St Arnaud Town	3,004	2,779	— 225	— 7.5	9.81
Stawell Town	5,909	5,800	— 109	— 1.8	9.30
Stawell Shire	2,345	2,034	— 311	— 13.3	1,009.75
Warracknabeal Shire	4,714	4,218	— 496	— 10.5	710.00
Wimmera Shire	3,485	3,046	— 439	— 12.6	1,009.00
<b>Total division</b>	<b>60,017</b>	<b>55,587</b>	<b>— 4,430</b>	<b>— 7.4</b>	<b>12,206.39</b>
<b>MALLEE STATISTICAL DIVISION</b>					
Birchip Shire	1,919	1,739	— 180	— 9.4	567.00
Karkarooc Shire	4,247	3,729	— 518	— 12.2	1,436.00
Mildura City	12,934	13,198	264	2.0	8.45
Mildura Shire	16,315	16,695	380	2.3	4,071.00
Swan Hill City	7,398	7,712	314	4.2	5.27
Swan Hill Shire	13,000	12,366	— 634	— 4.9	2,530.00
Walpeup Shire	4,431	3,964	— 467	— 10.5	4,168.00
Wycheproof Shire	4,777	4,413	— 364	— 7.6	1,589.00
<b>Total division</b>	<b>65,021</b>	<b>63,816</b>	<b>— 1,205</b>	<b>— 1.9</b>	<b>14,374.72</b>

For footnotes see page 805.



VICTORIA—POPULATION BY LOCAL GOVERNMENT AREA—*continued*

Local government area	Population		Intercensal change		Area at 30.6.1971 (sq miles) (a)
	Census 1966	Census 1971	Numerical	Percentage	
<b>NORTHERN STATISTICAL DIVISION</b>					
Bendigo City	30,806	32,007	1,201	3.9	12.55
Bet Bet Shire	1,975	1,717	— 258	—13.1	358.00
Charlton Shire	2,499	2,226	— 273	—10.9	454.00
Cobram Shire	5,261	5,520	259	4.9	170.00
Cohuna Shire	4,658	4,768	110	2.4	192.00
Deakin Shire	5,705	5,666	— 39	— 0.7	371.00
Eaglehawk Borough	5,230	5,383	153	2.9	5.60
East Loddon Shire	1,722	1,598	— 124	— 7.2	461.00
Echuca City	7,044	7,505	461	6.5	7.84
Gordon Shire	3,320	3,124	— 196	— 5.9	781.00
Goulburn Shire	1,842	2,004	162	8.8	398.00
Huntly Shire	2,323	2,242	— 81	— 3.5	339.00
Kerang Borough	4,164	4,103	— 61	— 1.5	8.83
Kerang Shire	5,264	4,930	— 334	— 6.3	1,278.17
Korong Shire	3,663	3,203	— 460	—12.6	921.00
Kyabram Borough	4,645	5,081	436	9.4	8.05
Marong Shire	6,488	6,905	417	6.4	575.00
Nathalia Shire	3,225	3,206	— 19	— 0.6	478.00
Numurkah Shire	6,242	5,801	— 441	— 7.1	279.00
Rochester Shire	7,428	7,587	159	2.1	749.00
Rodney Shire	11,891	12,406	515	4.3	397.00
Shepparton City	17,488	19,410	1,922	11.0	10.31
Shepparton Shire	6,183	6,477	294	4.8	357.06
Strathfieldsaye Shire	6,703	7,711	1,008	15.0	239.00
Tungamah Shire	3,237	3,147	— 90	— 2.8	441.00
Waranga Shire (c) (e)	4,506	4,333	— 173	— 3.8	635.00
Yarrawonga Shire	3,805	3,755	— 50	— 1.3	243.00
<b>Total division</b>	<b>167,317</b>	<b>171,815</b>	<b>4,498</b>	<b>2.7</b>	<b>10,169.41</b>
<b>NORTH EASTERN STATISTICAL DIVISION</b>					
Beechworth Shire	4,806	4,506	— 300	— 6.2	297.90
Benalla City (c)	8,224	8,255	31	0.4	6.82
Benalla Shire (c)	3,728	3,329	— 399	—10.7	896.48
Bright Shire	4,526	4,649	123	2.7	1,146.00
Chiltern Shire	1,522	1,400	— 122	— 8.0	192.10
Euroa Shire	4,589	4,191	— 398	— 8.7	545.00
Mansfield Shire	4,275	4,260	— 15	— 0.4	1,508.00
Myrtleford Shire	4,374	4,434	60	1.4	275.00
Omoo Shire	2,026	1,868	— 158	— 7.8	2,232.00
Oxley Shire (c)	5,318*	5,642	324	6.1	1,079.57
Rutherglen Shire	2,556	2,473	— 83	— 3.2	205.00
Towong Shire	4,079	3,768	— 311	— 7.6	1,602.00
Upper Murray Shire	3,337	2,676	— 661	—19.8	949.00
Violet Town Shire	1,236	1,186	— 50	— 4.0	361.00
Wangaratta City (c)	15,268*	15,586	318	2.1	9.30
Wangaratta Shire (c)	1,914*	1,866	— 48	— 2.5	353.49
Wodonga Shire (d)	11,878	13,074	1,196	10.1	134.00
Yackandandah Shire	3,063	2,971	— 92	— 3.0	429.00
<b>Total division</b>	<b>86,719</b>	<b>86,134</b>	<b>— 585</b>	<b>— 0.7</b>	<b>12,221.66</b>

For footnotes see page 805.

VICTORIA—POPULATION BY LOCAL GOVERNMENT AREA—*continued*

Local government area	Population		Intercensal change		Area at 30.6.1971 (sq miles) (a)
	Census 1966	Census 1971	Numerical	Percentage	
<b>GIPPSLAND STATISTICAL DIVISION</b>					
Alberton Shire	5,844	5,803	— 41	— 0.7	721.00
Avon Shire (c)	3,171*	3,090	— 81	— 2.6	976.50
Bairnsdale Town (c)	7,960*	8,552	592	7.4	10.50
Bairnsdale Shire (c)	3,606*	3,741	135	3.7	879.50
Buln Buln Shire	8,700	8,414	— 286	— 3.3	486.00
Maffra Shire	8,510	8,515	5	0.1	1,611.00
Mirboo Shire	2,116	1,964	— 152	— 7.2	98.00
Moe City	16,555	15,605	— 950	— 5.7	8.26
Morwell Shire	20,829	22,443	1,614	7.7	259.00
Narracan Shire	9,045	8,607	— 438	— 4.8	892.00
Orbost Shire	6,434	6,301	— 133	— 2.1	3,700.00
Rosedale Shire	4,904	4,997	93	1.9	879.00
Sale City (c)	8,708*	10,436	1,728	19.8	9.88
South Gippsland Shire	5,407	5,408	1	(h)	553.00
Tambo Shire	5,558	5,888	330	5.9	1,356.00
Traralgon City	14,080	14,666	586	4.2	7.70
Traralgon Shire	1,264	1,336	72	5.7	180.30
Warragul Shire	9,928	10,010	82	0.8	136.00
Woorayl Shire	8,927	9,145	218	2.4	481.00
Yallourn Works Area	4,250	3,221	— 1,029	— 24.2	13.52
Not incorporated (Gippsland Lakes, Bass Strait Islands)	..	..	..	..	129.51
<b>Total division</b>	<b>155,796</b>	<b>158,142</b>	<b>2,346</b>	<b>1.5</b>	<b>13,387.67</b>
<b>EAST CENTRAL STATISTICAL DIVISION</b>					
Bass Shire	3,857	3,752	— 105	— 2.7	203.00
Berwick Shire (part) (b)	8,909	9,650	741	8.3	280.06
Cranbourne Shire (part) (b)	3,793	3,755	— 38	— 1.0	133.31
Healesville Shire (part) (b)	1,299	1,187	— 112	— 8.6	239.12
Korumburra Shire	7,354	6,938	— 416	— 5.7	237.00
Phillip Island Shire	1,408	1,711	303	21.5	39.00
Upper Yarra Shire	5,456	6,014	558	10.2	612.00
Wonthaggi Borough	4,026	3,825	— 201	— 5.0	20.45
Not incorporated (French Island)	210	198	— 12	— 5.7	65.00
<b>Total division</b>	<b>36,312</b>	<b>37,030</b>	<b>718</b>	<b>2.0</b>	<b>1,828.94</b>
<b>SUMMARY</b>					
Statistical divisions—					
Melbourne	2,230,793	2,503,450	272,657	12.2	2,368.25
West Central (f)	146,976	161,530	14,554	9.9	2,283.65
North Central (e) (f)	64,846	63,039	— 1,807	— 2.8	4,738.27
Western	203,432	199,505	— 3,927	— 1.9	14,305.04
Wimmera	60,017	55,587	— 4,430	— 7.4	12,206.39
Mallee	65,021	63,816	— 1,205	— 1.9	14,374.72
Northern (e)	167,317	171,815	4,498	2.7	10,169.41
North Eastern	86,719	86,134	— 585	— 0.7	12,221.66
Gippsland	155,796	158,142	2,346	1.5	13,387.67
East Central	36,312	37,030	718	2.0	1,828.94
Migratory (g)	2,988	2,303	— 685	— 22.9	..
<b>Total Victoria</b>	<b>3,220,217</b>	<b>3,502,351</b>	<b>282,134</b>	<b>8.8</b>	<b>87,884.00</b>
<b>Geelong Statistical District</b>	<b>111,365</b>	<b>122,087</b>	<b>10,722</b>	<b>9.6</b>	<b>134.06</b>

For footnotes see page 805.

VICTORIA—POPULATION BY LOCAL GOVERNMENT AREA—*continued*

- (a) Due to rounding, the sums of the areas of the individual municipalities do not add to the area of their statistical division in all cases, nor to the area of the State as a whole.
- (b) The following portions of the Shires of Berwick, Cranbourne, and Healesville are included in the Melbourne Statistical Division :  
*Berwick* : Berwick and Doveton Ridings, and parts of Pakenham and Beaconsfield Ridings.  
*Cranbourne* : Cranbourne Riding and part of Tooradin Riding.  
*Healesville* : Town Riding, West Riding, and part of Central Riding.
- (c) Local government area changes :  
 The 1966 figures in this statement have been adjusted where necessary to take account of local government area boundary changes effective between 1 July 1966 and 30 June 1971. These adjusted figures have been indicated with an asterisk (\*). The following table shows in each case the nature of the change, the date on which it took effect, and the area and estimated population involved. Changes of status or name have also been included.

Local government area	Nature of change	Net change in area	Estimated population	Date of change
Altona (C)	Former Shire reconstituted as a City	..	..	21.12.68
Avon (S)	Lost to Sale (C)	11 acres	Nil	1.10.66
Avon (S)	Lost to Sale (C)	947 acres	- 65	31.5.67
Bairnsdale (T)	Created from portion of Bairnsdale (S)	6,720 acres	+ 7,960	31.5.67
Bairnsdale (S)	Lost to Bairnsdale (T)	6,720 acres	- 7,960	31.5.67
Benalla (C)	Gained from Benalla (S)	30 acres	Nil	17.9.69
Benalla (S)	Lost to Benalla (C)	30 acres	Nil	17.9.69
Croydon (C)	Former Shire reconstituted as a City	..	..	22.5.71
Doncaster and Templestowe (C)	Former Shire reconstituted as a City	..	..	28.2.67
Frankston (C)	Former Shire reconstituted as a City	..	..	24.8.66
Heytesbury (S)	Gained from Otway (S)	6,400 acres	+ 20	31.5.69
Knox (C)	Former Shire reconstituted as a City	..	..	4.7.69
Mclvor (S)	Gained from Waranga (S)	1,920 acres	Nil	13.5.70
Newtown (C)	Name changed from Newtown and Chilwell (C)	..	..	14.11.67
Otway (S)	Lost to Heytesbury (S)	6,400 acres	- 20	31.5.69
Oxley (S)	Lost to Wangaratta (C)	147 acres	- 44	1.6.68
Portland (T)	Gained from Portland (S)	2,450 acres	+ 325	31.5.68
Portland (S)	Lost to Portland (T)	2,450 acres	- 325	31.5.68
Sale (C)	Gained from Avon (S)	11 acres	Nil	1.10.66
Sale (C)	Gained from Avon (S)	947 acres	+ 65	31.5.67
Wangaratta (C)	Gained from Oxley (S) and Wangaratta (S)	473 acres	+ 87	1.6.68
Wangaratta (S)	Lost to Wangaratta (C)	326 acres	- 43	1.6.68
Waranga (S)	Lost to Mclvor (S)	1,920 acres	Nil	13.5.70

- (d) The population of the Shire of Wodonga includes residents at Bonegilla Migrant Centre. The Benalla Migrant Centre closed on 8 December 1967.
- (e) The statistical division boundary has been altered slightly to conform with the new municipal boundaries between Waranga and Mclvor Shires.
- (f) Prior to 1971 the Shire of Kilmore was partly in both the North Central and West Central Statistical Divisions. From 1 January 1971 the statistical division boundary was altered so that the Shire of Kilmore is now entirely within the North Central Statistical Division. In this publication, the 1966 Census totals for the North Central and West Central Statistical Divisions have been revised to conform with the new boundaries.
- (g) The category "migratory" includes persons not elsewhere enumerated, e.g., those on board ships in ports or travelling between ports, or on long distance trains, motor coaches, or aircraft.
- (h) Less than 0.1.
- \* See footnote (c).

**Immigration**  
(1972 : pages 129-38)

**AUSTRALIA—PERSONS ARRIVING UNDER ASSISTED  
MIGRATION SCHEMES**

Assisted migration scheme	Date of commencement of scheme	Number assisted to December 1971
United Kingdom	April 1947	1,016,654
Refugee	November 1947	256,937
German	August 1952	94,357
Special Passage Assistance Programme and United States Passage Assistance Programme	July 1966	83,315
Netherlands	April 1951	80,826
Greek	August 1952	70,093
Italian	August 1951	59,678
Maltese	January 1949	42,252
General assisted passage schemes	September 1954	40,388
Austrian	August 1952	21,892
Spanish	August 1958	11,647
Turkish	October 1968	10,429
Belgian	February 1961	3,052
Other schemes		40,854
Total		1,832,374

**AUSTRALIA—OVERSEAS ARRIVALS AND DEPARTURES BY STATES**

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
<b>ARRIVALS</b>									
1967	428,797	95,852	51,874	6,963	47,536	281	5,418	449	637,170
1968	558,512	82,452	60,264	7,175	56,360	421	6,393	215	771,792
1969	676,452	79,955	66,528	7,264	59,736	79	8,744	100	898,858
1970	744,396	115,204	77,886	7,086	70,392	144	11,165	402	1,026,675
1971	752,014	157,842	71,257	6,405	75,650	252	14,925	453	1,078,798
<b>DEPARTURES</b>									
1967	386,130	60,393	51,668	8,222	32,697	346	5,480	325	545,261
1968	493,290	58,956	51,698	7,912	40,213	310	6,128	232	658,739
1969	584,574	60,600	60,371	8,792	46,388	291	8,546	250	769,812
1970	658,150	88,875	82,237	6,443	56,143	347	11,354	252	903,801
1971	687,792	138,456	79,658	5,853	66,130	397	15,581	326	994,193

NOTE. The above table indicates the State or Territory where passengers disembarked from or embarked on the ship or aircraft. Because numbers of passengers use interstate transport to commence or complete their journey, the figures do not indicate the precise effect on the population of the States of movements to and from overseas countries. International air services commenced from the new Melbourne (Tullamarine) Airport on 1 July 1970.

## AUSTRALIA AND VICTORIA—OVERSEAS MIGRATION

Year	Australia					Victoria (a)			
	Permanent and long-term movement (b)		Short-term movement		Total	Permanent and long-term movement (b)	Short-term movement		Total
	Settlers	Other	Australian residents returning or departing temporarily	Visitors			Australian residents returning or departing temporarily	Visitors	
ARRIVALS									
1967	135,019	57,292	223,038	221,821	637,170	54,409	24,800	16,643	95,852
1968	159,270	59,860	252,773	299,889	771,792	44,443	22,029	15,980	82,452
1969	183,416	65,175	288,990	361,277	898,858	39,394	22,104	18,457	79,955
1970	185,325	73,293	351,929	416,128	1,026,675	51,460	37,341	26,403	115,204
1971	155,525	78,282	412,598	432,393	1,078,798	58,282	60,732	38,828	157,842
DEPARTURES									
1967	22,302	73,451	217,746	231,762	545,261	20,071	24,482	15,840	60,393
1968	23,814	71,864	251,880	311,181	658,739	19,096	23,845	16,015	58,956
1969	24,739	83,521	288,805	372,747	769,812	18,177	24,533	17,890	60,600
1970	26,756	93,480	352,526	431,039	903,801	21,771	41,882	25,222	88,875
1971	29,449	100,805	413,917	450,022	994,193	27,895	70,074	40,487	138,456

(a) See note to preceding table.

(b) "Permanent and long-term movement" relates to persons arriving who state that they intend to reside in Australia permanently or for a period of one year or more, and to persons departing who state that they intend to reside abroad permanently or for a period of one year or more.

## VICTORIA—PREVIOUS NATIONALITY OF PERSONS NATURALISED

Nationality	Number of naturalisation certificates granted					Total granted 1967 to 1971	
	1967	1968	1969	1970	1971	Number	Per cent
Albanian	20	10	7	6	9	52	0.08
Austrian	269	183	136	108	111	807	1.33
Belgian	40	12	21	14	15	102	0.17
Bulgarian	18	14	7	14	12	65	0.11
Byelorussian	16	5	6	1	..	28	0.05
Chinese	332	237	177	110	97	953	1.57
Czechoslovak	52	45	35	64	151	347	0.57
Danish	40	29	23	4	19	115	0.19
Dutch	1,495	1,138	764	525	558	4,480	7.38
Estonian	21	16	9	2	10	58	0.09
Finnish	64	67	50	44	35	260	0.43
French	52	39	50	37	47	225	0.37
German	1,320	990	595	387	537	3,829	6.31
Greek	2,853	2,852	2,943	3,052	3,192	14,892	24.52
Hungarian	564	328	238	145	214	1,489	2.45
Israeli	160	148	83	62	81	534	0.88
Italian	5,742	3,549	2,763	2,228	2,424	16,706	27.51
Japanese	10	8	8	3	5	34	0.06
Latvian	147	72	36	35	26	316	0.52
Lebanese	70	70	87	113	190	530	0.87
Lithuanian	48	35	24	17	16	140	0.23
Norwegian	15	12	10	4	9	50	0.08
Polish	1,028	734	477	481	491	3,211	5.29
Romanian	57	23	20	34	22	156	0.26
Russian	152	137	96	59	56	500	0.82
Spanish	40	68	95	65	72	340	0.56
Swedish	15	5	11	9	8	48	0.08
Swiss	56	51	31	45	54	237	0.39
Turkish	15	6	18	19	70	128	0.21
Ukrainian	158	71	67	30	33	359	0.59
United Arab Republic	21	94	199	334	357	1,005	1.65
U.S. American	38	26	27	27	31	149	0.25
Yugoslav	1,907	1,591	1,235	1,212	1,599	7,544	12.42
Other nationalities	75	75	83	147	161	541	0.89
Stateless	122	92	100	94	91	499	0.82
Total	17,032	12,832	10,531	9,531	10,803	60,729	100.00

NOTE. The above figures relate to the number of certificates granted and do not represent the total number of persons affected by the certificates. In addition to the figures shown, there were 1,974 children in 1967, 1,523 in 1968, 1,229 in 1969, 1,123 in 1970, and 1,271 in 1971 affected by grant of certificates.

VITAL STATISTICS  
(1972: pages 139-62)

Introduction  
(1972: pages 139-40)

VICTORIA—SUMMARY OF VITAL STATISTICS

Year	Number				Rate per 1,000 of mean population (b)			Infant death rate (deaths under one year per 1,000 live births)
	Marriages	Live births	Deaths	Infant deaths (a)	Marriages	Live births	Deaths	
1967	28,004	65,485	28,373	1,101	8.55	19.98	8.66	16.8
1968	29,724	70,228	29,967	1,010	8.93	21.10	9.00	14.4
1969	30,860	71,035	28,976	1,066	9.11	20.96	8.55	15.0
1970	31,729	73,019	30,335	1,060	9.20	21.16	8.79	14.5
1971	32,386	75,498	30,598	1,107	9.23	21.51	8.72	14.7

(a) Included in deaths.

(b) Rates have been recalculated following the revision of population estimates for dates after 30 June 1966. When final results of the 1971 Census become available the rates may be further revised.

Marriages  
(1972: pages 140-4)

AUSTRALIA—NUMBER OF MARRIAGES

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
1967	37,077	28,004	13,634	9,434	7,430	3,213	325	883	100,000
1968	39,213	29,724	14,860	9,652	8,086	3,426	419	965	106,345
1969	41,286	30,860	15,669	10,599	8,993	3,532	413	1,118	112,470
1970	42,928	31,729	16,082	10,864	9,227	3,535	501	1,200	116,066
1971	43,038	32,386	16,538	10,833	9,382	3,578	485	1,397	117,637

AUSTRALIA—MARRIAGE RATES (a)

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.(b)	A.C.T.(b)	Aust.
1967	8.63	8.55	8.02	8.50	8.44	8.56	5.3	8.5	8.47
1968	8.99	8.93	8.59	8.60	8.83	9.02	6.2	8.6	8.85
1969	9.29	9.11	8.88	9.30	9.41	9.17	5.6	9.2	9.16
1970	9.48	9.20	8.96	9.38	9.28	9.11	6.3	9.1	9.26
1971	9.33	9.23	9.03	9.21	9.09	9.15	5.6	9.7	9.20

(a) Rates have been recalculated following the revision of population estimates for dates after 30 June 1966. When final results of the 1971 Census become available the rates may be further revised.

(b) Based on too few events to warrant calculation to second place of decimals.

VICTORIA—RELATIVE AGES OF BRIDEGROOMS AND BRIDES, 1971

Ages of bridegrooms (a) (years)	Ages of brides (a) (years)														Total bridegrooms
	15	16	17	18	19	20	21 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 and over		
16	..	1	1	..	1	..	..	..	..	..	..	..	..	3	
17	..	8	17	13	4	..	1	1	..	..	..	..	..	44	
18	2	105	199	182	83	..	30	3	..	..	..	..	..	636	
19	4	134	286	364	307	167	133	16	1	2	..	..	..	1,414	
20	2	111	305	525	597	454	431	24	3	..	..	..	..	2,452	
21 to 24	4	220	550	1,347	2,410	3,131	7,143	641	48	12	3	..	1	15,510	
25 to 29	1	67	117	293	532	799	3,545	1,436	190	48	12	6	3	7,049	
30 to 34	..	10	13	36	64	117	638	682	297	89	35	13	1	1,995	
35 to 39	..	..	..	3	12	16	168	286	208	126	67	26	15	929	
40 to 44	..	..	..	3	3	3	41	106	145	135	129	70	45	678	
45 to 49	..	..	1	..	..	1	16	38	68	85	100	103	60	472	
50 to 54	..	..	..	..	..	..	3	12	20	33	77	95	103	343	
55 to 59	..	..	..	..	..	..	1	4	11	20	27	52	183	298	
60 to 64	..	..	..	..	..	..	2	2	4	7	20	27	159	221	
65 and over	..	..	..	..	..	..	..	2	1	4	12	15	308	342	
Total brides	13	656	1,491	2,766	4,011	4,720	12,152	3,253	996	561	482	407	878	32,386	

(a) The marriage of bridegrooms under 18 years and brides under 16 years of age is restricted by the provisions of the *Marriage Act* 1961.

VICTORIA—PERCENTAGES OF BRIDEGROOMS AND BRIDES IN AGE GROUPS, 1971

Age group (years)	Percentage of total		Age group (years)	Percentage of total	
	Bridegrooms	Brides		Bridegrooms	Brides
15	..	(a)	30 to 34	6.2	3.1
16	(a)	2.0	35 to 39	2.9	1.7
17	0.1	4.6	40 to 44	2.1	1.5
18	2.0	8.5	45 to 49	1.4	1.3
19	4.4	12.4	50 to 54	1.0	0.9
20	7.6	14.6	55 to 59	0.9	0.7
21 to 24	47.9	37.5	60 and over	1.7	1.1
25 to 29	21.8	10.1	Total	100.0	100.0

(a) Less than 0.1.

VICTORIA—MARRIAGES OF MINORS

Year	Age in years							Total	
	14	15	16	17	18	19	20	Number	Percentage of all marriages
BRIDEGROOMS									
1967	..	..	..	36	479	1,204	1,798	3,517	12.56
1968	..	..	1	50	512	1,171	1,919	3,653	12.29
1969	..	..	1	36	517	1,242	1,937	3,733	12.10
1970	..	..	5	50	589	1,294	2,244	4,182	13.18
1971	..	..	3	44	636	1,414	2,452	4,549	14.05
BRIDES									
1967	4	23	479	1,138	2,118	3,283	4,291	11,336	40.48
1968	2	17	540	1,227	2,303	3,373	4,079	11,541	38.83
1969	1	18	495	1,192	2,577	3,506	4,200	11,989	38.85
1970	2	20	566	1,339	2,552	3,928	4,463	12,870	40.56
1971	..	13	656	1,491	2,766	4,011	4,720	13,657	42.17

## VICTORIA—MEAN AGE AT MARRIAGE

Year	Bridegrooms				Brides			
	Bachelors	Widowers	Divorced	All bridegrooms	Spinsters	Widows	Divorced	All brides
1967	25.3	56.3	41.6	27.0	22.4	50.3	38.0	24.1
1968	25.1	57.1	41.6	26.9	22.3	50.7	37.7	24.0
1969	24.8	56.8	41.0	26.7	22.3	50.5	37.5	23.9
1970	24.7	57.3	40.6	26.5	22.2	50.2	37.1	23.8
1971	24.7	56.7	40.2	26.5	22.1	50.5	36.8	23.8

## VICTORIA—CONJUGAL CONDITION OF PERSONS MARRYING

Period	Bridegrooms			Brides			Total marriages
	Bachelors	Widowers	Divorced	Spinsters	Widows	Divorced	
1967	25,786	845	1,373	25,704	931	1,369	28,004
1968	27,248	899	1,577	27,192	954	1,578	29,724
1969	28,308	965	1,587	28,324	1,023	1,513	30,860
1970	29,191	909	1,629	29,163	984	1,582	31,729
1971	29,549	1,001	1,836	29,587	1,045	1,754	32,386

## VICTORIA—TOTAL MARRIAGES IN 1971 AND PERCENTAGE OF PERSONS MARRYING IN EACH CONJUGAL CONDITION, 1940 TO 1971

Marriages between—	1971		Conjugal condition	Percentage of total—			
	Number	Percentage		1940-49	1950-59	1960-69	1971
Bachelors and spinsters	28,362	87.6	Bachelors	90.5	89.5	91.6	91.2
Bachelors and widows	306	1.0	Widowers	4.9	4.5	3.4	3.1
Bachelors and divorced women	881	2.7	Divorced	4.6	6.0	5.0	5.7
Widowers and spinsters	264	0.8	Total	100.0	100.0	100.0	100.0
Widowers and widows	499	1.5					
Widowers and divorced women	238	0.7					
Divorced men and spinsters	961	3.0					
Divorced men and widows	240	0.7					
Divorced men and divorced women	635	2.0					
Total marriages	32,386	100.0	Total	100.0	100.0	100.0	100.0



## VICTORIA—MARRIAGES, RELIGIOUS AND CIVIL, 1971

Category of celebrant	Number	Proportion of total marriages
<b>Ministers of religion :</b>		
<b>Recognised denominations (a)—</b>		
Roman Catholic Church	9,784	30.21
Church of England in Australia	7,230	22.32
The Presbyterian Church of Australia	4,822	14.89
The Methodist Church of Australasia	3,174	9.80
Orthodox Churches (b)	1,508	4.66
Churches of Christ in Australia	592	1.83
The Baptist Union of Australia	560	1.73
Congregational Union of Australia	393	1.21
Unitarians	284	0.88
Jewry	277	0.86
Lutheran Church (b)	262	0.81
The Salvation Army	165	0.51
Seventh-day Adventist Church	69	0.21
Jehovah's Witnesses	60	0.18
Christian Brethren	52	0.16
The Church of Jesus Christ of Latter-Day Saints	48	0.15
Other recognised denominations	104	0.32
Other ministers	187	0.58
<b>Total ministers of religion</b>	<b>29,571</b>	<b>91.31</b>
Civil officers	2,815	8.69
<b>Total marriages</b>	<b>32,386</b>	<b>100.00</b>

(a) Under authority of the Commonwealth *Marriage Act* 1961.(b) Includes churches grouped under this heading in the proclamation made under the Commonwealth *Marriage Act* 1961.

## VICTORIA—CIVIL MARRIAGES

Year	Total civil marriages		Performed in the Office of the Government Statistician(a)	
	Number	Percentage of total marriages	Number	Percentage of total civil marriages
1967	2,203	7.87	1,846	83.79
1968	2,337	7.86	1,942	83.10
1969	2,376	7.70	2,041	85.90
1970	2,479	7.81	2,070	83.50
1971	2,815	8.69	2,300	81.71

(a) In August 1971 the Melbourne venue for civil marriages was moved to new premises where it became possible to perform more ceremonies per year.

## Divorce

(1972: pages 144-6)

## VICTORIA—DIVORCE, 1971

Petition for—	Petitions filed by—			Decrees granted to—		
	Husbands	Wives	Total	Husbands	Wives	Total
Dissolution	(a)1,638	(a)2,618	4,256	1,190	1,878	(b)3,072
Nullity	3	10	13	2	4	6
Judicial separation	..	2	2	..	1	1
<b>Total</b>	<b>1,641</b>	<b>2,630</b>	<b>4,271</b>	<b>1,192</b>	<b>1,883</b>	<b>(b)3,079</b>

(a) Includes seven petitions for dissolution or nullity.

(b) Includes four petitions granted to both parties of marriage.

**VICTORIA—DIVORCE : PETITIONS FILED AND DECREES GRANTED :  
DISSOLUTION, NULLITY, AND JUDICIAL SEPARATION**

Year	Petitions filed			Decrees granted		
	Dissolution (a)	Nullity	Judicial separation	Dissolution	Nullity	Judicial separation
1967	2,714	16	2	2,039	15	..
1968	2,787	10	6	2,515	10	..
1969	3,058	9	1	2,220	15	..
1970	3,675	14	2	2,591	13	..
1971	4,256	13	2	3,072	6	1

(a) Includes fourteen petitions for dual relief in 1967, sixteen in 1968, nine in 1969, and fourteen in 1970 and 1971.

**VICTORIA—GROUNDS FOR DIVORCE, 1971**

Grounds on which granted	Dissolution		Nullity		Judicial separation	
	Husbands' petitions	Wives' petitions	Husbands' petitions	Wives' petitions	Husbands' petitions	Wives' petitions
Adultery	495	475	..	..	..	1
Adultery and desertion	..	6	..	..	..	..
Cruelty	1	40	..	..	..	..
Desertion	404	852	..	..	..	..
Separation	282	454	..	..	..	..
Desertion and separation	..	4	..	..	..	..
Other grounds	8	47	2	4	..	..
<b>Total</b>	<b>1,190</b>	<b>1,878</b>	<b>2</b>	<b>4</b>	<b>..</b>	<b>1</b>

NOTE. In addition to the above there were four instances where dissolutions were granted to both parties.

**VICTORIA—DIVORCE DECREES GRANTED : AGES OF  
PETITIONERS (AT DATE OF DECREE) AND ISSUE, 1971**

Ages of petitioners (years)	Dissolution (a)		Nullity		Judicial separation		Number of children (a)	
	Husbands' petitions	Wives' petitions	Husbands' petitions	Wives' petitions	Husbands' petitions	Wives' petitions	Husbands' petitions	Wives' petitions
Under 20	..	3	..	..	..	..	..	3
20-24	41	153	..	..	..	..	31	132
25-29	243	427	..	..	..	..	160	473
30-34	205	332	..	2	..	..	235	630
35-39	179	248	..	..	..	..	290	559
40-44	157	280	2	2	..	..	300	567
45-49	141	220	..	..	..	1	242	281
50-54	97	118	..	..	..	..	108	123
55-59	64	62	..	..	..	..	33	21
60 and over	63	35	..	..	..	..	12	4
<b>Total</b>	<b>1,190</b>	<b>1,878</b>	<b>2</b>	<b>4</b>	<b>..</b>	<b>1</b>	<b>1,411</b>	<b>2,793</b>

(a) Of the total of 4,204 children shown above, three children were the issue of marriages for which nullities were granted and two children were the issue of marriages for which a judicial separation was granted. In addition to the above, there were four instances involving a total of six children where dissolutions were granted to both parties.

VICTORIA—DISSOLUTIONS OF MARRIAGE : DECREES GRANTED : AGES OF PARTIES AT DATE OF DECREE, 1971

Ages of husbands (years)	Ages of wives (years)									Total husbands	
	Under 20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59		60 and over
20-24	3	81	12	..	..	..	..	..	..	..	96
25-29	1	187	369	26	1	..	..	..	..	..	584
30-34	..	28	264	242	20	3	..	1	..	..	558
35-39	..	4	54	180	177	23	3	1	1	..	443
40-44	..	..	10	49	164	178	35	13	..	..	449
45-49	..	..	4	17	46	149	153	25	4	3	401
50-54	..	..	2	..	9	45	95	70	16	2	239
55-59	..	..	..	1	2	11	34	48	48	15	159
60 and over	..	..	..	..	..	5	19	28	32	58	142
Total wives	4	300	715	515	419	414	339	186	101	78	(a)3,071

(a) Excludes one petition where age of husband was not stated but age of wife was 46 at time of dissolution.

VICTORIA—DISSOLUTIONS OF MARRIAGE : DECREES GRANTED : DURATION OF MARRIAGE AND ISSUE, 1971

Duration of marriage (years)	Number of children							Total dissolutions	Total children (a)
	0	1	2	3	4	5	6 and over		
1	5	3	..	..	..	..	..	8	3
2	23	3	..	..	..	..	..	26	3
3	38	16	1	1	1	..	..	57	25
4	103	36	9	3	..	..	..	151	63
5	114	79	13	2	..	..	..	208	111
6	98	65	32	7	3	..	..	205	162
7	66	73	31	3	..	..	1	174	151
8	42	53	47	9	2	1	..	154	187
9	43	49	44	21	1	2	..	160	214
10	32	37	50	22	4	1	..	146	224
11	21	27	43	21	10	2	..	124	226
12	31	26	36	19	5	..	..	117	175
13	17	21	37	30	7	2	1	115	229
14	16	20	29	27	12	3	1	108	228
15-19	89	58	140	105	58	21	12	483	1,066
20-24	75	62	96	86	31	15	12	377	794
25-29	112	77	44	15	7	3	4	262	278
30-34	80	24	12	3	..	..	..	119	57
35-39	43	6	..	..	..	..	..	49	6
40 and over	27	1	1	..	..	..	..	29	3
Total dissolutions of marriage	1,075	736	665	374	141	50	31	3,072	..
Total children	..	736	1,330	1,122	564	250	203	..	4,205

(a) Of the total of 4,205 children, six children were the issue of marriages for which dissolutions were granted to both parties.

Births

(1972: pages 146-50)

AUSTRALIA—NUMBER OF BIRTHS

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
1967	78,841	65,485	34,692	20,386	18,023	7,547	1,921	2,401	229,296
1968	81,696	70,228	35,190	21,207	19,541	8,317	2,084	2,643	240,906
1969	86,036	71,035	36,576	21,977	20,754	8,445	2,274	3,079	250,176
1970	88,448	73,019	37,530	22,617	21,618	8,185	2,624	3,475	257,516
1971	98,466	75,498	39,970	22,996	24,239	8,321	2,832	4,040	276,362

## AUSTRALIA—BIRTH RATES (a)

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T. (b)	A.C.T. (b)	Aust.
1967	18.35	19.98	20.39	18.37	20.48	20.10	31.0	23.2	19.42
1968	18.72	21.10	20.33	18.89	21.34	21.89	30.8	23.6	20.04
1969	19.35	20.96	20.73	19.28	21.72	21.93	31.1	25.3	20.38
1970	19.52	21.16	20.90	19.52	21.74	21.09	33.1	26.4	20.55
1971	21.35	21.51	21.84	19.55	23.50	21.27	32.8	28.0	21.62

- (a) Rates have been recalculated following the revision of population estimates for dates after 30 June 1966. When final results of the 1971 Census become available the rates may be further revised.  
 (b) Based on too few events to warrant calculation to second place of decimals.

## VICTORIA—BIRTHS BY SEX, MASCULINITY, AVERAGE AGE OF FATHER AND MOTHER

Year	Males	Females	Total	Masculinity (a)	Average age (b)	
					Father	Mother
1967	33,529	31,956	65,485	104.92	30.6	27.2
1968	36,145	34,083	70,228	106.05	30.3	27.0
1969	36,421	34,614	71,035	105.22	30.2	27.0
1970	37,350	35,669	73,019	104.71	30.1	26.9
1971	38,432	37,066	75,498	103.69	29.8	26.7

- (a) Number of male births per 100 female births.  
 (b) Average age of father and mother of nuptial children only.

## VICTORIA—NUPTIAL CONFINEMENTS : AGE GROUP OF MOTHER AND PREVIOUS ISSUE, 1971

Age group of mother (years)	Number of married mothers with previous issue numbering—										Total married mothers	
	0	1	2	3	4	5	6	7	8	9		10 and over
Under 20	4,107	713	43	..	..	..	..	..	..	..	..	4,863
20-24	13,291	8,410	2,312	506	92	7	3	..	..	..	..	24,621
25-29	6,619	8,998	5,376	1,984	563	201	61	21	2	..	..	23,825
30-34	1,459	2,645	2,911	2,056	959	416	194	64	32	9	7	10,752
35-39	424	730	947	816	595	383	197	134	77	45	35	4,383
40-44	111	133	189	231	168	115	83	69	41	31	54	1,225
45-49	9	10	7	7	13	8	7	7	4	2	2	76
Age not stated	3	3	2	..	..	..	..	..	..	..	..	8
<b>Total</b>	<b>26,023</b>	<b>21,642</b>	<b>11,787</b>	<b>5,600</b>	<b>2,390</b>	<b>1,130</b>	<b>545</b>	<b>295</b>	<b>156</b>	<b>87</b>	<b>98</b>	<b>69,753</b>
Proportion of total married mothers	37.31	31.03	16.90	8.03	3.43	1.62	0.78	0.42	0.22	0.12	0.14	100.00

VICTORIA—NUPTIAL CONFINEMENTS:  
NUMBER OF MOTHERS IN AGE GROUPS,  
TOTAL ISSUE, AND AVERAGE ISSUE, 1971

Age group of mother (years)	Number of mothers	Total issue	Average issue
Under 20	4,863	5,701	1.17
20-24	24,621	39,819	1.62
25-29	23,825	53,564	2.25
30-34	10,752	33,469	3.11
35-39	4,383	17,322	3.95
40-44	1,225	5,888	4.81
45-49	76	377	4.96
Age not stated	8	15	1.88
<b>Total</b>	<b>69,753</b>	<b>156,155</b>	<b>2.24</b>

VICTORIA—NUPTIAL CONFINEMENTS : RELATIVE  
AGE GROUPS OF PARENTS, 1971

Age group of father (years)	Age group of mother (years)								Total fathers
	Under 20	20-24	25-29	30-34	35-39	40-44	45-49	Not stated	
Under 20	773	161	4	..	..	..	..	1	939
20-24	3,257	10,148	970	66	2	1	..	1	14,445
25-29	712	11,408	11,705	868	39	6	..	1	24,739
30-34	108	2,404	8,753	4,949	463	46	1	..	16,724
35-39	10	383	1,886	3,554	1,939	168	2	1	7,943
40-44	3	81	386	1,050	1,458	555	24	..	3,557
45-49	..	22	79	191	367	351	33	..	1,043
50 and over	..	4	27	62	111	96	16	..	316
Not stated	..	10	15	12	4	2	..	4	47
<b>Married mothers</b>	<b>4,863</b>	<b>24,621</b>	<b>23,825</b>	<b>10,752</b>	<b>4,383</b>	<b>1,225</b>	<b>76</b>	<b>8</b>	<b>69,753</b>

VICTORIA—NUPTIAL FIRST BIRTHS : AGE GROUP OF MOTHER AND  
DURATION OF MARRIAGE, 1971

Age group of mother (years)	Duration of marriage																Total nuptial first births	
	Months											Years				5 and over		
	0	1	2	3	4	5	6	7	8	9	10	11	1	2	3			4
Under 20	41	92	153	242	442	844	828	230	87	144	141	116	629	98	16	3	1	4,107
20-24	33	56	89	177	346	706	690	304	280	595	485	447	4,309	2,850	1,306	449	169	13,291
25-29	10	13	13	24	29	74	91	66	92	164	142	157	1,334	1,314	1,165	917	1,014	6,619
30-34	6	4	8	8	12	14	27	17	31	58	42	34	336	222	140	101	399	1,459
35-39	4	5	1	1	1	6	13	5	16	16	14	10	93	55	28	28	128	424
40-44	1	1	..	..	..	1	3	5	4	3	3	1	24	15	13	5	32	111
45-49	..	..	..	..	..	..	..	..	..	..	..	..	1	3	1	..	3	9
Not stated	..	..	..	..	..	..	..	..	..	..	1	..	1	1	..	..	..	3
<b>Total</b>	<b>95</b>	<b>171</b>	<b>264</b>	<b>452</b>	<b>830</b>	<b>1,645</b>	<b>1,652</b>	<b>627</b>	<b>510</b>	<b>981</b>	<b>828</b>	<b>765</b>	<b>6,727</b>	<b>4,558</b>	<b>2,669</b>	<b>1,503</b>	<b>1,746</b>	<b>26,023</b>

## VICTORIA—MULTIPLE CONFINEMENTS (a)

Year	Cases of twins	Cases of triplets	Total multiple cases	Multiple cases per 1,000 total confinements
1967	691	11	(b)703	10.85
1968	730	5	735	10.57
1969	742	7	(c)751	11.34
1970	772	10	(b)783	10.84
1971	790	3	793	11.37

(a) Excludes confinements where the births were of stillborn children only.

(b) Includes one case of quadruplets.

(c) Includes two cases of quadruplets.

## AUSTRALIA—EX-NUPTIAL BIRTHS

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
1967	6,300	3,699	3,525	1,375	1,944	562	259	70	17,734
1968	6,622	4,166	3,756	1,558	2,014	657	312	86	19,171
1969	6,860	4,098	3,835	1,508	2,231	647	315	91	19,585
1970	7,455	4,420	4,251	1,715	2,316	650	426	134	21,367
1971	9,674	5,010	4,859	1,782	2,720	722	664	198	25,629

## AUSTRALIA—EX-NUPTIAL BIRTHS; PERCENTAGE OF TOTAL BIRTHS

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
1967	7.99	5.65	10.16	6.74	10.79	7.45	13.48	2.92	7.73
1968	8.11	5.93	10.67	7.35	10.31	7.90	14.97	3.25	7.96
1969	7.97	5.77	10.49	6.86	10.75	7.66	13.85	2.96	7.83
1970	8.43	6.05	11.33	7.58	10.71	7.94	16.23	3.86	8.30
1971	9.82	6.64	12.16	7.75	11.22	8.68	23.45	4.90	9.27

## VICTORIA—AGES OF MOTHERS OF EX-NUPTIAL CHILDREN

Age of mother (years)	1967	1968	1969	1970	1971
12	1	1	..	1	..
13	..	1	1	5	1
14	11	10	17	11	16
15	70	66	69	95	98
16	207	200	194	228	250
17	320	396	344	419	423
18	417	477	446	507	582
19	401	475	448	525	517
20	373	386	360	410	506
21-24	823	952	990	962	1,172
25-29	502	553	575	590	750
30-34	283	320	314	320	377
35-39	179	194	212	218	206
40-44	56	81	81	83	58
45 and over	12	10	4	4	5
Not stated	3	1	7	4	2
Total	3,658	4,123	4,062	4,382	4,963

## VICTORIA—ADOPTIONS AND LEGITIMATIONS

Year	Number of children—	
	Adopted (a)	Legitimated (b)
1967	2,068	482
1968	1,832	533
1969	2,125	488
1970	2,147	601
1971	2,084	558

(a) Legal adoptions registered under the provisions of the *Adoption of Children Act 1964*.

(b) Legitimations registered. Under the provisions of the *Commonwealth Marriage Act 1961-1966*, which came into operation on 1 September 1963, a child whose parents were not married to each other at the time of its birth becomes legitimised on the subsequent marriage of its parents. The legitimisation takes place whether or not there was a legal impediment to the marriage of the parents at the time of the child's birth and whether or not the child was still living at the time of the marriage, or in the case of a child born before 1 September 1963 at that date.

## Deaths

(1972: page 150)

## AUSTRALIA—NUMBER OF DEATHS

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
1967	39,613	28,373	14,736	9,071	6,779	3,228	527	376	102,703
1968	41,803	29,967	16,078	9,916	7,468	3,284	543	488	109,547
1969	40,665	28,976	15,786	9,337	7,350	3,309	485	588	106,496
1970	43,601	30,335	17,055	10,138	7,543	3,174	608	594	113,048
1971	41,691	30,598	16,339	9,686	7,806	3,295	637	598	110,650

## AUSTRALIA—DEATH RATES (a)

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T. (b)	A.C.T. (b)	Aust.
1967	9.22	8.66	8.66	8.17	7.71	8.60	8.5	3.6	8.70
1968	9.58	9.00	9.29	8.83	8.16	8.64	8.0	4.4	9.11
1969	9.15	8.55	8.95	8.19	7.69	8.59	6.6	4.8	8.68
1970	9.62	8.79	9.50	8.75	7.59	8.18	7.7	4.5	9.02
1971	9.04	8.72	8.93	8.23	7.57	8.42	7.4	4.1	8.66

(a) Rates have been recalculated following the revision of population estimates for dates after 30 June 1966. When final results of the 1971 Census become available the rates may be further revised.

(b) Based on too few events to warrant calculation to second place of decimals.

**Causes of death**  
(1972: pages 150-8)

VICTORIA—CAUSES OF DEATH: NUMBERS AND RATES, 1971

International Classification of Diseases Code	Cause of death (a)	International List numbers	Number of deaths	Proportion of total	Rate per 1,000,000 of mean population
B3	Bacillary dysentery and amoebiasis	004, 006	1	(d)	(d)
B4	Enteritis and other diarrhoeal diseases	008, 009	67	0.22	19
B5	Tuberculosis of respiratory system	010-012	46	0.15	13
B6	Other tuberculosis, including late effects	013-019	15	0.05	4
B11	Meningococcal infection	036	1	(d)	(d)
B14	Measles	055	1	(d)	(d)
B16	Malaria	084	1	(d)	(d)
B17	Syphilis and its sequelae	090-097	4	0.01	1
B18	All other infective and parasitic diseases	(b)	88	0.29	25
B19	Malignant neoplasms—				
	Digestive organs and peritoneum	150-159	1,810	5.92	516
	Lung	162	962	3.14	274
	Skin	172-173	103	0.34	29
	Breast	174	514	1.68	147
	Genital organs	180-187	631	2.06	180
	Urinary organs	188-189	236	0.77	67
	Leukaemia and aleukaemia	204-207	218	0.71	62
	Other malignant and lymphatic neoplasms	(c)	863	2.82	246
B20	Benign and unspecified neoplasms	210-239	41	0.13	12
B21	Diabetes mellitus	250	565	1.85	161
B22	Avitaminoses and other nutritional deficiency	260-269	25	0.08	7
B23	Anaemias	280-285	67	0.22	19
B24	Meningitis	320	14	0.05	4
B25	Active rheumatic fever	390-392	1	(d)	(d)
B26	Chronic rheumatic heart disease	393-398	264	0.86	75
B27	Hypertensive disease	400-404	511	1.67	146
B28	Ischaemic heart disease	410-414	9,407	30.74	2,680
B29	Other forms of heart disease	420-429	1,211	3.96	345
B30	Cerebrovascular disease	430-438	4,261	13.92	1,214
B31	Influenza	470-474	29	0.09	8
B32	Pneumonia	480-486	728	2.38	207
B33	Bronchitis, emphysema, and asthma	490-493	1,090	3.56	311
B34	Peptic ulcer	531-533	163	0.53	47
B35	Appendicitis	540-543	12	0.04	3
B36	Intestinal obstruction and hernia	550-553, 560	94	0.31	27
B37	Cirrhosis of liver	571	190	0.62	54
B38	Nephritis and nephrosis	580-584	144	0.47	41
B39	Hyperplasia of prostate	600	76	0.25	22
B40	Abortion	640-645	5	0.02	2
B41	Other complications of pregnancy, childbirth and the puerperium	630-639 650-678	12	0.04	3
B42	Congenital anomalies	740-759	338	1.10	96
B43	Birth injury, difficult labour and other anoxic and hypoxic conditions	764-768 772-776 760-763 769-771 773-775 777-779	222	0.73	63
B44	Other causes of perinatal mortality	773-775 777-779	375	1.23	107
B45	Symptoms and ill-defined conditions	780-796	79	0.26	23
	General arteriosclerosis	440	808	2.64	230
B46	Other diseases of circulatory system	441-458	504	1.65	144
	Other diseases of respiratory system	460-466	275	0.90	78
	All other diseases	500-519	12		
	Residual		1,119	3.66	319
BE47	Motor vehicle accidents	E810-E823	1,064	3.48	303
BE48	All other accidents	E800-E807 E825-E949	724	2.37	206
BE49	Suicide and self-inflicted injury	E950-E959	501	1.64	143
BE50	All other external causes	E960-E999	118	0.39	34
Total all causes			30,598	100.00	8,717

(a) No deaths were recorded in the following categories in 1971: 1. Cholera (000), 2. Typhoid fever (001), 7. Plague (020), 8. Diphtheria (032), 9. Whooping cough (033), 10. Streptococcal sore throat and scarlet fever (034), 12. Acute poliomyelitis (040-043), 13. Smallpox (050), 15. Typhus and other rickettsioses (080-083).

(b) 002, 003, 005, 007, 021-031, 035, 037-039, 044-046, 051-054, 056, 057, 060-068, 070-079, 085-089, 098-136.

(c) 140-149, 160, 161, 163, 170, 171, 190-199, 200-203, 208, 209.

(d) Too small to register within the limits of the table.



## VICTORIA—MAIN CAUSES OF DEATH IN AGE GROUPS, 1971

International Classification of Diseases Code	Age group and cause of death	Deaths from specified cause			
		In age group		At all ages	
		Number	Per cent	Number	Per cent (a)
<b>Under 1 year</b>					
B44	Other causes of perinatal mortality	374	33.8	375	99.7
B42	Congenital anomalies	240	21.7	338	71.0
B43	Birth injury, difficult labour and other anoxic and hypoxic conditions	220	19.9	222	99.1
B46 (part)	Other diseases of respiratory system	115	10.4	275	41.8
B32	Pneumonia	44	4.0	728	6.1
B18	All other infective and parasitic diseases	23	2.0	88	26.1
<b>1-4 years</b>					
BE48	All other accidents	41	21.4	724	5.7
BE47	Motor vehicle accidents	33	17.2	1,064	3.1
B19	Malignant neoplasms	29	15.1	5,337	0.5
B42	Congenital anomalies	27	14.1	338	8.0
B46 (part)	Other diseases of respiratory system	14	7.3	275	5.1
B32	Pneumonia	10	5.2	728	1.4
<b>5-14 years</b>					
BE47	Motor vehicle accidents	80	34.7	1,064	7.5
BE48	All other accidents	39	16.9	724	5.4
B19	Malignant neoplasms	37	16.0	5,337	0.7
B42	Congenital anomalies	13	5.6	338	3.8
B 4	Enteritis and other diarrhoeal diseases	6	2.6	67	8.9
B33	Bronchitis, emphysema, and asthma	4	1.7	1,090	0.4
<b>15-24 years</b>					
BE47	Motor vehicle accidents	374	53.0	1,064	35.2
BE49	Suicide and self-inflicted injuries	71	10.1	501	14.2
B19	Malignant neoplasms	70	9.9	5,337	1.3
BE48	All other accidents	48	6.8	724	6.6
B42	Congenital anomalies	17	2.4	338	5.0
BE50	All other external causes	15	2.1	118	12.7
<b>25-34 years</b>					
BE47	Motor vehicle accidents	139	28.5	1,064	13.1
BE49	Suicide and self-inflicted injuries	76	15.6	501	15.2
B19	Malignant neoplasms	61	12.5	5,337	1.1
BE48	All other accidents	49	10.1	724	6.8
BE50	All other external causes	25	5.2	118	21.2
B28	Ischaemic heart disease	19	3.9	9,407	0.2
<b>35-44 years</b>					
B28	Ischaemic heart disease	189	20.7	9,407	2.0
B19	Malignant neoplasms	177	19.4	5,337	3.3
BE47	Motor vehicle accidents	102	11.2	1,064	9.6
BE49	Suicide and self-inflicted injuries	98	10.7	501	19.5
B30	Cerebrovascular disease	77	8.4	4,261	1.8
BE48	All other accidents	39	4.3	724	5.4
<b>45-54 years</b>					
B28	Ischaemic heart disease	812	32.8	9,407	8.6
B19	Malignant neoplasms	705	28.4	5,337	13.2
B30	Cerebrovascular disease	186	7.5	4,261	4.4
BE49	Suicide and self-inflicted injuries	93	3.8	501	18.5
BE47	Motor vehicle accidents	91	3.7	1,064	8.5
B37	Cirrhosis of liver	59	2.4	190	31.1
<b>55-64 years</b>					
B28	Ischaemic heart disease	1,778	38.2	9,407	18.9
B19	Malignant neoplasms	1,213	26.1	5,337	22.7
B30	Cerebrovascular disease	395	8.5	4,261	9.3
B33	Bronchitis, emphysema, and asthma	186	4.0	1,090	17.0
B21	Diabetes mellitus	96	2.1	565	17.0
BE47	Motor vehicle accidents	95	2.0	1,064	8.9
<b>65-74 years</b>					
B28	Ischaemic heart disease	2,740	37.2	9,407	29.1
B19	Malignant neoplasms	1,540	20.9	5,337	28.9
B30	Cerebrovascular disease	1,014	13.8	4,261	23.8
B33	Bronchitis, emphysema, and asthma	357	4.9	1,090	32.8
B29	Other forms of heart disease	227	3.1	1,211	18.7
B21	Diabetes mellitus	165	2.2	565	29.2

(a) Deaths in this age group from the stated cause expressed as a percentage of all deaths from that cause.

VICTORIA—MAIN CAUSES OF DEATH IN AGE GROUPS 1971—*continued*

International Classification of Diseases Code	Age group and cause of death	Deaths from specified cause			
		In age group		At all ages	
		Number	Per cent	Number	Per cent (a)
	<b>75 years and over</b>				
B28	Ischaemic heart disease	3,861	31.0	9,407	41.1
B30	Cerebrovascular disease	2,566	20.6	4,261	60.2
B19	Malignant neoplasms	1,502	12.1	5,337	28.2
B29	Other forms of heart disease	791	6.3	1,211	65.3
B46 (part)	Arteriosclerosis	705	5.7	808	87.3
B33	Bronchitis, emphysema, and asthma	451	3.6	1,090	41.4

(a) Deaths in this age group from the stated cause expressed as a percentage of all deaths from that cause.

VICTORIA—DEATH RATES FROM MALIGNANT NEOPLASMS  
IN AGE GROUPS

Age group (years)	Annual deaths from malignant neoplasms per 10,000 of each sex in each age group					
	1920-22	1932-34	1946-48	1953-55	1960-62	1965-67
	MALES					
Under 5	0.46	0.27	0.60	1.11	1.06	0.79
5-9	0.13	0.20	0.34	0.98	0.85	0.95
10-14	0.14	0.24	0.24	0.69	0.59	0.57
15-19	0.30	0.37	0.61	0.93	0.95	0.86
20-24	0.64	0.73	0.69	1.27	0.86	1.25
25-34	0.76	0.93	1.20	1.32	1.34	1.62
35-44	3.31	3.04	3.00	4.01	3.93	4.50
45-54	13.94	10.13	11.65	13.25	14.54	14.64
55-64	40.46	37.25	32.73	36.99	41.16	42.09
65-74	78.21	85.19	80.46	82.41	90.40	98.12
75 and over	110.12	133.78	148.20	163.06	161.58	170.73
All ages	9.52	11.63	13.51	13.76	14.15	14.90
	FEMALES					
Under 5	0.39	0.38	0.48	1.37	1.04	0.68
5-9	0.17	0.17	0.18	0.60	0.92	0.66
10-14	0.05	0.08	0.40	0.71	0.64	0.46
15-19	0.15	0.17	0.04	0.49	0.66	0.71
20-24	0.30	0.39	0.60	0.56	0.99	0.82
25-34	1.28	1.57	1.75	1.81	1.88	1.50
35-44	6.61	6.00	6.23	6.14	5.76	5.38
45-54	19.14	17.31	16.47	16.46	15.02	16.40
55-64	34.48	35.82	33.40	30.93	30.20	30.30
65-74	63.05	61.17	61.44	59.38	50.34	57.01
75 and over	92.86	106.19	111.49	117.02	103.68	96.93
All ages	9.63	12.00	14.50	14.16	13.12	13.00

VICTORIA—DEATHS FROM MALIGNANT NEOPLASMS  
BY AGE GROUP AND SEX, 1971

Site of disease (a)	Sex	Age group (years)				Total
		Under 25	25-44	45-64	65 and over	
Buccal cavity and pharynx (140-149)	M	1	4	36	35	76
	F	..	1	9	20	30
Oesophagus (150)	M	..	1	26	41	68
	F	..	..	16	34	50
Stomach (151)	M	..	8	90	178	276
	F	1	4	51	146	202
Intestine, except rectum (152, 153)	M	..	6	91	148	245
	F	..	4	107	234	345
Rectum and rectosigmoid junction (154)	M	..	5	45	91	141
	F	..	6	25	62	93
Trachea, bronchus and lung (162)	M	..	15	348	446	809
	F	..	7	68	78	153
Breast (174)	M	..	1	2	3	6
	F	1	40	234	233	508
Cervix uteri (180)	F	..	5	44	42	91
Other and unspecified parts of uterus (181, 182)	F	2	1	19	49	71
Ovary, fallopian tube, and broad ligament (183)	F	3	8	80	70	161
Prostate (185)	M	..	..	31	245	276
Bladder (188)	M	..	..	24	74	98
	F	..	..	6	27	33
Other and unspecified urinary organs (189)	M	..	3	33	31	67
	F	2	..	12	24	38
Brain and other parts of nervous system (191, 192)	M	12	10	48	13	83
	F	12	7	24	12	55
Leukaemia (204-207)	M	26	16	29	61	132
	F	22	11	12	41	86
Other neoplasms of lymphatic and haemopoietic system (200-203, 208, 209)	M	16	14	61	58	149
	F	8	6	44	54	112
All other and unspecified sites	M	19	32	189	240	480
	F	14	23	114	252	403
Total	M	74	115	1,053	1,664	2,906
	F	65	123	865	1,378	2,431

(a) Figures in parentheses are in respect of the Eighth Revision of the International List of Causes of Death.

VICTORIA—DEATHS FROM CEREBROVASCULAR DISEASES  
BY AGE GROUP AND SEX, 1971

Cause of death (a)	Sex	Age group (years)					Total deaths
		Under 45	45-54	55-64	65-74	75 and over	
Subarachnoid haemorrhage (430)	M	32	17	15	12	7	83
	F	33	38	31	27	10	139
Cerebral haemorrhage (431)	M	12	38	84	145	141	420
	F	12	34	59	150	284	539
Cerebral infarction (432-434)	M	3	13	49	107	251	423
	F	1	10	24	111	507	653
Acute but ill-defined cerebrovascular disease (436)	M	2	17	71	182	320	592
	F	3	14	47	195	637	896
Other and ill-defined cerebrovascular diseases (435, 437, 438)	M	1	2	6	39	147	195
	F	1	3	9	46	262	321
Total	M	50	87	225	485	866	1,713
	F	50	99	170	529	1,700	2,548

(a) Figures in parentheses are in respect of the Eighth Revision of the International List of Causes of Death.

## VICTORIA—DEATHS FROM HEART DISEASES BY AGE GROUP AND SEX, 1971

Cause of death (a)	Sex	Age group (years)					Total deaths
		Under 45	45-54	55-64	65-74	75 and over	
Rheumatic fever with heart involvement (391)	M	..	..	..	..	..	..
	F	1	..	..	..	..	1
Chronic rheumatic heart disease (393, 398)	M	13	17	39	38	23	130
	F	9	23	22	39	41	134
Hypertensive heart disease (402, 404)	M	3	5	16	36	58	118
	F	5	1	19	33	160	218
Acute myocardial infarction (410)	M	91	413	955	1,250	1,165	3,874
	F	21	85	319	733	1,287	2,445
Other ischaemic heart disease (411-414)	M	82	264	390	461	615	1,812
	F	22	50	114	296	794	1,276
Other forms of heart disease (420-429)	M	29	33	63	105	279	509
	F	23	18	27	122	512	702
Total	M	218	732	1,463	1,890	2,140	6,443
	F	81	177	501	1,223	2,794	4,776

(a) Figures in parentheses are in respect of the Eighth Revision of the International List of Causes of Death.

## VICTORIA—DEATHS INVOLVING MOTOR VEHICLES

Year	Number of motor vehicles on register at 30 June	Deaths involving motor vehicles		
		Number (a)	Per 10,000 motor vehicles	Per 1,000,000 of mean population
1967	1,136,548	993	8.7	303
1968	1,193,536	904	7.6	272
1969	1,254,638	1,087	8.7	321
1970	1,321,516	1,097	8.3	318
1971	1,387,111	1,064	7.7	304

(a) Deaths of pedestrians included in this column numbered 260, 238, 286, 249, and 304, respectively.

NOTE. See also road traffic accident statistics on page 1062.

## VICTORIA—DEATHS FROM HOMICIDE (a)

Year	Males	Females	Total
1967	24	20	44
1968	20	29	49
1969	20	10	30
1970	25	23	48
1971	44	12	56

(a) Deaths from injuries inflicted by another person with intent to injure or kill, by any means.

NOTE. Deaths from criminal abortion are excluded from this category and included with deaths from maternal causes.

**Infant deaths**  
(1972: pages 158-62)

**AUSTRALIA—INFANT DEATHS**

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
1967	1,452	1,101	678	346	314	130	122	44	4,187
1968	1,525	1,010	716	345	397	143	101	45	4,282
1969	1,625	1,066	691	347	453	139	103	58	4,482
1970	1,743	1,060	672	367	459	116	126	61	4,604
1971	1,710	1,107	766	366	464	114	170	80	4,777

**AUSTRALIA—INFANT DEATH RATES (a)**

Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
1967	18.4	16.8	19.5	17.0	17.4	17.2	63.5	18.3	18.26
1968	18.7	14.4	20.3	16.3	20.4	17.2	48.5	17.0	17.78
1969	18.9	15.0	18.9	15.8	21.8	16.5	45.3	18.8	17.92
1970	19.7	14.5	17.9	16.2	21.2	14.2	48.0	17.6	17.88
1971	17.4	14.7	19.2	15.9	19.1	13.7	60.0	19.8	17.29

(a) Number of deaths under one year of age per 1,000 live births.

**VICTORIA—INFANT DEATHS**

Year	Melbourne Statistical Division		Remainder of State		Victoria	
	Number of deaths under one year	Rate per 1,000 live births	Number of deaths under one year	Rate per 1,000 live births	Number of deaths under one year	Rate per 1,000 live births
1967	746	16.4	355	17.8	1,101	16.8
1968	685	13.9	325	15.4	1,010	14.4
1969	730	14.5	336	16.2	1,066	15.0
1970	721	13.7	339	16.7	1,060	14.5
1971	843	15.5	264	12.6	1,107	14.7

NOTE. Births and deaths registered in Victoria are allotted to the place of usual residence of the parties. In the cases of births and infant deaths, the mother's residence is considered to be that of the child.

**VICTORIA—INFANT DEATH RATES AT CERTAIN AGES**

Year	Deaths under one year per 1,000 live births						Males	Females
	Under one week	One week and under one month	One month and under three months	Three months and under six months	Six months and under twelve months	Total under one year		
1967	11.4	1.3	1.5	1.5	1.1	16.8	18.2	15.3
1968	9.6	1.0	1.3	1.4	1.1	14.4	16.1	12.6
1969	9.7	1.2	1.2	1.5	1.4	15.0	16.6	13.4
1970	9.5	1.1	1.6	1.2	1.0	14.5	16.2	12.8
1971	9.3	1.1	1.6	1.5	1.2	14.7	15.6	13.7

## VICTORIA—INFANT DEATHS AT CERTAIN AGES, BY SEX, 1971

Particulars	Under one week	One week and under one month	One month and under three months	Three months and under six months	Six months and under twelve months	Total under one year
<b>Males—</b>						
Number	379	43	61	66	50	599
Rate (a)	9.9	1.1	1.6	1.7	1.3	15.6
Percentage of total	63.3	7.2	10.2	11.0	8.3	100.0
<b>Females—</b>						
Number	322	38	56	49	43	508
Rate (a)	8.7	1.0	1.5	1.3	1.2	13.7
Percentage of total	63.4	7.5	11.0	9.6	8.5	100.0

(a) Number of deaths in each age group per 1,000 live births.

## VICTORIA—INFANT DEATHS AT CERTAIN AGES, BY CAUSE, 1971

Cause of death (a)	Deaths under one year					Total under one year
	Under one week	One week and under one month	One month and under three months	Three months and under six months	Six months and under twelve months	
Chronic circulatory and genito-urinary disease in mother (760)	9	2	..	..	..	11
Other maternal conditions unrelated to pregnancy (761)	15	2	..	..	..	17
Toxaemias of pregnancy (762)	40	1	..	..	..	41
Maternal ante- and intrapartum infection (763)	21	1	..	..	..	22
Difficult labour (764-768)	47	1	..	1	..	49
Other complications of pregnancy and childbirth (769)	151	3	..	..	..	154
Conditions of placenta (770)	50	2	..	..	..	52
Conditions of umbilical cord (771)	13	..	..	..	..	13
Birth injury and termination of pregnancy without mention of cause (772, 773)	12	1	..	1	..	14
Haemolytic disease of newborn (774, 775)	10	2	..	1	..	13
Anoxic and hypoxic conditions, not elsewhere classified (776)	148	5	2	1	1	157
Immaturity, unqualified (777)	43	..	..	..	..	43
Other conditions of newborn (778, 779)	8	..	..	..	..	8
Congenital anomalies (740-759)	113	43	41	22	21	240
Infections (000-136)	3	8	10	8	5	34
Pneumonia (480-486)	7	4	12	15	6	44
Other diseases (140-474, 490-738, 780-796)	9	4	48	61	45	167
Inhalation or ingestion of food or other object causing obstruction or suffocation, and accidental mechanical suffocation (E911-E913)	..	1	1	1	6	9
Other external causes (E800-E910, E914-E999)	2	1	3	4	9	19
Total all causes	701	81	117	115	93	1,107

(a) Figures in parentheses refer to the Eighth Revision of the International List of Causes of Death.

NOTE. From 1 May 1971 onwards a new type of death certificate has been used in Victoria for infant deaths under 28 days of age, and stillbirths. The additional information obtained on the new certificate has made possible a more precise identification of the underlying cause of death. Consequently the figures in this table relating to deaths under one month of age are not strictly comparable with those for previous years.

## VICTORIA—STILLBIRTHS AND INFANT DEATHS

Year	Stillbirths (28 weeks or more gestation)		Deaths under one month		Deaths under one month plus stillbirths		Deaths under one year plus stillbirths	
	Number	Rate per 1,000 births (live and still)	Number	Rate per 1,000 births (live and still)	Number	Rate per 1,000 births (live and still)	Number	Rate per 1,000 births (live and still)
1967	797	12.03	828	12.49	1,625	24.52	1,898	28.64
1968	768	10.82	746	10.51	1,514	21.33	1,778	24.58
1969	761	10.60	777	10.82	1,538	21.42	1,827	25.45
1970	782	10.60	778	10.54	1,560	21.14	1,842	24.96
1971	760	9.97	782	10.25	1,542	20.22	1,867	24.48

## Cremation

(1972: page 162)

## VICTORIA—CREMATIONS AND DEATHS

Year	Total cremations	Total deaths	Percentage of cremations to deaths
1967	10,173	28,373	35.85
1968	10,939	29,967	36.50
1969	10,617	28,976	36.64
1970	11,265	30,335	37.14
1971	11,134	30,598	36.39

## INDUSTRIAL CONDITIONS, EMPLOYMENT, AND PRICES

### INDUSTRIAL CONDITIONS (1972: pages 163–99)

#### **Incidence of industrial awards, determinations, and agreements** (1972: pages 166–7)

#### VICTORIA—INCIDENCE OF AWARDS, DETERMINATIONS, AND REGISTERED INDUSTRIAL AGREEMENTS (a)

Date	Males				Females			
	Employees represented in estimates	Employees affected by awards, etc.		Other employees	Employees represented in estimates	Employees affected by awards, etc.		Other employees
		Commonwealth	State			Commonwealth	State	
	'000	per cent	per cent	per cent	'000	per cent	per cent	per cent
April 1954	509	59.4	27.4	13.2	194	47.7	45.2	7.1
May 1963	588	57.3	27.9	14.8	244	44.3	47.0	8.7
May 1968	667	57.7	24.6	17.7	312	39.9	50.8	9.3

(a) Relates to awards, etc., under the jurisdiction of Commonwealth and State industrial authorities. The proportions of employees not so covered (including those working under unregistered industrial agreements) were also obtained. Details exclude employees in rural industry and those of private employers in hotels, cafes, personal service, etc., and also those not subject to pay-roll tax. Further information on the sample survey is obtained in earlier *Victorian Year Books*.



VICTORIA—PERCENTAGE OF PRIVATE AND GOVERNMENT  
EMPLOYEES AFFECTED BY AWARDS, ETC., MAY 1968  
(per cent)

Particulars	Males			Females		
	Employees affected by awards, etc.		Other employees	Employees affected by awards, etc.		Other employees
	Commonwealth	State		Commonwealth	State	
Private employees	51.9	25.0	23.1	40.4	50.3	9.3
Government employees	70.6	23.8	5.6	37.5	52.9	9.6
Total private and government	57.7	24.6	17.7	39.9	50.8	9.3

See footnote to preceding table.

VICTORIA—PERCENTAGE OF EMPLOYEES AFFECTED BY  
AWARDS, ETC., BY INDUSTRY GROUPS, MAY 1968  
(per cent)

Industry group	Males			Females		
	Employees affected by awards, etc.		Other employees	Employees affected by awards, etc.		Other employees
	Commonwealth	State		Commonwealth	State	
Manufacturing groups	65.9	17.5	16.6	65.6	26.1	8.4
Non-manufacturing groups	51.4	30.1	18.5	20.9	69.1	10.1
All industry groups	57.7	24.6	17.7	39.9	50.8	9.3

See footnote to table on page 826.

**Rates of wage**  
(1972: pages 167-9)

MINIMUM WEEKLY WAGE RATES (a)

At end of December—	Rates of wage (b) (\$)		Index numbers (Australia 1954 = 100) (c)	
	Victoria	Australia	Victoria	Australia
<b>ADULT MALES</b>				
1963	37.20	37.55	131.7	133.0
1964	39.47	39.65	139.8	140.4
1965	40.34	40.76	142.8	144.3
1966	42.78	43.05	151.5	152.4
1967	44.59	45.00	157.9	159.3
1968	48.86	48.98	173.0	173.4
1969	51.74	51.86	183.2	183.6
1970 (d)	r 53.48	r 54.06	r 189.4	191.4
1971	61.32	61.44	217.1	217.5
<b>ADULT FEMALES</b>				
1963	26.08	26.69	131.0	134.1
1964	27.67	28.34	139.0	142.3
1965	28.46	29.10	143.0	146.2
1966	30.06	30.70	151.0	154.2
1967	32.04	32.57	160.9	163.6
1968	34.52	34.85	173.4	175.0
1969	37.08	37.70	186.2	189.4
1970	38.64	39.66	194.1	199.2
1971	45.63	46.96	229.2	235.9

(a) Weighted average minimum weekly rates (all groups) payable for a full weeks work (excluding overtime) and index numbers of wage rates, as prescribed in awards, determinations, and agreements. The indexes are designed to measure movements in prescribed minimum rates of "wages" as distinct from "salaries". Consequently awards, etc., relating mainly to salary earners are excluded. Rural industries are also excluded.

(b) The amounts shown should not be regarded as actual current averages, but as indexes expressed in money terms, indicative of trends.

(c) Base: weighted average weekly wage rate for Australia, 1954 = 100.

(d) Australian figures include the 10 per cent additions to minimum wage rates for adult males in some Western Australian State awards payable from December 1970.  
r: Revised.

MINIMUM WEEKLY WAGE RATES (a) : INDUSTRY GROUPS,  
30 JUNE 1972

Industry group	Rates of wage (b) (\$)		Index numbers (Australia 1954=100) (c)	
	Victoria	Australia	Victoria	Australia
	<b>ADULT MALES</b>			
Mining and quarrying (d)	63.10	71.38	223.4	252.8
Manufacturing—				
Engineering, metals, vehicles, etc.	62.89	62.01	222.7	219.6
Textiles, clothing, and footwear	62.24	62.11	220.4	219.9
Food, drink, and tobacco	63.43	62.30	224.6	220.6
Sawmilling, furniture, etc.	59.89	61.34	212.1	217.2
Paper, printing, etc.	67.62	67.64	239.4	239.5
Other manufacturing	63.35	62.73	224.3	222.1
All manufacturing groups	63.06	62.46	223.3	221.2
Building and construction	69.31	65.86	245.4	233.2
Railway services	55.88	60.46	197.9	214.1
Road and air transport	62.92	63.44	222.8	224.6
Shipping and stevedoring (e)	72.01	71.66	255.0	253.7
Communication	85.46	85.11	302.6	301.4
Wholesale and retail trade	65.62	64.85	232.3	229.6
Public authority (n.e.i.) and community and business services	65.70	65.56	232.6	232.1
Amusement, hotels, personal service, etc.	58.95	59.79	208.7	211.7
All industry groups	64.70	64.51	229.1	228.4
	<b>ADULT FEMALES</b>			
Manufacturing—				
Engineering, metals, vehicles, etc.	53.44	52.73	268.5	264.9
Textiles, clothing, and footwear	46.22	46.57	232.2	233.9
Food, drink, and tobacco	46.41	46.93	233.1	235.7
Other manufacturing	48.20	47.54	242.1	238.8
All manufacturing groups	47.65	47.93	239.3	240.7
Transport and communication	53.85	54.41	270.5	273.3
Wholesale and retail trade	52.93	52.92	265.9	265.8
Public authority (n.e.i.) and community and business services	54.04	52.74	271.4	264.9
Amusement, hotels, personal service, etc.	49.19	49.36	247.1	248.0
All industry groups	49.76	50.23	250.0	252.3

(a) Weighted average minimum weekly rates payable for a full week's work (excluding overtime) and index numbers of wage rates, as prescribed in awards, determinations, and agreements. The indexes are designed to measure movements in prescribed minimum rates of "wages" as distinct from "salaries". Consequently awards, etc., relating mainly to salary earners are excluded. Rural industries are also excluded.

(b) The amounts shown should not be regarded as actual current averages, but as indexes expressed in money terms, indicative of trends.

(c) Base : weighted average weekly wage rate for Australia, 1954=100.

(d) For mining, the average rates of wage on which index numbers are based are those prevailing at the principal mining centres in each State.

(e) For shipping, average rates of wage on which index numbers are based are for occupations other than masters, officers, and engineers in the merchant marine service, and include value of keep, where supplied.

**Standard hours of work**  
(1972: pages 169-71)  
**VICTORIA—WEEKLY HOURS OF WORK (EXCLUDING OVERTIME):**  
**ADULT MALES: INDUSTRY GROUPS (a)**

Industry group	Hours of work (b)			Index numbers (c)		
	31 March 1939	31 March 1948	31 December 1971	31 March 1939	31 March 1948	31 December 1971
Mining and quarrying (d)	44.34	40.52	37.07	111.0	101.4	92.8
Manufacturing—						
Engineering, metals, vehicles, etc.	44.05	40.00	40.00	110.2	100.1	100.1
Textiles, clothing, and footwear	44.40	40.03	40.00	111.1	100.2	100.1
Food, drink, and tobacco	44.82	40.12	39.98	112.2	100.4	100.1
Sawmilling, furniture, etc.	44.37	40.00	40.00	110.0	100.1	100.1
Paper, printing, etc.	43.68	39.94	39.95	109.3	99.9	100.0
Other manufacturing	44.02	39.97	39.98	110.2	100.0	100.1
All manufacturing groups	44.19	40.05	39.99	110.6	100.2	100.1
Building and construction	44.18	40.00	40.00	110.6	100.7	100.1
Railway services	43.96	39.97	39.99	110.0	100.0	100.1
Road and air transport	46.70	40.10	40.00	116.9	100.4	100.1
Communication	44.00	40.00	39.95	110.1	100.1	100.0
Wholesale and retail trade	45.47	40.11	40.00	113.8	100.4	100.1
Public authority (n.e.i.) and community and business services	42.75	38.93	39.25	107.0	97.4	98.2
Amusement, hotels, personal service, etc.	45.86	40.03	40.00	114.8	100.2	100.1
All industry groups (a)	44.46	40.03	39.87	111.3	100.2	99.8

For footnotes, see end of following table

**VICTORIA—WEEKLY HOURS OF WORK (EXCLUDING OVERTIME):**  
**ADULT FEMALES: INDUSTRY GROUPS (a)**

Industry group	Hours of work (b)			Index numbers (c)		
	31 March 1951	30 June 1953	31 December 1971	31 March 1951	30 June 1953	31 December 1971
Manufacturing—						
Engineering, metals, vehicles, etc.	39.87	39.87	39.94	100.5	100.5	100.7
Textiles, clothing, and footwear	40.00	40.00	39.98	100.8	100.8	100.8
Food, drink, and tobacco	40.00	40.00	40.00	100.8	100.8	100.8
Other manufacturing	39.94	39.94	39.87	100.7	100.7	100.5
All manufacturing groups	39.97	39.97	39.95	100.8	100.8	100.7
Transport and communication	37.94	37.94	37.91	95.6	95.6	95.6
Wholesale and retail trade	40.00	40.00	39.82	100.8	100.8	100.4
Public authority (n.e.i.) and community and business services	39.25	39.25	38.92	98.9	98.9	98.1
Amusement, hotels, personal service, etc.	39.94	39.94	39.68	100.7	100.7	100.0
All industry groups (a)	39.81	39.81	39.67	100.3	100.3	100.0

NOTE. Weighted average standard hours of work (excluding overtime) for a full working week and index numbers of hours of work.

(a) Excludes rural industry, shipping and stevedoring for males and females, and also mining and quarrying and building and construction for females.

(b) The figures shown should not be regarded as actual current averages, but as indexes expressed in hours, indicative of trends.

(c) Base: weighted average for Australia, 1954=100.

(d) For mining, the average hours of work are those prevailing at the principal mining centres.

**Average weekly earnings**  
(1972: pages 171-2)

**AUSTRALIA AND VICTORIA—AVERAGE WEEKLY EARNINGS PER  
EMPLOYED MALE UNIT (a)**

(\$)

Period	Victoria	Australia	Period	Victoria	Australia
1962-63	n.a.	48.90	1967-68	67.60	65.30
1963-64	n.a.	51.50	1968-69	72.10	70.20
1964-65	n.a.	55.30	1969-70	78.10	76.10
1965-66	n.a.	57.90	1970-71	86.20	84.70
1966-67	63.90	61.70	1971-72	94.10	93.50

**NOTE.** The figures are derived from particulars of employment and wages and salaries recorded on pay-roll tax returns, from other direct collections and from estimates of the unrecorded balance. The figures relate to civilians only.

Particulars of wages and salaries paid are not available for males and females separately from these sources; average weekly earnings have, therefore, been calculated in terms of male units, i.e. in Victoria total male employees plus 53 per cent of female employees. This proportion is derived from the estimated ratio of female to male earnings.

As the number of male units used in calculating Australian average weekly earnings is the sum of the estimates for the States, a separate ratio for Australia as a whole is not used, but the weighted average of the State ratios is approximately 52.5 per cent. For a number of reasons, average weekly earnings per employed male unit cannot be compared with the weekly wage rates shown on pages 828-9.

At the 1971 Population Census all trainee teachers were for the first time classified as not in the labour force. Previously those enrolled at government teachers colleges (and in some cases at other institutions also) had been included. Trainees affected by the reclassification have now been excluded, together with their allowances, from the calculation of average weekly earnings from September quarter 1971. The effect of their exclusion has been to increase average earnings figures by approximately 30 cents.

(a) Includes, in addition to wages at award rates, earnings of salaried employees, overtime earnings, over-award and bonus payments, payments made in advance or retrospectively during the period specified, etc.

n.a.: Not available.

**Survey of weekly earnings and hours**  
(1972: pages 172-4)

**VICTORIA—AVERAGE EARNINGS AND HOURS OF FULL-TIME  
EMPLOYEES (OTHER THAN MANAGERIAL, ETC., STAFF) (a)**  
CLASSIFIED BY INDUSTRY GROUPS, OCTOBER 1971

Industry group	Average weekly earnings (\$)				Average weekly hours paid for				Average hourly earnings (\$)			
	Males		Females		Males		Females		Males		Females	
	Adult	Junior	Adult	Junior	Adult	Junior	Adult	Junior	Adult	Junior	Adult	Junior
Manufacturing— Founding, engineering, vehicles, etc.	90.60	44.80	56.90	(b)	43.8	40.7	40.1	(b)	2.07	1.10	(b)	(b)
Other	86.80	43.50	49.50	(b)	43.4	40.9	39.0	(b)	2.00	1.06	(b)	(b)
Total manufacturing	88.50	44.10	51.20	34.20	43.6	40.8	39.3	38.7	2.03	1.08	1.30	0.88
Non-manu- facturing	86.00	44.50	56.30	38.00	42.0	40.5	39.0	39.0	2.05	1.10	1.44	0.98
All industry groups	87.60	44.30	53.00	36.80	43.0	40.6	39.2	38.9	2.04	1.09	1.35	0.95

For footnotes, see end of following table.

VICTORIA—AVERAGE WEEKLY EARNINGS OF FULL-TIME EMPLOYEES  
(OTHER THAN MANAGERIAL, ETC., STAFF) (a) CLASSIFIED BY  
INDUSTRY GROUPS DURING OCTOBER  
(\$)

Industry group	Adult males			Junior males			Adult females			Junior females		
	1969	1970	1971	1969	1970	1971	1969	1970	1971	1969	1970	1971
Manufacturing— Founding, engineering, vehicles, etc.	73.80	79.20	90.60	37.30	37.70	44.80	(b)	(b)	56.90	(b)	(b)	(b)
Other	73.10	78.20	86.80	37.40	39.50	43.50	(b)	(b)	49.50	(b)	(b)	(b)
Total manufacturing	73.40	78.60	88.50	37.30	38.60	44.10	40.80	44.30	51.20	28.40	30.50	34.20
Non-manu- facturing	74.00	80.00	86.00	36.60	40.70	44.50	45.50	50.30	56.30	30.70	34.40	38.00
All industry groups	73.60	79.10	87.60	37.00	39.60	44.30	42.50	46.40	53.00	29.90	33.10	36.80

(a) Details have been derived from sample surveys of most private employers subject to pay-roll tax which have been conducted as at the last pay period in October during recent years. Employees in rural industry and in private domestic service are excluded because most employers in these two industries are not subject to pay-roll tax. Also excluded are employees of government and semi-government authorities, and employees of religious, benevolent, and other similar organisations exempt from pay-roll tax. The earnings and hours of waterside workers employed on a casual basis are excluded because they are subject to wide fluctuations for short periods such as those covered by these surveys. In addition to obtaining data for the calculation of average weekly earnings, average weekly hours paid for, and average hourly earnings, the surveys obtained information on overtime and ordinary time earnings and hours for full-time employees (other than managerial, etc., staff).

(b) Information not available because the figures are subject to sampling variability too high for most practical uses.

VICTORIA—AVERAGE WEEKLY EARNINGS OF FULL-TIME  
MANAGERIAL, EXECUTIVE, ETC., STAFF (a) CLASSIFIED  
BY INDUSTRY GROUPS DURING OCTOBER  
(\$)

Industry group	Males			Females (b)		
	1969	1970	1971	1969	1970	1971
Manufacturing	117.90	128.10	141.30	64.90	72.70	80.60
Non-manufacturing	119.50	132.30	136.90	68.00	71.30	81.20
All industry groups	118.70	130.40	138.90	67.10	71.70	81.10

(a) For footnotes, see preceding table.

(b) Australian figures only are available for females because of the small number involved by States.

**Basic wage**

(1972: pages 174-8)

MELBOURNE—BASIC WEEKLY WAGE RATES FIXED BY COMMONWEALTH  
CONCILIATION AND ARBITRATION COMMISSION  
(adult males)  
(\$)

Year (a)	Amount	Year (a)	Amount	Year (a)	Amount
1923	9.15	1936	6.90	1949	13.00
1924	8.45	1937	7.70	1950	16.20
1925	8.75	1938	7.90	1951	19.90
1926	8.90	1939	8.00	1952	22.80
1927	9.00	1940	8.40	1953—August	23.50
1928	8.60	1941	8.80	1956—June	24.50
1929	9.00	1942	9.70	1957—May	25.50
1930	8.30	1943	9.80	1958—May	26.00
1931	6.34	1944	9.80	1959—June	27.50
1932	6.17	1945	9.80	1961—July	28.70
1933	6.28	1946	10.60	1964—June	30.70
1934	6.40	1947	10.90	1966—July	32.70
1935	6.60	1948	12.00	1967—July	(b)

(a) The system of making regular quarterly adjustments was instituted in 1922 and was discontinued after the August 1953 adjustment. From 1923 to 1952 the rate ruling at 31 December, the middle of the financial year, is shown.

(b) From July 1967 basic wages and margins were deleted from awards and wage rates expressed as total wages.

MELBOURNE—MINIMUM WEEKLY WAGE  
RATES FIXED BY COMMONWEALTH  
CONCILIATION AND ARBITRATION  
COMMISSION  
(adult males)  
(\$)

Date operative (a)	Amount
1966 11 July	36.45
1967 1 July	37.45
1968 25 October	38.80
1969 19 December	42.30
1971 1 January	46.30
1972 19 May	51.00

(a) Rates are operative from the beginning of the first pay period commencing on or after the date shown.

VICTORIA—WAGES BOARDS' DETERMINATIONS

Date operative (a)	Adult males	Adult females
1967 1 July	\$1.00	\$1.00
1968 25 October	\$1.35	\$1.35
1969 19 December	3 per cent	3 per cent
1971 1 January	6 per cent	6 per cent
1972 19 May	\$2.00	\$2.00

(a) Operative from the beginning of the first pay period commencing on or after the date shown.

**Industrial disputes**  
(1972: pages 179-80)

VICTORIA—INDUSTRIAL DISPUTES (a)

Year	Number of disputes	Number of workers involved			Number of working days lost
		Directly	Indirectly (b)	Total	
		'000	'000	'000	'000
1967	212	83.2	1.3	84.5	107.3
1968	327	169.3	3.5	172.8	243.9
1969	367	336.7	19.7	356.4	717.2
1970	447	324.0	9.1	333.0	510.8
1971	362	366.5	13.5	380.1	689.6

(a) Refers only to disputes involving a stoppage of work of ten man-days or more.  
(b) Persons placed out of work at the establishments where the stoppages occurred but not themselves parties to the disputes.

NOTE. For these statistics an industrial dispute is defined as a withdrawal from work by a group of employees or a refusal by an employer or a number of employers to permit some or all of their employees to work; each withdrawal or refusal being made in order to enforce a demand, to resist a demand or to express a grievance. Stoppages of work not directly connected with terms and conditions of employment (e.g., political matters and fining and gaoling of persons) are included in the statistics.

VICTORIA—INDUSTRIAL DISPUTES (a): INDUSTRY GROUPS

Year	Mining and quarrying	Manufacturing	Building and construction	Transport		Other groups	All groups
				Stevedoring	Other		
NUMBER OF DISPUTES							
1967	2	119	39	29	6	17	212
1968	1	122	76	101	12	15	327
1969	1	159	81	90	19	17	367
1970	1	207	64	130	17	28	447
1971	3	174	41	82	22	40	362
WORKERS INVOLVED (DIRECTLY AND INDIRECTLY) ('000)							
1967	0.1	55.1	6.1	14.3	2.7	6.3	84.5
1968	(b)	71.6	31.8	41.0	17.7	10.6	172.8
1969	..	127.6	41.2	68.3	85.1	34.0	356.4
1970	0.1	112.1	46.7	92.5	25.0	56.5	333.0
1971	0.5	167.5	53.6	63.9	33.9	60.7	380.1
WORKING DAYS LOST ('000)							
1967	0.6	75.7	12.8	8.6	1.6	8.0	107.3
1968	0.2	128.9	40.9	35.0	18.0	20.8	243.9
1969	4.9	344.6	101.6	84.0	127.9	54.2	717.2
1970	0.5	206.4	183.2	47.8	23.6	49.3	510.8
1971	1.6	269.4	189.7	37.8	63.2	127.7	689.6
ESTIMATED LOSS IN WAGES (\$'000)							
1967	8.1	774.7	147.9	92.4	19.2	64.4	1,106.6
1968	2.5	1,395.0	553.8	359.1	215.9	205.1	2,731.3
1969	116.7	4,170.1	1,563.8	926.5	1,249.7	593.0	8,619.6
1970	10.5	2,651.8	2,689.1	561.6	295.1	585.6	6,793.7
1971	25.6	3,572.7	3,246.6	500.8	893.0	1,488.1	9,726.5

(a) Refers only to disputes involving a stoppage of work of ten man-days or more.  
(b) Less than 50.

NOTE. See note to preceding table.



**Workers compensation**  
(1972: pages 181-3)

VICTORIA—WORKERS COMPENSATION BUSINESS

Year	Wages on which premiums were charged	Gross premiums received less adjustments	New claims arising during year		Claims paid during year	Claims outstanding at end of year
			Fatal	Non-fatal		
	\$'000	\$'000			\$'000	\$'000
1966-67	2,730,791	52,521	(a) 490	203,537	25,787	48,864
1967-68	2,979,540	54,797	(a) 718	204,057	29,828	56,224
1968-69	3,286,808	57,160	663	203,111	32,528	63,487
1969-70	3,455,975	60,396	683	205,034	34,310	69,544
1970-71	3,932,840	71,409	813	205,859	37,456	77,464

(a) Fluctuations in the number of new claims arising were partly the result of changes in the recording methods of insurers.

NOTE. Figures for premiums and claims in this table are not comparable with those on pages 1018-20.

VICTORIA—CLAIMS FOR WORKERS COMPENSATION: SUMMARY OF AMOUNTS PAID  
(\$'000)

Year	Claims under Workers Compensation Act									Total	
	Compensation			Medical, etc., services							Claims under other Acts and common law damages, etc.
	Weekly compensation	Lump sum—death	Lump sum—maim	Doctor	Hospital	Chemist or registered nurse	Ambulance	Other curative, etc., services	Legal costs, etc.		
1965-66	8,422	3,084	3,212	3,442	1,683	185	119	343	2,018	2,417	24,925
1966-67	8,216	2,938	2,931	3,683	1,979	180	122	339	2,571	2,828	25,787
1967-68	8,898	4,176	3,197	3,839	2,381	193	127	392	2,871	3,754	29,828
1968-69	8,920	4,756	3,600	4,086	2,890	216	139	429	3,397	4,095	32,528
1969-70	9,562	4,767	3,448	4,522	2,953	263	134	480	3,837	4,344	34,310
1970-71	11,444	4,679	4,204	4,709	3,158	212	161	500	4,022	4,367	37,456

**Industrial accidents**  
(1972: pages 183-8)

VICTORIA—NUMBER OF INDUSTRIAL ACCIDENTS TO  
MALES BY INDUSTRY GROUP (a)

Industry group	Number of accidents			
	1969-70		1970-71	
	Fatal	Non-fatal	Fatal	Non-fatal
Primary	2	1,517	5	1,605
Mining and quarrying	..	111	1	106
Manufacturing	9	10,964	8	11,139
Electricity, gas, water, sanitary	4	1,153	3	1,063
Building and construction	6	3,326	3	3,128
Transport, storage, and communication	14	2,586	7	2,409
Commerce	2	3,374	2	3,484
Community services, etc.	1	1,012	1	833
Amusement, personal service, etc.	..	710	1	728
Public authority (n.e.i.), finance, and other (n.e.i.)	11	2,457	2	1,996
<b>Total</b>	<b>49</b>	<b>27,210</b>	<b>33</b>	<b>26,491</b>

(a) Figures relate to fatal cases and to those where incapacity for work was for a period of one week or more. Excluded are Commonwealth employees and self-employed persons.

NOTE. Except for "commerce" and "amusement, etc.", figures for individual industry groups are not comparable between 1969-70 and earlier years.

VICTORIA—NUMBER OF INDUSTRIAL ACCIDENTS  
TO FEMALES BY INDUSTRY GROUP

Industry group	Number of non-fatal accidents	
	1969-70	1970-71
Primary	78	72
Mining and quarrying	..	..
Manufacturing	1,996	2,048
Electricity, gas, water, sanitary	..	10
Building and construction	..	1
Transport, storage, and communication	79	89
Commerce	613	609
Community services, etc.	702	626
Amusement, personal service, etc.	481	457
Public authority (n.e.i.), finance, and other (n.e.i.)	660	565
<b>Total</b>	<b>4,609</b>	<b>4,477</b>

NOTE. See footnotes to preceding table.  
No fatal accidents to females were reported.

VICTORIA—NON-FATAL INDUSTRIAL ACCIDENTS  
TO MALES : PERIOD OF INCAPACITY AND  
COST OF CLAIMS, BY INDUSTRY GROUP

Industry group	Period of incapacity		Cost of claims	
	1969-70	1970-71	1969-70	1970-71
	weeks	weeks	\$'000	\$'000
Primary	6,392	7,934	364	459
Mining and quarrying	613	481	97	49
Manufacturing	40,015	44,115	3,836	4,536
Electricity, gas, water, sanitary	4,946	4,890	483	369
Building and construction	12,893	12,131	1,134	1,175
Transport, storage, and communication	11,372	10,829	836	866
Commerce	11,142	12,539	767	945
Community services, etc.	4,219	3,209	247	230
Amusement, personal service, etc.	3,413	3,098	222	207
Public authority (n.e.i.), finance, and other (n.e.i.)	9,971	8,122	716	499
<b>Total</b>	<b>104,976</b>	<b>107,349</b>	<b>8,703</b>	<b>9,334</b>

See footnotes on page 837.

VICTORIA—NON-FATAL INDUSTRIAL ACCIDENTS TO MALES :  
INDUSTRY GROUP BY ACCIDENT FACTOR, 1970-71

Industry group	Accident factor									Total
	Machinery	Vehicles	Electricity, etc. (a)	Harmful substances	Falling, slipping	Stepping on objects (b)	Handling objects (c)	Hand tools (d)	Other and unspecified	
Primary	94	101	19	9	325	59	606	183	209	1,605
Mining and quarrying	10	3	2	..	26	3	51	7	4	106
Manufacturing	1,434	292	358	83	1,880	588	5,072	1,145	287	11,139
Electricity, gas, water, sanitary	30	37	22	4	272	62	548	49	39	1,063
Building and construction	143	75	56	20	833	155	1,506	241	99	3,128
Transport, storage, and communication	43	246	23	7	744	110	1,102	64	70	2,409
Commerce	180	190	109	21	664	187	1,505	508	120	3,484
Community services, etc.	27	53	23	4	285	35	290	33	83	833
Amusement, personal service, etc.	21	22	36	7	145	37	247	38	175	728
Public authority (n.e.i.), finance, and other (n.e.i.)	56	122	33	9	582	109	873	99	113	1,996
<b>Total</b>	<b>2,038</b>	<b>1,141</b>	<b>681</b>	<b>164</b>	<b>5,756</b>	<b>1,345</b>	<b>11,800</b>	<b>2,367</b>	<b>1,199</b>	<b>26,491</b>

- (a) Includes explosions, flames, and hot substances.  
 (b) Includes striking against objects.  
 (c) Includes strain in handling, struck by objects.  
 (d) Includes power-operated.

VICTORIA—NON-FATAL INDUSTRIAL ACCIDENTS TO MALES:  
INDUSTRY GROUP BY SITE OF INJURY, 1970-71

Industry group	Site of injury									Total
	Head	Eye	Neck (a)	Trunk	Arm	Hand	Leg	Foot	General and un- speci- fied	
Primary	49	39	53	350	216	363	390	139	6	1,605
Mining and quarrying	3	4	5	30	12	22	17	13	..	106
Manufacturing	261	301	307	2,837	1,343	3,482	1,481	1,100	27	11,139
Electricity, gas, water, sanitary	25	30	41	390	123	167	198	85	4	1,063
Building and construction	98	105	110	897	362	655	570	317	14	3,128
Transport, storage, and com- munication	113	46	95	707	292	342	546	257	11	2,409
Commerce	107	82	117	976	431	976	501	287	7	3,484
Community services, etc.	36	13	31	263	110	121	204	55	..	833
Amusement, personal service, etc.	51	10	27	194	116	145	128	56	1	728
Public authority (n.e.i.), finance, and other (n.e.i.)	86	33	81	701	241	281	409	160	4	1,996
<b>Total</b>	<b>829</b>	<b>663</b>	<b>867</b>	<b>7,345</b>	<b>3,246</b>	<b>6,554</b>	<b>4,444</b>	<b>2,469</b>	<b>74</b>	<b>26,491</b>

(a) Includes vertebral column.

VICTORIA—NON-FATAL INDUSTRIAL ACCIDENTS TO MALES:  
INDUSTRY GROUP BY TYPE OF INJURY, 1970-71

Industry group	Type of injury											Total
	Contusions, lacerations, etc.	Burns and scalds	Bone fractures	Dislocations	Sprains, strains, and hernias	Amputations and enucleations	Concussion	Internal injury	Effects of poisons	Effects of electricity	Other and unspecified	
Primary	705	29	242	59	518	7	13	2	3	1	26	1,605
Mining and quarrying	36	2	17	6	41	..	1	..	..	..	3	106
Manufacturing	4,574	474	1,431	295	3,977	159	41	15	9	11	153	11,139
Electricity, gas, water, sanitary	339	24	134	34	510	3	3	..	1	2	13	1,063
Building and construction	1,127	79	518	99	1,209	19	12	7	5	7	46	3,128
Transport, storage, and communication	796	32	388	83	1,032	14	10	8	..	1	45	2,409
Commerce	1,428	135	413	110	1,309	21	15	5	2	4	42	3,484
Community services	260	29	104	30	394	1	7	1	..	..	7	833
Amusement, personal service, etc.	236	46	153	23	244	..	14	5	1	..	6	728
Public authority (n.e.i.), finance, and other (n.e.i.)	615	39	241	81	965	9	16	3	2	1	24	1,996
<b>Total</b>	<b>10,116</b>	<b>889</b>	<b>3,641</b>	<b>820</b>	<b>10,199</b>	<b>233</b>	<b>132</b>	<b>46</b>	<b>23</b>	<b>27</b>	<b>365</b>	<b>26,491</b>

**VICTORIA—NON-FATAL INDUSTRIAL ACCIDENTS TO MALES:  
ACCIDENT FACTOR (a) BY SITE OF INJURY, 1970-71**

Accident factor	Site of injury									Total
	Head	Eye	Neck (b)	Trunk	Arm	Hand	Leg	Foot	General and un- speci- fied	
Machinery	54	78	4	54	131	1,562	71	83	1	2,038
Vehicles	127	13	37	182	137	151	291	191	12	1,141
Electricity, etc. (a)	67	27	8	35	89	126	94	208	27	681
Harmful substances	11	58	1	6	8	28	15	19	18	164
Falling, slipping	160	14	223	1,460	965	354	2,229	350	1	5,756
Stepping on objects (a)	70	11	12	92	241	393	364	162	..	1,345
Handling objects (a)	215	243	513	5,161	1,385	2,144	863	1,276	..	11,800
Hand tools (a)	35	93	9	46	182	1,694	181	127	..	2,367
Other and unspecified	90	126	60	309	108	102	336	53	15	1,199
<b>Total</b>	<b>829</b>	<b>663</b>	<b>867</b>	<b>7,345</b>	<b>3,246</b>	<b>6,554</b>	<b>4,444</b>	<b>2,469</b>	<b>74</b>	<b>26,491</b>

(a) For footnotes see page 838.

(b) Includes vertebral column.

**VICTORIA—NON-FATAL INDUSTRIAL ACCIDENTS TO MALES:  
ACCIDENT FACTOR (a) BY AGE GROUP, 1970-71**

Accident factor	Age group (years)						Total
	Under 20	20-29	30-39	40-49	50-59	60 and over	
Machinery	269	683	388	392	203	103	2,038
Vehicles	109	301	247	236	168	80	1,141
Electricity, etc. (a)	91	213	149	127	75	26	681
Harmful substances	19	49	31	35	21	9	164
Falling, slipping	375	1,275	1,262	1,343	1,048	453	5,756
Stepping on objects (a)	109	323	289	301	224	99	1,345
Handling objects (a)	733	2,649	2,693	2,870	2,018	837	11,800
Hand tools (a)	391	797	504	357	229	89	2,367
Other and unspecified	102	312	283	259	169	74	1,199
<b>Total</b>	<b>2,198</b>	<b>6,602</b>	<b>5,846</b>	<b>5,920</b>	<b>4,155</b>	<b>1,770</b>	<b>26,491</b>

(a) For footnotes see page 838.

**Labour organisations**  
(1972: pages 188-93)

VICTORIA—TRADE UNIONS

At 31 December-	Number of separate unions	Number of members			Proportion of total wage and salary earners		
		Males	Females	Total	Males	Females	Total
		'000	'000	'000	per cent	per cent	per cent
1967	152	413.9	131.6	545.5	53	33	46
1968	153	417.6	133.0	550.7	52	32	46
1969	152	421.7	138.0	559.8	52	32	45
1970	156	437.9	153.6	591.5	52	34	46
1971	158	450.9	166.8	617.7	54	37	48

VICTORIA—TRADE UNIONS : INDUSTRY GROUPS AT 31 DECEMBER

Industry group	1970		1971	
	Number of unions	Number of members	Number of unions	Number of members
		'000		'000
<b>Manufacturing—</b>				
Engineering, metals, vehicles, etc.	8	91.6	8	93.8
Textiles, clothing, and footwear	4	50.3	4	50.0
Food, drink, and tobacco	13	26.5	15	30.6
Sawmilling, furniture, etc.	3	7.2	3	7.3
Paper, printing, etc.	5	20.0	5	20.3
Other manufacturing	12	32.3	12	32.1
<b>Total manufacturing</b>	<b>45</b>	<b>227.9</b>	<b>47</b>	<b>234.1</b>
Building and construction	11	35.0	11	36.7
Railway and tramway services	5	23.5	5	23.8
Road and air transport	9	22.7	9	24.6
Shipping and stevedoring	7	7.1	7	6.9
Banking, insurance, and clerical	8	35.6	8	42.5
Wholesale and retail trade	3	22.9	4	27.9
Public authority (n.e.i.), etc. (a)	39	112.7	38	112.3
Amusement, hotels, personal service, etc.	9	17.7	9	18.7
Other industries (b)	20	86.4	20	90.2
<b>Total</b>	<b>156</b>	<b>591.5</b>	<b>158</b>	<b>617.7</b>

(a) Includes communication and municipal, etc.

(b) Includes agriculture, grazing, etc., mining and quarrying, and community and business services.

**Apprenticeship Commission**  
(1972: pages 197-9)

**VICTORIA—NUMBER OF PROBATIONERS AND APPRENTICES EMPLOYED (a)**

Trade	1968	1969	1970	1971	1972
<b>Building trades—</b>					
Plumbing and gasfitting	2,368	2,400	2,413	2,447	2,363
Carpentry and joinery	3,009	3,085	3,059	3,078	3,038
Painting, decorating, and signwriting	445	474	396	450	491
Plastering	56	73	43	32	31
Fibrous plastering	225	204	208	153	145
Bricklaying	208	238	199	195	215
Tile laying	12	19	28	29	29
Stonemasonry	..	1	1	6	8
<b>Total building trades</b>	<b>6,323</b>	<b>6,494</b>	<b>6,347</b>	<b>6,390</b>	<b>6,320</b>
<b>Metal trades—</b>					
Engineering	4,454	4,606	4,378	4,439	4,423
Electrical	3,184	3,468	3,371	3,561	3,598
Motor mechanic	3,825	3,857	3,699	3,765	3,972
Moulding	109	115	113	134	140
Boilermaking and/or steel construction	834	954	1,104	1,126	1,158
Sheet metal	456	482	513	558	567
Electroplating	37	38	38	47	46
Aircraft mechanic	205	193	162	147	119
Radio tradesman	331	339	332	343	325
Instrument making and repairing	197	200	183	191	174
Silverware and silverplating	14	13	15	12	9
Vehicle industry	1,567	1,643	1,671	1,779	1,941
Refrigeration mechanic	145	179	184	203	215
Optical tradesman	29	63	80	92	101
<b>Total metal trades</b>	<b>15,387</b>	<b>16,150</b>	<b>15,843</b>	<b>16,397</b>	<b>16,788</b>
<b>Food trades—</b>					
Breadmaking and baking	156	144	152	160	180
Pastrycooking	143	179	158	165	182
Butchering and/or small goods making	732	693	829	757	835
Cooking	207	263	275	307	392
Waiting	..	7	11	13	14
<b>Total food trades</b>	<b>1,238</b>	<b>1,286</b>	<b>1,425</b>	<b>1,402</b>	<b>1,603</b>
<b>Miscellaneous—</b>					
Bootmaking	221	173	172	162	149
Printing	1,774	1,792	1,719	1,691	1,598
Hairdressing	2,447	2,570	2,275	2,160	2,150
Dental mechanic	59	69	63	70	79
Watchmaking	48	53	51	51	44
Furniture	886	956	933	894	864
Glass	54	63	72	77	80
Gardening	28	77	91	116	168
Textile mechanic	..	..	11	20	61
Shipwrighting and boatbuilding	..	..	5	31	43
Dry cleaning	..	..	..	2	18
Garment cutting	..	..	..	..	14
<b>Total miscellaneous</b>	<b>5,517</b>	<b>5,753</b>	<b>5,392</b>	<b>5,274</b>	<b>5,268</b>
<b>Total</b>	<b>28,465</b>	<b>29,683</b>	<b>29,007</b>	<b>29,463</b>	<b>29,979</b>

The above table shows the proclaimed apprenticeship trades and the number of probationers and apprentices employed under the Apprenticeship Act on 30 June in each of the years 1968 to 1972. These figures are extracted from the Annual Reports of the Apprenticeship Commission.



## EMPLOYMENT AND UNEMPLOYMENT

(1972: pages 200-7)

**Control of employment**

(1972: pages 200-1)

## VICTORIA—COMMONWEALTH EMPLOYMENT SERVICE

Particulars	1967-68	1968-69	1969-70	1970-71	1971-72
Applications for employment (a)	271,994	261,537	264,476	291,064	374,904
Number placed in employment	108,748	116,477	121,803	121,982	128,967
Number of vacancies notified	154,682	165,493	179,517	175,677	184,298
Vacancies at 30 June	9,411	11,777	12,326	9,228	8,411

(a) Includes unemployed persons and persons already in employment who are seeking improved positions.

NOTE. The Commonwealth Employment Service was established to assist people seeking employment to obtain suitable positions and to assist employers seeking labour to obtain employees best suited to their needs. There are 40 District Employment Offices in Victoria.

**Labour force**

(1972: pages 201-4)

At the 1971 Census the following questions were asked to determine a person's labour force status :

- (a) Did this person have a full or part-time job, or business or farm of any kind last week?
- (b) Did this person do any work at all last week for payment or profit?
- (c) Was this person temporarily laid off by his employer without pay for the **WHOLE** of last week?
- (d) Did this person look for work last week?

This approach conforms closely to the recommendations of the Eighth International Conference of Labour Statisticians held in Geneva in 1954 and to the approach used at the 1966 Census.

According to the definition any labour force activity during the previous week, however little, results in the person being counted in the labour force.

Thus many persons whose main activity is not a labour force one (e.g., housewife, full-time student) are drawn into the labour force by virtue of part-time or occasional labour force activity in the previous week. Answers to the question on usual major activity indicate that there were substantially more of such persons at the census of 1971 than at the census of 1966 and that they were predominantly females.

On the other hand, the definition excludes persons who may frequently or usually participate in the labour force but who in the previous week happened to have withdrawn from the labour force. Answers to the question

on usual major activity indicate that there were substantially more of such persons at the census of 1971 than at the census of 1966, especially among males.

A similar definition of the labour force is used in the quarterly population sample survey conducted by the Bureau by the method of personal interview. This survey is used to measure changes in the labour force from quarter to quarter in the intercensal period.

Evidence from post-enumeration surveys and pilot tests indicates that the personal interview approach tends to identify a larger number of persons as in the labour force than does the filling in of the census questions on the schedule by the householder and that this tendency has increased between the 1966 and 1971 Censuses.

The above considerations should be borne in mind if comparisons of the total labour force or labour force participation rates are made between the 1966 and 1971 Censuses, or between the 1971 Census and the 1971 labour force quarterly estimates.

**VICTORIA—OCCUPATIONS (a) OF THE POPULATION  
IN MAJOR GROUPS, CENSUS 1971**

Occupation group	Number			Percentage of employed		
	Males	Females	Persons	Males	Females	Persons
Professional, technical, and related workers	89,600	63,034	152,634	9.19	13.29	10.53
Administrative, executive and managerial workers	86,480	11,639	98,119	8.87	2.46	6.77
Clerical workers	83,380	144,739	228,119	8.55	30.53	15.74
Sales workers	63,257	53,519	116,776	6.49	11.29	8.06
Farmers, fishermen, hunters, timber getters, and related workers	83,905	17,409	101,314	8.61	3.67	6.99
Miners, quarrymen, and related workers	1,802	2	1,804	0.18	..	0.13
Workers in transport and communication operations	63,339	10,165	73,504	6.50	2.14	5.07
Craftsmen, production process workers and labourers (not elsewhere classified)	400,871	87,955	488,826	41.11	18.55	33.73
Service, sport and recreation workers	38,576	57,815	96,391	3.96	12.19	6.65
Members of armed forces, enlisted personnel	15,390	675	16,065	1.58	0.14	1.11
Occupation inadequately described or not stated	48,389	27,233	75,622	4.96	5.74	5.22
Total employed	974,989	474,185	1,449,174	100.00	100.00	100.00
Unemployed	14,078	9,739	23,817			
Total labour force	989,067	483,924	1,472,991			
Persons not in labour force	760,994	1,268,366	2,029,360			
Grand total	1,750,061	1,752,290	3,502,351			

(a) Occupation is defined as the type of work performed by an employed person and should not be confused with the type of productive activity, business, or service carried out by the establishment in which a person works.

## VICTORIA—OCCUPATIONAL STATUS OF THE POPULATION, CENSUS 1971

Occupational status	Number			Percentage of population		
	Males	Females	Persons	Males	Females	Persons
<b>IN LABOUR FORCE—</b>						
Employed—						
Employer	57,778	16,338	74,116	3.30	0.93	2.12
Self-employed	86,545	22,584	109,129	4.95	1.29	3.12
Employee	828,082	429,310	1,257,392	47.32	24.50	35.90
Helper (not on wage or salary)	2,584	5,953	8,537	0.15	0.34	0.24
Total employed	974,989	474,185	1,449,174	55.72	27.06	41.38
Unemployed (a)	14,078	9,739	23,817	0.80	0.56	0.68
Total in labour force	989,067	483,924	1,472,991	56.52	27.62	42.06
<b>NOT IN LABOUR FORCE—</b>						
Child not attending school	178,447	170,780	349,227	10.20	9.75	9.97
Child at primary or secondary school	392,873	370,000	762,873	22.45	21.11	21.78
Student full-time (b)	29,460	21,233	50,693	1.68	1.21	1.45
Home duties	..	646,801	646,801	..	36.91	18.47
Other	166,214	59,552	219,766	9.15	3.40	6.27
Total not in labour force	760,994	1,268,366	2,029,360	43.48	72.38	57.94
Grand total	1,750,061	1,752,290	3,502,351	100.00	100.00	100.00

(a) Unemployed persons are those who are not employed and who were either laid off without pay for the whole week or were actively looking for work.

(b) Other than at primary or secondary school.

**Wage and salary earners in civilian employment**  
(1972: pages 204-7)

**VICTORIA—WAGE AND SALARY EARNERS IN CIVILIAN EMPLOYMENT :  
INDUSTRY GROUPS (a)**  
(‘000)

Industry group	June 1966	June 1969	June 1970	June 1971	June 1972
MALES					
Mining and quarrying	4.7	4.1	4.5	4.6	4.6
Manufacturing	300.9	316.0	323.9	325.6	327.0
Electricity, gas, water, and sanitary services	31.4	31.6	31.3	31.2	31.6
Building and construction	81.7	84.5	82.9	81.0	82.6
Road transport and storage	21.0	22.7	23.6	24.7	25.2
Shipping and stevedoring	8.9	9.4	9.7	9.7	8.9
Rail and air transport	19.1	19.3	19.7	20.4	21.0
Communication	23.3	24.8	25.4	26.2	26.7
Finance and property	27.8	32.3	34.0	36.0	36.2
Retail trade	53.9	56.8	58.0	58.8	61.6
Wholesale and other commerce	53.9	55.8	57.2	58.3	58.3
Public authority activities (n.e.i.)	27.7	31.0	32.2	33.0	33.9
Health, hospitals, etc.	10.4	11.5	11.9	12.4	13.1
Education	23.9	28.3	29.7	31.6	29.9
Amusement, hotels, personal service, etc. (b)	21.7	25.8	27.4	29.1	30.5
Other (c)	25.4	28.2	29.5	30.2	30.5
Total	735.7	782.2	801.0	812.7	821.7
Private	541.0	579.2	595.1	604.4	610.6
Government (d)	194.7	203.0	205.9	208.3	211.1
Total	735.7	782.2	801.0	812.7	821.7
FEMALES					
Mining and quarrying	0.4	0.5	0.6	0.7	0.7
Manufacturing	123.1	134.2	138.6	138.8	137.7
Electricity, gas, water, and sanitary services	2.4	2.6	2.7	2.7	2.6
Building and construction	3.1	3.7	3.9	4.0	4.4
Road transport and storage	2.8	2.9	3.1	3.2	3.5
Shipping and stevedoring	0.6	0.6	0.7	0.7	0.7
Rail and air transport	2.6	2.7	2.8	2.9	3.0
Communication	6.6	7.2	7.4	7.7	7.8
Finance and property	20.4	23.7	25.5	26.5	25.7
Retail trade	51.0	57.5	59.6	60.3	63.7
Wholesale and other commerce	20.9	22.0	23.1	24.1	24.3
Public authority activities (n.e.i.)	11.1	13.1	14.0	14.1	14.7
Health, hospitals, etc.	37.9	41.7	44.2	47.4	51.5
Education	30.6	38.3	40.7	43.5	40.1
Amusement, hotels, personal service, etc. (b)	29.1	33.8	36.2	39.2	39.6
Other (c)	18.6	21.4	23.0	24.1	25.0
Total	361.2	405.8	426.1	440.0	445.0
Private	304.6	341.1	357.6	368.9	377.2
Government (d)	56.6	64.7	68.5	71.1	67.8
Total	361.2	405.8	426.1	440.0	445.0

(a) Excludes employees in agriculture and private domestic service, and defence forces.

(b) Includes restaurants and hairdressing.

(c) Includes forestry, fishing and trapping; law, order, and public safety; religion and social welfare; and other community and business services.

(d) Includes employees of Commonwealth, State, semi-government, and local government bodies.

VICTORIA—WAGE AND SALARY EARNERS IN CIVILIAN EMPLOYMENT:  
INDUSTRY GROUPS (a)—*continued*  
(‘000)

Industry group	June 1966	June 1969	June 1970	June 1971	June 1972
PERSONS					
Mining and quarrying	5.1	4.6	5.1	5.3	5.3
Manufacturing	424.0	450.2	462.5	464.4	464.7
Electricity, gas, water, and sanitary services	33.8	34.2	34.0	33.9	34.2
Building and construction	84.8	88.2	86.9	85.0	87.0
Road transport and storage	23.8	25.6	26.7	27.9	28.7
Shipping and stevedoring	9.5	10.0	10.4	10.4	9.6
Rail and air transport	21.7	22.0	22.5	23.3	24.0
Communication	29.9	32.0	32.8	33.9	34.5
Finance and property	48.2	56.0	59.5	62.5	61.9
Retail trade	104.9	114.3	117.6	119.1	125.3
Wholesale and other commerce	74.8	77.8	80.3	82.4	82.6
Public authority activities (n.e.i.)	38.8	44.1	46.2	47.1	48.6
Health, hospitals, etc.	48.3	53.2	56.1	59.8	64.7
Education	54.5	66.6	70.4	75.1	70.0
Amusement, hotels, personal service, etc. (b)	50.8	59.6	63.6	68.3	70.1
Other (c)	44.0	49.6	52.5	54.3	55.6
<b>Total</b>	<b>1,096.9</b>	<b>1,188.0</b>	<b>1,227.1</b>	<b>1,252.7</b>	<b>1,266.7</b>
Private	845.6	920.3	952.7	973.3	987.7
Government (d)	251.3	267.7	274.4	279.4	279.0
<b>Total</b>	<b>1,096.9</b>	<b>1,188.0</b>	<b>1,227.1</b>	<b>1,252.7</b>	<b>1,266.7</b>

(a) Excludes employees in agriculture and private domestic service, and defence forces.

(b) Includes restaurants and hairdressing.

(c) Includes forestry, fishing, and trapping; law, order, and public safety; religion and social welfare; and other community and business services.

(d) Includes employees of Commonwealth, State, semi-government, and local government bodies.

NOTE. The figures in this table, except those relating to government employees, are based on comprehensive data from the Population Census of June 1966. For the period subsequent to the Census the employment data are obtained from three main sources, namely (i) current pay-roll tax returns, (ii) current returns from government bodies, and (iii) some other current returns of employment (e.g. for hospitals); the balance, i.e., unrecorded private employment, is estimated. Month-to-month changes shown by current returns are linked with the benchmark data to derive the monthly estimates. At June 1966 recorded employment obtained from the foregoing sources accounted for about 85 per cent of the total number of employees in the industries covered, as determined by the Census.

At the 1971 Population Census all trainee teachers were for the first time classified as not in the labour force and were excluded from this series from July 1971.

VICTORIA—WAGE AND SALARY EARNERS IN CIVILIAN EMPLOYMENT:  
GOVERNMENT BODIES (a)  
(‘000)

At end of June—	Commonwealth Government			State and semi-government			Local government			Total government		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
1966	61.0	18.7	79.6	117.6	35.3	152.9	16.1	2.7	18.8	194.7	56.6	251.3
1969	65.5	20.8	86.3	121.1	40.7	161.8	16.5	3.2	19.6	203.0	64.7	267.7
1970	67.4	21.9	89.4	121.6	43.2	164.9	16.8	3.4	20.2	205.9	68.5	274.4
1971	69.0	22.3	91.3	122.8	45.3	168.1	16.6	3.5	20.1	208.3	71.1	279.4
1972	69.6	22.5	92.2	122.7	41.6	164.3	18.8	3.7	22.5	211.1	67.8	279.0

(a) Includes employees of railways, tramways, banks, post office, air transport, education, broadcasting, television, police, public works, factories and munitions establishments, departmental hospitals and institutions, migrant hostels, etc. as well as administrative employees. At the 1971 Census all trainee teachers were for the first time classified as not in the labour force and from July 1971 on were excluded from the series

## PRICES

(1972: pages 207-13)

**Retail price indexes**

(1972: pages 207-9)

**MELBOURNE—CONSUMER PRICE INDEX**

(Base of each index: year 1966-67 = 100.0)

Year	Food	Clothing and drapery	Housing	Household supplies and equipment	Miscellaneous	All groups
1962-63	89.4	94.9	87.6	94.8	84.9	89.7
1963-64	90.3	95.5	89.4	93.6	85.7	90.4
1964-65	95.1	96.9	92.0	95.8	90.6	94.0
1965-66	99.0	98.0	96.3	98.7	95.1	97.5
1966-67	100.0	100.0	100.0	100.0	100.0	100.0
1967-68	106.3	102.1	103.8	101.4	102.5	103.7
1968-69	107.3	104.2	107.9	102.9	107.3	106.2
1969-70	109.1	107.4	112.2	103.5	110.2	108.7
1970-71	112.7	111.5	117.8	105.8	115.8	113.1
1971-72	116.8	117.9	124.9	108.9	127.1	119.7

**MELBOURNE—AVERAGE RETAIL PRICES OF SELECTED COMMODITIES (a)**  
(cents)

Item	Unit	1949	1959	1969	1970	1971
<b>Groceries, etc.—</b>						
Bread (delivered)	2 lb	6.6	14.1	20.0	21.0	21.5
Flour—Self raising	2 lb pkt	7.0	17.5	19.7	21.6	22.1
Tea(b)	½ lb	27.5	65.8	30.7	29.9	31.6
Sugar(c)	4 lb	3.8	8.3	42.2	42.3	40.9
Peaches, canned(d)	29 oz	15.1	30.7	29.9	31.5	32.0
Pears, canned(d)	29 oz	16.1	29.4	30.3	31.7	32.0
Potatoes	7 lb	17.6	33.7	35.4	45.4	47.8
Onions	lb	2.6	9.8	10.2	11.3	13.4
<b>Dairy produce, etc.—</b>						
Butter	lb	21.9	46.6	52.5	53.1	54.2
Eggs(e)	doz	30.4	56.9	68.9	61.8	58.1
Bacon rashers(f)	½ lb	29.9	70.1	51.3	52.7	54.0
Milk, fresh, bottled(g)	quart	8.8	15.4	19.0	19.0	20.3
<b>Meat—</b>						
Beef, rib(h)	lb	12.3	39.3	63.0	65.3	67.8
„ steak, rump	lb	22.3	61.4	112.8	116.6	120.0
„ „ chuck	lb	10.3	33.6	52.4	52.7	53.7
„ sausages	lb	9.3	19.6	30.8	30.9	31.1
„ corned silverside	lb	13.9	39.0	64.0	65.0	69.6
„ „ brisket	lb	9.3	26.1	44.0	45.1	44.8
Mutton, leg	lb	11.4	22.2	28.3	27.8	27.6
„ chops, loin	lb	10.4	22.3	29.1	29.3	31.1
„ „ leg	lb	11.6	25.3	31.6	31.4	30.4
Pork, leg	lb	21.9	50.6	62.5	62.3	64.1
„ loin	lb	22.5	50.4	65.7	64.2	66.6
„ chops	lb	23.1	52.7	65.9	64.0	66.4

(a) In some cases the averages are price relatives.

(b) Prior to 1962, 1 lb.

(c) Prior to 1966, 1 lb.

(d) Prior to 1956, 30 oz tins.

(e) Prior to 1961, new laid; extra large grade from April 1961; 24 oz from August 1965.

(f) Prior to 1965, 1 lb.

(g) Delivered. Milk prices prior to 1950 are for loose milk.

(h) Prior to 1955 prices are for "Bone-in".

**Wholesale price indexes**

(1972: pages 209-12)

**MELBOURNE—WHOLESALE PRICE INDEX OF MATERIALS  
USED IN BUILDING OTHER THAN HOUSE BUILDING**

(Base of each index: year 1966-67 = 100.0)

Group	1967-68	1968-69	1969-70	1970-71
Concrete mix, cement, sand, etc.	99.9	101.1	104.4	111.9
Cement products	101.0	103.1	108.5	115.1
Bricks, stone, etc.	102.4	107.3	110.5	115.8
Timber, board, and joinery	100.8	104.0	107.8	113.4
Steel and iron products	102.4	106.2	110.4	116.0
Aluminium products	100.9	104.0	108.7	117.1
Other metal products	105.8	106.7	124.1	120.8
Plumbing fixtures	102.4	103.4	111.8	121.6
Miscellaneous materials	102.8	104.3	106.4	110.2
Electrical installation materials	100.9	102.1	112.2	110.9
Mechanical services components	101.4	108.0	112.1	119.4
All groups	101.7	105.0	109.8	115.1

**MELBOURNE—WHOLESALE PRICE INDEX OF MATERIALS  
USED IN HOUSE BUILDING**

(Base of each index: year 1966-67 = 100.0)

Group	1967-68	1968-69	1969-70	1970-71
Concrete mix, cement, and sand	100.0	101.1	103.3	110.4
Cement products	104.0	108.2	118.8	129.9
Clay bricks, tiles, etc.	102.4	107.7	110.9	115.7
Timber, board, and joinery	99.6	101.5	103.8	109.2
Steel products	101.5	104.8	110.3	113.9
Other metal products	104.1	107.1	112.0	114.0
Plumbing fixtures, etc.	100.9	101.6	103.1	110.9
Electrical installation materials	103.4	105.3	116.6	114.7
Installed appliances	100.9	99.9	101.8	102.7
Plaster and plaster products	102.0	103.8	106.0	111.6
Miscellaneous materials	103.2	104.7	107.5	111.4
All groups	101.3	103.6	107.2	112.3

**Export Price Index**

(1972: pages 212-3)

**EXPORT PRICE INDEX NUMBERS**

(Base of each index: year 1959-60 = 100)

Period	Wool	Meats	Dairy produce	Cereals	Dried and canned fruits	Sugar	Hides and tallow	Metals and coal	Gold	All groups
1961-62	97	100	81	106	95	91	84	91	100	96
1962-63	104	101	88	107	90	107	72	89	100	101
1963-64	120	105	93	107	98	175	73	101	100	114
1964-65	102	110	94	107	100	100	91	123	101	105
1965-66	107	120	86	107	102	84	107	122	101	107
1966-67	103	124	84	114	101	67	89	117	101	105
1967-68	95	125	79	109	95	67	67	120	104	100
1968-69	99	131	72	104	97	72	73	123	117	102
1969-70 (a)	87	148	73	96	99	94	93	143	109	103
1970-71 (a)	67	152	88	100	102	113	94	139	109	101

(a) Interim series, subject to revision.

## LOCAL GOVERNMENT

ADMINISTRATION  
(1972 : pages 214-35)VICTORIA—MUNICIPALITIES  
AT 30 JUNE 1972

Cities	62
Towns	5
Boroughs	8
Shires	135
Total	210

VICTORIA—LOCAL AUTHORITIES SUPERANNUATION BOARD:  
BENEFIT CONTRACTS ACCOUNT  
(\$'000)

Particulars	Year ending February—				
	1967	1968	1969	1970	1971
Income—					
Premium income	2,502	2,807	2,998	3,362	3,627
Interest, dividends, and rents	828	955	1,106	1,254	1,430
Total income	3,329	3,761	4,104	4,615	5,057
Expenditure—					
Contributions, refunds, and death and withdrawal benefits	1,168	1,318	1,423	1,814	1,793
Contributions to management	198	210	246	276	302
Total expenditure	1,366	1,528	1,669	2,091	2,096
Operating surplus for year	1,963	2,234	2,434	2,525	2,961
Accumulated funds at end of year	14,649	16,883	19,317	21,842	24,803



STATISTICS OF LOCAL GOVERNMENT  
(1972 : pages 235-46)

**Properties rated, loans outstanding, etc.**  
(1972: page 235)

VICTORIA—LOCAL GOVERNMENT AUTHORITIES: PROPERTIES  
RATED, LOANS OUTSTANDING, ETC.

Year ended 30 September—	Number of properties rated	Value of rateable property		Receipts all funds	Expenditure all funds	Loans out- standing
		Net annual value	Estimated capital improved value			
	'000	\$'000	\$'000	\$'000	\$'000	\$'000
1966	1,306	593,250	11,716,929	235,206	240,932	169,060
1967	1,344	634,352	12,373,547	262,161	256,839	189,147
1968	1,383	673,662	13,141,234	278,893	274,182	206,080
1969	1,400	791,141	14,929,094	289,451	292,630	219,435
1970	1,442	829,184	15,486,346	305,335	304,094	229,100

**Municipal revenue and expenditure**  
(1972 : pages 235-6)

VICTORIA—LOCAL GOVERNMENT AUTHORITIES : ORDINARY SERVICES  
AND BUSINESS UNDERTAKINGS : REVENUE AND EXPENDITURE  
(\$'000)

Year ended 30 September—	Ordinary services		Business undertakings	
	Revenue	Expenditure	Revenue	Expenditure
1966	110,726	112,661	47,604	47,962
1967	124,354	124,307	50,884	50,963
1968	137,922	135,645	55,251	54,739
1969	143,104	142,771	58,262	57,963
1970	155,307	156,546	60,506	59,706

**General Account**  
(1972 : pages 236-9)

VICTORIA—LOCAL GOVERNMENT AUTHORITIES: ORDINARY SERVICES:  
REVENUE, YEAR ENDED 30 SEPTEMBER 1970  
(\$'000)

Particulars	Municipalities in Melbourne Statistical Division (a)		Municipalities outside Melbourne Statistical Division	Total
	City of Melbourne	Other		
<b>Taxation—</b>				
Rates (net)	7,835	60,467	32,070	100,372
Penalties	19	387	121	527
<b>Licences—</b>				
Dog	4	275	138	417
Other	22	155	59	235
<b>Total taxation</b>	<b>7,880</b>	<b>61,283</b>	<b>32,388</b>	<b>101,551</b>
<b>Public works and services—</b>				
Roads, streets, bridges, drains	207	2,367	2,035	4,609
Council properties, sundry income—				
Parks, gardens, baths, and other recreational facilities	182	1,268	1,123	2,572
Markets	1,851	387	540	2,778
Halls	57	515	347	919
Libraries, museums, art galleries	4	122	103	230
Plant operating (surplus)	..	1,416	3,424	4,840
Rents, n.e.i.	809	365	308	1,482
Other	47	547	883	1,477
Council properties, sale of capital assets—				
Plant, furniture, etc.	..	292	305	597
Land and buildings, etc.	..	1,041	368	1,409
<b>Health and welfare—</b>				
Sanitary and garbage	168	2,855	1,337	4,359
Other	135	951	464	1,550
<b>Other works and services—</b>				
Car parking fees and fines	1,754	711	690	3,155
Building and scaffolding fees	131	974	211	1,316
Supervision of private streets	..	1,002	123	1,124
Other	45	1,127	293	1,465
<b>Total public works and services</b>	<b>5,391</b>	<b>15,938</b>	<b>12,554</b>	<b>33,882</b>
<b>Government grants—</b>				
Roads, etc.	9	244	760	1,013
Parks, gardens, etc.	..	170	1,053	1,223
Infant welfare	29	581	274	884
Pre-school	63	280	227	571
Home help	32	540	161	732
Libraries, etc.	31	769	593	1,392
Other	53	544	1,304	1,901
<b>Total government grants</b>	<b>217</b>	<b>3,127</b>	<b>4,372</b>	<b>7,716</b>
<b>Transfers from business undertakings</b>	<b>90</b>	<b>615</b>	<b>54</b>	<b>759</b>
<b>Transfers from other council funds</b>	<b>1,497</b>	<b>3,369</b>	<b>2,199</b>	<b>7,064</b>
<b>Oncost (C.R.B., private streets, etc.)</b>	<b>18</b>	<b>840</b>	<b>1,323</b>	<b>2,181</b>
<b>Interest on investments</b>	<b>116</b>	<b>745</b>	<b>161</b>	<b>1,023</b>
<b>Other revenue</b>	<b>91</b>	<b>603</b>	<b>438</b>	<b>1,131</b>
<b>Total revenue</b>	<b>15,299</b>	<b>86,520</b>	<b>53,488</b>	<b>155,307</b>

(a) See list on page 800.

VICTORIA—LOCAL GOVERNMENT AUTHORITIES : ORDINARY SERVICES :  
EXPENDITURE, YEAR ENDED 30 SEPTEMBER 1970  
(\$'000)

Particulars	Municipalities in Melbourne Statistical Division (a)		Municipali- ties outside Melbourne Statistical Division	Total
	City of Melbourne	Other		
General administration	2,432	14,020	9,610	26,063
Debt charges (excluding business undertakings)—				
Interest—				
Loans	2,543	4,469	2,443	9,455
Overdraft	21	189	304	514
Redemption	463	5,103	3,533	9,099
Sinking fund	473	416	129	1,019
Other	(b)	107	24	131
Total debt charges	3,502	10,283	6,433	20,218
Public works and services—				
Roads, streets, bridges, drains—				
Construction and maintenance	1,083	13,370	12,083	26,536
C.R.B. (main roads maintenance)	3	756	1,095	1,854
C.R.B. (other works)	..	710	2,704	3,414
Cleaning and watering	574	2,801	702	4,077
Other	386	1,481	361	2,228
Street lighting	(c)	2,447	620	3,067
Council properties (maintenance and operating expenses)—				
Parks, gardens, baths, and other recreational facilities	1,648	6,386	3,586	11,619
Markets	756	194	336	1,286
Halls	297	1,542	786	2,625
Libraries, museums, art galleries	149	2,664	1,152	3,965
Plant operating (deficit)	1	7	11	20
Other	269	1,568	1,442	3,279
Council properties—capital expenditure—				
Plant, furniture, etc., purchase	113	2,228	2,229	4,571
Land and buildings purchase	18	1,987	219	2,224
Buildings—capital works	15	1,806	1,077	2,898
Other capital works	2	1,035	711	1,748
Health and welfare—				
Sanitary and garbage services	363	6,238	1,787	8,387
Infant welfare (maintenance)	104	1,417	698	2,219
Pre-school (maintenance)	176	458	280	914
Home help	68	1,329	351	1,748
Elderly citizens	17	451	156	624
Other	338	1,658	690	2,686
Other works and services—				
Car parking	772	810	302	1,883
Building and scaffolding inspection	27	950	189	1,166
Supervision of private streets	..	694	29	723
Dog Act expenses	7	184	111	303
Other	13	1,894	635	2,542
Total public works and services	7,199	57,066	34,343	98,608

(a) See list on page 800.

(b) Under \$500.

(c) Cost of street lighting is charged to electricity undertaking.

VICTORIA—LOCAL GOVERNMENT AUTHORITIES : ORDINARY SERVICES :  
EXPENDITURE, YEAR ENDED 30 SEPTEMBER 1970—*continued*  
(\$'000)

Particulars	Municipalities in Melbourne Statistical Division (a)		Municipali- ties outside Melbourne Statistical Division	Total
	City of Melbourne	Other		
Grants—				
Fire brigades	286	2,282	12	2,580
Hospitals and other charities	35	153	127	315
Other	195	241	96	532
Total grants	516	2,676	234	3,427
Transfers to other council funds	1,855	3,115	2,579	7,549
Miscellaneous	62	355	265	682
Total expenditure	15,566	87,515	53,465	156,546

(a) See list on page 800.

**Municipal administrative costs**  
(1972 : page 239)

VICTORIA—COST OF MUNICIPAL ADMINISTRATION  
(\$'000)

Particulars	Year ended 30 September—				
	1966	1967	1968	1969	1970
Salaries (a)	11,773	12,747	13,319	15,074	16,604
Mayoral and presidential allowances	289	317	341	349	366
Audit expenses	120	129	153	159	174
Election expenses	107	112	127	123	140
Legal expenses	316	356	426	279	363
Printing, advertising, postage, tele- phone, etc.	1,772	1,837	2,070	2,160	2,405
Insurances, n.e.i.	1,750	1,836	1,943	1,923	1,814
Pay-roll tax, n.e.i.	993	1,108	1,186	1,225	1,301
Superannuation, n.e.i.	1,188	1,391	1,444	1,608	1,722
Long service leave, n.e.i.	(b)	(b)	(b)	729	725
Other	509	632	815	281	450
Total	18,816	20,465	21,826	23,909	26,063

(a) Including cost of valuations and travelling expenses, but excluding health officers' salaries which are included under "Health and welfare—other" on previous page.

(b) Included in "Other".

**Municipal business undertakings**

(1972 : pages 239-40)

**VICTORIA—LOCAL GOVERNMENT AUTHORITIES : BUSINESS  
UNDERTAKINGS, YEAR ENDED 30 SEPTEMBER 1970**  
(\$'000)

Particulars	Municipalities in Melbourne Statistical Division (a)		Municipali- ties outside Melbourne Statistical Division	Total
	City of Melbourne	Other		
REVENUE				
Water supply—				
Rates, sale of water, etc.	..	105	707	812
Electricity—				
Charges for services and sales of products, etc.	18,986	39,026	..	58,012
Abattoirs—				
Charges for services and sales of products, etc.	..	292	508	800
Other (b)—				
Charges for services and sales of products, etc.	..	232	649	882
<b>Total revenue</b>	<b>18,986</b>	<b>39,656</b>	<b>1,864</b>	<b>60,506</b>
EXPENDITURE				
Water supply—				
Working expenses	..	87	463	550
Depreciation	..	4	59	63
Debt charges	..	14	161	175
Other expenditure	..	..	1	1
<b>Total water supply</b>	<b>..</b>	<b>105</b>	<b>684</b>	<b>789</b>
Electricity—				
Working expenses	17,375	35,697	..	53,071
Depreciation	869	792	..	1,661
Debt charges	474	1,349	..	1,823
Other expenditure	90	624	..	714
<b>Total electricity</b>	<b>18,808</b>	<b>38,461</b>	<b>..</b>	<b>57,270</b>
Abattoirs—				
Working expenses	..	163	401	563
Depreciation	..	24	27	51
Debt charges	..	15	48	63
Other expenditure	..	60	27	87
<b>Total abattoirs</b>	<b>..</b>	<b>262</b>	<b>503</b>	<b>765</b>
Other (b)—				
Working expenses	..	214	531	745
Depreciation	..	5	40	45
Debt charges	..	..	27	27
Other expenditure	..	35	31	66
<b>Total other</b>	<b>..</b>	<b>254</b>	<b>629</b>	<b>883</b>
<b>Total expenditure</b>	<b>18,808</b>	<b>39,082</b>	<b>1,816</b>	<b>59,706</b>

(a) See list on page 800.

(b) Consists of quarries, iceworks, and reinforced concrete pipe and culvert works.

**Municipal loan finance**

(1972 : pages 241-2)

**VICTORIA—LOCAL GOVERNMENT AUTHORITIES: LOAN RECEIPTS  
AND LOAN EXPENDITURE**(Excluding redemption loans and private street loans)  
(\$'000)

Year ended 30 September—	Receipts				Expenditure			
	Loans for—		Other	Total	Ordinary services	Business under- takings	Other (non- works)	Total
	Ordinary services	Business under- takings						
1966	18,879	1,842	2,352	23,073	21,468	3,570	199	25,237
1967	23,136	3,032	2,318	28,486	19,855	4,013	192	24,060
1968 (a)	20,405	2,691	1,792	24,887	21,158	3,940	217	25,315
1969 (a)	22,622	1,394	2,102	26,118	24,641	3,332	83	28,057
1970 (a)	22,764	1,298	2,372	26,434	21,005	3,264	146	24,416

(a) Excludes separate rate loans.

**VICTORIA—LOCAL GOVERNMENT AUTHORITIES: LOAN RECEIPTS,  
YEAR ENDED 30 SEPTEMBER 1970**(Excluding redemption loans, private street, and separate rate loans)  
(\$'000)

Particulars	Municipalities in Melbourne Statistical Division (a)		Municipali- ties outside Melbourne Statistical Division	Total
	City of Melbourne	Other		
Loan raisings for—				
Ordinary services	3,659	12,395	6,711	22,764
Business undertakings—				
Water supply	..	..	156	156
Electricity	..	1,140	..	1,140
Abattoirs	..	..	2	2
Other receipts (government grants, recoups, etc., to loan fund)	1,811	310	251	2,372
Total receipts	5,470	13,844	7,120	26,434

(a) See list on page 800.

VICTORIA—LOCAL GOVERNMENT AUTHORITIES: LOAN EXPENDITURE,  
YEAR ENDED 30 SEPTEMBER 1970  
(\$'000)

Particulars	Municipalities in Melbourne Statistical Division (a)		Municipali- ties outside Melbourne Statistical Division	Total
	City of Melbourne	Other		
Ordinary services—				
Roads, streets, bridges, and drains	352	4,711	2,223	7,285
Property construction—				
Parks, gardens, baths, and other recreational facilities	94	2,319	516	2,929
Halls	..	935	940	1,875
Markets	1,647	..	339	1,986
Libraries, etc.	..	167	187	354
Other	7	305	242	555
Plant purchase	94	342	1,324	1,760
Land and buildings purchase	678	1,523	587	2,787
Health and welfare	171	678	91	940
Off-street parking	148	65	100	312
Other	..	17	205	222
Total ordinary services	3,191	11,060	6,754	21,005
Business undertakings—				
Water supply	..	5	166	171
Electricity	1,811	1,249	..	3,060
Abattoirs	..	..	34	34
Total business undertakings	1,811	1,254	200	3,264
Other (non-works)	..	141	6	146
Total expenditure	5,002	12,455	6,959	24,416

(a) See list on page 800.

VICTORIA—LOCAL GOVERNMENT AUTHORITIES: LOAN LIABILITY

At 30 September—	Due to—		Gross loan liability	Accumu- lated sinking funds	Net loan liability		Average rate of interest payable
	Govern- ment	Public			Amount	Per head of population	
	\$'000	\$'000	\$'000	\$'000	\$'000	\$	per cent
1966	2,705	163,416	166,121	10,207	155,914	48.25	5.32
1967	2,836	183,442	186,278	11,836	174,442	53.10	5.39
1968	2,989	200,295	203,284	13,720	189,565	56.81	5.46
1969	3,117	213,581	216,698	13,604	203,093	59.75	5.53
1970	3,120	225,980	229,100	15,017	214,083	61.92	5.63

**Construction of private streets**

(1972 : pages 243-4)

**VICTORIA—LOCAL GOVERNMENT AUTHORITIES : PRIVATE  
STREET ACCOUNT : RECEIPTS, EXPENDITURE, ETC.,  
YEAR ENDED 30 SEPTEMBER 1970**

(\$'000)

Particulars	Municipalities in Melbourne Statistical Division (a)	Municipalities outside Melbourne Statistical Division	Total
<b>Receipts—</b>			
Loans	1,988	369	2,357
Bank overdraft (increase)	1,774	178	1,952
Owners' contributions	16,604	1,980	18,584
Other	502	66	569
<b>Total</b>	<b>20,868</b>	<b>2,594</b>	<b>23,462</b>
<b>Expenditure—</b>			
Works	12,980	1,620	14,600
Bank overdraft (decrease)	1,148	378	1,526
Debt charges—			
Interest—			
Loans	1,459	144	1,603
Overdraft	341	41	382
Redemption	2,896	355	3,251
Sinking fund	426	8	434
Other	196	(b)	196
Other	1,510	133	1,644
<b>Total</b>	<b>20,958</b>	<b>2,679</b>	<b>23,637</b>
Cash in hand or in bank at 30 September 1970	5,116	449	5,565
Bank overdraft at 30 September 1970	10,113	1,561	11,674
Loan liability at 30 September 1970	24,142	2,213	26,356

(a) See list on page 800.

(b) Under \$500.



**VICTORIA—LOCAL GOVERNMENT AUTHORITIES: PRIVATE STREET  
ACCOUNT: RECEIPTS, EXPENDITURE, ETC.**

(\$'000)

Particulars	Year ended 30 September—				
	1966	1967	1968	1969	1970
<b>Receipts—</b>					
Loans	2,812	5,562	5,633	3,794	2,357
Bank overdraft (increase)	2,130	624	..	..	426
Owners' contributions	17,235	17,237	18,452	18,746	18,584
Other	652	664	827	672	569
<b>Total</b>	<b>22,829</b>	<b>24,087</b>	<b>24,913</b>	<b>23,212</b>	<b>21,936</b>
<b>Expenditure—</b>					
Works	19,514	17,370	15,189	17,454	14,600
Bank overdraft (decrease)	..	..	758	615	..
Debt charges—					
Interest—					
Loans	1,207	1,182	1,339	1,589	1,603
Overdraft	365	618	662	460	382
Redemption	2,123	2,426	2,805	3,036	3,251
Sinking fund	138	176	249	411	434
Other	(a)	4	8	17	196
Other	749	1,383	1,549	2,008	1,644
<b>Total</b>	<b>24,097</b>	<b>23,159</b>	<b>22,559</b>	<b>25,589</b>	<b>22,111</b>
<b>Loan liability at 30 September</b>	<b>20,626</b>	<b>23,762</b>	<b>26,597</b>	<b>27,305</b>	<b>26,356</b>

(a) Under \$500.

**Country Roads Board Account**

(1972 : pages 244-5)

**VICTORIA—LOCAL GOVERNMENT AUTHORITIES : COUNTRY ROADS  
BOARD ACCOUNT, YEAR ENDED 30 SEPTEMBER 1970  
(\$'000)**

Particulars	Municipalities in Melbourne Statistical Division (a)		Municipal- ities outside Melbourne Statistical Division	Total
	City of Melbourne	Other		
<b>Receipts—</b>				
Refunds from Country Roads Board	117	9,037	16,322	25,475
Direct payment by Country Roads Board	..	1,220	5,175	6,395
Council's proportion of works on unclassified roads	21	1,938	2,488	4,448
Bank overdraft (increase)	147	657	518	1,323
Other	..	241	90	332
<b>Total</b>	<b>285</b>	<b>13,093</b>	<b>24,595</b>	<b>37,973</b>
<b>Expenditure—</b>				
Main roads	25	6,658	10,428	17,110
Unclassified roads	259	5,717	13,109	19,084
Other roads (State highways, etc.)	..	333	584	916
Bank overdraft (decrease)	..	300	435	734
Other	1	87	40	128
<b>Total</b>	<b>285</b>	<b>13,093</b>	<b>24,595</b>	<b>37,973</b>
<b>Bank overdraft at 30 September 1970</b>	<b>149</b>	<b>1,409</b>	<b>2,025</b>	<b>3,583</b>

(a) See list on page 800.

VICTORIA—LOCAL GOVERNMENT AUTHORITIES:  
COUNTRY ROADS BOARD ACCOUNT  
(\$'000)

Particulars	Year ended 30 September—				
	1966	1967	1968	1969	1970
<b>Receipts—</b>					
Refunds from Country Roads Board	20,345	22,526	23,105	23,858	25,475
Direct payment by Country Roads Board	5,765	5,652	6,556	6,029	6,395
Council's proportion of works on unclassified roads	3,428	3,589	3,928	3,796	4,448
Bank overdraft (increase)	..	648	..	686	589
Other	44	22	71	44	332
<b>Total</b>	<b>29,583</b>	<b>32,436</b>	<b>33,659</b>	<b>34,413</b>	<b>37,239</b>
<b>Expenditure—</b>					
Main roads	14,294	15,382	16,098	16,761	17,110
Unclassified roads	13,827	16,225	16,837	16,894	19,084
Other roads (State highways, etc.)	1,060	702	629	636	916
Bank overdraft (decrease)	265	..	38	..	..
Other	136	127	56	121	128
<b>Total</b>	<b>29,583</b>	<b>32,436</b>	<b>33,659</b>	<b>34,413</b>	<b>37,239</b>
Bank overdraft at 30 September	1,733	2,382	2,344	2,998	3,583

**Length of roads and streets**

(1972 : page 246)

VICTORIA—LENGTH OF ALL ROADS AND STREETS OPEN FOR  
GENERAL TRAFFIC AT 30 JUNE 1971  
(miles)

Type of road or street	State highways, freeways (a)	Main roads	Tourists roads, forest roads	Other roads and streets	Total
Bituminous seal	4,340	8,294	599	18,856	32,089
Cement, concrete, etc.	..	..	..	214	214
Water-bound macadam, gravel, sand, and hard loam pavements	167	758	530	27,334	28,789
Formed, but not otherwise paved	..	23	..	20,960	20,983
Not formed but open for general traffic	..	..	..	19,523	19,523
<b>Total</b>	<b>4,507</b>	<b>9,075</b>	<b>1,129</b>	<b>86,887</b>	<b>101,598</b>

(a) Includes 78 miles of freeways consisting of 70 miles of extra-metropolitan freeways (by-pass roads) and 8 miles of metropolitan freeways.

SEMI-GOVERNMENTAL AUTHORITIES\*  
(1972 : pages 246-73)

**Country Roads Board**  
(1972 : pages 246-52)

VICTORIA—COUNTRY ROADS BOARD : RECEIPTS AND EXPENDITURE  
(\$'000)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
RECEIPTS					
Fees—Motor Car Act (less cost of collection)	25,871	26,805	28,888	30,868	32,895
Municipalities contributions—Permanent works and maintenance—Main roads	1,824	1,845	1,931	1,904	2,018
Commonwealth Aid Roads Acts	29,050	30,895	32,723	38,160	41,425
Roads (Special Projects) Fund	3,311	2,652	3,055	3,533	7,761
Proceeds from Commercial Goods Vehicles Act	6,732	7,248	7,842	8,555	8,903
Loans from State Government	834	987	3,389	900	388
Grants from State Government	715	700	784	849	783
Other receipts	459	380	520	498	543
<b>Total</b>	<b>68,796</b>	<b>71,513</b>	<b>79,132</b>	<b>85,267</b>	<b>94,715</b>
EXPENDITURE					
Construction and maintenance of roads and bridges	57,503	61,078	64,776	73,678	79,559
Traffic line marking and traffic lights	252	240	270	319	413
Plant purchases	1,388	1,234	1,583	1,818	1,956
Buildings, workshops, etc.	165	746	611	618	599
Interest and sinking fund payments	2,140	2,190	2,306	2,443	2,504
Payment to Tourist Fund	494	517	536	578	617
Payment to Transport Regulation Board	383	404	435	471	513
Payment to Traffic Authority Fund	..	30	271	289	309
General expenditure	5,250	6,004	6,664	6,901	9,367
<b>Total</b>	<b>67,575</b>	<b>72,443</b>	<b>77,452</b>	<b>87,115</b>	<b>95,838</b>

\* This section includes only those semi-governmental authorities having close associations with local government.

**VICTORIA—COUNTRY ROADS BOARD : EXPENDITURE ON  
ROADS AND BRIDGES  
(\$'000)**

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
State highways—					
Construction	14,984	13,654	12,714	15,946	14,081
Maintenance	4,689	5,349	5,635	6,132	6,384
Freeways—					
Construction	5,059	7,840	11,570	13,288	18,515
Maintenance	112	129	113	151	354
Main roads—					
Construction	12,416	12,303	12,198	12,585	13,720
Maintenance	4,350	4,466	4,742	5,198	5,653
Unclassified roads—					
Construction	10,892	11,550	12,001	13,843	14,425
Maintenance	1,907	2,189	2,247	2,512	2,792
Tourists roads—					
Construction	1,753	2,430	2,229	2,509	1,991
Maintenance	559	427	564	603	674
Forest roads—					
Construction	442	424	423	507	556
Maintenance	295	234	255	291	347
River Murray bridges and punts—					
Maintenance	45	82	86	112	69
Total construction	45,547	48,202	51,134	58,678	63,287
Total maintenance	11,956	12,876	13,642	14,999	16,272
Total expenditure	57,503	61,078	64,776	73,678	79,559

**Water supply authorities**

(1972 : pages 252-3)

**VICTORIA—WATER SUPPLY AUTHORITIES AT 30 JUNE 1971**

Authorities	Administered under the provisions of—
Melbourne and Metropolitan Board of Works	Melbourne and Metropolitan Board of Works Act
State Rivers and Water Supply Commission	}
Waterworks trusts (181)	
Local governing bodies—	
Ballarat Water Commissioners	
Municipal councils—	
Ararat City	
Bacchus Marsh Shire	
Beechworth Shire	
Bet Bet Shire	
Camperdown Town	
Creswick Shire	
Korong Shire	
Kyabram Borough	
Stawell Town	
Talbot and Clunes Shire	
Walpeup Shire	
Warrnambool City	
Werribee Shire	
Sale City	Water Act
Geelong Waterworks and Sewerage Trust	Local Government Act
Latrobe Valley Water and Sewerage Board	Geelong Waterworks and Sewerage Act
Mildura Urban Water Trust	Latrobe Valley Act
West Moorabool Water Board	Mildura Water Trust Act
	West Moorabool Water Board Act

## Melbourne and Metropolitan Board of Works

(1972 : pages 253-62)

VICTORIA—MELBOURNE AND METROPOLITAN BOARD OF WORKS:  
CAPITAL OUTLAY ON WATERWORKS  
(\$'000)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71	Total cost to 30 June 1971
Yan Yean System (including Greenvale)	288	432	2,618	5,362	2,440	12,959
Maroondah System	946	263	833	238	37	6,028
O'Shannassy, Upper Yarra, and Thomson System (including Silvan)	117	2,868	3,385	6,551	7,824	69,255
Service reservoirs	75	232	940	937	1,680	8,649
Large mains	2,309	1,438	1,332	3,010	5,401	61,429
Reticulation	3,683	3,977	4,146	4,127	4,666	59,523
Afforestation	2	10	4	20	5	694
Investigations, future works	22	161	993	960	Cr. 679	1,655
<b>Total outlay</b>	<b>7,442</b>	<b>9,380</b>	<b>14,250</b>	<b>21,205</b>	<b>21,374</b>	<b>220,191</b>

VICTORIA—MELBOURNE AND METROPOLITAN BOARD OF WORKS:  
OUTPUT OF WATER  
(million gallons)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Yan Yean Reservoir	5,650	2,461	4,477	3,874	5,090
Maroondah Reservoir	13,245	9,788	15,961	13,444	17,265
O'Shannassy, Upper Yarra, and Silvan Reservoirs	49,929	38,628	42,856	49,732	50,804
<b>Total output</b>	<b>68,824</b>	<b>50,877</b>	<b>63,293</b>	<b>67,050</b>	<b>73,159</b>

VICTORIA—MELBOURNE AND METROPOLITAN BOARD OF WORKS:  
WATER CONSUMPTION AND SEWERAGE CONNECTIONS

Year	Properties supplied with water at 30 June	Total annual consumption of water	Consumption of water on any one day		Daily average of annual consumption of water	Daily consumption of water per head of population served	Properties for which sewers were provided at 30 June
			Maximum	Minimum			
	number	million gallons	million gallons	million gallons	million gallons	gallons	number
1966-67	626,690	68,815	442.5	113.3	188.53	87.98	484,798
1967-68 (a)	642,039	50,876	198.8	88.5	139.01	64.06	509,185
1968-69	658,944	63,288	386.0	100.0	173.39	77.86	528,983
1969-70	676,111	67,063	396.8	112.4	183.73	80.41	543,870
1970-71	698,024	73,141	409.9	110.5	200.38	84.95	559,000

(a) Due to extreme drought conditions, restrictions on the consumption of water were imposed.

VICTORIA—MELBOURNE AND METROPOLITAN BOARD OF WORKS:  
CAPITAL OUTLAY ON SEWERAGE SYSTEM  
(\$'000)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71	Total cost to 30 June 1971
Farm purchase and preparation	416	464	526	429	488	12,219
Treatment works	1,829	1,667	2,182	1,925	4,671	14,515
Outfall sewer and rising mains	185	164	61	1,213	5,911	11,072
Pumping stations, buildings, and plant	686	184	521	1,943	1,784	18,737
Main and branch sewers	10,533	12,584	10,853	15,020	12,633	118,811
Reticulation sewers	5,306	7,828	6,187	9,618	5,632	104,969
Cost of house connections charge- able to capital	..	..	..	..	..	794
Sanitary depots	..	Cr. 24	Cr. 18	.. 5	Cr. 1	752
Investigations	71	137	244	356	220	1,479
<b>Total outlay</b>	<b>19,026</b>	<b>23,004</b>	<b>20,557</b>	<b>30,507</b>	<b>31,338</b>	<b>283,348</b>

VICTORIA—MELBOURNE AND METROPOLITAN BOARD OF WORKS :  
FARM AT WERRIBEE, 1970-71

Total area of farm	26,809 acres
Area used for wastewater disposal	17,241 acres
Average rainfall over 78 years	18.98 inches
Net cost of wastewater purification per head of population served	\$1.07
Profit on cattle and sheep	\$255,954

VICTORIA—MELBOURNE AND METROPOLITAN BOARD OF WORKS :  
ASSESSED VALUE OF PROPERTY RATED, 1970-71  
(\$m)

Rate	Net annual value of property
Water rate	520.3
Metropolitan general rate (for sewerage services)	431.7
Metropolitan drainage and river improvement rate	467.4
Metropolitan improvement rate	541.0



VICTORIA—MELBOURNE AND METROPOLITAN BOARD OF WORKS:  
REVENUE, EXPENDITURE, ETC.  
(\$'000)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
REVENUE					
Water supply—					
Water rates and charges (including revenue from water supplied by measure)	14,559	14,957	16,007	20,266	22,785
Sewerage—					
Sewerage rates	13,378	15,167	18,541	20,626	24,925
Trade waste charges	1,212	1,170	2,013	2,705	2,864
Sanitary charges	241	253	367	550	571
Metropolitan farm—					
Grazing fees, rents, pastures, etc.	8	7	9	5	5
Balance, livestock account	526	416	573	371	256
Metropolitan drainage and rivers—					
Drainage and river improvement rate	2,170	3,600	4,450	4,540	5,937
River water charges	17	17	21	33	22
Total	32,111	35,588	41,981	49,096	57,365
EXPENDITURE					
Water supply—					
Management	1,830	2,096	2,438	2,831	3,603
Maintenance	2,829	3,409	3,793	3,969	4,798
Water supply works	..	1,421	200	910	860
Sewerage—					
Management	1,532	1,780	2,069	2,340	2,915
Maintenance	2,051	2,217	2,638	3,269	3,757
Sewerage works	..	..	1,200	1,700	1,700
Metropolitan farm—					
Management	99	110	132	161	212
Maintenance	845	882	951	1,077	1,308
Metropolitan drainage and rivers—					
Management	275	318	381	462	647
Maintenance	365	507	589	726	1,321
Drainage works	..	355	934	990	990
Pensions and allowances	297	267	436	504	418
Loan flotation expenses	457	333	589	471	474
Interest (including exchange)	17,835	19,258	21,184	23,668	26,701
Contributions to—					
Sinking fund	1,131	1,206	1,315	1,380	1,468
Loans redeemed reserve	1,420	1,479	1,924	2,063	2,384
Renewals fund	968	749	771	904	1,004
Depreciation	352	59	53	57	251
Superannuation account	285	336	441	1,210	1,641
Municipalities—					
For road maintenance	..	..	49	49	63
Valuations	96	101	97	130	129
Rates equalisation reserve	Cr. 609	Cr. 1,278	Cr. 202	Cr. 299	718
Special reserve	..	..	..	500	..
Other	50	50	..	25	3
Total	32,111	35,655	41,981	49,096	57,365
Net deficit (—)	..	— 67	..	..	..
Capital outlay at 30 June—					
Water supply	153,983	163,363	177,613	198,817	220,191
Sewerage	177,941	200,945	221,502	252,009	283,348
Drainage and river improvement works	31,436	33,149	35,654	37,594	39,80

VICTORIA—MELBOURNE AND METROPOLITAN BOARD OF WORKS:  
PLANNING AND HIGHWAYS ACCOUNT, ETC.  
(\$'000)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Revenue—					
Metropolitan improvement rate and sundry income	5,136	6,022	6,223	7,570	8,437
Expenditure—					
Management	633	721	904	1,213	1,534
Maintenance	67	108	140	217	345
Interest	51	52	54	56	57
Contributions to sinking fund	24	24	24	24	24
Transfer to planning and highways reserve	4,311	5,064	5,032	5,978	6,388
Other	51	53	70	83	88
Total expenditure	5,136	6,022	6,223	7,570	8,437
Capital outlay at 30 June (a)	26,724	38,152	54,172	70,721	82,262

(a) Includes expenditure of the following amounts paid from the Roads (Special Projects) Fund: 1966-67, \$3,630,000; 1967-68, \$7,098,000; 1968-69, \$9,387,000; 1969-70, \$9,141,000; and 1970-71, \$7,039,000.

Water supply and sewerage in country towns

(1972 : pages 262-7)

VICTORIA—COUNTRY WATER SUPPLY AUTHORITIES : INCOME,  
EXPENDITURE, ETC., 1970  
(\$'000)

Particulars	Ballarat	Geelong	Latrobe Valley	Other (a)	Total
For year—					
Income	554	1,961	825	4,035	7,374
Expenditure	549	1,937	640	3,771	6,897
At end of year—					
Works, etc., at cost	6,433	20,861	11,992	50,746	90,032
Loan liability	4,109	20,066	11,215	35,052	70,443

(a) Consists of 180 waterworks trusts. Municipal water supply undertakings are excluded as their finances are shown elsewhere, see page 855.

VICTORIA—COUNTRY SEWERAGE AUTHORITIES: POPULATION SERVED,  
 PROPERTIES CONNECTED, INCOME, EXPENDITURE, ETC., 1970

Particulars	Ballarat	Geelong	Latrobe Valley	Other (a)	Total
Estimated population served (at end of year)	57,000	108,415	(b)	498,674	664,089
Number of properties connected to sewers (at end of year)	16,906	30,272	(b)	149,027	196,205
	\$'000	\$'000	\$'000	\$'000	\$'000
General revenue account—					
Income—					
Rates	379	1,028	(b)	4,728	6,134
Other	191	197	444	2,135	2,967
Total	570	1,225	444	6,863	9,101
Expenditure—					
Working expenses	156	386	235	2,186	2,963
Other	380	861	180	4,480	5,902
Total	536	1,247	416	6,666	8,864
House connections account—					
Receipts	88	59	..	1,818	1,965
Expenditure	89	59	..	1,794	1,943
Loan account—					
Receipts	276	841	117	8,853	10,087
Expenditure	269	702	186	8,094	9,251
Loan liability (at end of year)	5,192	14,130	6,083	63,253	88,657

(a) Consists of 86 sewerage authorities.

(b) The Latrobe Valley Water and Sewerage Board does not connect properties to sewers, but it receives, together with a large amount of industrial wastes, domestic sewage from some sewerage authorities for which it charges by measure. It does not levy a sewerage rate.

**Metropolitan Fire Brigades Board**

(1972 : pages 268-9)

**VICTORIA—METROPOLITAN FIRE BRIGADES BOARD:  
REVENUE, EXPENDITURE, ETC.  
(\$'000)**

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
<b>REVENUE</b>					
Statutory contributions—					
Municipalities	1,734	2,026	2,065	2,402	3,037
Insurance companies	3,468	4,027	4,156	4,803	6,070
Brokers and owners					65
Charges for services	515	527	688	731	779
Interest and sundries	350	324	376	371	421
Total	6,067	6,904	7,285	8,307	10,371
<b>EXPENDITURE</b>					
Salaries	4,117	4,345	5,082	5,585	6,424
Administrative charges, etc.	704	646	759	827	1,068
Partially-paid firemen and special service staff allowances	306	313	388	430	486
Plant purchase and repairs	416	532	568	618	720
Interest	35	34	33	32	31
Repayment of loans	24	25	21	22	17
Superannuation fund	229	243	287	389	568
Motor replacement reserve	96	103	120	141	154
Pay-roll tax	115	122	143	158	180
Miscellaneous	111	98	446	186	447
Total	6,153	6,461	7,847	8,386	10,095
Net surplus (+) or deficit (-)	- 87	+ 443	- 561	- 80	+ 277
Loan indebtedness at 30 June	622	597	576	554	537

**VICTORIA—METROPOLITAN FIRE BRIGADES BOARD : NUMBER  
OF FIRE STATIONS AND STAFF EMPLOYED AT 30 JUNE**

Particulars	1967	1968	1969	1970	1971
Fire stations	45	45	45	45	46
Staff employed—					
Fire fighting	1,124	1,153	1,175	1,166	1,242
All other	236	241	261	269	271

**Country Fire Authority**  
(1972 : pages 269-70)

VICTORIA—COUNTRY FIRE AUTHORITY: REVENUE, EXPENDITURE, ETC.  
( '\$000)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
REVENUE					
Statutory contributions—					
Municipalities Assistance Fund	835	953	1,038	1,225	1,309
Insurance companies	1,669	1,907	2,075	2,451	2,618
Other	77	93	101	117	184
<b>Total</b>	<b>2,581</b>	<b>2,953</b>	<b>3,213</b>	<b>3,793</b>	<b>4,111</b>
EXPENDITURE					
Salaries and wages	995	1,101	1,300	1,486	1,781
Depreciation	102	115	130	152	139
Insurance	99	108	113	118	225
Interest	116	136	161	189	224
Maintenance	482	640	567	526	641
Motor replacement fund	208	229	257	287	316
Other	342	435	526	685	589
<b>Total</b>	<b>2,344</b>	<b>2,764</b>	<b>3,054</b>	<b>3,443</b>	<b>3,915</b>
Net surplus	236	189	159	350	196
Loan expenditure	433	554	606	506	628
Loan indebtedness (at 30 June)	2,286	2,630	3,034	3,521	3,897

VICTORIA—COUNTRY FIRE AUTHORITY: NUMBER OF FIRE BRIGADES,  
PERSONNEL, AND MOTOR VEHICLES AT 30 JUNE

Particulars	1967	1968	1969	1970	1971
Fire brigades—					
Urban	208	208	209	211	212
Rural	1,051	1,048	1,050	1,050	1,052
Personnel—					
Permanent	254	267	275	289	311
Volunteer	114,730	117,333	118,569	111,635	112,730
Motor vehicles—					
Transport	67	70	75	76	79
Fire service	1,036	1,079	1,134	1,190	1,241

**Local government and semi-governmental bodies : new money loan raisings**  
(1972 : pages 270-1)

**VICTORIA—LOCAL GOVERNMENT, SEMI-GOVERNMENTAL, AND  
OTHER PUBLIC BODIES: NEW MONEY LOAN RAISINGS**

(\$'000)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
<b>LOCAL GOVERNMENT</b>					
Due to government	279	396	340	174	458
Due to public creditor	28,926	31,995	28,515	26,687	26,155
<b>Total local government</b>	<b>29,205</b>	<b>32,391</b>	<b>28,855</b>	<b>26,860</b>	<b>26,613</b>
<b>SEMI-GOVERNMENTAL, ETC.</b>					
Due to government (a)	43,763	53,425	55,236	54,976	55,940
Due to public creditor	101,210	102,808	124,797	117,961	141,113
<b>Total semi-governmental, etc.</b>	<b>144,973</b>	<b>156,233</b>	<b>180,033</b>	<b>172,937</b>	<b>197,053</b>
<b>ALL AUTHORITIES</b>					
Due to government (a)	44,042	53,822	55,576	55,150	56,398
Due to public creditor	130,135	134,802	153,312	144,648	167,268
<b>Total</b>	<b>174,178</b>	<b>188,624</b>	<b>208,887</b>	<b>199,798</b>	<b>223,666</b>

(a) Including the following advances by the Commonwealth Government under the Commonwealth-State Housing Agreement : \$23,354,000 in 1966-67, \$23,866,000 in 1967-68, \$25,688,000 in 1968-69, \$25,883,000 in 1969-70, and \$29,098,000 in 1970-71.

## PRIMARY PRODUCTION

### LAND SETTLEMENT AND IRRIGATION

(1972: pages 274–301)

#### Land utilisation

(1972: pages 274–9)

#### MALLEE DISTRICT—CEREAL CROPS, SEASON 1970–71

Crop	Area	Average yield per acre
	acres	
Wheat	857,564	15.93 bushels
Oats—grain	238,576	18.83 bushels
hay	30,654	1.21 tons
grazing	64,383	..
Barley	304,583	18.37 bushels

#### WIMMERA DISTRICT—CEREAL CROPS, SEASON 1970–71

Crop	Area	Average yield per acre
	acres	
Wheat	573,483	21.67 bushels
Oats—grain	345,062	26.23 bushels
hay	25,002	1.66 tons
grazing	27,276	..
Barley	197,854	18.90 bushels

#### NORTHERN DISTRICT—CEREAL CROPS, SEASON 1970–71

Crop	Area	Average yield per acre
	acres	
Wheat	363,475	24.18 bushels
Oats—grain	207,345	28.53 bushels
hay	54,102	1.98 tons
grazing	16,304	..
Barley	93,324	27.06 bushels

**Alienation of land**  
(1972: pages 279-80)

**VICTORIA—ALIENATION OF LAND  
AT 30 JUNE 1971**

Particulars	Area
	acres
Lands alienated in fee-simple	33,299,126
Lands in process of alienation	384,431
Crown lands	22,562,203
<b>Total</b>	<b>56,245,760</b>

**VICTORIA—CROWN LANDS AT 30 JUNE 1971**

Particulars	Area
	acres
Land in occupation under—	
Perpetual leases	42,329
Grazing leases and licences	5,445,307
Other leases and licences	47,814
Reservations—	
Reserved forest	5,656,629
Forest and timber reserves (under Land Act)	148,987
Water catchment and drainage purposes	214,285
National Parks (under National Parks Act)	506,531
Wildlife reserves (administered by Fisheries and Wildlife Department)	127,083
Water frontages, beds of streams and lakes (not included above)	845,748
Other reserves	290,617
Unoccupied and unreserved but including areas set aside for roads	9,236,873
<b>Total</b>	<b>22,562,203</b>

**VICTORIA—ALIENATION OF CROWN LANDS**

Year (a)	Area of Crown lands sold			Crown lands alienated in fee-simple	
	Absolutely, at auction, etc.	Conditionally to selectors	Total	Area	Purchase money
	acres	acres	acres	acres	\$
1965	4,705	20,757	25,462	76,965	280,839
1966	27,135	12,508	39,643	53,136	420,313
1967	18,120	48,239	66,359	40,780	566,717
1968	17,880	27,191	45,071	57,014	509,413
1970	4,559	109,485	114,044	91,104	n.a.

(a) 1965 to 1968 year ended 31 December, 1969 not available, 1970 year ended 30 June.  
n.a.: Not available.



**Rural finance facilities**  
(1972: pages 282-8)

VICTORIA—RURAL FINANCE ACT: REVENUE, EXPENDITURE, ETC.  
(\$'000)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Revenue—					
Interest	1,447	1,559	1,689	1,849	2,005
Other	30	42	23	38	39
Total revenue (a)	1,477	1,601	1,712	1,887	2,044
Expenditure—					
Administration	185	247	230	278	323
Interest	1,108	1,169	1,295	1,309	1,413
Sinking fund	59	61	66	68	71
Other	49	92	8	16	8
Total expenditure (a)	1,402	1,569	1,599	1,671	1,815
Net surplus (a)	75	32	113	216	229
Loans made during the year	4,236	5,289	2,699	5,637	4,970
Loans outstanding at 30 June	25,123	27,641	27,330	29,099	30,875
Loan indebtedness to State Government at 30 June	22,881	24,451	27,527	26,395	27,012
Government—					
Advances made during the year	252	3,144	3,447	823	4,074
Advances outstanding at 30 June	1,353	4,291	6,412	6,203	9,376

(a) Excludes transactions under the Soldier Settlement Act and the Insurance Fund and government transactions.

VICTORIA—LAND ACQUIRED AND COST OF  
DEVELOPMENT, 1945 TO 1971

Particulars	Land acquired and total expenditure to 30 June 1971	
	acres	\$'000
Freehold land	1,193,171	39,448
Crown land	51,536	
Development and improvement of holdings	..	
	Total realisations to 30 June 1971	
	acres	\$'000
Sales of land not required for soldier settlement	65,046	(a)3,303

(a) Sale price of land not required for settlement.

## VICTORIA—ADVANCES TO EX-SERVICEMEN, 1945 TO 1971

Act	Total advances to 30 June 1971		Advances outstanding at 30 June 1971	
	number	\$'000	number	\$'000
<b>Soldier Settlement Act—</b>				
Advances for settlers' lease liability <sup>(a)</sup>	3,033	57,403	1,916	33,005
Advances to assist in acquiring and developing single unit farms	2,878	23,917	1,032	6,834
Advances for improvements, stock, implements, etc.	n.a.	12,568	22	19
Advances for shares in co-operatives	327	250	..	..
<b>Commonwealth Re-establishment and Employment Act—</b>				
Advances to assist rehabilitation in farming industry	2,970	3,594	16	3

(a) The total number of settlers allocated holdings is 3,293 which includes 243 holdings re-allocated and 17 holdings disposed of.  
n.a. : Not available.

## VICTORIA—OTHER LAND SETTLEMENT, 1959 TO 1971

Particulars	Land acquired and total expenditure to 30 June 1971		Balance outstanding at 30 June 1971	
	acres	\$'000	\$'000	
<b>Land acquired—</b>				
Freehold land purchased	24,425	2,068	8,240	
Crown land	126,880			
Development and improvement of holdings	..	27,936		
	Total realisations to 30 June 1971			
	acres	\$'000		
Sales of land not required for settlement	6,232	(a) 701	318	
	Total advances to 30 June 1971		Advances outstanding at 30 June 1971	
	number	\$'000	number	\$'000
Advances to settlers under the Land Settlement Act	n.a.	1,641	23	68
Liability of settlers granted purchase leases	526	17,981	524	15,731

(a) Sale price of land not required for settlement ; balance outstanding represents instalments not yet due where terms were given to purchasers.  
n.a. : Not available.

VICTORIA—COMMONWEALTH DEVELOPMENT BANK  
OF AUSTRALIA : RURAL LOANS APPROVED, 1970-71

Type of rural activity	Value of rural loans approved
	\$'000
Sheep	825
Dairying	572
Cattle	1,092
Wheat and other grain crops	12
Fruit	646
Poultry	493
Other	469
Total	4,109
	\$
Average loan	12,643

VICTORIA—COMMONWEALTH TRADING BANK AND PRIVATE  
TRADING BANKS: BUSINESS ADVANCES OUTSTANDING TO  
RURAL INDUSTRY BORROWERS AT END OF JUNE  
(\$m)

Industry of borrower	1967	1968	1969	1970	1971
Sheep grazing	61.5	76.4	82.2	81.0	78.9
Wheat growing	18.6	27.5	26.5	28.4	27.2
Dairy and pig raising	40.8	51.0	54.2	48.7	45.5
Other rural	29.8	38.1	44.7	50.9	51.8
<b>Total</b>	<b>150.7</b>	<b>193.1</b>	<b>207.6</b>	<b>209.1</b>	<b>203.3</b>

VICTORIA—RURAL ADVANCES (a)  
OF PASTORAL FINANCE COMPANIES  
(\$m)

At end of June—	Advances outstanding
1967	50.2
1968	54.8
1969	65.9
1970	66.1
1971	57.2

(a) Held by branches located in Victoria which is not necessarily the State of residence of the borrower.

**Water supply and land settlement**

(1972: pages 288–96)

VICTORIA—MAJOR IRRIGATION STORAGES

River	Irrigation storage	Capacity	Principal system or district served
		acre ft	
Goulburn	Lake Eildon	2,750,000	Goulburn–Loddon
	Waranga Reservoir	333,400	" "
	Greens Lake	26,550	" "
	Goulburn Reservoir	20,700	" "
Campaspe	Lake Eppalock	252,860	" "
	Loddon		
	Cairn–Curran Reservoir	120,600	" "
	Tullaroop Reservoir	60,000	Maryborough town supply; private diverters; and Goulburn–Loddon System
Broken	Lake Nillahcootie	32,260	Broken River Valley; private diverters
Murray	Lake Hume	(a) 1,240,000	Murray
	River Murray Weirs	(a) 111,575	"
	Kow Swamp	40,860	"
Macalister	Lake Glenmaggie	154,300	Macalister
Ovens	Lake Buffalo	19,500	Wangaratta town supply; private diverters; Ovens Valley
Werribee	Pykes Creek Reservoir	19,400	Bacchus Marsh District
	Melton Reservoir	13,900	Werribee District
	Lake Merrimu	15,000	Bacchus Marsh District
		(b) 5,210,905	

- (a) Victoria's half share under the River Murray Agreement, subject to certain obligations to South Australia.  
(b) In addition to the storages named, there is a system of natural lakes in the Kerang–Swan Hill Area forming part of the Torrumbarry System. The Coliban River storages are used for both irrigation and town supply around Bendigo and Castlemaine. A limited irrigation area is also supplied from the Wimmera–Mallee System.

## VICTORIA—AREA OF SYSTEMS AND LANDS IRRIGATED, AND WATER DELIVERED, 1969-70

System or district	Total area within constituted district	Area irrigated							Total	Water deliveries
		Pastures		Lucerne and sorghum	Vineyards	Orchards	Market gardens	Other		
		Native	Sown							
	acres	acres	acres	acres	acres	acres	acres	acres	acre ft	
River Murray System—										
Torrumbarry System (a)	386,439	14,094	238,409	9,605	4,279	1,795	796	15,103	284,081	320,000
Murray Valley Area	301,691	306	106,408	6,914	61	6,637	337	1,308	121,971	227,609
Pumped Supply Districts (b)	74,781	294	325	1,162	40,255	3,010	139	2,445	47,630	142,140
Total River Murray	762,911	14,694	345,142	17,681	44,595	11,442	1,272	18,856	453,682	689,749
Goulburn-Loddon System	1,327,070	26,708	520,348	33,418	359	20,636	4,395	36,492	642,356	898,919
Macalister District	130,476	980	59,040	324	..	..	98	..	60,442	59,729
Werribee-Bacchus Marsh	16,231	..	5,833	775	..	624	3,902	276	11,410	17,284
Other northern systems	n.a.	521	13,287	1,185	1	2,857	415	111	18,377	38,482
Other southern systems	n.a.	..	..	..	..	..	1,457	139	1,596	..
Private diversions	n.a.	5,231	148,964	16,221	2,592	4,198	15,384	8,559	201,149	387,539
Grand total	(c) 2,236,688	48,134	1,092,614	69,604	47,547	39,757	26,923	64,433	1,389,012	2,091,702

Source : State Rivers and Water Supply Commission.

(a) Includes 15,225 acres irrigated by private diversion.

(b) Including First Mildura Irrigation Trust (18,559 acres irrigated), supervised by the Commission.

(c) Incomplete.

n.a. : Not available.

## FARMING

(1972: pages 305-54)

## General

(1972: pages 305-14)

## AUSTRALIA—PRINCIPAL ITEMS OF FARM ACTIVITY, 1970-71

Particulars	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T. and A.C.T.	Australia
Rural holdings—								
Number	75,365	68,555	43,399	29,087	22,592	9,926	571	249,495
Area ('000 acres)	171,068	38,944	382,253	162,584	283,107	6,501	185,280	1,229,739
Principal crops—								
Wheat—								
Area ('000 acres)	5,475	1,879	825	1,983	5,835	11	1	16,009
Production ('000 bushels)	110,604	36,901	4,401	29,028	108,650	283	28	289,895
Oats—								
Area ('000 acres)	1,002	986	60	482	1,284	23	1	3,838
Production ('000 bushels)	25,133	25,720	464	8,408	28,657	486	14	88,882
Barley—								
Area ('000 acres)	744	665	225	1,714	1,562	32	..	4,942
Production ('000 bushels)	18,937	14,037	2,704	32,738	33,922	1,313	..	103,650
Hay—all types—								
Area ('000 acres)	761	1,266	161	485	469	212	8	3,362
Production ('000 tons)	1,355	2,455	376	743	662	441	12	6,044
Tobacco—								
Area (acres)	3,042	10,481	13,411	..	..	..	..	26,934
Production (dried leaf '000 lb)	2,800	15,215	19,745	..	..	..	..	37,760
Onions—								
Area (acres)	2,047	2,593	3,218	2,229	301	316	6	10,710
Production (tons)	17,338	16,907	25,418	24,054	4,462	3,261	43	91,483
Potatoes—								
Area (acres)	22,102	34,965	15,925	7,160	6,246	8,994	12	95,404
Production (tons)	143,387	272,200	108,659	71,380	68,058	71,444	45	735,173
Other vegetables—Area (acres)	43,137	39,733	53,849	13,606	8,268	16,740	358	175,691
Fruit—Area (acres)	93,167	66,614	54,752	45,302	23,791	20,853	158	304,637
Vineyards—								
Area (acres)	27,792	50,933	3,846	68,332	6,708	..	..	157,611
Grapes for table (tons)	6,881	10,826	..	1,042	1,921	..	..	20,670
Wine made ('000 gallons)	10,376	6,616	32	37,233	999	..	..	55,257
Currants (tons)	630	3,034	..	3,150	1,489	..	..	8,303
Sultanas and raisins (tons)	9,240	40,585	..	1,313	29	..	..	51,167
Livestock numbers, 31 March 1971—								
Sheep ('000)	70,605	33,761	14,774	19,166	34,709	4,517	260	177,792
Cattle ('000)	6,494	5,061	7,944	1,196	1,781	733	1,163	24,373
Pigs ('000)	796	520	491	389	278	113	3	2,590
Livestock slaughtered for human consumption—								
Sheep ('000)	6,933	8,554	2,117	2,541	2,931	713	16	23,805
Lambs ('000)	8,016	7,880	789	2,559	1,485	681	182	21,592
Cattle ('000)	1,344	1,382	1,324	223	340	140	87	4,840
Calves ('000)	229	464	265	41	8	22	1	1,030
Pigs ('000)	1,092	941	742	435	316	171	20	3,717
Wool production ('000 lb)	692,900	430,900	168,800	259,100	350,500	47,800	2,200	1,952,200
Wholemilk production—								
All purposes ('000 gallons)	276,167	898,970	167,627	103,592	54,869	98,085	870	1,600,180
Tractors on rural holdings—(number)	86,262	81,878	72,264	37,023	35,658	12,939	701	326,725
Gross value of production—								
Agriculture (\$'000)	426,311	263,332	364,269	166,351	262,391	40,148	1,193	1,523,997
Pastoral (\$'000)	416,413	354,607	229,660	123,858	146,198	34,459	23,713	1,328,908
Dairying (\$'000)	151,920	243,791	70,053	43,918	26,861	29,858	588	566,989
Poultry (\$'000)	84,599	47,796	27,217	13,605	15,173	5,548	1,384	195,322



VICTORIA—LAND IN OCCUPATION IN EACH DISTRICT, SEASON 1970-71  
(Areas of 1 acre and upwards)

Statistical district	Total area of districts	Number of holdings	Area occupied by rural holdings				Unproductive	Total
			For agricultural purposes (a)	For pasture				
				Sown grasses, clover, or lucerne (b)	Natural grasses			
'000 acres	'000 acres	'000 acres	'000 acres	'000 acres	'000 acres	'000 acres		
Central	4,065	14,292	239	1,841	390	119	2,589	
North-Central	2,930	4,320	94	1,335	565	78	2,072	
Western	8,775	12,687	339	5,452	764	249	6,804	
Wimmera	7,395	5,871	1,880	3,165	875	267	6,187	
Mallee	10,784	5,952	2,643	2,461	2,030	540	7,674	
Northern	6,337	11,392	1,125	3,224	1,140	108	5,597	
North-Eastern	7,220	5,097	108	1,806	1,420	256	3,590	
Gippsland	8,739	8,944	69	2,163	1,689	510	4,431	
<b>Total</b>	<b>56,246</b>	<b>68,555</b>	<b>6,497</b>	<b>21,447</b>	<b>8,873</b>	<b>2,127</b>	<b>38,944</b>	
PERCENTAGE OF ABOVE TO AREA OCCUPIED								
Central			9.23	71.11	15.06	4.60	100.00	
North-Central			4.54	64.43	27.27	3.76	100.00	
Western			4.98	80.13	11.23	3.66	100.00	
Wimmera			30.39	51.15	14.14	4.32	100.00	
Mallee			34.44	32.07	26.45	7.04	100.00	
Northern			20.10	57.61	20.37	1.92	100.00	
North-Eastern			3.01	50.31	39.55	7.13	100.00	
Gippsland			1.56	48.81	38.12	11.51	100.00	
<b>Total</b>			<b>16.68</b>	<b>55.07</b>	<b>22.79</b>	<b>5.46</b>	<b>100.00</b>	
PERCENTAGE IN EACH DISTRICT OF TOTAL IN STATE								
Central	7.23	20.85	3.68	8.58	4.40	5.59	6.65	
North-Central	5.21	6.30	1.45	6.22	6.37	3.67	5.32	
Western	15.60	18.51	5.22	25.42	8.61	11.71	17.47	
Wimmera	13.15	8.56	28.94	14.76	9.86	12.55	15.89	
Mallee	19.17	8.68	40.68	11.48	22.88	25.39	19.70	
Northern	11.26	16.62	17.31	15.03	12.85	5.08	14.37	
North-Eastern	12.84	7.43	1.66	8.42	16.00	12.03	9.22	
Gippsland	15.54	13.05	1.06	10.09	19.03	23.98	11.38	
<b>Total</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	

(a) Excludes area of clover and grasses cut for hay and seed.

(b) Includes oats and barley sown for grazing and lucerne fed off.

VICTORIA—HOLDINGS CLASSIFIED ACCORDING TO SIZE OF HOLDING :  
NUMBER AND TOTAL AREA OF HOLDINGS

Size of holding (acres)	1959-60		1965-66		1968-69	
	Number of holdings	Total area of holdings	Number of holdings	Total area of holdings	Number of holdings	Total area of holdings
		acres		acres		acres
1- 99	21,803	841,772	21,340	805,121	23,298	823,449
100- 199	12,374	1,750,203	12,219	1,742,700	12,077	1,736,717
200- 299	6,499	1,569,717	6,693	1,623,245	6,657	1,615,138
300- 399	5,263	1,780,143	5,312	1,803,816	5,292	1,797,488
400- 499	3,423	1,523,243	3,297	1,470,439	3,342	1,487,694
500- 999	11,287	7,931,505	11,037	7,797,393	10,754	7,619,444
1,000-1,399	3,737	4,409,447	3,738	4,404,898	3,811	4,498,332
1,400-1,999	2,477	4,081,603	2,573	4,255,922	2,662	4,420,849
2,000-2,999	1,515	3,635,339	1,599	3,817,242	1,665	3,972,472
3,000-4,999	888	3,292,668	926	3,453,964	972	3,612,703
5,000 and over	512	6,920,890	465	6,668,863	526	7,597,251
<b>Total</b>	<b>69,778</b>	<b>37,736,530</b>	<b>69,199</b>	<b>37,843,603</b>	<b>71,056</b>	<b>39,181,537</b>

VICTORIA—HOLDINGS CLASSIFIED ACCORDING TO TYPE OF ACTIVITY :  
NUMBER AND TOTAL AREA OF HOLDINGS AND AREA USED  
FOR VARIOUS PURPOSES, 1968-69

Type of activity	Number of holdings	Total area of holdings	Area used for—				Balance of holding
			Fruit	Crops (excluding fruit)	Fallow	Sown grasses and clovers	
		acres	acres	acres	acres	acres	acres
Sheep—Cereal grain	5,908	8,227,479	47	2,465,455	1,114,553	2,849,563	1,797,861
Sheep	11,935	12,578,511	367	631,667	144,563	7,535,450	4,266,464
Cereal grain	3,409	5,063,399	140	2,205,123	1,203,386	834,038	820,712
Beef cattle	4,166	4,130,144	228	65,248	25,424	1,494,001	2,545,243
Dairying	18,182	4,366,512	1,436	258,462	55,544	3,062,491	988,579
Vineyards	1,972	79,249	47,527	4,139	1,524	10,217	15,842
Fruit (other than vine)	2,031	168,576	62,344	4,069	2,951	33,495	65,717
Vegetables—							
Potatoes	982	167,652	298	47,021	5,612	79,835	34,886
Other and mixed	1,204	235,842	1,138	79,866	8,791	113,191	32,856
Poultry	1,042	55,287	630	6,433	2,967	27,232	18,025
Pigs	329	50,311	4	5,479	1,356	23,336	20,136
Tobacco	310	79,432	139	11,058	641	27,564	40,030
Other	383	49,293	417	9,443	3,031	22,082	14,320
Multi-purpose	2,419	1,833,290	3,285	309,247	86,213	941,246	493,299
Total classified holdings	54,272	37,084,977	118,000	6,102,710	2,656,556	17,053,741	11,153,970
Unclassified holdings—							
Sub-commercial	11,364	1,188,370	3,316	37,648	32,644	421,887	692,875
Unused, special, etc.	5,420	908,190	1,531	795	38,198	266,270	601,396
Total all holdings	71,056	39,181,537	122,847	6,141,153	2,727,398	17,741,898	12,448,241

VICTORIA—NUMBER OF HOLDINGS GROWING WHEAT, AND NUMBER OF HOLDINGS ON WHICH LIVESTOCK WERE DEPASTURED, CLASSIFIED ACCORDING TO SIZE OF HOLDING, 1968-69

Size of holding (acres)	Number of holdings with—				
	Wheat	Sheep	Cattle for		Pigs
			Milk production	Beef production	
1- 99	196	2,858	6,373	6,728	1,758
100- 199	323	2,900	7,793	5,331	1,413
200- 299	403	2,611	3,955	3,718	834
300- 399	778	3,009	2,438	3,138	632
400- 499	683	2,315	1,321	2,122	358
500- 999	4,282	9,084	3,041	6,718	1,212
1,000-1,399	2,043	3,459	901	2,474	449
1,400-1,999	1,575	2,471	563	1,716	336
2,000-2,999	1,074	1,556	} 573	{ 1,083	} 386
3,000-4,999	652	926			
5,000 and over	287	471	103	375	69
Total	12,296	31,660	27,061	34,040	7,447

NOTE. Individual holdings may appear in more than one category.



## VICTORIA—ARTIFICIAL FERTILISERS

Year	Crops			Pastures		
	Number of holdings	Area fertilised	Quantity used	Number of holdings	Area fertilised	Quantity used
		'000 acres	'000 tons		'000 acres	'000 tons
1966-67	29,771	4,772	267	40,658	12,502	846
1967-68 (a)	30,253	4,961	289	39,636	11,359	780
1968-69 (a)	n.a.	5,654	316	34,994	9,233	638
1969-70 (a)	27,055	4,945	294	35,426	10,408	713
1970-71 (a)	24,164	3,779	232	34,668	9,833	684

(a) Not strictly comparable with previous years due to changing coverage.  
n.a. : Not available.

## VICTORIA—AERIAL AGRICULTURE

Particulars	Unit	Year ended 31 March—				
		1967	1968	1969	1970	1971
Total area treated (a)	'000 acres	2,424	1,803	1,956	2,337	1,864
Topdressed or seeded	'000 acres	1,945	(b)	(b)	1,795	1,534
Sprayed or dusted (c)	'000 acres	(b)	266	(b)	542	330
Materials used—						
Superphosphate	tons	(b)	(b)	87,225	116,125	90,859
Seed	'000 lb	139	310	157	99	174
Aircraft utilisation (flying time)	hours	19,109	15,124	15,536	20,893	15,294

(a) Areas treated with more than one type of material on one operation are counted once only. Includes 45,000 acres baited for rabbit destruction in 1969, 58,000 acres in 1970, and 93,000 acres in 1971. Figures for 1967 and 1968 not available for publication.

(b) Not available for publication.

(c) Includes 58,000 acres baited for rabbit destruction, etc., in 1970.

## VICTORIA—FARM MACHINERY ON RURAL HOLDINGS AT 31 MARCH

Particulars	1967	1968 (a)	1969 (a)	1970 (a)	1971 (a)
Milking machines—Units	108,664	109,137	112,618	112,012	n.c.
Shearing machines—Stands	43,510	43,596	43,393	43,152	n.c.
Tractors—Wheeled type	76,678	78,721	79,101	79,188	78,830
Crawler type	2,888	3,045	2,958	3,130	3,071
Rotary hoes	12,305	13,112	12,915	11,646	12,373
Fertiliser distributors and broadcasters	30,948	30,560	30,383	30,036	29,337
Grain drills—Combine	20,392	20,380	20,217	19,919	19,710
Other	9,574	9,187	9,002	8,641	8,395
Maize planters	747	750	909	877	811
Headers, strippers, and harvesters	14,319	14,556	14,179	13,310	13,289
Pick-up balers	12,965	13,173	14,106	14,337	14,692
Forage harvesters	1,913	1,951	2,080	2,108	2,134

(a) Not strictly comparable with previous years; see page 305 of the *Victorian Year Book* 1972 for explanation.  
n.c. : Not collected.

NOTE. Details of items which have not been collected since 1955 are published in the *Victorian Year Book* 1954-1958, page 88.

## VICTORIA—ACREAGE CULTIVATED ANNUALLY

Period or year (ended March)	Annual average area in each decennium, 1856 to 1965, and actual area each year 1966 to 1971, under—		
	Crop (a)	Fallow	Total cultivation (a)
	acres	acres	acres
1856 to 1865	325,676	12,146	337,822
1866 to 1875	624,377	57,274	681,651
1876 to 1885	1,306,920	137,536	1,444,456
1886 to 1895	2,109,326	364,282	2,473,608
1896 to 1905	3,022,914	524,197	3,547,111
1906 to 1915	3,756,211	1,276,148	5,032,359
1916 to 1925	4,594,244	1,852,145	6,446,389
1926 to 1935	5,233,894	2,501,357	7,735,251
1936 to 1945	4,435,645	2,142,953	6,578,598
1946 to 1955	4,635,982	2,311,401	6,947,383
1956 to 1965	4,222,393	2,191,000	6,413,393
1966	4,969,436	2,620,326	7,589,762
1967	5,143,495	2,751,499	7,894,994
1968	(b)5,202,729	(b)2,646,502	(b)7,849,231
1969	6,156,483	2,727,232	8,883,715
1970	5,374,775	1,745,131	7,119,906
1971	4,197,171	2,300,327	6,497,498

(a) Until 1960 the area of crop included pasture cut for hay and seed. For the decennium 1956 to 1965 and 1961 onwards, area of pasture cut for hay and seed is excluded in the above table.

(b) Includes 135,574 acres under crop and 55,814 acres under fallow resulting from change in coverage referred to on page 305 of the *Victorian Year Book* 1972.

## VICTORIA—AREA, YIELD, AND GROSS VALUE OF CROPS, 1970-71

Crop	Area	Yield	Gross value (a)
	acres		\$'000
Cereals for grain—			
Barley—			
2-row	639,757	13,509,048 bushels	15,762
6-row	25,170	528,575 bushels	617
Maize	1,322	62,136 bushels	101
Oats	986,511	25,717,127 bushels	13,558
Rye	12,337	100,890 bushels	111
Wheat	1,879,044	36,901,274 bushels	51,127
Hay—			
Barley and rye	10,662	17,715 tons	248
Lucerne	102,753	242,536 tons	5,647
Meadow	966,136	1,863,492 tons	29,600
Oaten	165,867	300,235 tons	4,513
Wheaten	20,841	31,350 tons	453
Green fodder	67,107		1,887
Grey and other field peas	16,474	321,774 bushels	500
Grass and clover seed	32,600	78,954 centals	1,209
Industrial crops—			
Broom millet	118	715 cwt fibre	18
Linseed	16,877	205 cwt seed	1
Safflower	12,530	127,393 cwt	763
Hops	897	30,886 cwt	153
Mustard	617	12,387 cwt	1,313
Tobacco	10,481	3,149 cwt	43
Rape seed	46,308	135,852 cwt	16,807
		318,121 cwt	1,400

VICTORIA—AREA, YIELD, AND GROSS VALUE OF CROPS, 1970-71—*continued*

Crop	Area	Yield	Gross value (a)
	acres		\$'000
Vegetables—			
Onions	2,593	16,907 tons	1,366
Potatoes	34,965	299,100 tons	20,916
Other	39,987	..	24,420
Stock fodder—			
Pumpkins and root crops	6,009	..	420
Vineyards—			
Grapes—			
Table	3,143	10,826 tons	2,493
Wine	7,847	29,697 tons	1,697
Drying	34,869	174,477 tons	..
		36,753 tons of sultanas	11,622
		3,833 tons of raisins	1,468
		3,034 tons of currants	1,122
Vines, unproductive	5,073	..	..
Orchards—			
Productive	55,231	..	45,445
Unproductive	11,382	..	..
All other crops	15,726	..	7,252
<b>Total crops</b>	<b>5,231,234</b>	<b>..</b>	<b>263,332</b>

(a) The gross value is based on the wholesale price realised in the principal markets. The places where primary products are absorbed locally or where they become raw materials for a secondary industry are presumed to be principal markets.

## VICTORIA—NUMBER OF GROWERS OF CERTAIN CROPS, SEASON 1970-71

Crops grown	Statistical district								Total
	Central	North-Central	Western	Wimmera	Mallee	Northern	North-Eastern	Gippsland	
Grain crops—									
Wheat	381	260	444	3,455	2,448	2,930	328	15	10,261
Oats	384	459	1,542	3,118	1,542	2,253	416	12	9,726
Barley	501	101	323	1,813	1,628	1,184	72	31	5,653
Maize	2	..	..	..	2	5	9	46	64
Green fodder—									
Maize	123	18	55	1	..	7	16	127	347
All other	649	250	871	43	82	390	235	424	2,944
Other—									
Potatoes	1,121	303	355	2	19	11	64	292	2,167
Onions	174	..	123	2	18	6	1	4	328
Other vegetables	1,031	18	206	21	296	345	16	155	2,088
Orchards	1,378	119	40	58	1,023	894	106	42	3,660
Vineyards	15	10	4	9	2,267	155	26	..	2,486
Grass and clover seed	15	51	104	42	25	49	98	3	387
Tobacco	..	..	..	..	..	23	343	..	366

VICTORIA—AREA UNDER CULTIVATION, SEASON 1970-71  
(acres)

Crop	Statistical district								Total
	Central	North-Central	Western	Wimmera	Mallee	Northern	North-Eastern	Gipps-land	
Grain crops—									
Wheat	18,027	14,398	19,666	573,483	857,564	363,475	31,462	969	1,879,044
Oats	16,555	23,534	134,992	345,062	238,576	207,345	20,117	330	986,511
Barley	47,155	3,143	13,577	197,854	304,583	93,324	3,350	1,941	664,927
Rye	180	64	132	1,035	10,717	139	70	..	12,337
Maize	9	..	..	..	520	193	37	..	1,322
Field peas	5,303	567	4,040	3,295	1,691	1,309	164	105	16,474
All hay	161,778	70,771	332,779	103,289	54,026	288,465	80,183	174,968	1,266,259
Green fodder	16,572	6,302	25,314	2,002	2,396	7,941	3,827	8,762	73,116
Grass and clover for seed	575	4,457	6,510	3,107	3,858	3,760	10,226	107	32,600
Tobacco	..	..	..	..	..	453	10,028	..	10,481
Potatoes	19,238	5,156	4,704	10	111	373	543	4,830	34,965
Onions	945	1	1,277	1	124	215	2	28	2,593
All other vegetables	18,011	160	7,714	44	3,520	4,424	120	5,994	39,987
Vines	129	499	168	834	46,906	980	1,416	..	50,932
Orchards	18,575	1,752	386	2,069	8,178	33,640	1,644	369	66,613
All other crops	9,271	1,098	41,871	13,295	6,567	15,867	2,328	2,776	93,073
Total area under crop	332,323	131,902	593,130	1,245,380	1,539,337	1,021,903	165,517	201,742	5,231,234
Land in fallow	45,166	18,895	49,401	702,894	1,132,916	307,030	17,437	26,588	2,300,327
Total area under cultivation	377,489	150,797	642,531	1,948,274	2,672,253	1,328,933	182,954	228,330	7,531,561

(a) Included in all other crops.

(b) The total area under crop includes 966,136 acres of grass and clover cut for hay and 35,327 acres of double-cropping.

VICTORIA—YIELD OF PRINCIPAL CROPS, SEASON 1970-71

Crop	Statistical district								Total
	Central	North-Central	Western	Wimmera	Mallee	Northern	North-Eastern	Gipps-land	
Grain crops—									
Wheat bush	450,510	353,119	491,449	12,432,621	13,669,260	8,789,211	693,484	21,620	36,901,274
Oats ..	480,179	739,407	4,416,301	9,051,794	4,493,697	5,916,697	612,537	6,515	25,717,127
Barley ..	1,629,302	85,352	351,616	3,739,548	5,596,392	2,525,366	74,204	35,843	14,037,623
Maize ..	300	..	..	..	14,050	16,134	2,990	28,662	62,136
Field peas ..	142,656	14,559	95,919	35,250	10,341	19,410	2,109	1,530	321,774
All hay tons	345,959	133,884	642,239	144,496	75,558	561,523	162,886	388,783	2,455,328
Grass and clover for seed cents	1,488	14,299	15,803	5,044	4,531	7,079	30,648	63	78,955
Tobacco cwt	..	..	..	..	..	4,647	131,205	..	135,852
Potatoes tons	161,629	47,631	38,788	67	751	2,600	3,544	44,090	299,100
Onions ..	6,062	6	8,857	11	600	1,144	..	227	16,907
Wine made gallons	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	6,616,000
Dried vine fruit—									
Raisins tons	..	..	..	..	3,833	(b)	..	..	3,833
Sultanas ..	..	..	..	..	36,753	..	..	..	36,753
Currants ..	..	..	..	..	3,034	..	..	..	3,034

(a) Details for individual districts are not available for publication.

(b) Included in Mallee District.

**Principal crops**  
(1972: pages 315-36)

**VICTORIA—GRAIN ELEVATORS BOARD : REVENUE, EXPENDITURE, ETC.**  
(\\$'000)

Particulars	Year ended 31 October—				
	1967	1968	1969	1970	1971
<b>Revenue—</b>					
Grain handling charges	4,375	3,979	4,654	5,022	5,506
Interest on investments	437	482	552	584	649
Other	..	3	..	..	..
<b>Total revenue</b>	<b>4,812</b>	<b>4,464</b>	<b>5,206</b>	<b>5,606</b>	<b>6,155</b>
<b>Expenditure—</b>					
Operating and maintenance expenses	1,517	1,093	1,651	1,949	2,329
Administration expenses	457	342	458	505	582
Depreciation and renewals	544	571	573	600	576
Interest on loans	1,348	1,420	1,516	1,590	1,638
Sinking fund charges	255	269	288	292	301
Appropriations to reserves	788	762	720	669	558
Other	2	6	..	..	41
<b>Total expenditure</b>	<b>4,911</b>	<b>4,463</b>	<b>5,206</b>	<b>5,605</b>	<b>6,025</b>
Net surplus	—99	1	..	1	130
Fixed assets at 31 October	28,909	30,700	31,823	32,825	31,668
Loan indebtedness at 31 October—					
State Government	1,706	1,683	1,672	1,630	1,598
Public	23,723	24,899	26,572	26,734	27,232

**VICTORIA—WHEAT FOR GRAIN**

Season	Holdings growing wheat (20 acres and over)	Area	Production	Average yield per acre	Gross value	Weight of bushel of wheat, f.a.q.
	number					
1966-67	11,202	3,138	70,896	22.59	104,471	63½
1967-68	11,056	3,224	28,317	8.78	43,856	65
1968-69	11,686	3,984	(a) 90,728	22.77	122,008	65
1969-70	11,618	3,298	83,544	25.32	116,747	65½
1970-71	9,669	1,879	36,901	19.63	50,127	64½

(a) Record production.

## VICTORIA—PRINCIPAL VARIETIES OF WHEAT SOWN

Variety in order of popularity, season 1970-71	Season 1968-69		Season 1969-70		Season 1970-71	
	Acres sown	Percentage of total area sown	Acres sown	Percentage of total area sown	Acres sown	Percentage of total area sown
Insignia	1,940,328	48.20	1,508,592	45.17	664,426	34.97
Olympic	813,166	20.20	753,515	22.56	369,259	19.44
Summit	205,304	5.10	242,383	7.26	215,083	11.32
Heron	253,611	6.30	310,679	9.30	214,976	11.32
Pinnacle	507,223	12.60	299,889	8.98	130,963	6.89
Insignia 49	72,460	1.80	61,554	1.84	94,434	4.97
Emblem	136,870	3.40	86,114	2.58	87,827	4.62
Robin	..	..	6,027	0.18	10,988	0.58
Sherpa	32,205	0.80	24,570	0.74	8,708	0.46
Beacon	12,077	0.30	10,643	0.32	8,390	0.44
Falcon	16,102	0.40	11,621	0.35	5,716	0.30
Quadrat	8,051	0.20	5,527	0.17	2,443	0.13
Halberd	..	..	..	..	1,641	0.09
Gamenya	..	..	2,490	0.07	1,045	0.05
Not specified	..	..	..	..	79,218	4.17
All other	28,179	0.70	16,178	0.48	4,768	0.25
Total	4,025,576	100.00	3,339,782	100.00	1,899,885	100.00

## VICTORIA—OATS FOR GRAIN

Season	Area	Production	Average yield per acre	Gross value
	'000 acres	'000 bush	bush	\$'000
1966-67	1,079	(a) 31,248	28.96	19,033
1967-68	723	6,859	9.49	6,723
1968-69	991	30,230	30.49	13,029
1969-70	884	25,927	29.34	10,495
1970-71	987	25,717	26.06	13,558

(a) Record production.

## VICTORIA—BARLEY PRODUCTION

Season	Area		Production		Average yield per acre			Gross value
	2-row	6-row	2-row	6-row	2-row	6-row	Total	
	'000 acres	'000 acres	'000 bush	'000 bush	bush	bush	bush	\$'000
1966-67	213	14	5,066	355	23.74	24.85	23.81	7,260
1967-68	287	18	2,550	158	8.89	8.81	8.88	3,261
1968-69	387	22	8,394	491	21.68	22.45	21.72	8,868
1969-70	461	26	10,787	586	23.40	22.76	23.37	11,060
1970-71	640	25	13,509	529	21.11	21.16	21.11	16,379

## VICTORIA—MAIZE PRODUCTION

Season	For green fodder	For grain						Av. yield per acre	Gross value
		Area			Production				
		Hybrid	Other	Total	Hybrid	Other	Total		
	acres	acres	acres	acres	bush	bush	bush	bush	\$'000
1966-67	3,421	1,261	146	1,407	67,044	5,074	72,118	51.26	115
1967-68	4,723	825	92	917	29,252	2,723	31,975	34.87	48
1968-69	3,588	1,059	102	1,161	68,553	3,608	72,161	62.15	108
1969-70	2,435	1,079	66	1,145	69,310	2,620	71,930	62.82	111
1970-71	1,348	1,284	38	1,322	60,876	1,260	62,136	47.00	101

## VICTORIA—RYE PRODUCTION

Season	Area	Production	Average yield per acre	Gross value
	acres	bushels	bushels	\$'000
1966-67	11,608	77,722	6.70	106
1967-68	9,578	42,351	4.42	57
1968-69	11,689	70,239	6.01	73
1969-70	11,560	57,000	4.93	58
1970-71	12,337	100,890	8.18	111

## VICTORIA—HAY PRODUCTION, 1970-71

Kind	Area	Production	Average yield per acre
	acres	tons	tons
Wheaten	20,841	31,350	1.50
Oaten	165,867	300,235	1.81
Lucerne	102,753	242,536	2.36
Barley and rye	10,662	17,715	1.66
Meadow	966,136	1,863,492	1.93
Total	1,266,259	2,455,328	1.94

VICTORIA—ENSILAGE MADE AND FARM STOCKS OF ENSILAGE AND HAY  
(tons)

Statistical district	Ensilage made, 1970-71	Stocks at 31 March 1971	
		Ensilage	Hay
Central	57,332	53,656	342,392
North-Central	6,502	7,461	141,489
Western	28,219	28,406	734,956
Wimmera	1,541	7,063	180,650
Mallee	1,888	5,299	72,603
Northern	10,518	13,414	549,556
North-Eastern	23,924	30,198	224,258
Gippsland	78,793	77,277	407,100
Total	208,717	222,774	2,653,004

## VICTORIA—POTATO PRODUCTION

Season	Area	Production (a)	Average yield per acre	Gross value
	acres	tons	tons	\$'000
1966-67	37,167	225,186	6.06	15,291
1967-68	40,329	215,941	5.35	18,566
1968-69	39,979	299,961	7.50	10,343
1969-70	39,765	279,553	7.03	17,002
1970-71	34,965	299,100	(b) 8.55	20,916

(a) Includes amounts held on farms for seed, stock feed, etc., as follows: 26,394 tons in 1966-67, 28,783 tons in 1967-68, 36,328 tons in 1968-69, 29,619 tons in 1969-70 and 26,900 tons in 1970-71.

(b) Record average yield.

## VICTORIA—ONION PRODUCTION

Season	Area	Production	Average yield per acre	Gross value
	acres	tons	tons	\$'000
1966-67	3,295	22,375	6.79	1,464
1967-68	3,617	11,339	3.13	1,427
1968-69	3,634	21,282	5.86	905
1969-70	3,296	21,339	6.47	1,469
1970-71	2,593	16,907	6.52	1,366

## VICTORIA—LINSEED PRODUCTION

Season	Area	Production	Average yield per acre	Gross value
	acres	cwt	cwt	\$'000
1966-67	5,012	46,376	9.25	302
1967-68	9,365	16,088	1.72	104
1968-69	14,304	101,570	7.10	658
1969-70	18,880	187,039	9.91	1,167
1970-71	16,877	127,393	7.55	763

## VICTORIA—TOBACCO PRODUCTION

Season	Area	Production	Average yield per acre	Gross value
	acres	cwt (dry)	cwt (dry)	\$'000
1966-67	8,455	97,792	11.57	11,938
1967-68	8,664	68,076	7.86	7,915
1968-69	9,727	107,812	11.08	13,910
1969-70	11,015	138,536	12.58	15,348
1970-71	10,481	135,852	12.96	16,087



VICTORIA—FRUIT GROWING

Particulars	Unit	1966-67	1967-68	1968-69	1969-70	1970-71
Number of growers		4,563	4,221	4,197	3,937	3,660
Area	acre	73,519	71,158	71,598	70,883	66,613
Gross value of fruit produced	\$'000	32,327	34,462	30,804	45,093	46,723
Apples	bushel	4,356,989	3,874,995	4,857,746	5,330,770	5,078,604
Pears	"	4,700,818	5,341,706	3,419,992	7,043,916	7,061,229
Quinces	"	25,089	15,935	17,515	22,257	15,346
Apricots	"	529,551	503,965	440,205	574,483	677,143
Cherries	"	120,731	178,410	148,824	141,741	184,709
Nectarines	"	36,723	37,372	33,358	34,502	35,897
Peaches	"	2,731,525	3,344,333	2,721,995	2,974,780	2,925,282
Plums	"	147,643	145,202	124,591	114,003	159,116
Prunes	"	21,421	15,892	12,874	18,416	16,516
Lemons and limes	"	147,881	169,596	215,255	163,930	236,450
Oranges—						
Navels	"	454,929	452,903	527,480	504,589	641,704
Valencias	"	660,194	638,522	808,095	742,038	1,111,198
Other oranges	"	28,647	29,849	24,217	33,216	32,870
Mandarins	"	64,350	80,286	81,181	77,752	110,606
Grapefruit	"	73,273	86,954	95,498	111,382	133,805
Figs	"	1,127	602	1,049	626	1,840
Passionfruit	"	3,914	5,356	5,532	4,534	3,274
Olives	"	15,030	38,070	23,957	34,595	29,591
Gooseberries	cwt	872	599	380	609	875
Loganberries	"	909	819	641	470	1,136
Raspberries	"	2,859	3,091	2,138	3,266	3,410
Strawberries	"	24,387	30,464	33,473	38,415	29,816
Youngberries	"	4,044	4,403	2,695	4,786	4,465
Other berries	"	903	771	331	843	872
Almonds	lb	32,522	34,484	17,947	33,657	11,319
Filberts	"	11,680	5,840	2,935	6,608	3,800
Walnuts	"	69,606	158,272	182,889	149,698	270,426
Chestnuts	"	n.a.	n.a.	n.a.	n.a.	41,186

n.a. : Not available.

VICTORIA—FRUIT TREES, PLANTS, ETC., IN ORCHARDS AND GARDENS

Fruit and nuts	1967-68			1970-71 (a)		
	Bearing	Not bearing	Total	Bearing	Not bearing	Total
	number of trees			number of trees		
Apples	1,637,939	523,087	2,161,026	1,578,474	354,236	1,932,710
Pears	1,437,252	356,080	1,793,332	1,527,304	242,475	1,769,779
Quinces	5,680	549	6,229	4,822	1,644	6,466
Plums	112,911	39,143	152,054	112,041	39,379	151,420
Prunes	15,496	2,642	18,138	13,648	2,568	16,216
Cherries	140,106	81,752	221,858	148,206	65,828	214,034
Peaches	1,140,965	279,718	1,420,683	1,066,124	265,647	1,331,771
Apricots	265,826	52,367	318,193	264,737	61,436	326,173
Nectarines	28,076	13,224	41,300	27,798	16,147	43,945
Oranges—						
Navels	202,853	64,590	267,443	209,290	49,034	258,324
Valencias	281,834	68,917	350,751	330,411	47,694	378,105
Other oranges	10,153	1,105	11,258	9,282	415	9,697
Mandarins	48,965	16,638	65,603	53,367	7,995	61,362
Grapefruit	25,795	6,940	32,735	26,922	6,165	33,087
Lemons and limes	71,497	30,266	101,763	80,321	29,102	109,423
Figs	1,733	916	2,649	1,459	753	2,212
Olives	62,847	20,174	83,021	69,256	18,382	87,638
	acres			acres		
Passionfruit	20,085	7,150	27,235	51	21	72
Raspberries	200,000	46,000	246,000	121	25	146
Loganberries	24,645	795	25,440	32	8	40
Strawberries	8,475,000	1,350,000	9,825,000	429	41	470
Gooseberries	31,200	10,800	42,000	25	8	33
Youngberries	62,115	10,455	72,570	105	14	119
Other berries	13,650	1,950	15,600	25	2	27
	number of trees			number of trees		
Almonds	8,148	1,070	9,218	5,892	13,545	19,437
Walnuts	5,061	1,574	6,635	6,707	1,675	8,382
Filberts	2,280	259	2,539	325	1,502	1,827
Chestnuts	n.a.	n.a.	n.a.	725	1,212	1,937

(a) Berries and passionfruit collected on an acreage basis only.  
n.a. : Not available.

VICTORIA—NUMBER OF FRUIT TREES, PLANTS, ETC.,  
SEASON 1970-71

Particulars	Unit	Statistical district								Total
		Central	North-Central	Western	Wimmera	Mallee	Northern	North-Eastern	Gippsland	
Growers Area	number acre	1,378 18,575	119 1,752	40 386	58 2,069	1,023 8,178	894 33,640	106 1,644	42 369	3,660 66,613
Apples	tree	1,253,990	129,833	37,813	8,870	15,895	364,839	87,999	33,471	1,932,710
Pears	"	119,865	43,437	428	3,801	2,161	1,599,285	559	243	1,769,779
Peaches	"	168,653	1,167	310	7,770	13,194	1,137,737	876	2,064	1,331,771
Apricots	"	15,388	223	115	4,080	72,663	233,181	342	181	326,173
Plums	"	58,697	2,352	74	542	41,132	48,470	102	51	151,420
Prunes	"	1,351	..	..	3,101	4,899	6,162	700	3	16,216
Cherries	"	184,825	2,423	..	1,009	826	18,692	6,159	100	214,034
Quinces	"	3,815	1	10	86	14	2,488	52	..	6,466
Nectarines	"	21,223	212	10	85	16,352	5,836	106	121	43,945
Figs	"	1,530	..	..	40	11	631	..	..	2,212
Olives	"	677	260	..	45,187	38,603	659	2,192	60	87,638
Oranges	"	..	..	..	..	512,471	131,878	1,777	..	646,126
Mandarins	"	..	..	..	..	58,835	2,508	19	..	61,362
Grapefruit	"	12	..	..	..	25,605	7,435	35	..	33,087
Lemons and limes	"	49,309	..	..	183	29,995	29,019	728	189	109,423
Passionfruit	acre	21	..	1	..	2	16	12	20	72
Strawberries	"	453	4	2	1	1	1	6	2	470
Raspberries	"	144	..	..	..	..	..	..	2	146
Loganberries	"	40	..	..	..	..	..	..	..	40
Gooseberries	"	30	3	..	..	..	..	..	..	33
Youngberries	"	119	..	..	..	..	..	..	..	119
Other berries	"	26	1	..	..	..	..	..	..	27
Almonds	tree	279	..	..	3,616	11,096	1,294	3,116	36	19,437
Walnuts	"	460	80	..	..	301	136	6,501	904	8,382
Filberts	"	316	1,012	..	..	..	..	487	12	1,827
Chestnuts	"	560	..	..	..	..	..	1,365	12	1,937

VICTORIA—DRIED TREE FRUITS  
(lb)

Season	Apricots	Peaches	Pears	Prunes	Others	Total
1966-67	16,175	716	250	306,958	215	324,314
1967-68	18,407	3,628	4,313	230,560	481	257,389
1968-69	29,832	3,038	9,916	164,909	70	207,765
1969-70	4,726	784	..	198,333	..	203,843
1970-71	9,840	700	5,600	96,811	1,600	114,551

VICTORIA—VINE FRUIT PRODUCTION

Season	Number of growers	Area		Production				
		Bearing	Not bearing	Grapes gathered	Wine made	Dried fruits		
						Raisins	Sultanas	Currants
acres	acres	'000 cwt	'000 gals	cwt	cwt	cwt		
1966-67	2,538	45,381	3,783	6,530	3,555	125,085	1,266,927	71,552
1967-68	2,490	44,802	3,923	5,975	5,180	101,014	1,083,418	63,314
1968-69	2,443	44,719	4,251	4,101	6,241	71,461	686,456	53,740
1969-70	2,493	45,647	4,191	6,771	7,251	65,388	1,276,025	67,669
1970-71	2,487	45,859	5,073	4,300	6,616	76,653	735,049	60,689

**VICTORIA—VEGETABLES FOR HUMAN CONSUMPTION,  
1970-71**

Type	Area sown	Production	Gross value
	acres	tons	\$'000
Potatoes	34,965	299,100	20,916
Onions	2,593	16,907	1,366
Carrots	2,120	31,443	3,106
Parsnips	495	6,071	1,266
Beetroot	172	1,736	90
Tomatoes	5,141	73,344	5,126
French beans	3,338	4,304	480
Green peas—			
Sold in pod	2,221	2,350	633
Canning, etc. (pod equivalent)	12,681	(a) 17,369	1,459
Cabbages	1,650	17,699	1,533
Cauliflowers	2,237	37,412	2,220
Brussels sprouts	673	2,636	921
Lettuce	1,899	13,514	1,746
Pumpkins	1,844	10,463	1,105
Other vegetables	5,516	..	4,735
<b>Total</b>	<b>77,545</b>	<b>..</b>	<b>46,702</b>

(a) Shelled weight 7,816 tons.

**Pastoral and dairying**  
(1972: pages 336-53)

**VICTORIA—LIVESTOCK**  
(‘000)

Year	Horses (including foals)	Cattle (a)		Sheep	Pigs
		Dairy	Beef		
1861 at 31 March	77		722	5,781	61
1871 " "	167		721	10,762	131
1881 " "	276		1,286	10,360	242
1891 " "	436		1,783	12,693	282
1901 " "	392		1,602	10,842	350
1911 at 1 March	472		1,548	12,883	333
1921 " "	488		1,575	12,171	175
1931 " "	380		1,430	16,478	281
1941 " "	318		1,922	20,412	398
1951 at 31 March	186	1,489	727	20,012	237
1961 " "	64	1,717	1,147	26,620	319
1966 " "	(b)	1,921	1,416	30,968	384
1967 " "	55	1,968	1,560	31,239	351
1968 " "	(b)	1,963	1,511	27,909	377
1969 " "	(b)	1,960	1,918	30,185	422
1970 " "	(b)	1,975	2,488	33,157	495
1971 " "	(b)	1,974	3,086	33,761	520

(a) Separate figures for beef and dairy cattle are not available for years before 1943.

(b) Not collected.

VICTORIA—DISTRIBUTION OF LIVESTOCK AT 31 MARCH 1971  
(’000)

Particulars	Statistical district							Total	
	Central	North-Central	West-ern	Wim-mera	Mallee	North-ern	North-East-ern		Gipps-land
<b>Cattle—</b>									
Bulls for service—									
Bulls, 1 year and over—									
Dairy breeds	5	1	8	1	(a)	7	2	9	33
Beef breeds	10	4	19	3	2	9	9	12	68
Bull calves—under 1 year—									
Dairy breeds	2	1	3	(a)	(a)	3	1	3	13
Beef breeds	5	2	8	1	1	4	3	5	29
Cows and heifers for milk and cream—									
Cows in milk	123	11	182	5	11	269	35	287	923
Cows—dry	43	7	116	4	4	40	35	72	321
Heifers—1 year and over	45	7	83	3	4	86	18	90	336
Heifer calves—under 1 year	40	5	75	3	5	91	19	87	325
House cows and heifers	3	2	5	3	2	3	2	2	22
Other cattle and calves for meat production—									
Cows and heifers	214	101	419	62	35	180	237	269	1,517
Calves—under 1 year	137	61	228	44	30	158	139	194	991
Other	71	29	101	12	9	69	75	114	480
Total cattle	698	231	1,247	141	103	919	575	1,144	5,058
Pigs	70	15	51	56	50	178	47	54	521
Sheep	2,656	2,726	12,324	5,350	2,172	4,539	1,920	2,075	33,762

(a) More than nil but less than 500.

VICTORIA—DAIRYING

Year	Number of cow keepers at 31 March	Number of dairy cows (in milk or dry) at 31 March	Estimated total production of milk for all purposes (year ended 30 June)	Gross value of dairy produce (a) (year ended 30 June)
		’000	’000 gals	\$’000
1967	(b)	1,211	790,941	210,345
1968	(b)	1,200	734,451	181,541
1969	(b)	1,209	815,791	202,245
1970	20,894	1,245	892,378	223,617
1971	19,942	1,244	(c)898,970	219,578

(a) Includes subsidy.  
(b) Not collected.  
(c) Subject to revision.

VICTORIA—BUTTER, CHEESE, CONDENSED AND  
POWDERED MILK, AND CASEIN MADE  
(‘000 lb)

Year ended 30 June—	Butter (a)	Cheese (a)	Condensed milk	Powdered full-cream milk	Casein
1967	266,907	67,907	113,559	24,188	38,509
1968	241,240	73,570	95,064	24,258	37,399
1969	280,206	75,256	90,716	30,608	59,323
1970	313,753	73,866	113,467	27,200	63,947
1971	299,489	78,671	129,269	37,657	56,259

(a) Small quantities of butter and cheese made on farms are excluded from the above table.

VICTORIA—PIGS AND PIG KEEPERS AT 31 MARCH 1971

Statistical district	Boars	Breeding sows	All other	Total pigs	Pig keepers
Central	849	9,742	59,132	69,723	717
North-Central	247	2,080	12,688	15,015	339
Western	854	7,383	42,337	50,574	943
Wimmera	971	8,049	46,863	55,883	1,260
Mallee	829	6,855	41,926	49,610	980
Northern	2,263	25,342	150,249	177,854	1,557
North-Eastern	712	6,319	39,719	46,750	705
Gippsland	846	8,060	45,464	54,370	751
Total	7,571	73,830	438,378	519,779	7,252

VICTORIA—PIG KEEPING IN CONJUNCTION WITH DAIRYING :  
NUMBER OF HOLDINGS AT 31 MARCH 1969

Size of dairy cattle herd (numbers)	Size of pig herd (numbers)								Holdings with—		
	1-4	5-9	10-14	15-19	20-29	30-49	50-99	100 and over	Pigs	No pigs	Dairy cattle
1-4	178	104	59	35	46	64	54	36	576	3,487	4,063
5-9	109	59	41	19	43	43	40	14	368	1,582	1,950
10-14	69	40	39	17	23	27	33	12	260	939	1,199
15-19	38	31	19	17	22	19	18	14	178	661	839
20-29	70	52	30	24	47	34	25	24	306	965	1,271
30-49	91	90	80	34	95	85	69	37	581	1,741	2,322
50-69	70	81	75	63	107	123	90	47	656	2,008	2,664
70-99	58	60	62	60	137	205	212	98	892	3,644	4,536
100-149	47	38	41	34	67	161	273	175	836	4,637	5,473
150 and over	36	14	14	15	26	38	103	194	440	2,300	2,740
Total	766	569	460	318	613	799	917	651	5,093	21,964	27,057

## VICTORIA—GEOGRAPHICAL DISTRIBUTION OF BREEDS OF SHEEP (INCLUDING RAMS) AT 31 MARCH 1971

Breed	Statistical district							Total	Percentage of total sheep	
	Central	North-Central	Western	Wimmera	Mallee	Northern	North-Eastern			Gippsland
Merino	807,925	1,528,305	5,580,892	4,023,819	1,100,875	1,922,817	827,927	947,258	16,739,818	49.58
Crossbred	958,977	671,363	1,898,216	634,746	740,560	1,834,064	687,056	718,838	8,143,820	24.12
Corriedale	358,524	182,736	2,224,281	357,366	79,128	225,090	135,523	154,577	3,717,225	11.00
Merino Comeback	165,913	208,954	1,142,617	140,429	114,125	199,783	119,312	107,910	2,199,043	6.51
Polwarth	150,693	15,918	732,802	9,738	3,167	26,140	61,933	7,661	1,008,052	2.99
Border Leicester	63,990	48,878	129,306	101,831	62,309	137,749	24,954	46,603	615,620	1.82
Dorset Horn	70,169	37,704	103,143	35,567	42,383	122,449	26,793	26,041	464,249	1.38
Romney Marsh	18,142	2,874	368,704	15,513	4,443	3,285	9,739	22,471	445,171	1.32
Poll Dorset	20,445	11,564	28,063	16,386	23,431	35,226	11,648	14,682	161,445	0.48
Southdown	28,110	13,638	52,132	1,184	774	11,734	3,601	22,129	133,302	0.39
Zenith	2,162	1,177	31,452	11,710	146	16,918	7,058	99	70,722	0.21
Ryeland	5,415	928	9,320	283	8	2,080	1,685	2,726	22,445	0.07
Cheviot	1,949	169	5,154	7	132	99	710	1,354	9,574	0.03
Suffolk	438	199	6,120	633	981	32	11	336	8,750	0.03
Perendale	2,257	2	2,540	79	..	64	448	404	5,794	0.02
English Leicester	189	833	1,308	155	6	112	383	1,063	4,049	0.01
All other	630	630	7,662	228	22	1,728	727	781	12,408	0.04
Total	2,655,928	2,725,872	12,323,712	5,349,674	2,172,490	4,539,370	1,919,508	2,074,933	33,761,487	100.00

## VICTORIA—GEOGRAPHICAL DISTRIBUTION OF RAMS ACCORDING TO BREED AT 31 MARCH 1971

Breed	Statistical district								Total	Percentage of total rams
	Central	North-Central	Western	Wimmera	Mallee	Northern	North-Eastern	Gippsland		
Merino	5,601	10,264	66,395	32,403	5,098	12,525	5,370	7,113	144,769	38.13
Dorset Horn	8,130	5,375	13,121	6,011	8,773	21,453	7,817	3,681	74,361	19.58
Corriedale	3,806	2,219	25,375	5,301	767	2,252	1,095	1,856	42,671	11.24
Border Leicester	1,016	2,524	3,357	5,982	5,465	8,910	2,156	1,924	31,334	8.25
Poll Dorset	3,596	2,445	4,379	2,879	4,982	7,289	2,903	2,539	31,012	8.17
Southdown	4,816	2,641	5,362	152	116	2,198	1,176	4,153	20,614	5.43
Polwarth	1,408	383	9,721	73	49	366	625	114	12,739	3.35
Romney Marsh	232	43	7,739	696	19	140	260	523	9,652	2.54
Ryeland	851	291	1,345	53	8	344	668	739	4,299	1.13
Crossbred	234	145	805	119	93	252	189	523	2,360	0.62
Zenith	17	56	410	298	14	211	85	4	1,095	0.29
Merino Comeback	41	19	490	161	56	145	30	73	1,015	0.27
English Leicester	22	171	228	64	6	46	30	150	717	0.19
Cheviot	136	50	274	7	10	44	86	101	708	0.19
Suffolk	55	57	228	33	109	32	11	54	579	0.15
South Suffolk	11	53	268	34	20	89	48	2	525	0.14
Perendale	109	2	88	29	..	4	28	49	309	0.08
All other	64	39	529	22	2	80	104	117	957	0.25
Total	30,145	26,777	140,114	54,317	25,587	56,380	22,681	23,715	379,716	100.00

PRIMARY PRODUCTION

## VICTORIA—BREEDS OF SHEEP (INCLUDING RAMS) AT 31 MARCH (a)

Breed	1968		1970		1971	
	Number	Percentage of total	Number	Percentage of total	Number	Percentage of total
Merino	12,810,165	45.90	16,217,856	48.91	16,739,818	49.58
Corriedale	4,081,828	14.63	3,560,181	10.74	3,717,225	11.01
Merino Comeback	1,584,194	5.67	1,970,247	5.94	2,199,043	6.51
Polwarth	981,631	3.52	999,322	3.01	1,008,052	2.99
Border Leicester	509,229	1.82	570,155	1.72	615,620	1.82
Dorset Horn	409,774	1.47	380,334	1.15	464,249	1.38
Romney Marsh	597,952	2.14	432,712	1.31	445,171	1.32
Poll Dorset	106,562	0.38	119,481	0.36	161,445	0.48
Southdown	108,508	0.39	110,583	0.33	133,302	0.39
Zenith	56,493	0.20	63,179	0.20	70,722	0.21
Ryeland	18,816	0.07	18,832	0.06	22,445	0.07
Cheviot	10,152	0.04	8,465	0.02	9,574	0.03
Suffolk	4,365	0.02	3,543	0.01	8,750	0.02
Lincoln	6,881	0.02	4,953	0.01	7,284	0.02
English Leicester	8,144	0.03	7,028	0.02	4,049	0.01
Other (including crossbreeds and unspecified)	6,614,060	23.70	8,689,959	26.21	8,154,738	24.16
Total	27,908,754	100.00	33,156,830	100.00	33,761,487	100.00

(a) Not collected in 1969.

## VICTORIA—LAMBING

Season	Ewes intended for mating	Ewes actually mated	Lambs marked	Proportion of lambs marked to ewes mated
	'000	'000	'000	per cent
1967-68	13,205	12,476	10,101	81
1968-69	11,797	11,557	9,255	80
1969-70	14,037	13,910	12,266	88
1970-71	14,830	14,841	12,724	86
1971-72 p	14,511	13,123	11,031	84

p: Preliminary.

## VICTORIA—SHEEP AND LAMBS IN EACH STATISTICAL DISTRICT AT 31 MARCH 1971 ('000)

Particulars	Statistical district								Total
	Central	North-Central	Western	Wimmera	Mallee	North-eastern	North-eastern	Gippsland	
Rams	30	27	140	54	26	56	23	24	380
Ewes	1,318	1,187	6,007	2,477	1,385	2,553	1,012	1,078	17,016
Wethers	727	1,016	3,291	1,760	319	1,030	524	452	9,120
Lambs	581	496	2,885	1,059	442	900	361	521	7,245
Total sheep and lambs	2,656	2,726	12,324	5,350	2,172	4,539	1,920	2,075	33,761

## VICTORIA—LAMBING, 1970-71 SEASON

Particulars	Statistical district								Total
	Central	North-Central	Western	Wimmera	Mallee	North-eastern	North-eastern	Gippsland	
Ewes mated '000	1,147	1,025	4,904	2,150	1,272	2,390	953	1,000	14,841
Lambs marked '000	1,065	910	4,089	1,699	1,106	2,135	835	885	12,724
Percentage	93	89	83	79	87	89	88	89	86



VICTORIA—LAMBING FORECAST: EWES MATED OR INTENDED TO BE  
MATED FOR LAMBING DURING 1971 SEASON

(As advised by farmers at 31 March 1971)

('000)

Statistical district	Breed of ram used—				Total
	Merino	Corriedale or Polwarth	Shortwool breeds	Longwool breeds	
Central	229,280	163,217	688,751	56,233	1,137,481
North-Central	394,424	63,436	465,949	105,292	1,029,101
Western	2,115,560	1,076,477	1,185,411	424,799	4,802,247
Wimmera	1,182,196	153,582	459,047	283,429	2,078,254
Mallee	213,606	32,375	802,565	238,722	1,287,268
Northern	471,624	89,574	1,450,103	355,420	2,366,721
North-Eastern	229,402	57,295	512,396	90,108	889,201
Gippsland	279,704	61,600	472,864	106,356	920,524
Total	5,115,796	1,697,556	6,037,086	1,660,359	14,510,797

VICTORIA—SHEEP AND LAMBS SHORN, SEASON 1970-71

Statistical district	Shorn		Wool clipped (including crutchings)		Average	
	Sheep	Lambs	Sheep's	Lambs'	Per sheep	Per lamb
	'000	'000	'000 lb	'000 lb	lb	lb
Central	2,331	673	22,928	2,099	9.84	3.12
North-Central	2,736	582	28,073	1,823	10.26	3.13
Western	11,615	3,178	110,504	9,565	9.51	3.01
Wimmera	5,331	1,276	54,646	4,083	10.25	3.20
Mallee	2,040	494	20,385	1,544	9.99	3.13
Northern	4,478	1,116	45,570	3,491	10.18	3.13
North-Eastern	1,997	444	18,895	1,222	9.46	2.75
Gippsland	1,835	627	17,240	1,798	9.40	2.87
Total	32,363	8,390	318,241	25,625	9.83	3.05

VICTORIA—SHEEP SHORN AND WOOL CLIPPED

Season	Shorn		Wool clipped (including crutchings)		Average	
	Sheep	Lambs	Sheep's	Lambs'	Per sheep	Per lamb
	'000	'000	'000 lb	'000 lb	lb	lb
1966-67	29,553	7,605	292,627	22,080	9.90	2.90
1967-68	28,304	6,940	257,042	17,787	9.08	2.56
1968-69	28,653	6,227	280,511	18,471	9.79	2.97
1969-70	30,974	8,638	330,201	26,159	10.66	3.03
1970-71	32,363	8,390	318,241	25,625	9.83	3.05

## VICTORIA—WOOL PRODUCTION AND VALUE

Season	Clip	Stripped from and exported on skins, etc. (greasy)	Total quantity (greasy)	Gross value	Average price per lb
	'000 lb	'000 lb	'000 lb	\$'000	cents
1966-67	314,707	63,750	378,457	180,946	47.81
1967-68	274,829	57,598	332,427	133,213	40.07
1968-69	298,983	65,364	364,347	155,547	42.69
1969-70	356,511	70,879	427,390	154,693	36.19
1970-71 (a)	359,115	71,760	430,875	118,184	27.42

(a) Excluding support payment of 0.23 cents per lb.

VICTORIA—HEN EGGS SET AND CHICKENS HATCHED  
( '000 )

Period	Hen eggs set (a)	Chicks hatched (b) intended to be raised for—				Total hatched
		Meat production	Egg production	Breeding		
				Pullets	Cockerels	
<b>MEAT STRAINS</b>						
1966-67	19,626	14,486	(c) 7	1	1	14,494
1967-68	20,655	15,806	(c) 1	1	1	15,809
1968-69	20,120	15,546	(c) ..	..	..	15,546
1969-70	21,945	17,334	(c) ..	..	..	17,334
1970-71	29,400	22,104	(c) n.a.	n.a.	n.a.	(e) 22,104
<b>EGG STRAINS (d)</b>						
1966-67	12,206	1,509	4,114	217	30	5,869
1967-68	12,578	1,567	4,251	209	31	6,059
1968-69	13,104	880	4,455	184	26	5,545
1969-70	14,439	1,464	4,977	211	30	6,683
1970-71	15,342	1,096	5,349	(e) 132	(e) 23	(e) 6,601

(a) Includes eggs which failed to hatch.

(b) Excludes chicks destroyed.

(c) Not applicable.

(d) Egg strain chicks reported as "unsexed" have been allocated half to chicks for meat production and half to chicks for egg production. The number so reported was 486,340 in 1966-67, 410,129 in 1967-68, 223,321 in 1968-69, 172,222 in 1969-70, and 93,031 in 1970-71.

(e) Incomplete.

n.a. : Not available.

VICTORIA—POULTRY SLAUGHTERED FOR HUMAN CONSUMPTION  
(<sup>'000</sup>)

Period	Chickens (i.e., broilers, fryers or roasters)	Hens and stags	Ducks and drakes	Turkeys
1966-67	13,570	911	253	166
1967-68	15,519	990	248	95
1968-69	13,832	1,326	272	114
1969-70	16,562	1,643	246	172
1970-71	19,854	1,908	283	146

DRESSED WEIGHT OF POULTRY SLAUGHTERED (a),  
AND INTENDED FOR SALE (b)  
(<sup>'000</sup> lb)

	Fresh	Frozen	Fresh	Frozen	Fresh	Frozen	Fresh	Frozen
1966-67	20,020	14,742	2,520	449	728	169	131	1,487
1967-68	19,053	22,333	2,963	355	635	248	145	818
1968-69	21,093	18,393	3,791	876	815	190	204	844
1969-70	26,750	18,309	4,402	1,423	783	97		1,655
1970-71	35,053	20,506	4,802	2,018	779	236		1,353

(a) Dressed weight of whole birds, pieces and giblets as reported by producers.

(b) Fresh: Sold immediately after slaughter or chilled for sale soon after.

Frozen: Frozen hard for storage of indefinite duration.

VICTORIA—STOCK SLAUGHTERED IN ESTABLISHMENTS  
AND ON FARMS AND STATIONS (a)  
(<sup>'000</sup>)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71 (b)
Sheep	7,310	9,227	5,853	8,209	8,622
Lambs	5,875	5,816	7,040	7,570	7,884
Bulls and bullocks	244	237	256	385	725
Cows	485	516	418	458	659
Young cattle	361	337	348	413	(c)
Calves—Bobby	570	673	510	465	420
Other	77			31	30
Pigs	699	701	772	897	943
Number of slaughterhouses	263	240	251	230	215

(a) Includes numbers of livestock condemned as being unsuitable for human consumption.

(b) Average dressed weights per carcass during 1970-71 were: sheep 46.91 lb, lambs 36.33 lb, bulls, bullocks and steers 527.14 lb, cows and heifers 407.68 lb, bobby calves 45.26 lb, other calves 197.15 lb, and pigs 106.91 lb.

(c) A change in the collection form in July 1970 has resulted in the elimination of "young cattle" which has been absorbed by "bulls, bullocks, and steers", "cows and heifers", and "other calves". This also explains the increase in average carcass weight of "other calves".

**Honey industry**  
(1972 : pages 353-4)

VICTORIA—BEE HIVES, HONEY, AND BEESWAX

Season ended 31 May—	Bee keepers	Hives	Production		Gross value	
			Honey	Beeswax	Honey	Beeswax
	number	number	'000 lb	'000 lb	\$'000	\$'000
1967	1,158	96,274	7,160	88	1,045	44
1968	1,298	95,108	7,580	92	1,114	67
1969	1,240	99,953	3,638	50	520	37
1970	1,256	102,100	8,220	103	800	65
1971	1,278	103,454	9,804	120	984	68

PRIMARY INDUSTRIES OTHER THAN FARMING  
(1972: pages 354-78)

**Forestry**  
(1972: pages 354-9)

VICTORIA—FOREST TIMBER  
( '000 cu ft)

Item	1966-67	1967-68	1968-69	1969-70	1970-71
Logs for sawing, peeling, slicing, or pulping—					
Hardwoods	68,880	70,129	75,022	72,199	73,155
Softwoods (plantation grown pines)	15,325	14,037	17,001	19,553	19,558
Total logs	84,205	84,166	92,023	91,752	92,713
Hewn and other timber (not included above) estimated volume—					
Firewood (a)	14,990	12,293	10,718	9,854	9,304
Other (b)	4,793	4,677	4,194	4,192	3,938

(a) Excludes mill waste used as firewood.

(b) Includes telephone and electric supply transmission poles, bridge and wharf piles and beams, fencing timbers, railway sleepers, and mining timbers from Crown lands. Similar information for private lands is not available.

VICTORIA—OUTPUT FROM STATE PLANTATIONS  
OF SOFTWOOD LOGS AND PULPWOOD  
(’000 cu ft)

Year	Sawlogs and peeling logs	Pulpwood
1966-67	4,830	2,323
1967-68	r 4,617	1,968
1968-69	4,425	1,589
1969-70	r 4,922	r 2,077
1970-71	5,132	2,377

r : Revised.

VICTORIA—CAUSES OF FOREST FIRES

Cause	Number of fires				
	1966-67	1967-68	1968-69	1969-70	1970-71
Grazing interests	..	4	..	1	2
Landowners, householders, etc.	90	169	64	49	87
Deliberate lighting	104	167	74	43	48
Sportsmen, campers, tourists	33	51	20	37	45
Licenseses and forest workers	15	56	18	14	20
Smokers	36	61	15	27	11
Lightning	41	67	95	37	59
Tractors, cars, trucks, locomotives, and stationary engines	35	50	25	15	20
Children	9	19	13	13	12
Sawmills	8	15	7	6	4
Miscellaneous known causes	44	53	45	22	22
Unknown origin	71	75	15	40	28
Total	486	787	391	304	358

VICTORIA—AREAS OF STATE FOREST BURNT  
(acres)

Year	Commercial area	Non-commercial area	Total
1966-67	7,830	30,689	38,519
1967-68	306,350	240,698	547,048
1968-69	36,969	34,638	71,607
1969-70	3,401	9,175	12,576
1970-71	1,500	10,384	11,884

**Fisheries and wildlife**  
(1972: pages 359-62)

**VICTORIA—FISHERIES : MEN, BOATS,  
AND EQUIPMENT**

Year	Registered crew members	Boats registered		Value of nets and other equipment
		Number	Value	
			\$'000	\$'000
1966-67	2,057	1,108	5,903	1,078
1967-68	2,053	1,084	6,808	1,153
1968-69	1,571	871	5,363	1,047
1969-70	1,429	795	4,966	944
1970-71	1,504	815	5,862	1,174

**VICTORIA—FISHERIES : QUANTITY AND GROSS VALUE OF TAKE**

Year	Recorded production							
	Fish		Rock lobster (a)		Prawns		Molluscs	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	'000 lb	\$'000	'000 lb	\$'000	'000 lb	\$'000	'000 lb	\$'000
1966-67	16,048	1,959	1,723	1,034	11	6	32,674	1,981
1967-68	17,016	2,253	1,533	1,027	5	3	35,889	2,618
1968-69	23,568	r 2,775	1,581	1,455	5	3	16,028	r 1,699
1969-70	35,235	r 3,396	1,788	1,500	2	2	r 9,719	r 1,081
1970-71	31,989	3,277	1,718	1,718	2	1	15,447	2,314

(a) Includes freshwater crayfish.  
r : Revised.

VICTORIA—CATCH OF FISH, CRUSTACEANS, AND MOLLUSCS  
(’000 lb live weight)

Species	1966-67	1967-68	1968-69	1969-70	1970-71
<b>Freshwater fish—</b>					
Eel	221	235	288	272	353
English perch	145	141	53	19	25
Golden perch	21	11	6	6	4
Tench	20	28	31	18	8
Other	14	8	16	26	19
<b>Total</b>	<b>421</b>	<b>423</b>	<b>394</b>	<b>341</b>	<b>409</b>
<b>Marine fish—</b>					
Anchovy	441	343	2,395	n.a.	n.a.
Bream, black	490	726	709	1,060	871
Flathead, rock	257	291	243	260	263
Flathead, tiger	1,136	1,209	1,662	2,018	1,427
Flounder	151	160	130	190	133
Garfish, sea and river	358	369	510	490	433
Luderick	110	83	96	152	158
Morwong (jackass fish)	272	155	284	152	112
Mullet, yellow-eye	607	513	497	630	667
Pike, long-finned	107	133	94	76	115
Pilchard	112	98	1,370	n.a.	n.a.
Salmon, Australian	1,252	1,303	943	1,142	554
Shark, gummy	1,840	2,240	2,350	2,327	1,772
Shark, saw	254	212	369	274	303
Shark, school	3,556	3,319	3,739	4,641	3,900
Snapper	349	374	423	487	792
Snoek (barracouta)	2,791	3,676	5,360	5,558	4,999
Trevally	105	102	112	102	140
Whiting, King George	246	286	160	168	284
Whiting, school	234	175	363	562	379
Other	960	825	1,367	1,978	1,080
<b>Total</b>	<b>15,628</b>	<b>16,592</b>	<b>23,175</b>	<b>34,895</b>	<b>31,580</b>
<b>Crustaceans—</b>					
Rock lobster (a)	1,723	1,533	1,581	1,788	1,718
Prawns	11	5	5	2	2
<b>Total</b>	<b>1,734</b>	<b>1,538</b>	<b>1,586</b>	<b>1,790</b>	<b>1,720</b>
<b>Molluscs—</b>					
Abalone	3,379	7,470	5,751	4,712	4,509
Mussels	260	247	119	516	1,048
Scallops	28,726	27,896	9,885	4,164	9,590
Other	309	276	272	r 327	300
<b>Total</b>	<b>32,674</b>	<b>35,889</b>	<b>16,027</b>	<b>r 9,719</b>	<b>15,447</b>
<b>Total all species</b>	<b>50,457</b>	<b>54,442</b>	<b>41,182</b>	<b>r 46,745</b>	<b>49,156</b>

(a) Includes freshwater crayfish.

n.a. : Not available separately for publication; included in total.

r : Revised.

## Mining and quarrying production

(1972: pages 376-8)

## VICTORIA—COAL PRODUCTION AND VALUE (a)

Period (b)	Black coal		Brown coal	
	Production	Value	Production	Value
	tons	\$'000	tons	\$'000
1926-1930	668,177	1,786	1,515,592	386
1931-1935	472,030	888	2,445,215	512
1936-1940	324,903	568	3,608,751	712
1941-1945	286,277	818	5,010,555	1,052
1946-1950	156,290	722	6,648,430	2,404
1951-1955	143,535	1,590	8,728,116	7,186
1956-1960	100,893	1,050	12,193,625	11,302
1961	66,363	718	16,279,168	15,444
1962	56,721	632	17,137,438	15,682
1963	50,481	588	18,456,445	16,158
1964	47,058	544	19,034,792	17,304
1965	42,247	515	20,658,856	18,436
1966	35,519	497	21,782,977	20,064
1967	32,066	251	23,383,607	20,686
1968	26,314	209	22,970,653	21,555
1968-69	13,102	105	23,128,491	20,879
1969-70	401	6	23,926,874	22,131
1970-71	20	(c)	22,814,369	22,975

(a) Value of output at the mine.

(b) Figures for five yearly periods are annual averages.

(c) \$400.

## VICTORIA—ASSAYED CONTENT OF METALLIC MINERALS

Metal or element and mineral in which contained	1968-69	1969-70	1970-71
Alumina (ton)—			
Contained in bauxite	1,800	423	3,320
Antimony (ton)—			
Contained in antimony concentrate	..	..	103
Contained in antimony ore	..	..	255
Total antimony	..	..	358
Copper (ton)—			
Contained in copper concentrate	..	6	18
Contained in copper ore	30	35	21
Total copper	30	41	39
Gold (fine oz)—			
Contained in antimony concentrate	..	..	700
Contained in copper concentrate	..	7	23
Contained in gold bullion	9,286	8,671	5,243
Total gold	9,286	8,678	5,966
Iron (ton)—			
Contained in bauxite	121	48	384
Contained in iron ore	336	105	170
Total iron	457	153	554
Lead (ton)—			
Contained in lead concentrate	..	..	1
Palladium (oz)—			
Contained in copper concentrate	..	17	62
Platinum (oz)—			
Contained in copper concentrate	..	15	42
Silver (fine oz)—			
Contained in copper concentrate	..	73	174
Contained in gold bullion	164	7	7
Total silver	164	80	181
Tin (ton)—			
Contained in tin concentrate	42	9	3

Source: Victorian Mines Department and Commonwealth Bureau of Census and Statistics.



## VICTORIA—MINERAL PRODUCTION

Particulars	1968-69		1969-70		1970-71	
	Quantity	Value	Quantity	Value	Quantity	Value
<b>Metallic minerals (a)—</b>	oz	\$'000	oz	\$'000	oz	\$'000
Gold bullion	10,163	(b) 359	10,167	(b) 303	5,640	(b) 180
	ton		ton		ton	
Antimony concentrate	..	..	..	..	331	37
Antimony ore	..	..	..	..	2,300	63
Bauxite	4,016	20	1,028	..	7,777	58
Copper concentrate	..	..	28	9	90	17
Copper ore	865	41	1,066	53	1,068	22
Iron ore	559	r 4	175	1	285	1
Lead concentrate	..	..	..	..	2	(c) 11
Tin concentrate	61	81	12	23	6	11
<b>Non-metallic minerals—</b>						
Diatomite	..	..	..	..	4	(d)
Fireclay	r 21,613	r 46	26,936	67	41,418	104
Fluorspar	..	..	609	14	931	30
Gypsum	r 109,029	r 212	50,058	153	45,573	151
Kaolin, refined	r 6,448	r 167	5,506	167	7,174	202
Kaolin, unrefined (e)	r 10,647	r 24	12,138	24	17,450	42
Limestone (f)	r 1,894,929	r 2,599	2,014,863	2,758	2,042,385	2,765
Other clays	r 1,971,461	r 1,757	1,796,244	1,649	1,981,114	1,556
Silica	113,624	289	112,740	292	106,396	319
<b>Fuel minerals—</b>						
Briquettes	1,471,328	r 12,306	1,540,717	11,514	1,369,316	10,614
Coal, black	13,102	105	401	6	20	(g)
Coal, brown (h)	23,128,491	20,879	23,926,874	22,131	22,814,369	22,975
	'000 barrels		'000 barrels		'000 barrels	
Crude oil	..	..	13,474	n.a.	76,257	n.a.
Liquefied petroleum gases (i)—						
Commercial butane	..	..	98	n.a.	2,474	n.a.
Commercial propane	..	..	137	n.a.	2,181	n.a.
	mmscf (j)		mmscf (j)		mmscf (j)	
Natural gas (k)	738	n.a.	9,668	n.a.	30,526	n.a.
Other derivatives (i)—						
Commercial ethane	..	..	17	n.a.	190	n.a.
	'000 tons		'000 tons		'000 tons	
<b>Construction materials—</b>						
Sand	5,260	5,604	5,454	5,969	5,656	6,130
Gravel	2,842	1,484	3,119	1,575	3,542	1,727
Crushed and broken stone	15,191	24,506	17,528	29,973	17,228	31,437
	ton		ton		ton	
Dimension stone	r 8,965	r 182	8,664	175	9,428	198
	'000 tons		'000 tons		'000 tons	
Other quarry products	2,119	1,357	3,275	1,971	3,669	2,415

Source : Victorian Mines Department and Commonwealth Bureau of Census and Statistics.

(a) See preceding table for assayed content.

(b) Includes gold subsidy of \$24,040 in 1968-69, \$10,409 in 1969-70, and \$1,979 in 1970-71.

(c) \$40.

(d) \$52.

(e) Excludes unrefined kaolin used in producing refined kaolin at or near mine.

(f) Excludes limestone used as construction material.

(g) \$400.

(h) Includes brown coal used for briquette production.

(i) Excludes manufactured liquefied petroleum gases and other derivatives from petroleum refining.

(j) Million standard cubic feet.

(k) Includes commercial gas and gas for field usage.

n.a. : Not available.

r : Revised.

VALUE OF PRODUCTION  
(1972: pages 378-80)

VICTORIA—GROSS VALUE OF PRIMARY PRODUCTION EXCLUDING MINING  
(\$'000)

Industry	1966-67	1967-68	1968-69	1969-70	1970-71
Agriculture	325,461	221,960	331,715	r 318,489	(a)263,332
Pastoral	376,196	355,318	345,275	385,025	354,607
Dairying (b)	206,638	181,541	202,245	225,142	243,791
Poultry and bees	57,658	51,316	47,377	49,325	48,849
Trapping	4,244	3,621	3,623	3,078	1,749
Forestry	29,675	27,845	r 29,920	30,010	37,366
Fisheries	4,980	5,725	r 5,933	r 5,979	7,310
<b>Total gross value</b>	<b>1,004,852</b>	<b>847,326</b>	<b>r 966,088</b>	<b>r 1,017,048</b>	<b>957,004</b>

(a) Includes net payout of \$130,278 from the Apples and Pears Stabilization Fund.

(b) Includes subsidy : 1966-67 \$14,575,000, 1967-68 \$14,913,000, 1968-69 \$16,667,000, 1969-70 \$16,597,000, and 1970-71 \$27,710,000.

r : Revised.

VICTORIA—LOCAL VALUE OF PRIMARY PRODUCTION  
EXCLUDING MINING  
(\$'000)

Produce	1966-67	1967-68	1968-69	1969-70	1970-71
<b>Agriculture—</b>					
Barley	6,174	2,606	6,470	8,982	13,753
Maize	111	39	80	99	88
Oats	14,498	6,229	10,560	8,189	11,077
Wheat	87,279	36,735	95,832	87,223	40,487
Onions	1,188	1,266	649	731	1,148
Potatoes	12,649	16,132	6,891	13,680	18,305
Other vegetables for human consumption	21,862	20,713	19,668	r 19,978	21,865
Hay and straw	73,108	48,307	71,956	33,841	36,218
Fruit	24,302	26,940	23,469	37,077	38,277
Vineyards	18,688	19,496	16,160	21,344	15,706
Other crops	22,095	17,527	24,688	27,781	27,538
<b>Total</b>	<b>281,954</b>	<b>195,992</b>	<b>276,423</b>	<b>r 258,925</b>	<b>224,462</b>
<b>Pastoral—</b>					
Wool	167,123	124,143	145,557	143,040	108,215
Sheep, slaughtered	57,081	71,981	56,192	67,430	50,794
Cattle, slaughtered	119,187	128,648	118,882	146,015	166,353
<b>Total</b>	<b>343,391</b>	<b>324,772</b>	<b>320,631</b>	<b>356,485</b>	<b>325,362</b>
<b>Dairying—</b>					
Whole milk used for—					
Butter	96,922	72,345	95,110	109,859	104,476
Cheese	14,792	15,756	13,727	11,991	13,088
Condensing, concentrating, etc.	16,552	14,027	14,409	12,306	20,043
Human consumption and other purposes	37,731	39,925	37,844	41,455	40,253
Subsidy paid on wholemilk for butter and cheese	14,575	14,913	16,667	16,597	27,710
Pigs, slaughtered	17,540	16,905	16,392	19,372	22,415
<b>Total</b>	<b>198,111</b>	<b>173,871</b>	<b>194,148</b>	<b>211,580</b>	<b>227,985</b>

VICTORIA—LOCAL VALUE OF PRIMARY PRODUCTION EXCLUDING MINING—*continued*  
(\$'000)

Produce	1966-67	1967-68	1968-69	1969-70	1970-71
<b>Poultry and bees—</b>					
Eggs	35,173	33,535	31,163	33,395	25,471
Poultry	15,423	11,995	11,731	11,830	14,068
Honey and beeswax	758	782	396	821	997
<b>Total</b>	<b>51,354</b>	<b>46,311</b>	<b>43,291</b>	<b>46,046</b>	<b>40,536</b>
<b>Trapping, etc.—</b>					
Rabbits and hares	3,470	3,051	2,875	2,371	1,196
Rabbit and hare skins, etc.	506	359	524	513	427
<b>Total</b>	<b>3,976</b>	<b>3,409</b>	<b>3,400</b>	<b>2,884</b>	<b>1,623</b>
<b>Forestry—</b>					
Sawmills	23,798	23,235	25,865	26,137	32,659
Hewn timber	2,516	2,477	2,231	2,076	2,619
Firewood	2,554	1,586	1,371	1,348	1,600
Bark for tanning	89	80	63	59	1
Other	77	70	48	52	87
<b>Total</b>	<b>29,036</b>	<b>27,448</b>	<b>29,577</b>	<b>29,672</b>	<b>36,966</b>
<b>Fisheries—</b>					
Fish	1,643	1,933	r 2,343	r 2,819	2,635
Rock lobster (a)	909	1,012	1,436	1,481	1,696
Scallops	1,344	1,310	r 856	196	901
Other	411	898	r 701	r 807	1,230
<b>Total</b>	<b>4,307</b>	<b>5,153</b>	<b>r 5,336</b>	<b>r 5,304</b>	<b>6,462</b>
<b>Total local value</b>	<b>912,128</b>	<b>776,957</b>	<b>r 872,807</b>	<b>r 910,897</b>	<b>863,396</b>

(a) Includes freshwater crayfish.

r : Revised.

VICTORIA—NET VALUE OF PRIMARY PRODUCTION EXCLUDING MINING  
(\$'000)

Division of industry	1966-67	1967-68	1968-69	1969-70	1970-71
<b>Rural—</b>					
Agriculture	255,016	169,501	247,194	r 231,413	207,612
Pastoral	315,142	254,187	262,707	r 307,734	273,134
Dairying	145,567	140,097	166,117	r 187,340	202,724
Poultry	32,464	27,705	25,675	r 25,409	22,692
Bee farming	758	782	396	821	997
<b>Total rural</b>	<b>748,947</b>	<b>592,272</b>	<b>702,089</b>	<b>r 752,717</b>	<b>707,159</b>
<b>Forestry, fishing, trapping</b>	<b>37,319</b>	<b>r 36,010</b>	<b>r 38,313</b>	<b>r 37,861</b>	<b>45,051</b>
<b>Total net value</b>	<b>786,266</b>	<b>r 628,282</b>	<b>r 740,402</b>	<b>r 790,578</b>	<b>752,210</b>

r : Revised.

## MANUFACTURING INDUSTRY

## MANUFACTURING ACTIVITY

(1972 : pages 383-92)

## Summary of factory statistics

(1972 : pages 387-90)

## VICTORIA—SUMMARY OF FACTORY DEVELOPMENT

Year	Factories	Employment (a)	Wages and salaries paid (b)	Value of—			
				Materials and fuel used	Value added	Output	Land, buildings, plant and machinery
	number	number	\$m	\$m	\$m	\$m	\$m
1901	3,249	66,529	n.a.	n.a.	n.a.	n.a.	24.6
1911	5,126	111,948	17.8	51.3	32.2	83.5	27.5
1920-21	6,532	140,743	42.8	135.2	76.8	212.0	71.0
1932-33	8,612	144,428	42.4	122.1	81.9	204.0	135.7
1940-41	9,121	237,636	104.6	240.7	178.0	418.7	184.1
1946-47	10,949	265,757	156.0	367.9	263.0	630.9	243.8
1953-54	15,533	331,277	472.1	1,154.4	816.6	1,971.0	678.5
1960-61	17,173	388,050	776.0	1,914.0	1,417.5	3,331.5	1,641.9
1963-64	17,597	413,120	912.4	2,305.0	1,749.8	4,054.8	2,061.5
1964-65	17,925	432,389	1,028.5	2,551.1	1,949.7	4,500.8	2,233.7
1965-66	17,980	439,149	1,077.2	2,597.2	2,027.7	4,624.9	2,386.0
1966-67	18,054	445,557	1,167.9	2,814.1	2,236.4	5,050.5	2,617.0
1967-68	18,030	449,945	1,244.2	2,956.5	2,394.8	5,351.3	2,685.3
1968-69	(c)11,829	(d)440,431	1,342.1	(e)3,860.5	2,541.5	(f)6,335.9	n.a.
1969-70	(c)11,917	(d)451,078	1,501.1	(e)4,322.1	2,772.6	(f)6,997.8	n.a.

(a) Average employment over whole year, including working proprietors.

(b) Excludes drawings of working proprietors.

(c) Number of establishments operating during year.

(d) Persons on pay-roll at end of year. Includes those employed in separately located administrative offices and ancillary units.

(e) Purchases, transfers in, and selected expenses.

(f) Sales, transfers out, and other operating revenue.

(g) Number of establishments operating at 30 June 1969.

NOTE. A line drawn across a column between the figures indicates a break in continuity in the series.

## AUSTRALIA—MANUFACTURING ESTABLISHMENTS, 1968-69

State or Territory	Establishments (c)	Employment (d)	Wages and salaries paid (b)	Purchases, transfers in, and selected expenses	Value added	Sales, transfers out, and other operating revenue
	number	number	\$m	\$m	\$m	\$m
New South Wales	13,975	521,369	1,617.8	4,440.0	3,040.8	7,399.2
Victoria	11,829	440,431	1,342.1	3,860.5	2,541.5	6,335.9
Queensland	4,103	113,690	309.3	1,224.9	659.9	1,868.8
South Australia	3,085	116,314	347.6	970.4	643.1	1,584.2
Western Australia	2,713	62,523	183.2	564.5	368.5	919.6
Tasmania	997	32,089	95.1	301.7	195.5	487.1
Northern Territory	73	1,012	3.6	11.4	9.5	20.4
Australian Capital Territory	115	2,745	9.5	16.9	14.8	31.2
Total	36,890	1,290,173	3,908.1	11,390.2	7,473.5	18,646.5

For footnotes see page 910.

## VICTORIA—MANUFACTURING ESTABLISHMENTS IN STATISTICAL DIVISIONS, 1968-69

Statistical division	Establishments (g)	Employment (a)	Wages and salaries paid (b)	Purchases, transfers in, and selected expenses	Value added	Sales, transfers out, and other operating revenue
	number	number	\$m	\$m	\$m	\$m
Melbourne	9,465	369,030	1,156.5	3,168.6	2,156.0	5,259.7
West Central	330	18,908	62.3	186.8	132.2	321.6
North Central	168	4,156	10.9	19.1	18.8	37.6
Western	418	13,600	37.6	149.4	72.3	218.8
Wimmera	124	1,482	3.5	10.9	6.7	17.3
Mallee	105	1,112	2.7	9.3	5.8	14.8
Northern	326	9,852	29.2	151.2	60.8	213.3
North Eastern	211	4,380	12.1	43.1	27.1	69.0
Gippsland	314	7,196	22.6	101.4	51.3	152.6
East Central	102	1,931	4.6	20.7	10.5	31.3
Total	11,563	431,647	1,342.1	3,860.5	2,541.5	6,335.9

For footnotes see page 910.

**Some of the principal factory products of Victoria and Australia**  
(1972 : pages 390-2)

**VICTORIA AND AUSTRALIA—PRINCIPAL ARTICLES  
MANUFACTURED**

Commodity Code No.	Article	Unit of quantity	Victoria		Australia	
			1970-71	1971-72	1970-71	1971-72
023.09	Bacon and ham (a)	mill lb	41	44	105	110
027.02-29; 72-77; 023.17	Meat—canned (excluding baby food)	mill lb	81	84	120	124
051.21-27; 052.42	Milk—condensed, concentrated, and evaporated : full cream	mill lb	129	142	205	213
051.31	Butter	mill lb	299	288	448	432
051.36-46	Cheese	mill lb	79	82	171	175
051.61	Ice cream	mill gals	11	11	42	43
051.72-73	Milk—powdered : full cream	mill lb	38	43	57	65
062.01, 32	Flour, plain—wheaten (including sharps)	'000 short ton	407	346	1,397	1,271
063.11, 21, 31	Malt	mill bush	11	12	17	20
064.21	Biscuits	mill lb	91	87	250	257
076.08, 15, 22	Canned or bottled apricots, peaches, and pears	mill lb	294	170	435	296
076.60	Jams, fruit spreads, fruit butters, etc.	mill lb	40	38	85	78
094.02-47	Vegetables canned or bottled (in- cluding pickled)	mill lb	49	52	196	253
	Confectionery—					
104.06-18	Chocolate base	mill lb	45	51	110	115
104.21-29	Other without chocolate	mill lb	52	56	125	130
123.18	Sauce—tomato	mill imp pint	23	25	30	42
152.06	Pollard	'000 short ton	93	79	313	280
171.03, 07, 08	Aerated and carbonated waters, canned or bottled (b)	mill imp gals	44	44	160	165
242.07-11	Wool—scoured or carbonised	mill kg	26	28	63	67
242.33, 35, 70-76	Wool tops—pure and mixed	mill lb	23	23	54	52
246.46-49	Briquettes—brown coal	'000 ton	1,376	1,308	1,376	1,308
261.41	Cloth piece goods woven—woollen or predominantly woollen	mill sq yd	11	10	22	19
372.22-50	Blankets, bed (c)	'000	920	857	1,891	1,664
372.52-66; 374.51-59	Blankets, bed (c)	'000	920	857	1,891	1,664
403.02, 18, 20, 52-92, 96;	Plastics and synthetic resins	'000 cwt	2,493	2,696	5,040	5,726
404.01-98	Bricks—clay	mill	433	436	1,786	1,894
472.01, 03	Tiles, roofing—					
474.12	Terracotta	mill	15	15	51	51
475.30	Concrete	mill	41	43	127	146
479.32, 33	Plaster sheets	mill sq yd	16	18	41	45
503.13-32	Electric motors	'000	767	815	3,249	3,477

VICTORIA AND AUSTRALIA—PRINCIPAL ARTICLES MANUFACTURED—*continued*

Commodity Code No.	Article	Unit of quantity	Victoria		Australia	
			1970-71	1971-72	1970-71	1971-72
	Finished motor vehicles ( <i>d</i> )—					
581.02-08, 10-16	Cars	'000	179	199	375	387
582.04-28	Other	'000	22	25	53	60
661.21-23	Toasters (domestic)	'000	216	205	381	371
671.14	Sinks—stainless steel	'000	93	99	233	230
773.04-25	Shirts (men's and boys')	'000 doz	1,070	998	2,407	2,450
	Underwear—					
773.90, 94 ; 774.01-17, 36-39, 96, 97	Men's and boys'	'000 doz	1,183	1,155	2,733	2,686
774.44, 46, 48, 49, 61, 63, 68-73	Women's and girls'	'000 doz	2,830	2,338	4,277	3,712
775.01-19	Stockings—women's ( <i>e</i> )	'000 doz pair	5,651	6,540	6,952	7,871
775.51-82, 91-98, 776.01-42	Socks and stockings—men's, children's and infants'	'000 doz pair	2,711	2,566	2,913	2,769
	Footwear—					
	Boots, shoes, and sandals ( <i>f</i> )—					
791.01, 03, 09, 10, 15, 17, 20, 23, 28, 29	Men's and youths'	'000 pair	6,514	6,792	11,301	11,371
791.31, 33, 39, 40, 45, 47, 50-53, 58, 59	Women's and maids'	'000 pair	13,481	12,722	18,437	17,073
791.61, 62, 66, 69-75, 78, 79, 81, 82, 87-89, 91-96, 99	Children's (including infants')	'000 pair	5,136	5,610	6,762	7,202
791.05, 07, 35, 37, 63, 64, 83, 85, 86	Slippers	'000 pair	2,839	2,546	3,533	3,299
	Soaps and soap based products—					
805.01-13	Personal toilet use	'000 cwt	124	119	557	548
805.22-60	Other purposes	'000 cwt	239	270	890	910
844.22-67	Mattresses—all types	'000	289	287	1,079	1,038

- (a) Cured bone-in weight of smoked bacon and ham.
- (b) From October 1969 includes bulk aerated and carbonated waters.
- (c) Double, three quarter, single ; wool, wool mixture and other fibre.
- (d) Excludes vehicles finished by specialist body building works outside the motor vehicle manufacturers organisation.
- (e) Includes party hose.
- (f) Excluding wholly of rubber.

## AUSTRALIA—PRODUCTION SUMMARIES

Ref. No.	Subject	Ref. No.	Subject
1	Automotive Spark Plugs and Shock Absorbers	28	Footwear
2	Chemicals, etc.	29	Biscuits, Cocoa, Confectionery, Ice Cream
3	Plastics and Synthetic Resins and Plasticisers	30	Storage Batteries—Wet Cell
4	Paints and Other Surface Coatings	32	Perambulators, Pushers and Strollers
5	Electricity and Gas	33	Motor Vehicles
6	Soap, Detergents, Glycerine and Fatty Acids	34	Television, Radios, Other Sound Equipment; Transistors
7	Internal Combustion Engines	35	Bed Bases and Mattresses
8	Lawnmowers	36	Processed Milk Products
9	Electrical Appliances	38	Fish Preserving
10	Motor Bodies, Trailed Vehicles, Lift-on Freight Containers, etc.	39	Jam, Preserved Fruit and Vegetables
11	Pedal Cycles	40	Cereal Products
12	Meters	41	Vegetable Oils; Margarine and Other Edible Processed Fats
13	Building Fittings	42	Malt and Beer
14	Cotton Goods	43	Stock and Poultry Foods and Canned Pet Food
15	Fellmongering, Wooll scouring and Carbonising	45	Gramophone Records
16	Wool Top Making and Yarn Produced	47	Aerated and Carbonated Waters; Cordials and Syrups
17	Wool Woven Fabric, etc.	48	Sports Goods
18	Hosiery	49	Building Materials
19	Women's, Maids' and Girls' Clothing, and Infants' and Babywear	50	Electrodes for Manual Welding
20	Cellulosic and Synthetic Fibre Tops, Yarns and Woven Fabrics	51	Hides and Skins Used in Tanneries
21	Paper, Wood Pulp and Adhesive Tapes	52	Electrical Power Frequencies Transformers, Chokes and Ballasts
22	Floor Coverings and Felts	53	Plastics Film, Sheeting and Coated Materials
23	Electric Motors	55	Butter and Cheese
24	Men's, Youths' and Boys' Clothing	56	Canned Meat
25	Foundation Garments	58	Steel Wire and Wire Products
27	Gloves and Slide Fasteners	59	Non-ferrous Rolled, Extruded and Drawn Products



## ENERGY

(1972 : pages 395-404)

## State Electricity Commission of Victoria

(1972 : pages 396-401)

## VICTORIA—PUBLIC SUPPLY ELECTRICITY GENERATED, POWER STATIONS, AND SOURCES OF POWER, 1971-72

Station or origin of power	Source T = Thermal (a) H = Hydro	Quantity	Percentage of production
mill kWh			
State Electricity Commission—			
Own generation—			
Hazelwood Power Station	T	8,134.8	58.1
Yallourn Power Station and Briquette Factory	T	2,685.1	19.2
Morwell Power Station	T	1,129.8	8.0
Newport Power Station	T	279.6	2.0
Spencer Street Power Station (b)	T	55.4	0.4
Richmond Power Station	T	27.4	0.2
Red Cliffs Power Station	T	0.6	..
Total S.E.C. thermal generation	T	12,312.7	87.9
Eildon	H	340.8	2.4
Kiewa	H	346.9	2.5
Total S.E.C. hydro generation	H	687.7	4.9
Other public supply generation	T	0.2	..
Total generation by public supply undertakings	T and H	13,000.6	92.8
Net interstate purchases	T and H	1,003.9	7.2
Total	T and H	14,004.5	100.0

(a) Includes internal combustion.

(b) Melbourne City Council.

**Gas industry**

(1972 : pages 401-4)

## VICTORIA—GAS STATISTICS, 1971-72

Undertaking	At 30 June 1972—		
	Mains	Consumers	Sales 1971-72
	miles	number	million therms
Gas and Fuel Corporation of Victoria	6,165	507,443	247.0
The Colonial Gas Association Ltd	1,516	91,549	49.7
<b>Total</b>	<b>7,681</b>	<b>598,992</b>	<b>296.7</b>

VICTORIA—GAS AND FUEL CORPORATION OF VICTORIA :  
GAS MADE AND PURCHASED

Type of gas	1968-69		1970-71		1971-72	
	Million therms	Percentage of total	Million therms	Percentage of total	Million therms	Percentage of total
Brown coal gas (Lurgi)	36.7	31.3	..	..	..	..
Black coal gas	6.6	5.6	0.7	0.3	0.3	0.1
Water gas/Reformed gas	2.4	2.1	1.8	0.9	2.7	1.0
Oil gas	20.8	17.8	5.3	2.7	..	..
Refinery gases	45.4	38.7	10.9	5.6	7.1	2.6
Natural gas	5.2	4.5	177.0	90.5	265.1	96.3
<b>Total gas issued</b>	<b>117.1</b>	<b>100.0</b>	<b>195.7</b>	<b>100.0</b>	<b>275.2</b>	<b>100.0</b>

## 8

## SOCIAL CONDITIONS

## CULTURAL AND RECREATIONAL

(1972 : pages 405-27)

**Broadcasting**

(1972 : pages 419-20)

VICTORIA—COMMERCIAL BROADCASTING STATIONS  
IN OPERATION AT 30 JUNE 1972

Call sign	Location	Call sign	Location	Call sign	Location	Call sign	Location
3AK	} Melbourne	3XY	Melbourne	3GL	Geelong	3SH	Swan Hill
3AW		3BA	Ballarat	3HA	Hamilton	3SR	Shepparton
3DB		3BO	Bendigo	3LK	Horsham	3TR	Sale
3KZ		3CS	Colac	3MA	Mildura	3UL	Warragul
3UZ		3CV	Maryborough	3NE	Wangaratta	3YB	Warrnambool

**Television**

(1972 : pages 421-5)

## VICTORIA—TELEVISION TRANSLATOR STATIONS IN OPERATION

Area served	Parent station	Channel	Date of commencement
COMMERCIAL STATIONS			
Warrnambool-Port Fairy	BTV6 Ballarat	9	June 1966
Swan Hill	BCV8 Bendigo	11	May 1967
Portland	BTV6 Ballarat	11	July 1968
Alexandra	GMV6 Goulburn Valley	10	October 1968
Eildon	GMV6 Goulburn Valley	3	August 1969
Myrtleford	AMV4 Upper Murray	9	December 1969
Nhill	BTV6 Ballarat	7	October 1970
NATIONAL STATIONS			
Warrnambool-Port Fairy	ABRV3 Ballarat	2	October 1966
Portland	ABRV3 Ballarat	4	May 1968
Alexandra	ABGV3 Goulburn Valley	5	September 1968
Orbost	ABLV4 Latrobe Valley	2	April 1969
Eildon	ABGV3 Goulburn Valley	1	August 1969
Nhill	ABRV3 Ballarat	9	October 1970
Myrtleford	ABGV3 Goulburn Valley	2	December 1970

VICTORIA—COMPOSITION OF COMMERCIAL  
TELEVISION PROGRAMMES, 1971-72  
(Percentage of total transmission time devoted to each category)

Programme category	Melbourne commercial stations	Country commercial stations
Drama	51.7	51.7
Light entertainment	19.6	21.0
Sport	8.0	7.9
News	5.5	9.2
Children	9.4	4.7
Family activities	1.3	1.8
Information	1.5	1.5
Current affairs	1.5	0.8
Religious matter	0.8	1.4
Education	0.7	..
Total	100.0	100.0

VICTORIA—COMMERCIAL TELEVISION STATIONS IN  
OPERATION AT 30 JUNE 1972

Location	Call sign	Date of establishment
Melbourne	HSV7	November 1956
Melbourne	GTV9	January 1957
Melbourne	ATV0	August 1964
Bendigo	BCV8	December 1961
Latrobe Valley (Traralgon)	GLV10	December 1961
Goulburn Valley (Shepparton)	GMV6	December 1961
Ballarat	BTV6	April 1962
Upper Murray (Albury)	AMV4	September 1964
Mildura	STV8	November 1965

VICTORIA—NATIONAL TELEVISION STATIONS  
IN OPERATION AT 30 JUNE 1972

Location	Call sign	Date of establishment
Melbourne	ABV2	November 1956
Bendigo	ABEV1	April 1963
Ballarat	ABRV3	May 1963
Traralgon (Latrobe Valley)	ABLV4	September 1963
Shepparton (Goulburn Valley)	ABGV3	November 1963
Albury (Upper Murray)	ABAV1	December 1964
Swan Hill (Murray Valley)	ABSV2	July 1965
Mildura	ABMV4	November 1965

## COMPOSITION OF NATIONAL TELEVISION PROGRAMMES, 1971-72

Programme category	Number of hours	Percentage of total transmission hours	Australian origin percentage in each category	Programme category	Number of hours	Percentage of total transmission hours	Australian origin percentage in each category
Drama	1,130	23.70	13.27	Musical performances	21	0.43	72.46
Variety and acts	343	7.20	53.87	Religious	82	1.72	83.70
Sport	501	10.51	78.26	Rural	46	0.96	97.19
News	283	5.93	100.00	Arts and aesthetics	24	0.51	33.33
Public interest	570	11.95	71.94	Presentation	286	6.01	99.22
Education	1,306	27.41	44.84				
Cartoons and animation	175	3.66	14.37	Total	4,767	100.00	51.41

NOTE. This table is an analysis of the programmes of Sydney station ABN and exemplifies programme allocation on the Australian Broadcasting Commission's television stations in Australia.

### National parks (1972 : pages 425-7)

#### VICTORIA—NATIONAL PARKS EXPENDITURE (a) (\$)

National park	1966-67	1967-68	1968-69	1969-70	1970-71
Wyperfeld	4,731	7,947	6,568	7,459	8,176
Kinglake	9,469	17,610	31,102	22,442	26,726
Ferntree Gully	25,271	34,997	24,113	190,255	80,588
Wilson's Promontory	105,291	212,580	237,842	169,100	223,348
Mount Buffalo	37,987	29,445	93,221	41,277	29,565
Churchill	4,856	5,860	13,071	13,083	8,229
Fraser	19,749	23,326	33,248	25,527	37,388
Tarra Valley	1,704	2,068	2,289	2,343	2,531
Bulga	2,704	2,574	2,647	2,688	3,403
Hattah Lakes	11,256	19,902	9,302	8,773	36,514
Mount Eccles	1,689	1,817	4,123	3,053	4,369
Mount Richmond	626	1,067	5,964	2,577	1,798
The Lakes	2,864	4,040	3,429	9,807	6,356
Glenaladale	1,444	1,658	1,442	2,156	1,647
Port Campbell	29,752	16,681	10,924	10,886	10,562
Little Desert	..	3,658	3,983	5,463	9,855
East Gippsland (Alfred, Lind, Mallacoota Inlet, Wingan Inlet)	8,804	6,983	19,226	30,539	21,292
General	6,298	10,266	9,312	13,789	20,967
<b>Total</b>	<b>274,495</b>	<b>402,479</b>	<b>511,806</b>	<b>561,217</b>	<b>533,314</b>

(a) Excluded from these figures are special government grants made to the Country Roads Board for roads in or near national parks.

**EDUCATION**  
(1972 : pages 427-77)

**Educational system**  
(1972 : pages 427-31)

**VICTORIA—GOVERNMENT AND REGISTERED SCHOOLS: NUMBER OF SCHOOLS, TEACHERS, AND PUPILS**

Particulars	At school census date (a)—				
	1967	1968	1969	1970	1971
All schools (b)—					
Schools	2,819	2,826	2,807	2,796	2,768
Teachers	31,811	34,000	35,964	37,636	39,017
Pupils	725,803	744,411	761,577	776,468	785,148

(a) 1 August or first school day thereafter in each year.

(b) Includes primary, primary-secondary, secondary, and special schools.

**Government primary and secondary schools**  
(1972 : pages 433-5)

**VICTORIA—GOVERNMENT PRIMARY AND SECONDARY SCHOOLS: NUMBER OF SCHOOLS, TEACHERS, AND PUPILS (a)**

Particulars	1967	1968	1969	1970	1971
Primary schools—					
Schools	1,849	1,847	1,813	1,787	1,773
Teachers	11,414	11,971	12,725	13,353	14,003
Pupils	331,299	338,722	346,160	353,080	357,727
Primary-secondary schools—					
Schools	41	38	53	52	46
Teachers	773	787	829	808	727
Pupils—Primary grades	12,300	12,038	12,014	11,435	9,658
Secondary grades	3,987	3,604	3,595	3,450	3,145
Secondary schools—					
Schools	320	330	334	340	344
Teachers	11,845	12,978	13,983	14,322	15,043
Pupils	190,335	199,062	207,648	214,707	220,597
Special schools—					
Schools	31	32	35	36	34
Teachers	341	367	420	437	439
Pupils	2,360	2,412	2,708	2,768	2,806
All schools—					
Schools	2,241	2,247	2,235	2,215	2,197
Teachers	24,373	26,103	27,957	28,920	30,212
Pupils	540,281	555,838	572,125	585,440	593,933

(a) 1 August or first school day thereafter in each year.

NOTE. In this table a primary school is considered to be one which has primary pupils only, a secondary school one which has secondary pupils only, and those which have both primary and secondary pupils are classified as primary-secondary schools.

**VICTORIA—GOVERNMENT PRIMARY AND SECONDARY  
SCHOOLS : AGES OF PUPILS (a)**

Age last birthday (years)	At school census date (b)—				
	1967	1968	1969	1970	1971
Under 6	48,693	48,992	48,691	48,120	47,590
6	51,022	51,777	51,959	52,243	51,666
7	48,714	51,196	52,158	52,586	52,319
8	48,844	48,817	51,677	52,567	52,880
9	47,186	49,075	49,529	51,966	52,766
10	46,620	47,576	49,471	50,256	52,485
11	46,024	46,916	48,155	50,209	50,736
12	44,516	45,853	46,467	47,998	49,711
13	44,432	45,737	47,587	48,646	49,866
14	44,181	44,403	46,339	47,691	48,359
15	34,799	36,932	37,445	39,150	40,504
16	22,179	23,809	25,973	26,461	27,752
17	10,119	11,218	12,491	13,268	13,303
18	2,456	2,979	3,485	3,514	3,281
19 and over	496	558	698	765	715
<b>Total</b>	<b>540,281</b>	<b>555,838</b>	<b>572,125</b>	<b>585,440</b>	<b>593,933</b>

(a) Includes pupils enrolled in primary, primary-secondary, secondary, and special schools.  
(b) 1 August or first school day thereafter in each year.

**VICTORIA—GOVERNMENT PRIMARY AND SECONDARY SCHOOLS :  
CLASS OF SCHOOL : SEX OF PUPILS, 1971 (a)**

Class of school	Number of schools	Number of pupils		
		Boys	Girls	Total
Primary schools	1,764	181,490	168,552	350,042
Central schools, classes, and post-primary	15	4,215	3,666	7,881
Consolidated and group	31	5,095	4,871	9,966
Higher elementary	8	846	857	1,703
Girls secondary	1	.	234	234
Junior technical	95	49,207	9,980	59,187
High schools	248	69,198	91,978	161,176
Correspondence	1	417	521	938
Special schools	34	1,735	1,071	2,806
<b>Total</b>	<b>2,197</b>	<b>312,203</b>	<b>281,730</b>	<b>593,933</b>

(a) 2 August.

NOTE. The classification of the schools is in accordance with that used by the Education Department and differs from that used in the second table on page 920.

VICTORIA—GOVERNMENT PRIMARY EDUCATION: AGE AND  
GRADE OF PUPILS, 1971 (a)

Age last birthday (years)	Grade						Un- graded pupils	Total
	1	2	3	4	5	6		
Under 6	47,429	..	..	..	..	..	161	47,590
6	50,692	855	2	..	..	..	117	51,666
7	7,332	43,803	1,038	..	..	..	146	52,319
8	221	7,884	43,164	1,403	2	..	206	52,880
9	9	309	8,526	42,131	1,563	1	227	52,766
10	..	9	366	8,975	41,060	1,814	248	52,472
11	2	2	16	459	9,306	38,312	282	48,379
12	..	..	..	21	502	9,296	340	10,159
13 and over	12	17	10	8	32	802	1,079	1,960
Total	105,697	52,879	53,122	52,997	52,465	50,225	2,806	370,191

(a) 2 August.

VICTORIA—GOVERNMENT SECONDARY EDUCATION: AGE AND  
FORM OF PUPILS, 1971 (a)

Age last birthday (years)	Form						Total
	I (or Grade 7)	II (or Grade 8)	III	IV	V	VI	
Under 12	2,353	17	..	..	..	..	2,370
12	36,794	2,734	24	..	..	..	39,552
13	10,970	34,962	2,816	13	..	..	48,761
14	1,200	11,060	32,808	2,836	17	..	47,921
15	68	1,087	9,773	27,057	2,247	7	40,239
16	7	50	916	7,551	17,856	1,283	27,663
17	1	2	47	734	5,517	6,985	13,286
18	..	..	2	54	665	2,553	3,274
19 and over	..	..	..	..	79	597	676
Total	51,393	49,912	46,386	38,245	26,381	11,425	223,742

(a) 2 August.



**Scholarships and bursaries**

(1972 : pages 441-2)

**VICTORIA—NUMBER OF GOVERNMENT SCHOLARSHIPS,  
FREE PLACES, AND BURSARIES GRANTED (a)**

Particulars	Year of commencement				
	1967	1968	1969	1970	1971
State Government scholarships—					
Secondary education—					
Junior scholarships	19,788	19,641	20,440	20,921	21,102
Senior technical scholarships	218	251	240	254	268
Teaching bursaries	2,113	2,128	2,123	2,122	2,130
University education—					
Senior scholarships	43	43	43	42	40
Free places	79	78	86	79	79
Commonwealth scholarships—					
Secondary education—					
Secondary scholarships	2,795	2,791	2,696	2,825	2,709
Technical education	710	697	691	681	669
Tertiary education—					
Open entry	2,032	1,921	2,343	2,747	3,027
Later years	965	730	775	1,333	1,303
Mature age (b)	124	31	58	52	68

(a) Figures are for students who accepted scholarships and bursaries and were in training.

(b) Higher figures in 1967 are due to change of policy.

**Technical education**

(1972 : pages 442-4)

**VICTORIA—TECHNICAL EDUCATION : NUMBER OF SENIOR  
TECHNICAL SCHOOLS AND COURSE ENROLMENTS**

Particulars	1965	1966	1967	1968	1969 (a)	1970 (a)	1971 (a)
Number of schools	79	82	83	83	90	93	98
Number of enrolments (b) —							
Full-time	8,029	8,740	9,243	10,248	4,245	3,926	4,696
Part-time	71,258	73,490	75,016	75,650	70,703	65,910	62,817
Total	79,287	82,230	84,259	85,898	74,948	69,836	67,513

(a) Excludes tertiary students in colleges affiliated with the Victoria Institute of Colleges.

(b) Includes students enrolled for preparatory courses and single subjects.

**VICTORIA—TECHNICAL EDUCATION :  
COURSES AND ENROLMENTS, 1971**

Courses	Number of enrolments		
	Full-time	Part-time	Total
Diploma (a)	3,242	1,823	5,065
Higher technician and sub- professional	756	7,357	8,113
Technician	329	2,731	3,060
Trade and vocational	369	26,652	27,021
Post trade	..	2,459	2,459
Single subjects and other	..	21,795	21,795
Total	4,696	62,817	67,513

(a) Students enrolled in first year diploma studies (Form VI) or in colleges not affiliated with the Victoria Institute of Colleges.

**Education Department expenditure on education**

(1972 : pages 444-6)

**VICTORIA—EDUCATION DEPARTMENT:****EDUCATIONAL EXPENDITURE (a)**

(\$'000)

Expenditure on—	1968-69	1969-70	1970-71	1971-72
<b>STATE SCHOOLS</b>				
Primary—				
Recurring	84,124	94,412	106,942	125,904
Capital	9,671	10,998	14,759	13,734
Total	93,795	105,410	121,701	139,638
Secondary (b)—				
Recurring	88,735	101,457	112,090	134,761
Capital	13,678	15,209	16,894	21,655
Total	102,413	116,666	128,984	156,416
Technical (c)—				
Recurring	7,959	8,196	16,819	20,370
Capital	1,901	2,022	600	1,460
Total	9,860	10,218	17,419	21,830
Total State schools	206,068	232,294	268,104	317,884
<b>TERTIARY EDUCATION</b>				
University—				
Recurring	18,383	20,990	24,522	26,642
Capital	6,658	7,221	5,376	6,929
Total	25,041	28,211	29,898	33,571
Colleges of advanced education—				
Recurring	5,502	8,422	11,539	13,852
Capital	2,329	2,981	4,620	4,748
Total	7,832	11,403	16,159	18,600
Scholarships, fees, and allowances for students at universities or colleges of advanced education	29	26	20	20
Total tertiary	32,902	39,640	46,077	52,191
<b>TEACHER EDUCATION</b>	22,177	26,292	30,878	35,952
<b>OTHER EXPENDITURE</b>				
Pre-school education	2,918	3,156	3,430	4,623
Public library	2,064	2,283	2,718	3,068
Adult education	193	200	222	233
Non-government schools grants, subsidies, scholarships and bursaries, and pupil conveyance	5,580	7,032	9,031	12,701
Agricultural education (d)	1,583	2,270	3,068	3,810
Miscellaneous	22	11	16	39
Total other expenditure	12,360	14,952	18,485	24,474
Total expenditure on education	273,505	313,180	363,545	430,502

(a) Expenditure shown in this table differs from figures on educational expenditure shown on pages 991 and 1003 in that amounts shown in the finance section exclude payments for superannuation and pensions and workers compensation. The table also excludes revenue received by the Education Department, tuition fees, material fees, analysis fees, donations received, sales of class material and school notes, and other such receipts which were retained and expended by the various technical school councils.

(b) Includes secondary technical.

(c) Excludes colleges of advanced education. For 1970-71 a more realistic basis of allocation of cost of operating multi-level technical schools and colleges has been adopted compared with previous years.

(d) Excludes agricultural colleges of advanced education.

VICTORIA—EXPENDITURE ON EDUCATION IN GOVERNMENT SCHOOLS  
AND ON TEACHER EDUCATION, 1971-72  
(\$'000)

Classification	Primary education	Secondary education (a)	Technical education (b)	Total expenditure in State schools	Teacher education
Cost of administration	5,551	4,184	704	10,439	488
Cost of instruction	95,654	106,742	14,940	217,336	31,844
Building operation and maintenance (c)	9,559	7,450	2,269	19,278	740
Fixed charges (d)	15,140	16,384	2,457	33,981	1,607
Capital costs (e)	13,734	21,655	1,460	36,849	1,273
<b>Total</b>	<b>139,638</b>	<b>156,416</b>	<b>21,830</b>	<b>317,884</b>	<b>35,952</b>

(a) Including secondary technical education.

(b) Excludes expenditure on colleges of advanced education.

(c) Includes wages of caretakers, cleaners, gardeners, groundsmen, etc., cleaning and gardening materials, fuel and electricity, water and sanitation, maintenance of buildings, residences, and grounds, repair and replacement of furniture, etc.

(d) Includes pensions and superannuation, pay-roll tax, debt charges, rents of residences for teachers, rents of school accommodation, etc.

(e) Includes purchase of land and cost of surveys, costs of buildings and grounds, school furniture, and equipment.

**Registered schools**  
(1972 : pages 447-52)

VICTORIA—NUMBER OF REGISTERED SCHOOLS AND TEACHERS (a)

Particulars	Number of schools					Number of teachers				
	1967	1968	1969	1970	1971	1967	1968	1969	1970	1971
<b>Denominational—</b>										
Roman Catholic	482	483	479	487	477	4,696	4,950	5,126	5,665	5,794
Church of England	35	35	35	35	33	1,114	1,188	1,209	1,290	1,285
Presbyterian	14	14	11	11	11	623	648	578	622	577
Methodist	4	4	4	4	4	285	303	290	301	265
Other	27	27	27	28	28	437	498	507	529	543
<b>Udenominational</b>	16	16	16	16	18	283	310	297	309	341
<b>Total</b>	<b>578</b>	<b>579</b>	<b>572</b>	<b>581</b>	<b>571</b>	<b>7,438</b>	<b>7,897</b>	<b>8,007</b>	<b>8,716</b>	<b>8,805</b>

(a) 1 August or first school day thereafter in each year.

NOTE. Figures exclude business and coaching colleges.

VICTORIA—REGISTERED SCHOOLS: NUMBERS OF PUPILS BY SCHOOL DENOMINATION

At school census date (a)—	Denominational					Total denominational	Un-denominational	Total enrolments
	Roman Catholic	Church of England	Presbyterian	Methodist	Other			
1967	146,844	16,195	8,441	4,153	6,197	181,830	3,692	185,522
1968	149,286	16,328	8,515	4,206	6,483	184,818	3,755	188,573
1969	149,796	16,618	8,379	4,258	6,652	185,703	3,749	189,452
1970	150,602	17,039	8,317	4,243	7,029	187,230	3,798	191,028
1971	150,031	17,383	8,320	4,184	7,184	187,102	4,113	191,215

(a) 1 August or first school day thereafter in each year.

VICTORIA—REGISTERED SCHOOLS : SCHOOL DENOMINATION :  
AGES OF PUPILS, 2 AUGUST 1971

Age last birthday (years)	Denominational						Un- denomi- national	Total enrol- ments
	Roman Catholic	Church of England	Presby- terian	Methodist	Other	Total denomi- national		
Under 6	11,190	551	163	75	396	12,375	335	12,710
6	13,318	564	221	61	412	14,576	238	14,814
7	14,086	628	236	77	431	15,458	229	15,687
8	14,349	642	309	61	465	15,826	265	16,091
9	14,548	815	345	142	464	16,314	270	16,584
10	14,656	961	380	169	519	16,685	269	16,954
11	14,388	1,189	473	247	516	16,813	312	17,125
12	12,281	1,962	966	472	730	16,411	409	16,820
13	11,016	2,080	1,060	531	732	15,419	419	15,838
14	10,217	2,130	1,072	582	702	14,703	392	15,095
15	8,859	2,164	1,091	602	676	13,392	381	13,773
16	6,569	1,978	1,030	589	621	10,787	316	11,103
17	3,761	1,358	780	446	429	6,774	233	7,007
18	700	318	182	106	81	1,387	39	1,426
19 and over	93	43	12	24	10	182	6	188
Total	150,031	17,383	8,320	4,184	7,184	187,102	4,113	191,215

VICTORIA—REGISTERED SCHOOLS : AGES OF PUPILS (a)

Age last birthday (years)	At school census date (b)—				
	1967	1968	1969	1970	1971
Under 6	13,467	13,222	12,731	12,993	12,710
6	15,809	15,596	15,404	15,335	14,814
7	16,387	16,276	16,220	15,983	15,687
8	16,815	16,779	16,630	16,416	16,091
9	16,493	16,732	16,573	16,661	16,584
10	16,328	16,708	16,789	16,972	16,954
11	16,392	16,840	16,979	17,092	17,125
12	15,994	16,296	16,283	16,607	16,820
13	14,849	15,109	15,335	15,352	15,838
14	14,343	14,300	14,636	14,882	15,095
15	12,148	12,968	12,942	13,424	13,773
16	9,385	9,987	10,472	10,827	11,103
17	5,500	5,963	6,407	6,689	7,007
18	1,362	1,551	1,757	1,570	1,426
19 and over	250	246	294	225	188
Total	185,522	188,573	189,452	191,028	191,215

(a) Senior technical pupils are excluded.

(b) 1 August or first school day thereafter.

VICTORIA—GOVERNMENT AND REGISTERED  
SCHOOLS : PUPILS ENROLLED

At school census date (a)—	Government schools	Registered schools	Total enrolments
1967	540,281	185,522	725,803
1968	555,838	188,573	744,411
1969	572,125	189,452	761,577
1970	585,440	191,028	776,468
1971	593,933	191,215	785,148

(a) 1 August or first school day thereafter in each year.

VICTORIA—GOVERNMENT AND REGISTERED SCHOOLS :  
PUPILS ENROLLED : AGES OF PUPILS

Age last birthday (years)	At school census date (a)—				
	1967	1968	1969	1970	1971
Under 6	62,160	62,214	61,422	61,113	60,300
6	66,831	67,373	67,363	67,578	66,480
7	65,101	67,472	68,378	68,569	68,006
8	65,659	65,596	68,307	68,983	68,971
9	63,679	65,807	66,102	68,627	69,350
10	62,948	64,284	66,260	67,228	69,439
11	62,416	63,756	65,134	67,301	67,861
12	60,510	62,149	62,750	64,605	66,531
13	59,281	60,846	62,922	63,998	65,704
14	58,524	58,703	60,975	62,573	63,454
15	46,947	49,900	50,387	52,574	54,277
16	31,564	33,796	36,445	37,288	38,855
17	15,619	17,181	18,898	19,957	20,310
18	3,818	4,530	5,242	5,084	4,707
19 and over	746	804	992	990	903
<b>Total</b>	<b>725,803</b>	<b>744,411</b>	<b>761,577</b>	<b>776,468</b>	<b>785,148</b>

(a) 1 August or first school day thereafter in each year.

**Victorian Universities and Schools Examinations Board**  
(1972 : pages 453-4)

VICTORIA—HIGHER SCHOOL CERTIFICATE EXAMINATION

Candidates	1967	1968	1969	1970	1971
Total entries	22,869	24,989	28,135	30,404	27,700
Number who attempted to pass fully	12,898	14,617	16,932	18,756	19,351
Number who passed fully	8,628	9,701	10,987	12,467	13,274
Percentage who passed fully	66.9	66.4	64.9	66.5	68.6

**University of Melbourne**  
(1972 : pages 454-9)

VICTORIA—UNIVERSITY OF MELBOURNE : STUDENTS ENROLLED,  
CLASSIFIED BY SEX AND TYPE OF COURSE (a)

Year	Full-time		Part-time		External		Total	
	Males	Females	Males	Females	Males	Females	Males	Females
1968	6,970	2,764	2,774	1,187	216	81	9,960	4,032
1969	6,686	3,116	3,219	1,276	150	51	10,055	4,443
1970	6,800	3,282	3,220	1,260	127	37	10,147	4,579
1971	6,999	3,509	3,044	1,255	117	26	10,160	4,790
1972	7,006	3,603	3,002	1,295	101	9	10,109	4,907

(a) 1968 and 1969 figures refer to enrolments up to 30 June. From 1970 enrolments are up to 30 April.

**VICTORIA—UNIVERSITY OF MELBOURNE : ENROLMENTS  
CLASSIFIED BY FACULTIES (a)**

Faculty/School	1968	1969	1970	1971	1972
Agriculture	264	284	306	298	306
Applied science	165	199	142	156	156
Architecture and building	625	628	580	538	553
Arts	3,682	3,690	3,670	3,746	3,833
Commerce	1,738	1,819	1,843	1,816	1,794
Dental science	246	274	274	267	268
Education	639	660	707	714	710
Engineering and surveying	1,002	1,029	1,089	1,125	1,107
Journalism	62	65	58	18	8
Law and criminology	1,330	1,342	1,287	1,316	1,332
Medicine	1,144	1,216	1,253	1,308	1,376
Music	269	284	284	302	325
Physical education	188	198	199	195	201
Science	2,383	2,621	2,789	2,905	2,907
Social studies	336	313	340	360	340
Town and regional planning	160	152	210	234	243
Veterinary science	232	257	252	264	248
Student total (b)	13,992	14,498	14,726	14,950	15,016

(a) 1968 and 1969 figures refer to enrolments up to 30 June. From 1970 enrolments are up to 30 April.

(b) Students taking combined courses are counted in each faculty, and accordingly the sum of faculty enrolments exceeds the student total shown at the foot of the table.

**VICTORIA—UNIVERSITY OF MELBOURNE : DEGREES  
CONFERRED IN FACULTIES (a)**

Faculty	1968	1969	1970	1971	1972
Agriculture	46	60	65	72	65
Architecture, building, and town and regional planning	73	91	88	112	87
Arts	646	714	671	657	629
Commerce	263	324	304	327	305
Dental science	47	47	31	48	45
Education	89	74	66	83	70
Engineering	167	201	189	233	247
Law	201	208	180	174	184
Medicine	170	162	189	184	152
Music	29	34	29	29	46
Science and applied science	458	471	466	549	510
Veterinary science	40	41	44	43	49
Total	2,229	2,427	2,322	2,511	2,389
Bachelors' degrees	1,993	2,187	2,039	2,205	2,074
Higher degrees	236	240	283	306	315

(a) Figures for 1968 are for eleven months ended 30 June. From 1969 figures are for year ended 30 June.

VICTORIA—UNIVERSITY OF MELBOURNE: INCOME AND EXPENDITURE  
(\$'000)

Particulars	1967	1968	1969	1970	1971
SOURCE OF INCOME					
Commonwealth Government	9,297	9,389	9,160	10,792	12,844
State Government	7,630	9,396	11,959	10,659	12,264
Total Government grant	16,927	18,785	21,119	21,451	25,108
Other sources—					
Donations and special grants	1,190	1,201	1,248	1,469	1,586
Student fees	3,752	3,729	3,819	3,910	5,008
Public examination fees	54	54	57	70	72
Other fees	88	107	131	142	150
Endowment income	412	418	442	446	507
Charges for services	301	375	480	470	612
Halls of residence	204	218	204	260	281
Other income	459	546	757	1,122	1,701
Total other sources	6,460	6,647	7,138	7,889	9,915
Total income	23,387	25,431	28,257	29,340	35,023
NATURE OF EXPENDITURE					
Teaching and research—					
Salaries and superannuation	10,221	11,425	12,218	14,399	15,986
Equipment and maintenance	2,120	2,068	1,957	2,430	2,632
Research scholarships, fellowships, and study leave	1,026	1,021	692	702	799
Other teaching and research expenditure	921	1,065	1,171	1,258	1,466
Total teaching and research	14,288	15,579	16,038	18,791	20,884
Administration and general overhead—					
Salaries and superannuation	1,156	1,347	1,502	1,792	2,086
Other administration expenditure	528	559	691	720	814
Libraries—					
Salaries and superannuation	435	471	533	628	747
Other expenditure on libraries	367	438	527	547	614
Buildings, premises, and grounds—					
New buildings	4,529	3,381	3,120	3,408	5,150
Repairs and maintenance, including salaries and superannuation	1,311	1,557	1,523	1,567	1,899
Rents, rates, power, lighting, and heating	371	442	454	472	527
Other expenditure on buildings, etc.	537	141	366	308	374
Sundry auxiliary expenditure—					
Public examinations	50	50	53	61	67
Other expenditure	1,217	1,451	1,566	1,757	2,043
Total expenditure	24,789	25,416	26,373	30,050	35,204

**Monash University**  
(1972 : pages 459-64)

**VICTORIA—MONASH UNIVERSITY : STUDENTS ENROLLED  
CLASSIFIED BY SEX AND TYPE OF COURSE(a)**

Year	Full-time		Part-time		Total	
	Males	Females	Males	Females	Males	Females
1968	4,761	2,039	1,104	562	5,865	2,601
1969	5,161	2,312	1,425	644	6,586	2,956
1970	5,437	2,574	1,614	759	7,051	3,333
1971	5,577	2,782	1,822	853	7,399	3,635
1972	5,801	3,056	1,874	902	7,675	3,958

(a) 1968 and 1969 figures refer to enrolments up to 30 June. From 1970 enrolments are up to 30 April.

**VICTORIA—MONASH UNIVERSITY : ENROLMENTS  
CLASSIFIED BY FACULTIES UP TO 30 APRIL**

Faculty (a)	1971				1972			
	Undergraduate		Postgraduate		Undergraduate		Postgraduate	
	Males	Females	Males	Females	Males	Females	Males	Females
Arts	1,230	1,891	164	88	1,208	1,965	169	99
Economics and politics	1,290	306	212	21	1,349	358	210	21
Education	590	425	80	20	636	495	109	27
Engineering	934	14	127	..	1,051	21	131	1
Law	858	144	14	4	930	176	13	2
Medicine	747	182	28	5	732	200	39	2
Science	1,104	526	284	53	1,169	600	279	55
Total	6,753	3,488	909	191	7,075	3,815	950	207

(a) Some students are enrolled in more than one faculty. There were 307 taking combined courses in 1971 and 414 in 1972.

**VICTORIA—MONASH UNIVERSITY : DEGREES  
CONFERRED IN FACULTIES (a)**

Faculty	1968	1969	1970	1971	1972
Arts	398	490	544	662	641
Economics and politics	144	254	315	341	372
Education	11	26	26	37	101
Engineering	64	93	118	149	163
Law	60	130	173	143	200
Medicine	66	115	118	146	161
Science	182	247	306	327	417
Bachelor degrees	887	1,268	1,490	1,695	1,910
Higher degrees	38	87	110	110	145
Total	925	1,355	1,600	1,805	2,055

(a) Figures for 1968 are for eleven months ended 30 June. From 1969 figures are for year ended 30 June.



VICTORIA—MONASH UNIVERSITY : INCOME AND EXPENDITURE  
(\$'000)

Particulars	1967	1968	1969	1970	1971
SOURCES OF INCOME					
Commonwealth Government	5,495	6,245	8,484	8,141	9,048
State Government	6,846	7,798	9,850	9,852	10,461
Total Government grants	12,341	14,043	18,334	17,993	19,509
Other sources—					
Donations and special grants	663	810	451	357	525
Student fees	1,880	2,209	2,449	2,555	3,454
Other fees	5	11	9	21	21
Charges for services	117	259	237	319	564
Halls of residence	435	402	399	409	515
Other income	84	103	151	190	198
Total other sources	3,183	3,794	3,696	3,851	5,277
Total income	15,524	17,836	22,030	21,844	24,786
NATURE OF EXPENDITURE					
Teaching and research—					
Salaries and superannuation	6,078	7,223	8,031	10,173	11,531
Equipment and maintenance	1,986	1,978	1,843	2,103	2,247
Research scholarships, fellowships, and study leave	608	779	707	811	915
Other teaching and research expenditure	423	458	718	737	885
Total teaching and research	9,093	10,439	11,299	13,824	15,576
Administration and general overhead—					
Salaries and superannuation	876	960	1,137	1,297	1,615
Other administration expenditure	446	472	527	552	542
Libraries—					
Salaries and superannuation	401	470	602	697	825
Other expenditure on libraries	485	542	711	644	771
Buildings, premises, and grounds—					
New buildings	2,364	3,857	4,095	3,108	1,696
Repairs and maintenance, including salaries and superannuation	642	803	947	995	1,130
Rents, rates, power, lighting, heating	238	291	319	376	333
Other expenditure on buildings, etc.	89	199	216	93	85
Sundry auxiliary expenditure	790	876	1,051	1,259	1,442
Total expenditure	15,424	18,908	20,902	22,846	24,014

**La Trobe University**  
(1972 : pages 464-7)

**VICTORIA—LA TROBE UNIVERSITY :  
STUDENTS ENROLLED CLASSIFIED  
BY SEX AND TYPE OF COURSE (a)**

Year	Full-time		Part-time		Total	
	Males	Females	Males	Females	Males	Females
1968	549	358	172	84	721	442
1969	982	637	302	131	1,284	768
1970	1,187	818	349	165	1,536	983
1971	1,331	951	473	257	1,804	1,208
1972	1,820	1,273	755	454	2,575	1,727

(a) 1968 and 1969 figures refer to enrolments up to 30 June. From 1970 enrolments are up to 30 April.

**VICTORIA—LA TROBE UNIVERSITY : BACHELOR DEGREE ENROLMENTS  
CLASSIFIED BY SCHOOLS UP TO 30 APRIL**

School	Degree course pursued											
	1970				1971				1972			
	Arts	Eco- nomics	Science		Arts	Eco- nomics	Science	Edu- cation	Arts	Eco- nomics	Science	Edu- cation
Behavioural sciences	..	..	..	..	..	..	..	53	..	17	..	..
Humanities	822	..	..	938	..	..	..	1,334	..	..	..	..
Social sciences	375	304	..	408	345	..	..	641	491	..	..	..
Physical sciences	..	..	347	..	..	390	..	..	..	458	..	..
Biological sciences	..	..	201	..	..	262	..	..	..	316	..	..
Agriculture	..	..	105	..	..	156	..	..	..	180	..	..
Education	..	..	..	..	..	..	52	..	..	..	..	134
Total	1,197	304	653	1,346	345	808	52	2,028	491	971	134	..

**VICTORIA—LA TROBE UNIVERSITY :  
DEGREES CONFERRED BY SCHOOLS**

School	Year ended June—		
	1970	1971	1972
Humanities	70	132	128
Social sciences	56	113	136
Physical sciences	46	48	85
Biological sciences	14	25	38
Agriculture	..	..	12
Education	..	..	..
<b>Total</b>	<b>186</b>	<b>318</b>	<b>399</b>
Bachelor degrees	172	301	382
Higher degrees	14	17	17

NOTE. The first ceremony for the conferring of degrees awarded by the University took place in December 1969.

**VICTORIA—LA TROBE UNIVERSITY : INCOME AND EXPENDITURE  
(\$'000)**

Particulars	1967	1968	1969	1970	1971
<b>SOURCE OF INCOME</b>					
Commonwealth Government	1,558	3,713	4,141	3,078	5,620
State Government	3,122	3,796	3,818	3,852	6,473
<b>Total government grants</b>	<b>4,680</b>	<b>7,509</b>	<b>7,959</b>	<b>6,930</b>	<b>12,093</b>
<b>Other sources—</b>					
Donations and special grants	38	57	66	72	87
Other income	231	483	879	1,157	1,745
<b>Total other sources</b>	<b>269</b>	<b>540</b>	<b>946</b>	<b>1,230</b>	<b>1,830</b>
<b>Total income</b>	<b>4,950</b>	<b>8,050</b>	<b>8,904</b>	<b>8,160</b>	<b>13,924</b>
<b>NATURE OF EXPENDITURE</b>					
<b>Teaching and research—</b>					
Salaries and superannuation	692	1,149	1,727	2,597	3,219
Equipment and maintenance	58	39	78	209	241
Research scholarships, fellowships, and study leave	22	55	75	120	151
Other teaching and research expenditure	126	182	240	361	486
<b>Total teaching and research</b>	<b>899</b>	<b>1,423</b>	<b>2,120</b>	<b>3,288</b>	<b>4,097</b>
<b>Administration and general overhead—</b>					
Salaries and superannuation	238	415	460	583	713
Other administration expenditure	95	163	224	198	252
<b>Libraries—</b>					
Salaries and superannuation	163	242	287	344	441
Other expenditure on libraries	176	177	285	245	253
<b>Buildings, premises, and grounds—</b>					
New buildings	3,072	4,508	3,494	1,955	5,524
Repairs and maintenance, including salaries and superannuation	69	35	178	203	307
Rents, rates, power, lighting, heating	62	75	92	140	170
Other expenditure on buildings, etc.	950	861	694	1,225	835
Sundry auxiliary expenditure	96	240	380	656	908
<b>Total expenditure</b>	<b>5,819</b>	<b>8,141</b>	<b>8,213</b>	<b>8,836</b>	<b>13,501</b>

**Victoria Institute of Colleges**

(1972 : pages 467-74)

**VICTORIA—TERTIARY ENROLMENTS IN COLLEGES AFFILIATED WITH THE VICTORIA INSTITUTE OF COLLEGES (a)**

College	1970			1971		
	Full-time	Part-time	Total	Full-time	Part-time	Total
<b>Metropolitan colleges—</b>						
Caulfield Institute of Technology	1,362	1,802	3,164	1,651	2,059	3,710
Footscray Institute of Technology	804	949	1,753	979	1,094	2,073
Prahran College of Technology	432	272	704	519	314	833
Preston Institute of Technology	648	867	1,515	646	944	1,590
Royal Melbourne Institute of Technology	2,875	6,078	8,953	3,545	6,102	9,647
Swinburne College of Technology	1,876	2,575	4,451	1,892	2,267	4,159
Occupational Therapy School of Victoria	130	..	130	140	..	140
Physiotherapy School of Victoria	168	..	168	167	..	167
Victorian School of Speech Science	80	..	80	85	..	85
Victorian College of Pharmacy	377	6	383	331	5	336
College of Nursing, Australia	67	..	67	98	..	98
<b>Country colleges—</b>						
Ballarat Institute of Advanced Education	397	101	498	532	120	652
Bendigo Institute of Technology	439	209	648	640	247	887
Gippsland Institute of Advanced Education	222	129	351	301	147	448
Gordon Institute of Technology	768	353	1,121	923	412	1,335
Warrnambool Institute of Advanced Education	169	25	194	256	35	291
<b>Total</b>	<b>10,814</b>	<b>13,366</b>	<b>24,180</b>	<b>12,705</b>	<b>13,746</b>	<b>26,451</b>

(a) The V.I.C. is not itself a teaching institution, but a co-ordinating agency with which individual autonomous colleges may become affiliated. Enrolments include preliminary year enrolments.

**Melbourne Kindergarten Teachers' College**

(1972 : pages 474-6)

**VICTORIA—MELBOURNE KINDERGARTEN TEACHERS' COLLEGE :  
SOURCES OF INCOME FOR RECURRENT EXPENDITURE**

(\$)

Year	State Government grant	Student fees	Other income	Total income
1967	91,500	47,867	2,104	141,471
1968	100,000	50,254	7,250	157,504
1969	112,500	78,669	4,854	196,023
1970	179,000	107,488	4,582	291,070
1971	200,000	139,722	7,927	347,649

**VICTORIA—MELBOURNE KINDERGARTEN  
TEACHERS' COLLEGE : ENROLMENTS**

Year	Three year diploma course	Special in-service diploma course (a)	Post-diploma course	Total
1968	203	38	6	247
1969	248	15	7	270
1970	315	25	(b)	340
1971	369	17	7	393
1972	396	21	(c) 10	427

(a) A special part-time in-service course to enable primary and infant teachers teaching in a kindergarten to gain the K.T.C. Diploma.

(b) Course discontinued for one year.

(c) Includes 2 part-time over 2 year period.

**Council of Adult Education**

(1972 : pages 476-7)

**VICTORIA—ADULT EDUCATION : LECTURE CLASSES AND ENROLMENTS**

Lecture classes	1968-69		1969-70		1970-71	
	Spring term	Autumn term	Spring term	Autumn term	Spring term	Autumn term
Courses offered	142	446	147	383	145	383
Students enrolled	4,468	12,748	4,141	10,625	4,048	10,966

## VICTORIA—ADULT EDUCATION : DISCUSSION GROUPS

Discussion groups	1968	1969	1970	1971	1972
Number of groups	505	520	534	535	564
Students enrolled	5,611	5,763	6,053	6,097	6,391

VICTORIA—COUNCIL OF ADULT EDUCATION :  
INCOME AND EXPENDITURE  
(\$'000)

Particulars	1967-68	1968-69	1969-70	1970-71	1971-72
INCOME					
Government grant	176	188	199	222	233
Lecture fees, etc.	154	164	198	207	227
Conferences	34	34	24	22	16
Miscellaneous	5	6	6	6	15
<b>Total income</b>	<b>369</b>	<b>393</b>	<b>427</b>	<b>457</b>	<b>491</b>
EXPENDITURE					
Salaries	116	119	135	158	191
Classes, library, and discussion groups	139	156	166	152	193
Administration	71	63	74	72	82
Miscellaneous	42	54	53	74	26
<b>Total expenditure</b>	<b>369</b>	<b>393</b>	<b>427</b>	<b>457</b>	<b>491</b>

## HEALTH AND MEDICAL RESEARCH

(1972 : pages 477-508)

## Health Department

(1972 : pages 478-88)

## VICTORIA—INFANT WELFARE SERVICES

Particulars	1968	1969	1970	1971
Municipal centres	689	695	707	714
Centres on mobile circuits	11	11	11	11
Centres in non-ratepaying areas—				
Migrant hostels	8	8	8	4
Commonwealth defence stations	1	1	1	1
Total all types	709	715	727	730
Number of infant welfare sisters in centres	371	387	395	397
Number of birth notifications received	69,903	71,090	73,422	76,204
Number of children on centres' rolls	251,039	307,575	331,555	348,267
Number of children who attended centres	167,787	176,482	180,901	203,905
Number of attendances of children at centres	1,452,457	1,537,963	1,560,085	1,627,988
Number of expectant mothers attending centres	9,335	9,874	9,296	9,920
Number of attendances of expectant mothers	18,931	19,426	21,572	20,861
Number of post-natal visits to mothers in hospital	27,049	26,335	26,482	26,611
Number of home visits after birth of baby	151,139	157,753	157,560	158,745
Infant Welfare Correspondence Scheme—				
Number of children enrolled	74	79	66	73
Expectant mothers enrolled	6	6	1	4
Mothercraft teaching in schools—				
Number of schools	152	153	137	130
Number of special groups	5	7	5	4
Total schools and groups	157	160	142	134
Number of courses	358	355	318	303
Number of lectures	3,708	3,399	3,121	2,937
Number of students	9,660	9,252	9,062	9,316
Certificates issued	8,293	8,190	7,111	7,154

NOTE. In addition to the teaching given to mothers in infant welfare centres, mothercraft teaching is given to girls in secondary schools by infant welfare sisters.

## VICTORIA—PRE-NATAL CLINICS AND ATTENDANCES

Particulars	1967	1968	1969	1970	1971
Total number	30	28	28	29	29
Patients attending	6,718	8,350	7,183	7,030	6,381
Number of attendances at clinics	29,940	32,763	30,396	30,267	23,415

NOTE. At 29 selected infant welfare centres, a pre-natal clinic is conducted by a medical officer employed by the Maternal and Child Welfare Branch, Department of Health. These clinics are run in conjunction with public maternity hospitals serving these areas.

## VICTORIA—SUBSIDISED PRE-SCHOOL CENTRES : TYPE AND ENROLMENTS

Pre-school centres	1968		1969		1970		1971	
	Number	Enrolment	Number	Enrolment	Number	Enrolment	Number	Enrolment
Kindergartens	641	32,393	665	33,638	701	35,324	742	37,644
Play centres	110	3,264	114	3,508	113	3,344	104	3,104
Day nurseries	14	716	15	741	15	759	20	981
Crèche (occasional care)	1	100	1	100	1	100	1	100
Total	766	36,473	795	37,987	830	39,527	867	41,829

NOTE. Enrolment figures for day nurseries and the crèche show capacity only.

## VICTORIA—NUMBER OF CAPITAL GRANTS APPROVED AND AMOUNTS PAID FOR BUILDING INFANT WELFARE CENTRES, PRE-SCHOOL CENTRES, AND DAY NURSERIES

Buildings subsidised	1968	1969	1970	1971
	number	number	number	number
Infant welfare centres	26	30	32	26
Pre-school centres	70	62	54	56
Day nurseries	1	2	6	1
Total	97	94	92	83

Building subsidies	1967-68	1968-69	1969-70	1970-71
	\$'000	\$'000	\$'000	\$'000
Infant welfare centres	119	134	125	100
Pre-school centres	245	264	256	163
Day nurseries	36	2	16	96
Total	400	400	397	359

NOTE. The above tables are not available on the same yearly basis.



VICTORIA—EXPENDITURE ON MATERNAL, INFANT,  
AND PRE-SCHOOL WELFARE  
(\$'000)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Pre-school education—					
Subsidies to organisations towards cost of maintaining pre-school centres	1,588	1,847	2,255	2,615	2,966
Scholarships for training pre-school teachers and play-leaders	73	89	91	95	108
Maternal and child health—					
Salaries	311	317	323	359	415
Subsidies to municipalities, etc., towards cost of maintaining infant welfare centres	534	653	702	719	747
Subsidies to infant welfare and mothercraft training schools	34	60	72	74	77
Scholarships for training infant welfare sisters	1	3	2	3	3
Other expenditure	73	74	86	85	97
Child welfare—					
Subsidies to organisations towards cost of maintaining day nurseries and crèche	164	182	192	199	238
Scholarships for training pre-school mothercraft nurses	2	2	3	3	4
Total	2,782	3,227	3,727	4,152	4,656

VICTORIA—ACTIVE TUBERCULOSIS CASES

Year	New cases	Reactivated cases	Chronic cases	Total cases
1967	599	80	49	728
1968	535	57	38	630
1969	497	44	38	579
1970	421	61	33	515
1971	416	23	19	458

NOTE. There were 61 deaths from tuberculosis in 1971, a rate of 1.73 per 100,000 of the estimated mean population.

**VICTORIA—TUBERCULOSIS SANATORIA :  
ACCOMMODATION, ETC.**

Sanatoria	1967	1968	1969	1970	1971
<b>ACCOMMODATION</b>					
Metropolitan	518	499	499	(a) 353	255
Country	187	187	173	143	129
Total	705	686	672	496	384
<b>ADMISSIONS</b>					
Metropolitan	1,039	831	781	786	702
Country	224	212	157	138	144
Total	1,263	1,043	938	924	846
<b>DISCHARGES</b>					
Metropolitan	1,031	815	780	769	738
Country	195	180	145	127	129
Total	1,226	995	925	896	867
<b>DEATHS</b>					
Metropolitan	71	67	51	30	39
Country	12	15	13	13	13
Total	83	82	64	43	52

(a) Gresswell Sanatorium closed in May 1970.

**VICTORIA—TUBERCULOSIS BUREAUX ACTIVITIES**

Particulars	1967	1968	1969	1970	1971
New cases referred for investigation	13,483	13,690	12,622	11,555	11,122
Re-attendances (old cases and new)	53,007	54,700	56,519	55,586	56,077
Visits to patients' homes by nurses	24,870	23,808	22,803	23,810	24,755
X-ray examination—Films (a)—					
Large	41,122	37,484	35,462	30,163	22,817
Micro	13,732	17,847	21,378	26,690	36,353
Tuberculin tests	10,884	12,626	11,406	10,293	9,683
B.C.G. vaccinations	4,326	4,550	3,128	3,031	2,742
X-rays taken—Chest X-ray surveys	641,974	663,707	672,925	671,914	694,459
School tuberculin surveys—Mantoux tests	72,636	90,116	89,541	81,405	93,933

(a) Excludes mass X-ray surveys with mobile units.

**Mental Health Authority**

(1972 : pages 488-9)

**VICTORIA—MENTAL HEALTH : PERSONS UNDER CARE OF THE MENTAL HEALTH AUTHORITY**

Particulars	At 31 December—			At 30 November—	
	1967	1968 (a)	1969 (a)	1970	1971
<b>RESIDENT PATIENTS—</b>					
Recommended patients—					
In State mental hospitals	3,529	3,316	3,050	2,874	2,589
In Repatriation Mental Hospital	291	277	245	231	231
In psychiatric hospitals	160	177	167	200	196
Approved patients—					
In intellectual deficiency training centres	999	942	850	888	833
Voluntary patients—					
In State mental hospitals	1,910	1,828	1,767	1,912	1,835
In Repatriation Mental Hospital	14	20	34	37	32
In psychiatric hospitals	374	355	277	286	363
In intellectual deficiency training centres	1,009	1,638	2,047	2,175	2,376
Informal patients—					
In informal hospitals	115	105	133	283	155
In training schools	557	184	..	..	..
In training centres	177	245	254	241	248
<b>Total resident patients</b>	<b>9,135</b>	<b>9,087</b>	<b>8,824</b>	<b>9,127</b>	<b>8,858</b>
<b>NON-RESIDENT PATIENTS—</b>					
On trial leave, boarded out, etc.	1,362	1,239	1,534	1,247	1,311
<b>Total under care</b>	<b>10,497</b>	<b>10,326</b>	<b>10,358</b>	<b>10,374</b>	<b>10,169</b>

(a) In 1968 various areas previously designated as mental hospitals and training schools were gazetted as training centres and in 1969 the remaining training schools were gazetted as training centres and informal hospitals.

**VICTORIA—MENTAL HEALTH : PERSONS UNDER THE CARE OF THE MENTAL HEALTH AUTHORITY**

Type of institution	Number	Under care at 1 December 1970			Admitted, trans- ferred in, etc.	Dis- charged, trans- ferred out, etc.	Died	Under care at 30 November 1971		
		Resi- dent	Non- resi- dent (a)	Total				Resi- dent	Non- resi- dent (a)	Total
State mental hospitals	9	4,786	861	5,647	3,049	2,698	631	4,424	943	5,367
Repatriation Mental Hospital	1	268	94	362	212	194	37	263	80	343
Psychiatric hospitals	7	486	269	755	6,391	6,329	16	559	242	801
Informal hospitals	6	283	..	283	1,830	1,955	3	155	..	155
Intellectual deficiency training centres	9	3,304	23	3,327	1,148	892	80	3,457	46	3,503
<b>Total</b>	<b>32</b>	<b>9,127</b>	<b>1,247</b>	<b>10,374</b>	<b>12,638</b>	<b>12,068</b>	<b>767</b>	<b>8,858</b>	<b>1,311</b>	<b>10,169</b>

(a) Non-resident patients are those on trial leave, boarded out, etc.

**Hospitals and Charities Commission**

(1972 : pages 491-4)

## VICTORIA—AMBULANCE SERVICES

Particulars	1967-68	1968-69	1969-70	1970-71
Ambulances	283	290	300	310
Other vehicles	46	47	50	50
Staff	574	614	636	682
Contributors	345,462	333,333	346,513	375,982
Patients carried	273,475	270,372	317,993	318,171
Mileage travelled by ambulances	4,216,386	4,447,015	4,801,013	5,026,609
Maintenance grants	\$759,000	\$830,000	\$978,881	\$1,295,000
Capital grants	\$240,218	\$310,250	\$309,410	\$330,455

NOTE. Under the *Hospitals and Charities Act 1958* the Hospitals and Charities Commission is charged with the responsibility of ambulance services in Victoria. It provides funds for both maintenance and capital purposes.

**Public hospitals and charitable institutions**

(1972 : pages 496-9)

## VICTORIA—NUMBER OF PUBLIC HOSPITALS AND CHARITABLE INSTITUTIONS AT 30 JUNE (a)

Institution	1967	1968	1969	1970	1971
<b>Hospitals—</b>					
Special hospitals (b)	12	12	12	12	11
General hospitals—					
Metropolitan	22	22	23	22	24
Country	112	112	112	112	112
Auxiliary hospitals	1	1	1	1	1
Convalescent hospitals	1	1	1	1	1
Hospitals for the aged	7	7	7	7	8
Sanatoria	2	2	2	1	1
Mental health institutions (c)—					
Mental hospitals	10	10	10	10	10
Psychiatric and informal hospitals	9	9	9	11	13
Intellectual deficiency training centres	10	10	9	9	9
<b>Total hospitals</b>	<b>186</b>	<b>186</b>	<b>186</b>	<b>186</b>	<b>190</b>
<b>Other institutions and societies—</b>					
Infants' homes	8	8	8	8	8
Children's homes	35	35	35	36	36
Maternity homes	4	4	4	4	4
Institutions for maternal and infant welfare	4	4	4	4	4
Rescue homes	4	4	4	4	4
Benevolent homes	4	4	4	4	4
Institutions for the deaf, dumb, and blind	6	6	6	6	6
Hostels for the aged	12	11	11	11	11
Medical dispensaries	2	2	2	2	2
<b>Total other institutions (d)</b>	<b>79</b>	<b>78</b>	<b>78</b>	<b>79</b>	<b>79</b>

(a) Excluding infant welfare centres and bush nursing hospitals and centres.

(b) Special hospitals are those that have accommodation for specific cases only or for women and/or children exclusively and in this table include the Cancer Institute.

(c) To 1969 figures are as at 31 December, from 1970 as at 30 November.

(d) In addition to the institutions shown above, which were under the control of one or other of the State's health authorities, there were, in 1971, 1,612 other institutions registered with the Hospitals and Charities Commission.

## VICTORIA—PUBLIC HOSPITALS : ACCOMMODATION AND INMATES, 1970-71

Institution	Number of beds in—		Daily average of occupied beds in—		Total cases treated in—		Outpatients (including casualties)
	Public section	Intermediate and private section	Public section	Intermediate and private section	Public section	Intermediate and private section	Cases treated
Special hospitals (a)	1,340	314	994	240	40,226	10,131	135,764
General hospitals—							
Metropolitan	3,897	1,625	2,963	1,304	98,659	69,804	406,198
Country	2,805	3,558	1,847	2,418	44,295	119,135	417,213
Auxiliary hospitals	418	10	383	(b)	2,819	3	114
Hospitals for the aged	3,391	..	3,129	..	6,276	..	..
Convalescent hospitals	32	12	30	12	57	21	..
Sanatoria	237	..	125	..	512	..	..
<b>Total</b>	<b>12,120</b>	<b>5,519</b>	<b>9,471</b>	<b>3,974</b>	<b>192,844</b>	<b>199,094</b>	<b>959,289</b>

NOTE. This table excludes mental hospitals, psychiatric and informal hospitals, and intellectual deficiency training centres.

(a) Special hospitals include the Cancer Institute.

(b) Less than 0.5.

VICTORIA—PUBLIC HOSPITALS AND CHARITABLE INSTITUTIONS(a) :  
DETAILS OF SOURCES OF INCOME AND ITEMS OF EXPENDITURE  
(\$'000)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
INCOME					
Government aid	83,784	90,078	100,271	112,962	138,670
Charitable contributions	4,784	4,788	5,545	5,328	5,929
Fees—					
Outpatients	3,464	3,177	3,397	3,733	6,250
Inpatients—					
Public	20,973	24,086	25,924	28,140	28,188
Private and intermediate	14,975	16,156	17,063	18,636	20,892
Other	9,034	12,102	11,729	13,188	16,750
<b>Total</b>	<b>137,014</b>	<b>150,387</b>	<b>163,929</b>	<b>181,987</b>	<b>216,679</b>
EXPENDITURE					
Salaries and wages	80,946	88,162	98,763	111,869	137,409
Other operating expenses	36,146	38,737	42,396	45,927	51,307
Non-operating expenses	1,841	1,651	1,917	2,119	3,303
Capital	19,369	21,166	18,826	21,169	25,990
<b>Total</b>	<b>138,301</b>	<b>149,715</b>	<b>161,901</b>	<b>181,084</b>	<b>218,009</b>

(a) Including infant welfare centres and bush nursing hospitals and centres.

**VICTORIA—PUBLIC HOSPITALS AND CHARITABLE INSTITUTIONS :  
RECEIPTS AND EXPENDITURE  
(\$'000)**

Institutions	1966-67	1967-68	1968-69	1969-70	1970-71
<b>Hospitals (a)—</b>					
<b>Receipts—</b>					
Government	52,478	57,138	64,803	74,474	96,486
Patients (b)	36,103	39,850	42,199	45,472	49,972
Other	6,758	9,829	9,332	10,550	13,310
<b>Total receipts</b>	<b>95,338</b>	<b>106,817</b>	<b>116,334</b>	<b>130,496</b>	<b>159,768</b>
<b>Expenditure—</b>					
Salaries and wages	58,379	63,938	70,168	80,375	100,318
Capital	14,058	15,933	13,864	15,778	21,558
Other	23,974	25,877	29,678	33,024	38,759
<b>Total expenditure</b>	<b>96,410</b>	<b>105,748</b>	<b>113,709</b>	<b>129,177</b>	<b>160,635</b>
<b>Sanatoria—</b>					
<b>Receipts (c)</b>	1,394	1,399	1,414	1,357	1,145
<b>Expenditure—</b>					
Salaries and wages	864	903	925	935	752
Other	530	496	489	422	393
<b>Total expenditure</b>	<b>1,394</b>	<b>1,399</b>	<b>1,414</b>	<b>1,357</b>	<b>1,145</b>
<b>Mental health institutions (d)—</b>					
<b>Receipts (c)</b>	24,162	25,523	27,062	29,236	32,254
<b>Expenditure—</b>					
Salaries and wages	14,160	15,329	16,614	18,817	22,209
Capital	3,423	3,495	3,335	3,169	2,645
Other	6,579	6,699	7,113	7,250	7,401
<b>Total expenditure</b>	<b>24,162</b>	<b>25,523</b>	<b>27,062</b>	<b>29,236</b>	<b>32,254</b>
<b>Other charitable institutions (e)—</b>					
<b>Receipts—</b>					
Government	6,724	6,688	7,856	8,770	9,631
Patients (b)	3,115	3,315	3,810	4,656	4,995
Other	6,280	6,507	7,453	7,472	8,886
<b>Total receipts</b>	<b>16,119</b>	<b>16,509</b>	<b>19,119</b>	<b>20,898</b>	<b>23,512</b>
<b>Expenditure—</b>					
Salaries and wages	7,544	7,992	11,056	11,743	14,131
Capital	1,888	1,738	1,627	2,222	1,787
Other	6,903	7,177	7,034	7,350	8,057
<b>Total expenditure</b>	<b>16,335</b>	<b>16,907</b>	<b>19,717</b>	<b>21,315</b>	<b>23,975</b>
<b>Total all receipts</b>	<b>137,014</b>	<b>150,248</b>	<b>163,929</b>	<b>181,987</b>	<b>216,679</b>
<b>Total all expenditure</b>	<b>138,301</b>	<b>149,577</b>	<b>161,901</b>	<b>181,084</b>	<b>218,009</b>

(a) Hospitals include hospitals for the aged.

(b) Commonwealth Hospital Benefits payments are included in patients' fees.

(c) Sanatoria and mental health institutions are financed almost exclusively by government contributions.

(d) Includes mental hospitals, psychiatric and infirm hospitals, and intellectual deficiency training centres.

(e) Infant welfare centres and bush nursing hospitals and centres are included under this heading.

**Victorian Nursing Council**  
(1972 : pages 499–500)

VICTORIA—PRACTISING NURSES  
AT 31 DECEMBER 1971

Classification	Total holding annual practising certificates
General nurses	23,719
Psychiatric nurses and mental deficiency nurses	1,681
Nursing aides	6,700
Mothercraft nurses	1,700
Total	33,800

NOTE. Only nurses holding current practising certificates may practise in the State of Victoria.

VICTORIA—NUMBER OF HOSPITALS AND INSTITUTIONS APPROVED AS TRAINING SCHOOLS, AND NUMBER OF STUDENTS IN TRAINING AT 30 JUNE 1971

Type of course	Hospitals and institutions approved as training schools	Students in training
Basic courses—		
General	37	4,485
Psychiatric	10	202
Mental deficiency	5	35
Nursing aides	61	982
Mothercraft	9	249
Total	122	5,953
Post-basic courses—		
Midwifery	14	656
Infant welfare	3	25
Infectious diseases	1	5
Eye, ear, nose, and throat	1	4
Gynaecological	1	4
Radiotherapeutic	1	10
Total	21	704

NOTE. Entrance requirements for student nurses vary according to the type of course. A registration examination is required in all branches.

## Victorian Bush Nursing Association

(1972 : pages 500-2)

VICTORIA—BUSH NURSING HOSPITALS AND CENTRES :  
RECEIPTS AND EXPENDITURE  
(\$'000)

Particulars	Year ended 31 March—				
	1967	1968	1969	1970	1971
<b>RECEIPTS</b>					
Government grants (a)	789	616	782	735	921
Collections, donations, etc.	82	112	96	148	151
Proceeds from entertainments	18	18	18	4	5
Patients' fees	828	932	1,049	1,193	1,498
Members' fees	55	56	55	52	55
Interest and rent	14	15	19	23	31
Miscellaneous	32	27	20	34	23
<b>Total receipts</b>	<b>1,818</b>	<b>1,778</b>	<b>2,039</b>	<b>2,190</b>	<b>2,684</b>
<b>EXPENDITURE</b>					
Salaries—					
Nurses (paid to central council)	675	760	778	837	1,062
Other	295	303	347	415	506
Provisions, fuel, lighting, etc.	177	188	204	216	232
Surgery and medicine	57	54	63	71	88
Repairs and maintenance	42	46	63	54	54
Furniture and equipment	23	27	28	16	14
Printing, stationery, etc.	23	23	29	32	35
Interest, rent, bank charges, etc.	6	6	6	8	7
Miscellaneous	78	105	94	125	134
Loan and interest repayments	17	15	20	12	20
Land and buildings	215	81	65	307	275
Alterations and additions	70	128	98	119	72
<b>Total expenditure</b>	<b>1,680</b>	<b>1,736</b>	<b>1,797</b>	<b>2,211</b>	<b>2,500</b>

(a) Includes \$39,000 received under the Hospital Benefits Scheme for 1967, \$36,000 for 1968, \$31,000 for 1969, \$34,000 for 1970, and \$26,000 for 1971.



**Cancer Institute**  
(1972 : pages 505-6)

VICTORIA—CANCER INSTITUTE

Particulars	1960 (a)	1970-71
<b>Medical—</b>		
Beds available including hostel	107	122
Inpatient admissions	1,785	3,195
New outpatients	3,796	4,567
Outpatient attendances	34,465	36,754
Therapy treatments	71,835	84,213
Visiting nursing service—visits	20,679	39,992
Outpatient transport service—mileage	141,684	168,713
<b>Finance—</b>		
Expenditure	\$1,268,198	\$3,575,370
Income	\$148,670	\$777,713
State Government grant	\$1,120,000	\$2,773,200
<b>Personnel—</b>		
Medical staff	46	72
Nursing staff	104	130
Scientific and technical staff	108	188
Other staff	232	392
Salaries and wages	\$934,634	\$2,750,731

(a) Prior to 1964-65 details are not available on a financial year basis.

**Anti-Cancer Council of Victoria**  
(1972 : pages 506-7)

VICTORIA—ANTI-CANCER COUNCIL: EXPENDITURE  
(\$)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Research	151,843	174,104	176,682	176,636	193,018
Education	44,120	44,596	43,297	59,162	56,314
Patient aid	48,492	30,239	31,187	34,208	41,584
Other	43,782	46,142	52,750	66,836	88,708
<b>Total expenditure</b>	<b>288,237</b>	<b>295,081</b>	<b>303,916</b>	<b>336,842</b>	<b>379,624</b>

**Lord Mayor's Fund**  
(1972 : pages 507-8)

VICTORIA—LORD MAYOR'S FUND AND HOSPITALS  
AND CHARITIES SUNDAY APPEAL : RECEIPTS  
(\$'000)

Year	Lord Mayor's Fund	Hospitals and Charities Sunday Appeal	Total
1966-67	483	57	540
1967-68	493	55	547
1968-69	484	49	534
1969-70	490	48	537
1970-71	549	47	595

SOCIAL WELFARE

(1972 : pages 508-57)

**Commonwealth social services**

(1972 : pages 508-17)

VICTORIA—NATIONAL WELFARE FUND : EXPENDITURE (a)  
(\$'000)

Service	1967-68	1968-69	1969-70	1970-71	1971-72
<b>Social services—</b>					
Funeral benefits	362	407	382	440	418
Age and invalid pensions (b)	129,334	140,538	163,349	179,578	209,872
Widows' pensions	15,807	18,090	21,671	24,366	28,689
Maternity allowances	2,102	2,281	2,297	2,407	2,376
Child endowment (c)	52,675	54,133	62,419	55,924	60,891
Unemployment, sickness, and special benefits	4,735	4,557	4,824	5,817	11,799
Commonwealth rehabilitation service	493	590	725	1,012	1,299
<b>Health services—</b>					
Medical benefits	12,301	13,188	14,610	24,397	34,142
Medical benefits for pensioners	4,242	4,277	4,895	5,180	7,218
Hospital benefits (d)	16,672	18,947	24,496	25,227	33,797
Pharmaceutical benefits	20,031	22,385	26,863	32,715	34,410
Pharmaceutical benefits for pensioners	7,505	8,712	9,928	11,186	12,577
Nutrition of children	2,623	2,636	2,645	2,345	3,493
Handicapped children's benefits	..	7	83	89	87
Miscellaneous health services	391	362	461	609	709
Tuberculosis benefits	3,557	3,487	3,362	3,196	3,327
Home savings grants (e)	4,470	4,379	4,228	5,496	6,440
Other social services	..	241	483	1,660	2,597
<b>Total</b>	<b>277,301</b>	<b>299,216</b>	<b>347,721</b>	<b>381,643</b>	<b>454,141</b>

(a) The principal social welfare benefits in Australia are provided by the Commonwealth Government under the Social Services Act which is administered by the Department of Social Services.

(b) Includes allowances for wives and children of invalid pensioners.

(c) In 1969-70 there were five twelve-weekly payments instead of the usual four.

(d) Including nursing home benefits and hospital benefits for pensioners.

(e) Under the Home Savings Grant Act 1964.

## VICTORIA—AGE AND INVALID PENSIONS

Year	Pensioners (a)			Total payments (b)
	Age	Invalid	Total	
				\$'000
1967-68	174,777	26,718	201,495	129,334
1968-69	183,776	26,625	210,401	140,538
1969-70 (c)	206,608	29,753	236,361	163,349
1970-71	213,852	31,342	245,194	179,578
1971-72	221,704	32,575	254,279	209,872

(a) In addition to satisfying the means test, a claimant for pension is required to complete a qualifying period of residence in Australia.

(b) Includes allowances for wives and children of invalid pensioners.

(c) Liberalisation of the means test resulted in a higher number of grant of pensions.

## VICTORIA—WIDOWS' PENSIONS (a)

Year	Number of widow pensioners	Total payments
		\$'000
1967-68	19,372	15,807
1968-69	20,349	18,090
1969-70 (b)	23,318	21,671
1970-71	24,509	24,366
1971-72	25,787	28,689

(a) For widows' pensions purposes the term "widow" may include, in certain cases, a deserted wife, a divorcee, a woman whose husband has been imprisoned for at least six months, and a woman whose husband is in a mental hospital. Certain "dependent females" may also qualify.

(b) Liberalisation of the means test resulted in a higher number of grants of pensions.

## VICTORIA—MATERNITY ALLOWANCES

Year	Number granted	Total payments
		\$'000
1967-68	66,083	2,102
1968-69	72,304	2,281
1969-70	72,259	2,297
1970-71	75,824	2,407
1971-72	75,082	2,376

NOTE. Maternity allowances are paid to mothers residing in Australia on the birth of a child. The one year's residence qualification is waived if the mother intends to remain permanently in Australia.

## VICTORIA—CHILD ENDOWMENT (a)

Year	Number of endowed families	Number of endowed children in families (b)	Number of endowed children in institutions (b)	Number of endowed student children	Total payments
					\$'000
1967-68	462,300	1,015,234	5,303	54,934	52,675
1968-69	472,693	1,041,713	5,462	69,563	54,133
1969-70	487,592	1,069,440	5,526	72,856	(c) 62,419
1970-71	500,385	1,090,447	5,439	74,497	55,924
1971-72	511,947	1,106,485	5,673	78,216	60,891

(a) Child endowment is a continuing payment made to each person (usually the mother) who has the care of one or more children under sixteen years of age, or one or more qualified full-time students sixteen to twenty-one years of age.

(b) Excludes endowed student children.

(c) There were five twelve-weekly payments made to the credit of bank accounts instead of the usual four during this year.

## VICTORIA—SOCIAL SERVICES : UNEMPLOYMENT, SICKNESS, AND SPECIAL BENEFITS

Year	Number admitted to benefit during year			Number receiving benefit at end of year			Amount paid in benefits during year		
	Un-employment	Sickness	Special (a)	Un-employment	Sickness	Special (a)	Un-employment	Sickness	Special (b)
							\$'000	\$'000	\$'000
1967-68	32,653	16,731	7,317	6,141	2,309	1,915	2,425	1,646	663
1968-69	27,172	13,798	7,856	3,608	2,199	1,763	2,246	1,473	838
1969-70	20,038	15,682	8,180	3,093	2,458	1,216	1,795	1,956	1,073
1970-71	29,271	17,273	5,369	5,286	2,997	1,026	2,345	2,877	595
1971-72	62,890	21,333	3,239	10,914	3,744	1,039	6,721	4,435	642

(a) Includes migrants in reception and training centres.

(b) Includes amounts paid to migrants in reception and training centres.

## Repatriation Department

(1972 : pages 517-20)

## VICTORIA—WAR AND SERVICE PENSIONS

Year	Members of forces—					Dependants—			Amount paid during year	
	South African war veterans	First World War	Second World War, incl. native members and interim forces	Korea--Malaya	Other (c)	Total	Of incapacitated members	Of deceased members		Total
<b>WAR PENSIONS (a)</b>									\$'000	
1967-68	..	10,824	49,560	685	405	61,474	92,107	16,939	109,046	47,216
1968-69	..	9,830	49,358	697	514	60,399	87,422	17,024	104,446	51,654
1969-70	..	8,903	49,152	717	774	59,546	82,671	17,051	99,722	51,297
1970-71	..	7,997	48,660	715	971	58,343	78,018	16,908	94,926	52,636
1971-72	..	7,029	48,127	713	1,187	57,056	73,676	16,868	90,544	57,464
<b>SERVICE PENSIONS (b)</b>										
1967-68	18	9,066	3,868	9	11	12,972	3,414	556	3,970	7,420
1968-69	16	8,462	4,394	8	11	12,891	3,086	584	3,670	8,070
1969-70	12	8,409	5,710	12	15	14,158	3,538	611	4,149	9,767
1970-71	9	7,832	6,673	19	16	14,549	3,650	648	4,298	10,696
1971-72	8	7,053	7,725	19	17	14,822	3,685	687	4,372	12,075

(a) War pensions, introduced under the *War Pensions Act 1914*, are intended to provide compensation for ex-servicemen and women who have suffered incapacity as a result of their war service, for their eligible dependants, and also for the dependants of those who have died as a result of war service.

(b) In addition to compensatory payments for war-caused incapacity and death, the Repatriation Department introduced service pensions in 1936. This type of pension is paid, subject to a means test, to an ex-serviceman who has served in a theatre of war, and who either has attained the age of 60 years (55 years in the case of an ex-servicewoman) or who is permanently unemployable.

(c) Includes Far East Strategic Reserve, Special Overseas Service, Seamen's War Pensions, and Act of Grace Pensions.

## National health benefits

(1972 : pages 520-4)

## VICTORIA—HOSPITAL AND NURSING HOME BENEFITS

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
<b>Hospital benefits—</b>					
Number of registered organisations	43	42	40	37	24
Number of members ('000)	1,063	1,092	1,191	1,208	1,231
<b>Benefits paid—</b>	\$'000	\$'000	\$'000	\$'000	\$'000
From registered organisations' funds (a)	17,870	21,353	26,800	31,643	35,003
Commonwealth benefits (b)	9,509	10,549	11,080	11,136	11,998
<b>Nursing home benefits—</b>					
Commonwealth benefits	4,884	5,122	(c)6,468	(c)10,052	9,350
<b>Total benefits</b>	<b>32,263</b>	<b>37,023</b>	<b>44,348</b>	<b>52,831</b>	<b>56,351</b>

(a) Includes ancillary benefits.

(b) Excludes special account deficits and management expenses and includes Subsidised Medical Services Scheme fund benefit reimbursements.

(c) Increase is partly due to supplementary benefits scheme introduced on 1 January 1969.

## VICTORIA—MEDICAL BENEFITS

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Number of registered organisations	19	19	19	19	19
Number of members ('000)	969	1,010	1,104	1,128	1,168
Number of services received ('000)	8,086	8,602	9,210	10,095	10,633
Benefits paid during year—	\$'000	\$'000	\$'000	\$'000	\$'000
From registered organisations' funds (a)	12,116	13,167	14,747	17,288	22,982
Commonwealth benefits (b)	11,644	12,183	13,052	14,404	24,036
<b>Total benefits</b>	<b>23,760</b>	<b>25,350</b>	<b>27,799</b>	<b>31,692</b>	<b>47,018</b>

(a) Including ancillary benefits.

(b) Excludes special account deficits and management expenses and includes Subsidised Medical Services Scheme fund benefit reimbursements.

## VICTORIA—PHARMACEUTICAL BENEFITS

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
	'000	'000	'000	'000	'000
Number of prescriptions	14,136	14,296	15,885	17,301	19,157
Cost of prescriptions—	\$'000	\$'000	\$'000	\$'000	\$'000
Commonwealth contribution—					
Pensioners	6,933	7,505	8,712	9,928	11,186
Other population	16,040	15,821	18,112	20,744	25,361
Payments to hospitals and miscellaneous services	5,000	4,103	4,160	6,000	7,229
Patients' contributions	5,087	5,045	5,587	6,089	6,833

## VICTORIA—PENSIONER MEDICAL SERVICE

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Number of pensioners and dependants enrolled ('000)	260	282	294	303	313
Number of participating doctors	1,733	1,767	1,768	1,740	1,766
Number of services—					
Surgery ('000)	1,232	1,379	1,449	1,594	1,723
Domiciliary ('000)	878	870	832	814	838
<b>Payments to participating doctors for medical services (\$'000)</b>	<b>3,721</b>	<b>4,218</b>	<b>4,251</b>	<b>4,869</b>	<b>5,180</b>

## Ministry of Social Welfare

(1972 : pages 524-46)

## VICTORIA—FAMILY ASSISTANCE

Year	Number of applications		Number of children involved at end of period	Cost of assistance (a)
	Received	Approved		
				\$'000
1967-68	3,638	2,054	6,638	648
1968-69	3,795	2,291	6,489	829
1969-70(b)	4,724	3,162	7,337	1,081
1970-71(b)	5,555	3,643	4,911	2,062
1971-72(b)	6,133	4,150	7,191	2,709

(a) Excludes medical, dental, pharmaceutical, and optical benefits, and school book payments.

(b) From 2 April 1970 the family assistance system was altered and statistics from 1969-70 are not comparable with previous years.

## VICTORIA—FAMILY ASSISTANCE : ANALYSIS OF FAMILIES RECEIVING ASSISTANCE AT 30 JUNE 1972

Type of case	Families receiving assistance	Children involved
Cases where the Commonwealth Government reimburses half of the expenditure—		
Deserted wives	831	1,922
Wives of prisoners	107	247
Single mothers	1,983	2,305
Deserted <i>de facto</i> wives	778	1,696
<i>De facto</i> wives of prisoners	45	84
Mothers with child (or children) not of marriage	85	131
	3,829	6,385
Cases not subject to reimbursement by Commonwealth Government—		
Supplementary assistance to parents—		
Fathers incapacitated	5	18
On unemployment benefits	87	202
Assistance to people who care for children whose parents—		
Are deceased	137	143
Have deserted the child	260	395
Are in gaol	18	48
	507	806
Total (a)	4,336	7,191

(a) During 1971-72, there were 1,834 cases of families receiving emergency grants to assist them during the period between lodging the application for assistance and the first payment.

## DISCHARGES OF WARDS FROM FAMILY WELFARE DIVISION (a)

Type of discharge	1970-71			1971-72		
	Males	Females	Total	Males	Females	Total
Legal adoption	40	33	73	47	38	85
By direction of Director-General	362	245	607	511	374	885
Death	3	2	5	2	2	4
Time expired at 18 years	71	53	124	51	58	109
Discharged after time expired (b)	4	7	11	7	7	14
Court appeal	1	1	2	1	..	1
<b>Total</b>	<b>481</b>	<b>341</b>	<b>822</b>	<b>619</b>	<b>479</b>	<b>1,098</b>

(a) See also tables on young persons—that is, those fifteen years and over—made wards and admitted to, and discharged from, the Youth Welfare Division.

(b) Time cannot be extended beyond the twenty-first birthday.

## VICTORIA—REASONS FOR CHILDREN BEING ADMITTED AS WARDS OF STATE

Reason for admission to Family Welfare Division	1970-71			1971-72		
	Males	Females	Total	Males	Females	Total
<b>Children's Court orders—</b>						
<b>Care and protection application—</b>						
Found wandering or abandoned	17	20	37	20	16	36
No means of support, or no settled place of abode	154	145	299	174	166	340
Not provided with proper food, etc., ill-treated, or exposed	76	66	142	74	77	151
Unfit guardianship	122	112	234	72	96	168
Lapsing or likely to lapse into a career of vice or crime	103	12	115	87	15	102
Exposed to moral danger	1	31	32	1	37	38
Truancy	15	7	22	9	4	13
<b>Total</b>	<b>488</b>	<b>393</b>	<b>881</b>	<b>437</b>	<b>411</b>	<b>848</b>
<b>Offences—</b>						
Assault	2	..	2	1	..	1
Robbery	..	..	..	2	..	2
Sex—natural	1	..	1	..	..	..
Breaking	38	..	38	54	2	56
Larceny	44	2	46	42	1	43
Motor vehicles, larceny, etc.	8	..	8	15	..	15
Other offences	4	1	5	7	2	9
<b>Total</b>	<b>97</b>	<b>3</b>	<b>100</b>	<b>121</b>	<b>5</b>	<b>126</b>
<b>Uncontrollable applications</b>	<b>23</b>	<b>7</b>	<b>30</b>	<b>35</b>	<b>11</b>	<b>46</b>
<b>Total made wards by Children's Court</b>	<b>608</b>	<b>403</b>	<b>1,011</b>	<b>593</b>	<b>427</b>	<b>1,020</b>
<b>By Director-General of Social Welfare</b>	<b>51</b>	<b>51</b>	<b>102</b>	<b>67</b>	<b>40</b>	<b>107</b>
<b>Total</b>	<b>659</b>	<b>454</b>	<b>1,113</b>	<b>660</b>	<b>467</b>	<b>1,127</b>



**VICTORIA—LOCATION OF WARDS PLACED WITH THE FAMILY  
WELFARE DIVISION AT 30 JUNE**

Details	1968	1969	1970	1971	1972
<b>In Social Welfare Department institutions—</b>					
Reception centres	270	306	363	347	423
Children's homes	176	178	169	206	211
Family group homes	95	93	101	137	146
<b>Total</b>	<b>541</b>	<b>577</b>	<b>633</b>	<b>690</b>	<b>780</b>
In approved children's homes	2,370	2,322	2,487	2,496	2,488
On home release with parents or relatives	1,693	1,847	1,794	1,842	1,710
In foster homes	626	609	608	634	601
Placed pending adoption	86	95	90	64	28
In Mental Health Authority institutions	178	166	172	165	150
Whereabouts unknown	8	11	12	8	10
Other	..	..	..	..	6
<b>Total</b>	<b>5,502</b>	<b>5,627</b>	<b>5,796</b>	<b>5,899</b>	<b>5,773</b>

**VICTORIA—CHILDREN UNDER INFANT LIFE PROTECTION PROVISIONS**

Particulars	1967-68	1968-69	1969-70	1970-71	1971-72
Children placed during year	247	403	518	404	298
Children discharged during year	257	376	540	434	185
Total children on placement at end of year	169	196	174	144	257

**VICTORIA—DISCHARGES OF WARDS FROM  
YOUTH WELFARE DIVISION (a)**

Type of discharge	1970-71			1971-72		
	Males	Females	Total	Males	Females	Total
By direction of Director-General	54	36	90	62	39	101
Court appeals	3	6	9	..	9	9
Death	2	1	3	1	2	3
Time expired at 18 years	287	153	440	297	114	411
Discharge after time extended beyond 18 years (b)	9	16	25	10	12	22
<b>Total</b>	<b>355</b>	<b>212</b>	<b>567</b>	<b>370</b>	<b>176</b>	<b>546</b>

(a) See also tables on children under fifteen years of age made wards and admitted to, and discharged from, the Family Welfare Division.

(b) Time cannot be extended beyond the twenty-first birthday.

**VICTORIA—REASONS FOR YOUNG PERSONS BEING ADMITTED AS  
WARDS OF STATE**

Reason for admission to Youth Welfare Division	1970-71			1971-72		
	Males	Females	Total	Males	Females	Total
Children's Court orders—						
Care and protection application—						
Found wandering or abandoned	15	25	40	7	18	25
No means of support, or no settled place of abode	11	13	24	22	16	38
Not provided with proper food, nursing, clothing, or medical aid	..	1	1	1	1	2
Unfit guardianship	1	6	7	1	4	5
Lapsing or likely to lapse into a career of vice or crime	91	22	113	58	40	98
Exposed to moral danger	1	100	101	2	99	101
Truancy	4	..	4	..	1	1
Total	123	167	290	91	179	270
Offences—						
Assault	3	..	3	5	2	7
Robbery	2	..	2	3	..	3
Sex offences	11	..	11	5	..	5
Breaking	64	8	72	77	4	81
Larceny	32	3	35	42	9	51
Motor vehicles, larceny, etc.	30	2	32	46	2	48
Other offences	19	1	20	20	1	21
Total	161	14	175	198	18	216
Uncontrollable applications	22	1	23	9	1	10
Total	306	182	488	298	198	496

**VICTORIA—OFFENCES FOR WHICH SENTENCES TO YOUTH TRAINING  
CENTRES WERE IMPOSED**

Offence	1970-71			1971-72		
	Males	Females	Total	Males	Females	Total
Homicide	2	..	2	1	..	1
Assault	74	2	76	70	1	71
Robbery	43	..	43	32	..	32
Sex offences	66	..	66	25	..	25
Breaking	852	31	883	946	4	950
Larceny	594	24	618	634	3	637
Motor vehicles, larceny, etc.	760	5	765	812	2	814
False pretences	46	..	46	68	2	70
Other offences	454	9	463	419	1	420
Total offences for which sentences imposed	2,891	71	2,962	3,007	13	3,020
Persons sentenced	870	20	890	839	8	847

## VICTORIA—LENGTH OF SENTENCES TO YOUTH TRAINING CENTRES

Length of sentence	Number of sentences					
	1970-71			1971-72		
	Males	Females	Total	Males	Females	Total
Under 14 days	44	..	44	17	1	18
14 days and under 1 month	41	1	42	40	1	41
1 month and under 2 months	82	1	83	71	1	72
2 months and under 3 months	45	2	47	43	1	44
3 months and under 6 months	123	4	127	143	..	143
6 months and under 9 months	192	6	198	198	3	201
9 months and under 1 year	101	2	103	84	..	84
1 year and under 2 years	357	5	362	347	2	349
2 years and under 3 years	62	3	65	68	..	68
3 years	29	..	29	17	..	17
Governor's pleasure	..	..	..	1	..	1
Total sentences	1,076	24	1,100	1,029	9	1,038
Persons sentenced	(a) 870	(a) 20	890	(b) 839	(b) 8	847

(a) Of the 870 males sentenced 668 were sentenced for the first time and of the 20 females sentenced 18 were sentenced for the first time.

(b) Of the 839 males sentenced 627 were sentenced for the first time and of the 8 females sentenced 6 were sentenced for the first time.

VICTORIA—OFFENCES FOR WHICH PRISONERS WERE SENTENCED,  
1971-72 (a)

Offence	Males	Females	Total	Percentage
Homicide	26	1	27	0.2
Assault	861	9	870	4.9
Robbery with violence	68	..	68	0.4
Sex—Natural	279	109	388	2.2
Unnatural	113	1	114	0.7
Breaking	1,658	..	1,658	9.4
Larceny	2,467	78	2,545	14.4
Motor vehicles, larceny, etc.	837	7	844	4.8
False pretences	1,732	163	1,895	10.7
Drunk and disorderly	2,850	105	2,955	16.8
Vagrancy	448	39	487	2.7
Indecent, riotous, and offensive or insulting behaviour	641	18	659	3.7
Breach of bond or probation	187	17	204	1.2
Breach of parole	52	..	52	0.3
Other	4,760	111	4,871	27.6
Total offences	16,979	658	17,637	100.0
Convicted persons received	5,429	409	5,838	

(a) Many individuals are convicted for more than one offence and are received in prison more than once during a year.

VICTORIA—PRISON ACCOMMODATION AND PRISONERS  
(Exclusive of police lock-ups)

Institution	Accommodation available at 30 June—		Prisoners			
			Daily average		In custody at 30 June—	
	1971	1972	1970-71	1971-72	1971 <sup>(a)</sup>	1972 <sup>(b)</sup>
Pentridge Prison	1,387	1,387	1,254	1,259	1,239	1,246
Ararat Prison	200	200	184	184	188	176
Beechworth Training Prison	115	115	101	103	101	110
Bendigo Training Prison	120	120	114	117	119	97
Castlemaine Prison	112	112	90	91	105	90
Coorimungle Prison	60	60	54	53	51	53
Dhurringile Rehabilitation Centre	75	75	68	58	64	53
Geelong Training Prison	130	130	136	131	129	143
McLeod Prison Farm (French Island)	127	127	121	109	117	91
Morwell River Reforestation Prison	80	80	70	68	66	72
Sale Prison	75	75	73	73	64	78
Won Wron Reforestation Prison	85	85	73	79	69	78
Total males	2,566	2,566	2,338	2,325	2,312	2,287
Fairlea Female Prison	100	100	51	41	44	31
Total	2,666	2,666	2,389	2,366	2,356	2,318

(a) Including 79 males and 1 female awaiting trial.

(b) Including 123 males and 3 females awaiting trial.

VICTORIA—PRISONERS RECEIVED AT AND DISCHARGED FROM GAOLS  
(Exclusive of police lock-ups)

Particulars	1967-68	1968-69	1969-70	1970-71	1971-72
Number in confinement at beginning of period—					
Convicted	1,994	2,103	2,199	2,178	2,276
Awaiting trial	141	179	131	149	80
Total	2,135	2,282	2,330	2,327	2,356
Received during period—					
Convicted of felony, misdemeanour, etc.	8,889	8,745	8,003	8,474	8,190
Transfer from—					
Other gaols and youth training centres	2,303	2,462	2,261	2,741	2,681
Hospitals, asylums, etc.	143	159	155	176	190
For trial, not subsequently returned to prison	3,268	3,290	3,327	3,351	4,646
On parole board warrants	39	42	57	45	51
Awaiting deportation by Commonwealth Immigration Department	16	16	27	17	23
Returned on order	376	371	331	450	914
Total	15,034	15,085	14,161	15,254	16,695
Discharged during period	14,887	15,037	14,164	15,225	16,733
Number in confinement at end of period—					
Convicted	2,103	2,199	2,178	2,276	2,192
Awaiting trial	179	131	149	80	126
Total	2,282	2,330	2,327	2,356	2,318

## VICTORIA—PERSONS ON PROBATION

Year	Placed on probation during year		Children on probation at end of year	Adults on probation at end of year
	By Children's Courts	By adult courts		
1967-68	2,047	1,533	2,499	2,693
1968-69	2,148	1,381	2,735	2,263
1969-70	2,375	1,514	3,049	2,153
1970-71	2,865	1,458	3,536	2,181
1971-72	3,131	1,561	4,049	2,326

## VICTORIA—AGES OF PERSONS PLACED ON PROBATION

Age of probationers	1970-71			1971-72		
	Males	Females	Total	Males	Females	Total
<b>By Children's Courts—</b>						
Under 8 years	14	46	60	6	30	36
8 years and under 9 years	21	5	26	12	6	18
9 years and under 10 years	24	2	26	22	6	28
10 years and under 11 years	57	10	67	53	10	63
11 years and under 12 years	72	8	80	107	13	120
12 years and under 13 years	147	36	183	159	33	192
13 years and under 14 years	239	82	321	320	104	424
14 years and under 15 years	464	181	645	542	173	715
15 years and under 16 years	484	183	667	540	193	733
16 years and under 17 years	548	151	699	580	157	737
17 years and over (a)	82	9	91	56	9	65
Total	2,152	713	2,865	2,397	734	3,131
<b>By adult courts—</b>						
17 years and under 21 years	685	99	784	676	86	762
21 years and under 25 years	234	21	255	217	33	250
25 years and under 30 years	185	14	199	93	9	102
30 years and under 35 years	73	7	80	42	9	51
35 years and under 40 years	37	8	45	28	9	37
40 years and over	52	6	58	40	9	49
Not known	17	20	37	298	12	310
Total	1,283	175	1,458	1,394	167	1,561
Total probationers	3,435	888	4,323	3,791	901	4,692

(a) Those 17 years and over admitted to probation by Children's Courts committed the offence before their seventeenth birthday.

## VICTORIA—PERSONS ON PROBATION

Particulars	On Children's Courts probation orders			On adult courts probation orders			Total
	Males	Females	Total	Males	Females	Total	
1970-71							
On probation at beginning of year	2,364	685	3,049	1,793	360	2,153	5,202
Placed on probation during year	2,152	713	2,865	1,283	175	1,458	4,323
Completed probation during year	1,683	451	2,134	1,076	146	1,222	3,356
Probation cancelled due to—							
Further conviction	118	63	181	181	7	188	369
Breach of other conditions	50	13	63	17	3	20	83
On probation at end of year	2,665	871	3,536	1,802	379	2,181	5,717
1971-72							
On probation at beginning of year	2,665	871	3,536	1,802	379	2,181	5,717
Placed on probation during year	2,397	734	3,131	1,394	167	1,561	4,692
Completed probation during year	1,786	573	2,359	1,022	118	1,140	3,499
Probation cancelled due to—							
Further conviction	132	82	214	209	16	225	439
Breach of other conditions	36	9	45	47	4	51	96
On probation at end of year	3,108	941	4,049	1,918	408	2,326	6,375

## VICTORIA—ANALYSIS OF PERSONS ON PAROLE

Particulars	Youth parole			Adult parole			Total
	Males	Females	Total	Males	Females	Total	
1970-71							
On parole at beginning of year	182	5	187	724	24	748	935
Released on parole during year	413	3	416	661	11	672	1,088
Completed parole during year	268	7	275	420	13	433	708
Parole cancelled due to—							
Further conviction	86	..	86	155	..	155	241
Breach of other conditions	17	..	17	60	2	62	79
On parole at end of year	224	1	225	750	20	770	995
1971-72							
On parole at beginning of year	224	1	225	750	20	770	995
Released on parole during year	421	8	429	724	19	743	1,172
Completed parole during year	320	3	323	477	14	491	814
Parole cancelled due to—							
Further conviction	81	1	82	121	1	122	204
Breach of other conditions	25	1	26	88	2	90	116
On parole at end of year	219	4	223	788	22	810	1,033

## VICTORIA—ADULT PRE-SENTENCE REPORTS

Year	Supreme Court		County Court		Magistrates' Courts		Total
	Males	Females	Males	Females	Males	Females	
1967-68	14	..	138	4	260	29	445
1968-69	4	2	101	5	298	37	447
1969-70	12	..	155	9	267	28	471
1970-71	7	..	121	1	259	29	417
1971-72	5	..	122	6	234	28	395

VICTORIA—LOCATION OF YOUNG PERSONS UNDER THE  
CONTROL OF THE YOUTH WELFARE DIVISION

Location	Wards not under sentence		Young persons under sentence			
			Wards		Non-wards	
	Males	Females	Males	Females	Males	Females
AT 30 JUNE 1971						
Youth training centres—						
Government	120	66	66	2	285	5
Non-government	..	23	38	..	51	..
On home release	361	140	..	..	..	..
Residing with employer, in hostel, or in private board	233	172	..	..	..	..
On parole	..	..	(a) 38	(a) 1	186	..
In prison (b)	..	..	14	1	7	..
Other institutions	8	3	..	..	6	..
Absconded	..	..	..	..	14	..
Appeal bail	..	..	14	9	3	..
Whereabouts unknown	30	19	..	..	..	..
Total	752	423	170	13	552	5
AT 30 JUNE 1972						
Youth training centres—						
Government	101	104	62	1	294	..
Non-government	..	15	20	..	74	..
On home release	409	170	..	..	..	..
Residing with employer, in hostel, or in private board	256	163	..	..	..	..
On parole	..	..	(a) 12	3	207	1
In prison (b)	..	..	9	1	5	..
Other institutions	10	25	..	..	3	..
Absconded	..	..	..	..	16	..
Appeal bail	..	..	2	7	16	..
Whereabouts unknown	38	55	..	..	..	..
Total	814	532	105	12	615	1

(a) Wards on parole, although under the control of the Youth Parole Board, are still under the legal guardianship of the Director-General of Social Welfare.

(b) Wards and youth trainees in prison are either on remand or serving short term sentences.

VICTORIA—MINISTRY OF SOCIAL WELFARE:  
REVENUE AND EXPENDITURE  
(\$'000)

Particulars	1967-68	1968-69	1969-70	1970-71	1971-72
<b>Revenue—</b>					
Sale of goods produced in—					
Prisons	408	333	358	419	409
Youth training centres	24	21	27	25	28
Child endowment	39	25	64	74	90
Maintenance collection	79	79	82	96	117
Quarters, rations, and rents	34	58	68	73	85
Other revenue	25	23	16	17	24
Total revenue	609	540	615	704	753
<b>Expenditure—</b>					
Central Administration and Research and Statistics Division—					
Salaries and general expenses	276	286	358	446	531
Grants to approved welfare organisations	..	..	..	..	250
Family Welfare Division—					
Salaries and general expenses	457	475	565	646	776
Maintenance of reception centres and departmental children's homes	1,107	1,277	1,542	1,869	2,503
Payments for wards in—					
Approved children's homes	1,208	1,286	1,316	1,443	2,594
Foster homes	274	297	286	322	292
Family assistance	649	829	1,081	2,062	2,709
Other expenditure	36	50	46	57	126
Youth Welfare Division—					
Salaries and general expenses	127	150	177	214	263
Maintenance of remand and departmental youth training centres	1,306	1,453	1,660	1,882	2,246
Payments to non-departmental youth training centres	218	197	207	202	232
Other expenditure	117	130	133	142	176
Grants to youth organisations	291	304	310	303	340
Prisons Division—					
Salaries and general expenses	3,157	3,463	3,884	4,239	4,954
Probation and Parole Division—					
Salaries and general expenses	298	340	398	462	540
Parole boards' expenses	9	8	9	9	9
Training Division—					
Salaries and general expenses	115	124	159	169	201
Total expenditure	9,645	10,670	12,131	14,467	18,742
Net expenditure	9,036	10,130	11,516	13,763	17,989



**Red Cross Society**  
(1972 : pages 550-2)

**VICTORIA—RED CROSS SOCIETY**

Particulars	Unit	1966-67	1967-68	1968-69	1969-70	1970-71
Income (a)	\$'000	1,337	1,341	1,502	1,501	1,742
Expenditure (b)	\$'000	1,398	1,480	1,602	1,629	1,829
Accumulation account	\$'000	1,380	1,394	1,375	1,280	1,295
Expenditure on—						
Blood transfusion service	\$'000	568	623	691	774	867
Convalescent homes and hostels	\$'000	224	229	240	179	203
Handcraft and curative training	\$'000	60	52	55	63	73
Social service and welfare	\$'000	80	90	100	111	117
Service and repatriation hospitals, including recreation centres	\$'000	133	153	157	153	162
Civilian hospital and civilian relief						
Red Cross branches and companies	number	572	581	587	601	601
Junior Red Cross Circles	number	477	523	510	530	519
Blood donations	number	106,152	112,247	109,488	112,553	125,409
Blood distributed	half litres	71,691	77,347	78,051	77,556	86,261
Serum distributed	litres	243	318	414	489	570
Transport mileage	'000 miles	808	890	975	1,053	1,058

(a) Excludes legacies.

(b) Excludes stock adjustments and depreciation.

**Friendly societies**  
(1972 : pages 552-4)

**VICTORIA—FRIENDLY SOCIETIES : FUNDS**  
(\$'000)

Particulars	1966-67	1967-68	1968-69	1969-70
Ordinary societies (a)—				
Sick, funeral, and non-contributory endowment funds	17,582	18,182	18,689	19,173
Whole of life, endowment, and other assurance funds	3,166	4,049	5,306	6,705
Medical services funds	2,816	3,461	4,049	4,617
Hospital benefit funds	4,495	5,442	6,388	7,430
Medicine, management, and other funds	5,651	5,666	5,941	6,378
Dividing and other societies	1,215	1,355	1,480	1,534
<b>Total funds</b>	<b>34,925</b>	<b>38,155</b>	<b>41,853</b>	<b>45,837</b>

(a) Societies which provide the customary benefits, namely, sick pay, funeral, medicinal, medical, and hospital benefits.

## VICTORIA—FRIENDLY SOCIETIES: MEMBERSHIP, ETC.

Particulars	1966-67	1967-68	1968-69	1969-70
<b>ORDINARY FRIENDLY SOCIETIES (a)</b>				
Number of societies	20	20	20	20
Number of branches	1,120	1,112	1,091	1,086
Number of members contributing for—				
Sick and funeral benefits (b)	104,455	103,077	102,250	100,629
Medical services (b)	249,373	252,679	260,344	266,074
Hospital benefits (b)	263,552	268,090	276,241	287,034
Number of widows registered for funeral benefits	7,970	8,643	8,688	8,216
Number of whole of life and endowment assurance benefits in force	17,254	20,148	22,924	26,799
<b>DIVIDING AND OTHER SOCIETIES</b>				
Number of societies	109	106	104	102
Number of members	47,310	50,906	51,341	50,558
<b>ALL SOCIETIES</b>				
Number of members who received sick pay	24,871	23,625	24,183	24,069
Number of weeks for which sick pay was allowed	409,005	396,635	388,113	364,766
Number of deaths of sick and funeral benefit members	2,589	2,481	2,586	2,405
Number of deaths of wives and widows	608	783	615	654

(a) Societies which provide the customary benefits, namely, sick pay, funeral, medicinal, medical, and hospital benefits.

(b) A member may contribute for any number or all of these benefits and is entered in the table in each benefit for which he contributes.

VICTORIA—FRIENDLY SOCIETIES: RECEIPTS AND EXPENDITURE  
(\$'000)

Particulars	1966-67	1967-68	1968-69	1969-70
<b>RECEIPTS</b>				
Ordinary societies (a)—				
Sick, funeral, and non-contributory endowment funds	1,324	1,416	1,405	1,440
Whole of life, endowment, and other assurance funds	837	1,256	1,859	2,212
Medical services funds	7,477	7,786	8,253	9,152
Hospital benefit funds	7,018	8,207	9,427	10,728
Medicine, management, and other funds	1,351	1,324	1,531	1,866
Dividing and other societies	570	614	695	779
Less inter-fund transfers	206	254	238	287
Total receipts	18,371	20,349	22,932	25,890
<b>EXPENDITURE</b>				
Ordinary societies (a)—				
Sick, funeral, and non-contributory endowment funds	879	816	899	955
Whole of life, endowment, and other assurance funds	222	373	601	813
Medical services funds	6,814	7,141	7,664	8,584
Hospital benefit funds	6,080	7,259	8,480	9,685
Medicine, management, and other funds	1,119	1,310	1,256	1,429
Dividing and other societies	450	474	570	725
Less inter-fund transfers	206	254	238	287
Total expenditure	15,358	17,119	19,232	21,904
Excess of receipts over expenditure	3,013	3,230	3,700	3,986

(a) Societies which provide the customary benefits, namely, sick pay, funeral, medicinal, medical, and hospital benefits.

VICTORIA—FRIENDLY SOCIETIES: AMOUNTS DISBURSED IN BENEFITS  
(\$'000)

Nature of benefit	1966-67	1967-68	1968-69	1969-70
Sick pay	549	544	570	590
Funeral benefits	247	248	266	248
Non-contributory endowment benefits	84	93	83	109
Whole of life, endowment, and other assurance benefits (a)	153	238	394	641
Medical services—				
Society benefit	3,127	3,355	3,658	4,178
Government subsidy	2,909	3,041	3,229	3,537
Hospital benefits—				
Society benefit	4,207	5,249	6,259	7,270
Government subsidy	1,064	1,070	1,126	1,192
Medicine	242	215	229	246

(a) During the period since 1966-67 several new types of assurance benefit have been developed.

**Co-operative societies**

(1972 : pages 554-5)

VICTORIA—REGISTERED CO-OPERATIVE SOCIETIES AT 30 JUNE (a)

Type	1967	1968	1969	1970	1971
Producer	68	69	70	70	65
Trading	51	54	57	59	60
Community settlement	6	6	6	6	7
Community advancement	370	423	498	573	650
Credit	152	156	164	182	190
Associations	1	1	2	2	2
<b>Total</b>	<b>648</b>	<b>709</b>	<b>797</b>	<b>892</b>	<b>974</b>

(a) Further information regarding co-operative organisations is given on pages 1024-5 of this *Year Book*.

VICTORIA—SUMMARY OF OPERATIONS OF SOCIETIES WHICH  
SUBMITTED RETURNS (a), 1970-71

Type	Number of societies	Number of members	Liabilities		Assets
			Members' funds	External	
			\$'000	\$'000	\$'000
Producer	62	48,910	2,882	5,125	8,007
Trading	47	32,453	2,757	2,392	5,149
Community settlement	3	238	42	127	168
Community advancement	585	43,893	1,633	5,030	6,663
Credit	179	55,040	611	21,088	21,699
Associations	2	151	—19	644	626
<b>Total</b>	<b>878</b>	<b>180,685</b>	<b>7,906</b>	<b>34,406</b>	<b>42,312</b>

(a) Further information regarding co-operative organisations is given on pages 1024-5 of this *Year Book*.

## JUSTICE AND THE ADMINISTRATION OF LAW

(1972 : pages 557-84)

## Law in Victoria

(1972 : pages 557-9)

VICTORIA—PUBLIC SOLICITOR'S  
OFFICE : CRIMINAL CASES  
DEALT WITH

Year	Number of criminal cases dealt with
1967	590
1968	612
1969	647
1970	772
1971	813

NOTE. Until 1 June 1970 the office of the Public Solicitor assisted persons in civil and matrimonial matters under the Poor Persons Legal Assistance Act. However, since repeal of this Act by the *Legal Aid Act* 1969, legal assistance is now only provided by the State of Victoria through the Public Solicitor in prescribed criminal matters.

## VICTORIA—LEGAL AID COMMITTEE BUSINESS, 1971

Type of case	Number of applications	Number actually assisted
Divorce	2,822	2,087
Maintenance	2,762	1,746
Custody and affiliation	538	415
Motor accident damages claims	609	422
Criminal (Magistrates' Courts and County Court appeals)	855	643
Civil causes	1,968	845
Workers compensation	234	158
Probate and testators family maintenance	120	72
Others	1,786	206
Total	11,694	6,594

NOTE. Since 1 June 1970 the Legal Aid Committee has provided legal assistance for poor people in civil and matrimonial matters and also has universal jurisdiction to assist in any other kind of legal proceeding which cannot be undertaken by the Public Solicitor. (See also note to preceding table.)

**Courts in Victoria**  
(1972 : pages 565-70)

**VICTORIA—SUPREME COURT CIVIL BUSINESS**

Particulars	1967	1968	1969	1970	1971
Number of places at which sittings were held	11	11	11	11	11
Causes entered—					
For assessment of damages	30	28	10	12	19
For trial	1,822	1,702	1,496	2,015	2,312
Number of cases listed for trial—					
By juries of six	951	1,292	1,224	1,246	1,219
By a judge	598	517	532	527	627
Verdicts returned for—					
Plaintiff	122	76	115	186	160
Defendant	9	1	15	21	22
Amount awarded	\$'000 723	892	1,108	1,495	1,161
Writs of summons issued	4,020	4,640	5,028	5,847	6,223
Other original proceedings	133	165	166	154	193
Appellate proceedings (other than criminal appeals) heard and determined—					
By Full Court	61	62	61	58	53
By a judge	86	85	142	93	135

NOTE. Changes in the civil jurisdiction of the courts and in the number of cases being settled out of court have resulted in fluctuations in court business.

**VICTORIA—WRITS RECEIVED BY THE SHERIFF**

Year	Sovereign's writs against person and property	Subjects' writs against—		Total
		The person	Property	
1967	3	9	786	798
1968	9	11	847	867
1969	10	7	827	844
1970	4	8	913	925
1971	1	6	1,117	1,124

## VICTORIA—MAGISTRATES' COURTS: CASES OF A CIVIL NATURE

Particulars	1967	1968	1969	1970	1971
Civil cases—					
Number heard	204,336	208,682	200,801	211,893	213,640
Debts or damages—					
Claimed	\$'000 20,340	20,800	21,025	23,663	28,593
Awarded	\$'000 17,050	16,927	17,246	18,361	22,361
Other cases—					
Eviction (a)	3,233	3,250	3,349	3,130	3,472
Fraud summonses	10,079	10,978	11,270	9,737	9,480
Garnishee	20,851	20,272	19,680	17,264	15,382
Maintenance	6,001	6,732	7,264	8,166	10,014
Show cause summonses	31,162	37,596	37,440	36,149	38,847
Applications under Landlord and Tenant Acts	47	22	84	4	5
Miscellaneous	61,154	66,979	61,925	55,776	55,220
Licences and certificates issued	24,252	26,910	26,564	27,830	27,453

NOTE. See footnote to table on page 967 concerning fluctuations in court business.  
(a) Figures shown represent cases listed before Courts.

## VICTORIA—BANKRUPTCIES

Year	Bankruptcies	Orders for administration of deceased debtors' estates	Arrangements with creditors without sequestrations	Total
NUMBER				
1966-67	494	2	63	559
1967-68	520	4	59	583
1968-69	518	2	82	602
1969-70	489	5	111	605
1970-71	506	6	121	633
LIABILITIES (\$'000)				
1966-67	7,079	26	2,051	9,157
1967-68	4,567	43	1,857	6,468
1968-69	3,618	26	1,786	5,430
1969-70	5,011	20	2,052	7,083
1970-71	3,758	25	2,922	6,705
ASSETS (\$'000)				
1966-67	2,702	11	1,172	3,885
1967-68	1,318	21	1,173	2,512
1968-69	1,685	18	1,023	2,726
1969-70	1,425	6	1,823	3,254
1970-71	989	42	2,129	3,160

**Children's Court**  
(1972 : pages 570-4)

VICTORIA—CHILDREN'S COURTS : CASES SUMMARILY DISPOSED OF :  
NUMBER OF CHARGES AND NATURE OF OFFENCE

Nature of offence	1969			1970		
	Males	Females	Total	Males	Females	Total
Against the person	569	13	582	645	17	662
Against property	8,929	411	9,340	10,361	712	11,073
Fraud, forgery, and false pretences	117	19	136	140	21	161
Against good order	710	28	738	861	18	879
Driving offences	656	3	659	858	5	863
Miscellaneous offences (a)	183	19	202	221	32	253
<b>Total</b>	<b>11,164</b>	<b>493</b>	<b>11,657</b>	<b>13,086</b>	<b>805</b>	<b>13,891</b>

(a) Breaches of Acts of Parliament and by-laws of statutory bodies, escaping from legal custody, breach of bond or probation, etc.

VICTORIA—CHILDREN'S COURTS : CASES SUMMARILY DISPOSED OF :  
NUMBER OF CHARGES AND RESULT OF HEARING

Result of hearing	1969			1970		
	Males	Females	Total	Males	Females	Total
Fined	742	14	756	748	22	770
Placed on probation	4,187	232	4,419	4,848	319	5,167
Admitted to Social Welfare Department	1,686	53	1,739	1,687	65	1,752
Sentenced to youth training centre	1,341	21	1,362	1,464	16	1,480
Adjourned without probation	2,429	143	2,572	3,077	349	3,426
Other	123	2	125	341	8	349
<b>Total convictions</b>	<b>10,508</b>	<b>465</b>	<b>10,973</b>	<b>12,165</b>	<b>779</b>	<b>12,944</b>
Dismissed, withdrawn, or struck out	656	28	684	921	26	947
<b>Total</b>	<b>11,164</b>	<b>493</b>	<b>11,657</b>	<b>13,086</b>	<b>805</b>	<b>13,891</b>

**VICTORIA—CHILDREN'S COURTS: CASES SUMMARILY DISPOSED OF:  
NUMBER OF CHARGES: NATURE OF OFFENCE AND RESULT OF  
HEARING, 1970**

Nature of offence	Result of hearing					
	Dis- missed, with- drawn, etc.	Otherwise dealt with				
		Fined	Placed on probation	Social Welfare Depart- ment (a)	Ad- jour- ned without probation	Other
<b>Against the person—</b>						
Assault and grievous bodily harm	137	66	68	42	77	12
Sex offences	36	1	109	58	52	4
<b>Total</b>	<b>173</b>	<b>67</b>	<b>177</b>	<b>100</b>	<b>129</b>	<b>16</b>
<b>Against property—</b>						
Robbery	12	5	23	24	9	1
Breaking and entering	100	20	1,799	1,136	752	90
Larceny (excluding motor vehicles)	216	117	1,454	777	1,301	68
Motor vehicles (larceny and illegal use)	140	90	930	691	487	71
Wilful damage	64	46	106	52	152	13
Other offences against property	25	15	116	57	110	4
<b>Total</b>	<b>557</b>	<b>293</b>	<b>4,428</b>	<b>2,737</b>	<b>2,811</b>	<b>247</b>
<b>Fraud, forgery, and false pretences</b>	<b>9</b>	<b>10</b>	<b>66</b>	<b>43</b>	<b>31</b>	<b>2</b>
<b>Against good order—</b>						
Indecent behaviour, etc.	7	6	65	7	25	3
Other offensive behaviour	20	65	20	13	53	6
Obscene and insulting language	17	43	5	3	29	3
Firearms	14	25	32	5	81	4
Other offences against good order	59	40	82	45	93	9
<b>Total</b>	<b>117</b>	<b>179</b>	<b>204</b>	<b>73</b>	<b>281</b>	<b>25</b>
<b>Driving offences</b>	<b>67</b>	<b>189</b>	<b>262</b>	<b>146</b>	<b>144</b>	<b>55</b>
<b>Miscellaneous offences (b)</b>	<b>24</b>	<b>32</b>	<b>30</b>	<b>133</b>	<b>30</b>	<b>4</b>
<b>GRAND TOTAL</b>	<b>947</b>	<b>770</b>	<b>5,167</b>	<b>3,232</b>	<b>3,426</b>	<b>349</b>

(a) Includes "admitted to care" and "placed in custody" of the Social Welfare Department.

(b) Breaches of Acts of Parliament and by-laws of statutory bodies, escaping from legal custody, breach of bond or probation, etc.



## VICTORIA—POLICE WARNINGS

Offence group (a)	1967		1968		1969		1970	
	Males	Females	Males	Females	Males	Females	Males	Females
Assault (b)	12	..	8	..	14	..	20	1
Robbery with violence	..	..	..	..	..	..	1	..
Sex	46	1	24	1	41	1	45	3
Breaking and larceny (c)	896	254	945	299	1,113	359	1,271	536
Other offences	224	18	226	12	284	20	285	20
Total	1,178	273	1,203	312	1,452	380	1,622	560

NOTE. A system for warning juvenile first offenders operates in Victoria to prevent many children from having to make an appearance in a juvenile court.

(a) Based on Major Crime Index as prepared by the Victoria Police.

(b) Includes grievous bodily harm.

(c) Includes larceny and/or illegal use of a motor vehicle.

## VICTORIA—POLICE WARNINGS: AGE OF OFFENDER, 1970

Offence group (a) and sex	Age last birthday (years)					Total	
	10 and under	11, 12	13, 14	15, 16	17 and over		
Assault (b)	M ..	3	4	11	2	20	
	F ..	..	1	..	..	1	
Robbery with violence	M 1	..	..	..	..	1	
	F ..	..	..	..	..	..	
Sex	M ..	1	2	15	21	6	
	F ..	..	..	3	..	3	
Breaking and larceny (c)	M 159	247	461	341	63	1,271	
	F 18	73	199	213	33	536	
Other offences	M 35	40	82	101	27	285	
	F 1	2	6	8	3	20	
Total		215	367	768	698	134	2,182

(a) Based on Major Crime Index as prepared by the Victoria Police.

(b) Includes grievous bodily harm.

(c) Includes larceny and/or illegal use of a motor vehicle.

**Crime statistics**  
(1972 : pages 574-80)

**VICTORIA—MAGISTRATES' COURTS : ARREST CASES SUMMARILY  
DISPOSED OF : NUMBER OF CHARGES AND NATURE OF OFFENCE**

Nature of offence	1969				1970			
	Convicted		Dismissed, withdrawn, or struck out		Convicted		Dismissed, withdrawn, or struck out	
	Males	Females	Males	Females	Males	Females	Males	Females
Against the person	2,428	80	1,163	24	2,541	69	1,312	39
Against property	10,195	1,211	1,155	126	11,259	1,413	1,253	119
Fraud, forgery, and false pretences	1,215	219	121	16	1,219	431	87	42
Against good order (a)	5,651	541	1,374	114	5,785	578	1,382	114
Driving offences	4,976	40	2,861	28	6,126	84	3,222	49
Miscellaneous (b)	1,352	93	178	15	1,514	115	222	30
<b>Total</b>	<b>25,817</b>	<b>2,184</b>	<b>6,852</b>	<b>323</b>	<b>28,444</b>	<b>2,690</b>	<b>7,478</b>	<b>393</b>

(a) This table excludes arrests for drunkenness. In 1969, 25,841 persons were charged with drunkenness ; the corresponding figure for 1970 was 25,307. In most cases the result of hearing was a fine, with the alternative of imprisonment for default.

(b) Includes escaping from legal custody, offences concerning drugs, bribery, conspiracy, breach of bond or probation, etc.

**VICTORIA—MAGISTRATES' COURTS: ARREST CASES SUMMARILY  
CONVICTED : NUMBER OF CHARGES AND RESULT OF HEARING**

Result of hearing	1969		1970	
	Males	Females	Males	Females
Fined	11,987	975	13,565	1,200
Imprisoned for—				
Under 1 month	1,399	104	1,704	106
1 month and under 6 months	4,417	141	4,445	254
6 months and under 12 months	943	22	891	11
1 year and over	320	2	272	142
Released on probation	1,847	273	2,201	252
Adjourned for a period without probation	1,288	181	1,040	122
Released on bond or recognisance	2,667	459	3,223	546
Other	949	27	1,103	57
<b>Total</b>	<b>25,817</b>	<b>2,184</b>	<b>28,444</b>	<b>2,690</b>

See footnotes to preceding table.

**VICTORIA—MAGISTRATES' COURTS :  
SUMMONS CASES SUMMARILY DISPOSED OF :  
NUMBER OF CHARGES AND NATURE OF OFFENCE**

Nature of offence	1970		1971	
	Convicted	Dismissed, with- drawn, struck out	Convicted	Dismissed, with- drawn, struck out
Against the person	1,018	1,068	1,046	1,344
Against property	3,296	1,338	3,163	1,432
Against good order	1,508	462	1,356	568
Driving offences	173,597	18,017	162,366	17,553
Miscellaneous (a)	46,003	8,063	50,914	10,601
<b>Total</b>	<b>225,422</b>	<b>28,948</b>	<b>218,845</b>	<b>31,498</b>

(a) Miscellaneous offences are generally breaches of State and Commonwealth Acts of Parliament.

NOTE. Details of the sex of offenders are not available for Magistrates' Courts summons cases.

**VICTORIA—INQUEST CASES**

Year	Inquests into deaths of—			Persons committed for trial		
	Males	Females	Persons	Males	Females	Persons
1966	1,510	833	2,343	44	3	47
1967	1,775	906	2,681	47	2	49
1968	1,635	766	2,401	31	5	36
1969	1,667	823	2,490	47	3	50
1970	1,805	832	2,637	45	5	50

**VICTORIA—COMMITTALS BY CORONERS**

Year	Murder			Manslaughter			Culpable driving		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
1967	30	2	32	17	..	17	}	(a)	(a)
1968	22	4	26	9	1	10			
1969	17	2	19	30	1	31			
1970	28	5	33	17	..	17			
1971	27	4	31	9	..	9			

(a) Not available separately prior to 1971.

**VICTORIA—HIGHER COURTS: NUMBER OF PERSONS CONVICTED OF  
SPECIFIC OFFENCES**

Offence (a)	1969			1970		
	Males	Females	Persons	Males	Females	Persons
<b>Against the person—</b>						
Murder	6	..	6	12	2	14
Attempted murder	..	..	..	6	..	6
Manslaughter	13	2	15	14	..	14
Manslaughter with motor vehicle	10	1	11	3	..	3
Culpable driving causing death	1	..	1	10	..	10
Assault with grievous bodily harm	45	5	50	49	3	52
Assault	26	..	26	43	..	43
Carnal knowledge (under 16 years)	142	..	142	192	..	192
Carnal knowledge (16 and under 18 years)	13	..	13	5	..	5
Incest	15	..	15	16	..	16
Rape	23	..	23	27	..	27
Indecent assault on female	34	..	34	47	..	47
Indecent assault on male	31	..	31	29	..	29
Unnatural offences	49	..	49	19	..	19
Bigamy	3	1	4	4	..	4
Other offences against the person	20	5	25	15	3	18
<b>Total</b>	<b>431</b>	<b>14</b>	<b>445</b>	<b>491</b>	<b>8</b>	<b>499</b>
<b>Against property—</b>						
Robbery	112	4	116	137	8	145
Breaking and entering—						
Houses	214	9	223	249	13	262
Shops	85	2	87	71	..	71
Other	51	..	51	51	1	52
Larceny (excluding motor vehicles and cattle and sheep)	150	6	156	121	13	134
Illegal use and larceny of motor vehicles	77	..	77	92	1	93
Cattle and sheep stealing	23	..	23	24	..	24
Other offences against property	62	2	64	56	2	58
<b>Total</b>	<b>774</b>	<b>23</b>	<b>797</b>	<b>801</b>	<b>38</b>	<b>839</b>
<b>Fraud, forgery, and false pretences</b>	<b>135</b>	<b>22</b>	<b>157</b>	<b>136</b>	<b>20</b>	<b>156</b>
<b>Other offences—</b>						
Driving under the influence (b)	3	..	3	1	..	1
Dangerous, etc., driving (b)	6	..	6	..	..	..
Miscellaneous offences (c)	269	12	281	244	13	257
<b>Total</b>	<b>278</b>	<b>12</b>	<b>290</b>	<b>245</b>	<b>13</b>	<b>258</b>
<b>GRAND TOTAL</b>	<b>1,618</b>	<b>71</b>	<b>1,689</b>	<b>1,673</b>	<b>79</b>	<b>1,752</b>

(a) With the exception of murder, for which separate figures of attempted murder are shown, all offences include attempts.

(b) In March 1968 an amendment to the Motor Car Act classified some of these offences as summary offences which may be heard in Magistrates' Courts.

(c) Includes breach of bond, probation, etc.

VICTORIA—HIGHER COURTS : PERSONS CONVICTED OF SPECIFIC  
OFFENCES : RESULT OF HEARING, 1970

Offence (a)	Fined	Im- prison- ed twelve months and under	Im- prison- ed over twelve months	Death sen- tence (b)	Sen- tence sus- pended on enter- ing a bond	Placed on pro- bation	Other	Total
<b>Against the person—</b>								
Murder	..	..	1	5	..	..	8	14
Attempted murder	..	..	4	..	1	..	1	6
Manslaughter	..	..	13	..	..	..	1	14
Manslaughter with motor vehicle	..	2	..	..	1	..	..	3
Culpable driving causing death	2	..	6	..	2	..	..	10
Assault with grievous bodily harm	3	7	24	..	7	8	3	52
Assault	8	5	6	..	8	12	4	43
Carnal knowledge (under 16 years)	..	29	8	..	72	70	13	192
Carnal knowledge (16 and under 18 years)	..	1	1	..	3	..	..	5
Incest	..	..	11	..	3	1	1	16
Rape	..	2	15	..	1	3	6	27
Indecent assault on female	1	8	15	..	14	4	5	47
Indecent assault on male	1	5	7	..	10	4	2	29
Unnatural offences	..	3	8	..	4	3	1	19
Bigamy	..	..	1	..	3	..	..	4
Other offences against the person	..	4	6	..	3	4	1	18
Total	15	66	126	5	132	109	46	499
<b>Against property—</b>								
Robbery	..	13	66	..	20	25	21	145
<b>Breaking and entering—</b>								
Houses	..	66	33	..	38	80	45	262
Shops	..	19	23	..	13	9	7	71
Other	..	13	14	..	11	8	6	52
Larceny (excluding motor vehicles and cattle and sheep)	..	29	18	..	51	28	8	134
Illegal use and larceny of motor vehicles	4	32	15	..	12	17	13	93
Cattle and sheep stealing	..	5	1	..	15	3	..	24
Other offences against property	1	12	12	..	18	11	4	58
Total	5	189	182	..	178	181	104	839
Fraud, forgery, and false pretences	4	45	13	..	64	28	2	156
<b>Other offences—</b>								
Driving under the influence	..	..	..	..	..	..	1	1
Miscellaneous offences (c)	17	102	37	..	49	31	21	257
Total	17	102	37	..	49	31	22	258
<b>GRAND TOTAL</b>	41	402	358	5	423	349	174	1,752

(a) With the exception of murder, for which separate figures of attempted murder are shown, all offences include attempts.

(b) The death sentence has not been carried out in Victoria since 1967.

(c) Includes breach of bond, probation, etc.

VICTORIA—HIGHER COURTS : AGES OF PERSONS  
CONVICTED OF SPECIFIC OFFENCES, 1970

Offence (a)	Persons convicted—Age group (years)							Total
	17 and under	18-19	20-24	25-29	30-34	35-39	40 and over	
Against the person—								
Murder	2	..	2	2	4	..	4	14
Attempted murder	..	..	1	1	2	1	1	6
Manslaughter	2	..	5	..	..	..	7	14
Manslaughter with motor vehicle	..	1	2	..	..	..	..	3
Culpable driving causing death	1	1	4	..	2	..	2	10
Assault with grievous bodily harm	3	4	18	10	5	2	10	52
Assault	..	16	16	4	2	1	4	43
Carnal knowledge (under 16 years)	6	83	79	12	5	4	3	192
Carnal knowledge (16 and under 18 years)	..	..	2	1	..	1	1	5
Incest	..	..	1	..	1	1	13	16
Rape	..	10	7	5	3	..	2	27
Indecent assault on female	1	3	17	8	2	6	10	47
Indecent assault on male	..	1	6	5	2	8	7	29
Unnatural offences	1	3	2	4	2	2	5	19
Bigamy	..	..	..	..	1	2	1	4
Other offences against the person	..	4	3	4	2	1	4	18
Total	16	126	165	56	33	29	74	499
Against property—								
Robbery	8	39	63	13	6	5	11	145
Breaking and entering—								
Houses	25	91	76	19	19	8	24	262
Shops	..	13	29	10	9	3	7	71
Other	2	11	13	13	8	2	3	52
Larceny (excluding motor vehicles and cattle and sheep)	3	16	41	19	17	19	19	134
Illegal use and larceny of motor vehicles	1	28	40	14	6	2	2	93
Cattle and sheep stealing	2	2	6	6	..	3	5	24
Other offences against property	1	8	13	11	6	3	16	58
Total	42	208	281	105	71	45	87	839
Fraud, forgery, and false pretences	1	14	28	28	21	23	41	156
Other offences—								
Driving under the influence	..	1	..	..	..	..	..	1
Miscellaneous offences (b)	3	42	103	29	22	27	31	257
Total	3	43	103	29	22	27	31	258
GRAND TOTAL	62	391	577	218	147	124	233	1,752

(a) With the exception of murder, for which separate figures of attempted murder are shown, all offences include attempts.

(b) Includes breach of bond, probation, etc.

VICTORIA—HIGHER COURTS :  
AGES OF PERSONS CONVICTED

Age group (years)	1969			1970		
	Males	Females	Persons	Males	Females	Persons
Under 20	369	11	380	433	20	453
20-24	541	19	560	559	18	577
25-29	216	15	231	210	8	218
30-34	157	8	165	140	7	147
35-39	111	3	114	110	14	124
40-44	92	6	98	77	5	82
45-49	68	5	73	63	1	64
50-54	21	2	23	41	5	46
55-59	23	1	24	26	1	27
60 and over	20	1	21	14	..	14
Total	1,618	71	1,689	1,673	79	1,752

NOTE. Details in the above and following tables relate to distinct persons who have been convicted in the Supreme and County Courts in Victoria in the years shown. Persons charged with more than one offence are counted once only.

VICTORIA—HIGHER COURTS : NUMBER OF PERSONS CONVICTED :  
RESULT OF HEARING

Result of hearing	1969			1970		
	Males	Females	Persons	Males	Females	Persons
Fined	50	1	51	40	1	41
Imprisoned—						
Under 3 months	47	3	50	52	..	52
3 months and under 6	74	4	78	101	4	105
6 months and under 12	141	7	148	134	3	137
12 months	119	1	120	107	1	108
Over 12 months and under						
2 years	76	2	78	98	..	98
2 years and over	276	8	284	253	7	260
Death sentence (a)	4	..	4	5	..	5
Placed on probation	278	19	297	319	30	349
Released on recognisance or bond	441	26	467	394	29	423
Other	112	..	112	170	4	174
Total	1,618	71	1,689	1,673	79	1,752

(a) The death sentence has not been carried out in Victoria since 1967.

**Licensing legislation**  
(1972 : pages 580-1)

**VICTORIA—LICENSING FUND: REVENUE AND EXPENDITURE**  
(\$'000)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
<b>REVENUE</b>					
Licences, certificates, and permits	8,960	9,710	10,595	11,335	11,789
Interest on investments	20	20	20	20	18
Fees and fines	66	77	67	66	63
<b>Total</b>	<b>9,046</b>	<b>9,807</b>	<b>10,682</b>	<b>11,421</b>	<b>11,870</b>
<b>EXPENDITURE</b>					
Annual payments to municipalities	111	111	(a)	(a)	(a)
Compensation	3	12	19	336	448
Transfer to Police Superannuation Fund	46	46	(a)	(a)	(a)
Salaries, office expenses, etc.	322	363	388	426	489
Transfer to revenue	8,563	9,276	10,275	10,658	10,933
<b>Total</b>	<b>9,046</b>	<b>9,807</b>	<b>10,682</b>	<b>11,421</b>	<b>11,870</b>

(a) Under the Liquor Control Act, which came into force on 1 July 1968, annual payments to municipalities and to the Police Superannuation Fund are no longer made from the Licensing Fund.

**VICTORIA—NUMBER OF LIQUOR LICENCES AT 30 JUNE**

Type of licence	1967	1968	1969	1970	1971
Hotel	1,539	1,541	1,517	1,494	1,464
Registered club	301	309	325	347	367
Retailed bottled liquor	531	552	587	626	655
Wholesale liquor merchant	65	67	71	93	97
Australian wine	25	18	20	19	18
Canteen (a)	17	15	15	1	1
Vigneron	9	9	9	12	15
Brewer	7	7	7	6	6
Restaurant	94	105	136	157	181
Cabaret	..	2	7	9	10
Ship	..	..	1	1	1
Theatre	..	..	..	1	1
<b>Total</b>	<b>2,588</b>	<b>2,625</b>	<b>2,695</b>	<b>2,766</b>	<b>2,816</b>

(a) Prior to 1970, these were known as Railway refreshment rooms.



**Racing legislation**  
(1972 : page 582)

**VICTORIA—RACING AND TROTTING MEETINGS**

Particulars	Year ended 31 July—				
	1967	1968	1969	1970	1971
<b>RACING</b>					
Number of meetings—					
Metropolitan courses	65	66	70	70	68
Other courses	358	356	361	368	374
Number of events—					
Metropolitan courses	490	507	533	533	556
Other courses	2,443	2,481	2,499	2,660	2,666
Amount of stakes—					
Metropolitan courses	(\$'000) 1,957	2,023	2,226	2,524	2,840
Other courses	(\$'000) 1,158	1,228	1,257	1,457	1,617
<b>TROTTING</b>					
Number of meetings—					
Metropolitan courses	37	37	36	37	43
Other courses	188	187	200	201	199
Number of events—					
Metropolitan courses	272	259	252	259	323
Other courses	1,419	1,423	1,568	1,632	1,658
Amount of stakes—					
Metropolitan courses	(\$'000) 482	468	461	596	728
Other courses	(\$'000) 463	516	562	641	797

**Victoria Police**  
(1972 : pages 582–4)

**VICTORIA—POLICE FORCE AT 30 JUNE**

Particulars	1967	1968	1969	1970	1971
Authorised strength	4,620	4,731	4,781	4,823	5,073
Actual strength (a)	4,577	4,687	4,743	4,739	4,945
C.I.B., etc. (b)	649	657	666	653	686
Police-women	61	64	70	71	109
Cadets	134	138	176	184	204
Reservists	106	84	61	59	51
Number of inhabitants per active police officer (a)	699	698	714	718	707

(a) Includes police-women, but excludes cadets and police reservists.

(b) Criminal Investigation Bureau, plainclothes police, and scientific section.

HOUSING AND BUILDING  
(1972 : pages 584-607)

**Building statistics**  
(1972 : pages 590-6)

VICTORIA—VALUE OF PRIVATE AND GOVERNMENT  
BUILDING APPROVED  
(\$'000)

Year	Houses and flats	Other new buildings	Alterations and additions to buildings (a)	Total all buildings
1967-68	309,080	207,259	41,469	557,808
1968-69	339,110	221,561	44,913	605,584
1969-70	364,916	319,218	47,788	731,922
1970-71	336,044	289,864	51,987	677,895
1971-72	410,880	352,956	61,273	825,109

(a) Valued at less than \$10,000.

VICTORIA—VALUE (WHEN COMPLETED) OF TOTAL NEW BUILDINGS  
COMMENCED : CLASSIFIED BY TYPE  
(\$'000)

Type of building	1967-68	1968-69	1969-70	1970-71	1971-72
Houses	212,545	241,646	263,536	280,745	337,324
Flats	90,644	96,935	92,886	70,752	76,128
Shops	13,627	24,329	19,540	22,430	19,294
Hotels, guest houses, etc.	8,285	20,708	21,556	18,280	19,550
Factories	54,654	54,419	65,830	74,195	55,952
Offices	28,984	34,699	87,279	79,878	106,824
Other business premises	31,858	21,855	26,265	30,487	19,924
Educational	35,419	44,905	46,671	54,615	46,389
Religious	2,484	2,916	3,929	2,804	4,152
Health	9,538	14,660	29,210	13,923	16,104
Entertainment and recreation	7,501	7,205	8,453	8,806	10,515
Miscellaneous	9,325	11,728	9,434	15,121	21,265
<b>Total</b>	<b>504,864</b>	<b>576,005</b>	<b>674,588</b>	<b>672,037</b>	<b>733,418</b>

VICTORIA—VALUE OF TOTAL NEW BUILDINGS COMPLETED:  
CLASSIFIED BY TYPE  
(\$'000)

Type of building	1967-68	1968-69	1969-70	1970-71	1971-72
Houses	208,097	230,420	261,899	278,109	306,315
Flats	80,541	90,085	101,953	85,717	75,421
Shops	16,701	21,284	23,808	17,956	16,710
Hotels, guest houses, etc.	7,965	6,490	16,283	22,762	20,197
Factories	55,096	56,137	67,104	69,174	73,415
Offices	48,716	53,390	35,638	62,714	57,770
Other business premises	13,493	21,370	33,186	34,985	26,577
Educational	37,140	42,029	39,781	43,591	52,262
Religious	3,518	3,188	3,108	3,695	3,265
Health	10,751	10,352	21,367	29,080	25,428
Entertainment and recreation	4,778	9,714	9,807	10,120	7,877
Miscellaneous	10,574	33,667	15,176	10,061	12,145
<b>Total</b>	<b>497,370</b>	<b>578,126</b>	<b>629,109</b>	<b>667,966</b>	<b>677,381</b>

VICTORIA—VALUE OF WORK DONE ON NEW BUILDINGS:  
CLASSIFIED BY TYPE  
(\$'000)

Type of building	1967-68	1968-69	1969-70	1970-71	1971-72
Houses	211,611	233,502	265,058	281,327	319,217
Flats	81,592	99,709	99,721	79,254	74,066
Shops	18,764	18,917	22,536	17,829	20,278
Hotels, guest houses, etc.	7,869	10,137	21,493	21,055	17,252
Factories	59,446	55,157	66,137	70,758	68,713
Offices	41,849	48,879	45,903	72,527	91,073
Other business premises	21,108	30,879	34,402	33,099	24,941
Educational	40,202	42,040	43,172	50,814	50,047
Religious	3,072	3,119	3,347	3,193	3,145
Health	15,844	15,437	21,331	26,431	18,372
Entertainment and recreation	7,420	8,484	9,325	9,313	8,561
Miscellaneous	16,973	14,115	12,775	11,874	17,706
<b>Total</b>	<b>525,750</b>	<b>580,375</b>	<b>645,200</b>	<b>677,474</b>	<b>713,369</b>

NOTE. The above table includes partly estimated values for owner-built constructions where actual value of work done during the period was not available.

VICTORIA—NUMBER OF NEW HOUSES AND FLATS:  
GEOGRAPHICAL DISTRIBUTION

Year	Commenced		Completed		Under construction (i.e., unfinished) at end of period	
	Houses	Flats	Houses	Flats	Houses	Flats
MELBOURNE STATISTICAL DIVISION						
1967-68	16,003	13,587	15,545	11,798	6,925	8,416
1968-69	17,829	13,121	17,085	12,885	7,511	8,567
1969-70	18,771	12,457	18,772	12,971	7,407	7,826
1970-71	19,095	9,201	19,290	11,105	7,125	5,705
1971-72	21,703	8,927	20,070	8,840	8,493	5,596
REMAINDER OF THE STATE						
1967-68	5,905	812	6,047	888	3,788	498
1968-69	5,752	996	5,646	890	3,779	591
1969-70	5,804	1,048	5,930	1,021	3,553	573
1970-71	5,676	1,111	5,889	982	3,243	693
1971-72	5,897	1,408	5,557	1,251	3,467	804
STATE TOTAL						
1967-68	21,908	14,399	21,592	12,686	10,713	8,914
1968-69	23,581	14,117	22,731	13,775	11,290	9,158
1969-70	24,575	13,505	24,702	13,992	10,960	8,399
1970-71	24,771	10,312	25,179	12,087	10,368	6,398
1971-72	27,600	10,335	25,627	10,091	11,960	6,400

VICTORIA—NUMBER OF NEW HOUSES AND FLATS:  
CLASSIFIED BY OWNERSHIP

Year	New houses and flats erected for—				Total houses and flats
	Government ownership (a)	Private ownership (a)			
		By contractors	By owner- builders	Total private	
COMMENCED					
1967-68	2,321	30,936	3,050	33,986	36,307
1968-69	2,549	31,903	3,246	35,149	37,698
1969-70	3,208	31,649	3,223	34,872	38,080
1970-71	2,762	29,088	3,233	32,321	35,083
1971-72	2,839	31,626	3,470	35,096	37,935
COMPLETED					
1967-68	2,367	28,967	2,944	31,911	34,278
1968-69	2,251	30,914	3,341	34,255	36,506
1969-70	2,975	32,005	3,714	35,719	38,694
1970-71	3,085	30,720	3,461	34,181	37,266
1971-72	2,845	29,734	3,139	32,873	35,718
UNDER CONSTRUCTION (i.e. UNFINISHED) AT END OF PERIOD					
1967-68	1,804	13,519	4,304	17,823	19,627
1968-69	2,102	14,292	4,054	18,346	20,448
1969-70	2,326	13,561	3,472	17,033	19,359
1970-71	2,008	11,629	3,129	14,758	16,766
1971-72	1,982	13,105	3,273	16,378	18,360

(a) See definition on page 591 of the *Victorian Year Book* 1972.

VICTORIA—NUMBER OF NEW HOUSES: CLASSIFIED BY  
MATERIAL OF OUTER WALLS

Year	Brick, concrete, and stone	Brick veneer	Wood	Asbestos- cement	Other	Total
COMMENCED						
1967-68	516	18,343	1,346	1,494	209	21,908
1968-69	538	20,266	1,085	1,566	126	23,581
1969-70	642	21,126	937	1,797	73	24,575
1970-71	778	21,451	775	1,708	59	24,771
1971-72	873	24,350	710	1,647	20	27,600
COMPLETED						
1967-68	444	17,934	1,522	1,433	259	21,592
1968-69	531	19,228	1,218	1,594	160	22,731
1969-70	641	21,055	1,133	1,796	77	24,702
1970-71	716	21,678	862	1,864	59	25,179
1971-72	706	22,515	738	1,649	19	25,627
UNDER CONSTRUCTION (i.e., UNFINISHED) AT END OF PERIOD						
1967-68	533	7,252	1,059	1,769	100	10,713
1968-69	519	8,108	894	1,699	70	11,290
1969-70	551	8,088	638	1,651	32	10,960
1970-71	579	7,812	491	1,457	29	10,368
1971-72	626	9,486	441	1,382	25	11,960

**Government housing activities**  
(1972 : pages 597-607)

VICTORIA—WAR SERVICE HOMES SCHEME: OPERATIONS

Year	Homes provided during year				Total homes provided from inception to end of year	Annual expen- diture	Instal- ments paid (a)	Loans repaid
	By erection	By purchase	By discharge of mortgage	Total				
1966-67	348	1,447	369	2,164	79,867	\$'000 14,401	\$'000 20,149	1,518
1967-68	197	1,046	321	1,564	81,431	10,511	20,298	1,532
1968-69	174	1,320	326	1,820	83,251	13,085	21,039	1,576
1969-70	206	1,249	362	1,817	85,068	13,675	22,175	1,735
1970-71	233	1,423	333	1,989	87,057	15,156	22,255	1,677

(a) Includes excess instalment payments.

## VICTORIA—HOME SAVINGS GRANT SCHEME : OPERATIONS

Year	Applications received	Applications approved	Grants approved	Average grant	Expenditure from National Welfare Fund
	number	number	\$'000	\$	\$'000
1966-67	9,902	8,929	3,928	440	3,891
1967-68	11,329	10,717	4,527	422	4,470
1968-69	11,685	9,948	4,233	426	4,379
1969-70	11,806	9,617	4,256	443	4,228
1970-71	13,911	12,751	5,746	451	5,496

## VICTORIA—HOME SAVINGS GRANT SCHEME : APPLICATIONS APPROVED, MANNER OF ACQUISITION, AND TOTAL VALUE OF HOMES

Manner of acquisition	1966-67	1967-68	1968-69	1969-70	1970-71
<b>Purchase of home (a)—</b>					
Number of applications approved	4,725	5,992	5,743	5,863	7,924
Total value of homes (\$'000)	48,411	62,550	63,983	67,542	97,362
<b>Purchase of flat/home unit—</b>					
Number of applications approved	35	60	59	47	91
Total value of homes (\$'000)	352	638	639	531	1,129
<b>Built under contract—</b>					
Number of applications approved	3,703	4,084	3,729	3,353	4,343
Total value of homes (\$'000)	41,827	47,956	46,102	42,735	59,869
<b>Owner-built—</b>					
Number of applications approved	466	581	417	354	393
Total value of homes (\$'000)(b)	4,917	6,509	4,717	4,338	5,110
<b>Total all homes—</b>					
Number of applications approved	8,929	10,717	9,948	9,617	12,751
Total value of homes (\$'000)	95,507	117,654	115,440	115,146	163,470

(a) Includes purchase of new and previously occupied houses.

(b) Usually based on the cost of the land and the assessed value of the dwelling.

## VICTORIA—HOME SAVINGS GRANT SCHEME : APPLICATIONS APPROVED, METHOD OF FINANCING, AND AVERAGE AMOUNT OF MORTGAGE FINANCE

Year	First mortgage loan only	First and second mortgage loans	Other (a)	Total mortgage loans	Average first mortgage loan (b)	Average second mortgage loan
	number	number	number	number	\$	\$
1966-67	6,942	1,320	667	8,929	7,030	1,507
1967-68	8,341	1,544	832	10,717	7,182	1,542
1968-69	8,109	1,260	579	9,948	7,894	1,646
1969-70	7,841	1,203	573	9,617	8,173	1,813
1970-71	10,134	1,813	804	12,751	8,551	2,063

(a) Homes financed either from the applicant's own resources or with personal or unsecured loans or purchased under a terms contract of sale.

(b) Includes homes financed with first mortgage only and with first and second mortgage loans.

VICTORIA—HOUSING COMMISSION : REVENUE, EXPENDITURE, ETC.  
(\$'000)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
REVENUE					
Rentals	14,241	15,044	15,861	16,657	19,044
Gross surplus—house sales	1,830	1,628	1,872	2,496	3,202
Interest—					
House sales (net)	1,806	1,826	1,831	1,852	1,817
Sundry	161	148	314	418	287
Miscellaneous	281	230	337	314	299
Total revenue	18,318	18,875	20,214	21,737	24,649
EXPENDITURE					
Interest—less amounts capitalised and applied to house sales	5,907	6,268	6,842	7,482	7,971
Loan redemption—					
Commonwealth—State Agreement Contribution to National Debt Sinking Fund	1,898	1,967	2,093	2,216	2,294
Redemption of debentures and Debenture Loan Sinking Fund contribution	3	3	3	17	21
Administration—					
General	8	8	8	8	8
House and land sales	1,153	1,222	1,298	1,318	1,382
Rates—less amount capitalised	657	720	766	839	1,022
Provision for accrued maintenance	2,255	2,407	2,556	2,668	3,000
Provision for irrecoverable rents	2,507	2,554	2,586	2,636	2,871
Communal services—flats and garden maintenance	13	27	27	57	32
House purchasers' Death Benefit Fund appropriation	239	272	377	695	958
Transfer to house sales Reserve Suspense Account	477	469	463	461	473
Maintenance and repairs on houses sold	1,190	527	573	1,358	1,845
Transfer to House Purchaser's Interest Receivable Reserve	100	121	243	213	240
Appropriation of house sales profits for slum reclamation works	1,000	993	956	951	805
Other	300	600	600	600	..
Other	398	382	402	457	592
Total expenditure	18,106	18,540	19,792	21,975	23,515
Operating surplus	213	336	422	—238	1,134
Fixed assets at 30 June	262,665	275,293	294,332	315,245	339,247
Loan indebtedness at 30 June (a)—					
Government advances	357,184	379,043	402,512	425,803	452,013
Debenture issues	600	600	600	600	400
Death Benefit Fund advances	1,914	2,846	3,449	3,959	4,522

(a) Excluding subsidies from State Loan Fund for slum reclamation.

## VICTORIA—HOUSING COMMISSION : DWELLING CONSTRUCTION

Geographical distribution (a)	Houses and flat units				
	1966-67	1967-68	1968-69	1969-70	1970-71
	COMPLETED				
Melbourne Statistical Division	1,685	1,349	1,228	1,815	1,936
Remainder of State	1,431	865	903	835	951
State total	3,116	2,214	2,131	2,650	2,887
	UNDER CONTRACT AT END OF PERIOD (INCLUDES CONTRACTS LET, WORK NOT STARTED)				
Melbourne Statistical Division	1,276	1,483	1,964	2,299	2,028
Remainder of State	603	612	695	851	638
State total	1,879	2,095	2,659	3,150	2,666

(a) Figures are according to boundaries as determined at 30 June 1966.

VICTORIA—OPERATIONS OF CO-OPERATIVE HOUSING SOCIETIES  
AT 30 JUNE

Particulars	Unit	1967	1968	1969	1970	1971
Societies registered	number	1,070	1,126	1,165	1,267	1,316
Members registered	number	54,012	54,340	53,563	53,028	54,624
Shares subscribed	number	2,783,681	2,883,262	2,886,738	2,897,916	3,074,689
Nominal share capital	\$m	278	289	288	289	307
Advances approved	number	45,594	46,165	46,273	46,445	47,637
"	\$m	250	265	274	281	292
Government guarantees executed	number	678	689	718	758	787
"	\$m	180	180	184	191	195
Indemnities given and subsisting	number	2,353	2,679	2,793	2,773	2,998
Indemnities subsisting	\$'000	1,074	1,297	1,407	1,410	1,600
Housing loan funds paid into Home Builders' Account	\$m	77	87	98	108	119
Dwelling houses completed to date (a) number		59,508	63,255	66,253	68,994	72,285
Dwelling houses in course of erection (a) number		2,355	2,142	1,496	1,279	1,133

(a) Includes residential flats.

VICTORIA—HOUSING FINANCE STATISTICS : PERMANENT FINANCE FOR  
NEW HOMES ONLY : PARTICULARS OF AMOUNTS PAID BY MAJOR  
INSTITUTIONS AS LOANS TO PERSONS BUYING OR BUILDING  
HOMES IN VICTORIA FOR THEIR PERSONAL USE  
(\$'000)

Institution	Payments during year—				
	1967-68	1968-69	1969-70	1970-71	1971-72
Savings banks and co-operative housing societies	89,737	100,234	104,074	112,801	120,214
Life insurance offices	7,071	9,243	9,851	9,672	8,104
Friendly societies	763	1,049	1,650	2,006	2,169
Building societies	5,984	11,855	18,317	19,527	48,906
Government instrumentalities	16,778	15,952	21,055	21,319	16,115
Total	120,332	138,333	154,946	165,325	195,508



## FINANCE

PUBLIC FINANCE  
(1972 : pages 608-46)**Economic importance of government financial activity**  
(1972 : pages 608-10)VICTORIA—PUBLIC AUTHORITIES' CURRENT ACCOUNT  
(\$m)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
RECEIPTS					
Taxation	286.3	318.8	370.2	393.1	417.4
Interest, etc., received	12.7	13.4	13.9	18.5	30.2
Public enterprises' income	116.3	117.8	128.3	127.6	137.5
Grants from Commonwealth Government authorities	229.2	262.7	286.0	320.0	407.7
<b>Total receipts</b>	<b>644.4</b>	<b>712.8</b>	<b>798.4</b>	<b>859.3</b>	<b>992.7</b>
OUTLAY					
Net current expenditure on goods and services	347.5	389.4	437.7	508.1	595.7
Subsidies	0.7	3.2	2.7	1.7	1.7
Interest, etc., paid	163.4	177.3	192.7	211.0	229.9
Overseas grants	0.2	0.3	0.3	0.3	0.3
Cash benefits to persons	4.7	4.7	6.3	5.2	6.0
Grants towards private capital expenditure	2.4	3.6	3.9	4.9	5.2
Surplus on current account	125.6	134.2	154.7	128.1	153.8
<b>Total outlay</b>	<b>644.4</b>	<b>712.8</b>	<b>798.4</b>	<b>859.3</b>	<b>992.7</b>

**VICTORIA—PUBLIC AUTHORITIES' CAPITAL ACCOUNT**  
(\$m)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
<b>SOURCES OF FUNDS</b>					
Depreciation allowances	49.3	56.3	58.3	63.2	55.6
Net sale of securities—					
Commonwealth securities other than					
Treasury bills—					
Australia	118.1	147.7	126.7	141.6	91.6
Overseas	-16.7	-24.7	-4.9	-18.0	-5.2
Local and semi-governmental securities	106.6	89.4	117.1	104.0	127.9
Advances from Commonwealth Government					
authorities	28.6	33.2	24.9	48.5	39.2
Grants from Commonwealth Government					
authorities	42.8	51.4	51.8	61.6	122.9
Surplus on State and local government					
authorities current account	125.6	134.2	154.7	128.1	153.8
Other funds available (including errors and					
omissions)	32.8	35.3	29.4	34.7	40.4
Reduction in cash and bank balances	-11.2	-7.5	-0.7	20.4	-22.0
<b>Total sources of funds</b>	<b>475.9</b>	<b>515.4</b>	<b>557.4</b>	<b>584.2</b>	<b>604.2</b>
<b>USES OF FUNDS</b>					
Fixed capital expenditure on new assets	451.6	481.9	533.3	554.8	570.1
Expenditure on existing assets	2.6	0.3	3.5	4.8	4.7
Increase in value of stocks	1.0	2.5	-0.5	2.5	-1.9
Advances to public financial enterprises	20.6	30.7	21.1	22.1	31.4
<b>Total uses of funds</b>	<b>475.9</b>	<b>515.4</b>	<b>557.4</b>	<b>584.2</b>	<b>604.2</b>

## Financial relations with the Commonwealth

(1972 : pages 610-20)

VICTORIA—COMMONWEALTH PAYMENTS TO OR FOR THE STATE (a)  
(\$'000)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Financial Agreement—					
Interest on State debt	4,254	4,254	4,254	4,254	4,254
Sinking fund on State debt (b)	4,524	4,885	5,189	5,600	5,926
General revenue grants	208,790	233,091	253,562	293,643	361,584
Debt charges assistance	..	..	..	..	2,783
Commonwealth Aid Roads Acts	29,443	31,286	33,113	38,160	43,460
Tuberculosis hospitals—reimbursement of capital expenditure, etc.	110	10	175	327	151
Mental institutions—contribution to capital expenditure	1,192	1,382	1,200	947	798
Grants to universities	14,461	17,164	19,180	18,455	22,228
Colleges of advanced education	2,213	5,465	5,545	7,728	11,093
Teachers colleges	..	500	1,621	3,252	1,251
Research grants	607	770	675	864	954
Science laboratories	2,799	3,553	3,055	4,037	3,546
Technical training	3,050	5,091	1,550	3,000	3,912
School libraries	..	..	500	2,225	3,199
Independent schools	..	..	..	3,952	7,832
Grants for agricultural extension services	508	667	986	1,027	1,194
Salinity reduction—River Murray	..	600	800	170	25
Aboriginal advancement	..	..	225	347	367
Dwellings for aged pensioners	..	..	..	200	1,929
Road safety practices	23	23	23	23	30
Bovine brucellosis and T.B. eradication	..	..	..	37	577
Natural disaster payments	..	5,291	6,000	277	43
Blood transfusion services	276	176	193	225	251
Water resources	77	131	159	163	420
King River Dam	..	..	15	1,385	2,000
Other payments	8	8	8	133	6
<b>Total</b>	<b>272,335</b>	<b>314,347</b>	<b>338,028</b>	<b>390,431</b>	<b>479,813</b>

(a) Excludes subsidies and bounties to primary producers, payments from National Welfare Fund, and repayable loans.

(b) Paid to National Debt Sinking Fund.

**Revenue and expenditure**  
(1972 : pages 620-3)

VICTORIA—CONSOLIDATED FUND (a) : RECEIPTS  
(\$'000)

Source of revenue	1966-67	1967-68	1968-69	1969-70	1970-71
<b>Taxation (b)</b>	131,971	149,535	182,603	191,075	198,732
<b>Business undertakings—</b>					
Railways	104,989	98,786	100,329	105,204	108,000
Harbours, rivers, and lights	3,160	3,342	3,576	3,557	4,537
Water supply, sewerage, irrigation, and drainage	13,650	14,064	14,470	15,208	16,690
Electricity supply (interest and recoups of sinking fund contributions, etc.)	11,965	13,057	13,897	14,868	15,820
State Coal Mine	392	282	167	..	..
Other	623	338	353	467	547
<b>Total business undertakings</b>	<b>134,780</b>	<b>129,870</b>	<b>132,792</b>	<b>139,305</b>	<b>145,594</b>
<b>Lands—</b>					
Sales	402	484	690	565	551
Rents	1,739	1,886	1,824	1,980	2,111
Forestry	5,758	5,710	5,596	5,963	6,454
Royalties	527	550	688	3,211	17,255
Other	546	513	548	572	560
<b>Total lands</b>	<b>8,971</b>	<b>9,143</b>	<b>9,346</b>	<b>12,291</b>	<b>26,932</b>
<b>Interest, n.e.i.</b>	<b>22,694</b>	<b>24,137</b>	<b>26,494</b>	<b>29,399</b>	<b>31,319</b>
<b>Commonwealth grants—</b>					
Financial Agreement Act	4,254	4,254	4,254	4,254	4,254
Financial assistance	208,790	228,254	250,563	280,008	361,584
Special revenue assistance	..	4,837	2,999	13,635	..
Debt charges assistance	..	..	..	..	2,783
Colleges of advanced education	1,302	2,788	3,194	..	..
Water resources investigations	77	131	159	163	29
<b>Total Commonwealth grants</b>	<b>214,424</b>	<b>240,264</b>	<b>261,170</b>	<b>298,060</b>	<b>368,651</b>
<b>Commonwealth National Welfare Fund payments—</b>					
Tuberculosis—					
Maintenance expenditure	3,240	3,181	3,228	3,163	3,020
Pharmaceutical benefits—					
Mental institutions	110	193	301	283	274
Other	539	863	808	1,646	2,213
<b>Total Commonwealth National Welfare Fund payments</b>	<b>3,889</b>	<b>4,237</b>	<b>4,337</b>	<b>5,092</b>	<b>5,508</b>
<b>Fees and fines</b>	<b>8,984</b>	<b>9,835</b>	<b>10,729</b>	<b>11,584</b>	<b>12,914</b>
<b>All other (c)</b>	<b>33,881</b>	<b>34,307</b>	<b>36,714</b>	<b>40,096</b>	<b>43,142</b>
<b>Sub-total (d)</b>	<b>559,595</b>	<b>601,328</b>	<b>664,183</b>	<b>726,900</b>	<b>832,791</b>
<b>Loan raisings</b>	<b>132,520</b>	<b>139,700</b>	<b>146,620</b>	<b>157,870</b>	<b>121,670</b>
<b>Loan repayments</b>	<b>8,900</b>	<b>8,687</b>	<b>8,154</b>	<b>6,616</b>	<b>5,897</b>
<b>Works grant—Commonwealth payment</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>51,020</b>
<b>Sub-total (d)</b>	<b>141,420</b>	<b>148,387</b>	<b>154,774</b>	<b>164,486</b>	<b>178,587</b>
<b>Total receipts</b>	<b>701,015</b>	<b>749,716</b>	<b>818,957</b>	<b>891,386</b>	<b>1,011,379</b>

(a) This Fund, established on 1 July 1970, supersedes the Consolidated Revenue Fund and the Loan Fund by incorporating both into this new Fund. For comparative purposes the table also shows, for the years prior to 1970-71, an artificial incorporation of both these Funds.

(b) For details of total taxation collections see page 992.

(c) Includes repayments of advances by the Housing Commission under the Commonwealth-State Housing Agreements.

(d) The sub-totals for 1966-67 to 1969-70 are the receipts of the Consolidated Revenue Fund and the Loan Fund, respectively. The sub-totals in 1970-71 represent amounts which would have constituted the receipts of the former Consolidated Revenue Fund and the Loan Fund, respectively.

VICTORIA—CONSOLIDATED FUND (a): PAYMENTS  
(\$'000)

Function of payments	1966-67	1967-68	1968-69	1969-70	1970-71
<b>Public debt charges—</b>					
Interest (including exchange)	84,942	91,690	98,993	109,115	117,074
Debt redemption	17,602	18,620	20,029	20,906	22,280
Other	456	464	491	489	497
<b>Total public debt charges</b>	<b>103,000</b>	<b>110,774</b>	<b>119,514</b>	<b>130,511</b>	<b>139,850</b>
<b>Business undertakings—</b>					
Railways (b)	97,052	98,472	104,307	111,170	121,048
Harbours, rivers, and lights	1,454	1,680	1,575	1,756	2,138
Water supply, sewerage, irrigation and drainage	10,079	10,572	10,838	11,971	13,096
State Coal Mine	687	593	394	..	..
Other	337	271	287	365	413
<b>Total business undertakings</b>	<b>109,610</b>	<b>111,588</b>	<b>117,401</b>	<b>125,261</b>	<b>136,694</b>
<b>Social expenditure—</b>					
<b>Education—</b>					
Registered schools	2,515	5,247	5,611	7,049	8,987
State schools	109,096	122,012	139,940	160,391	183,762
Technical schools	27,724	33,300	39,224	43,802	53,076
Universities	12,562	13,658	16,506	18,754	21,972
Libraries, art galleries, etc.	2,779	3,050	3,632	4,108	4,798
Agricultural education, research, etc.	1,924	1,992	2,196	2,230	2,358
Other	1,832	2,139	2,579	2,996	3,401
Public health and recreation	5,935	6,272	6,606	7,189	7,892
<b>Charitable—</b>					
Hospitals—					
General	45,193	46,721	53,797	61,972	80,325
Mental	19,837	21,280	22,758	25,208	28,826
Child welfare	5,543	6,188	7,003	7,891	9,827
Other	1,044	1,144	1,338	1,406	1,385
<b>Law, order and public safety—</b>					
Justice	5,691	5,935	6,466	7,340	8,002
Police	23,028	25,045	26,511	29,984	32,999
Penal establishments	3,029	3,353	3,676	4,111	4,466
Public safety	79	87	105	128	115
<b>Total social expenditure</b>	<b>267,811</b>	<b>297,422</b>	<b>337,946</b>	<b>384,558</b>	<b>452,190</b>
<b>All other expenditure—</b>					
Public works, n.e.i.	4,921	5,316	6,002	6,398	7,037
Lands and survey	4,094	4,282	4,454	4,848	5,171
Agriculture	6,412	6,839	7,375	8,402	9,885
Forestry	5,679	5,853	5,691	6,212	6,972
Legislative and general administration	16,479	16,903	18,948	21,067	23,624
Pensions and superannuation	12,184	13,248	14,509	16,273	18,206
Pay-roll tax	6,034	6,641	7,152	7,944	8,956
Miscellaneous (c)	23,370	25,257	27,654	30,809	38,011
<b>Total all other expenditure</b>	<b>79,174</b>	<b>84,338</b>	<b>91,783</b>	<b>101,953</b>	<b>117,862</b>
<b>Sub-total (d)</b>	<b>559,595</b>	<b>604,122</b>	<b>666,644</b>	<b>742,282</b>	<b>846,597</b>
Appropriation to works and services account (e)	141,420	148,387	154,774	164,486	164,782
<b>Total payments</b>	<b>701,015</b>	<b>752,509</b>	<b>821,418</b>	<b>906,768</b>	<b>1,011,379</b>

(a) This Fund, established on 1 July 1970, supersedes the Consolidated Revenue Fund and the Loan Fund.

(b) Excludes interest, etc., on Railways debt which is included with "Public debt charges".

(c) Includes interest and repayment of advances under the Commonwealth-State Housing Agreements.

(d) The sub-totals for 1966-67 to 1969-70 are the expenditures of the Consolidated Revenue Fund. The sub-total in 1970-71 represents an amount which would have constituted the expenditure of the former Consolidated Revenue Fund.

(e) The amounts shown for each of the years 1966-67 to 1969-70 represent receipts of the Loan Fund.

**Taxation**  
(1972 : pages 623-35)

**VICTORIA—TAXATION COLLECTIONS**

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
	\$'000	\$'000	\$'000	\$'000	\$'000
Probate duties	34,997	37,642	46,801	44,423	49,927
Land tax	21,132	20,976	21,839	22,436	28,442
Liquor tax	8,991	9,744	10,632	11,370	11,827
Lottery tax	6,410	6,085	5,990	6,504	6,436
Racing taxes	14,337	15,929	17,373	19,445	21,222
Taxes on the ownership and operation of motor vehicles—					
Vehicle registration fees and taxes	36,491	39,812	46,062	48,832	51,853
Drivers', etc., licences and fees	2,921	3,010	3,493	3,443	5,057
Stamp duty (vehicle registration)	4,896	5,436	5,976	6,688	7,007
Road transport taxes	1,773	1,770	1,813	1,887	1,927
Road maintenance contributions	6,732	7,248	7,842	8,555	8,903
Motor car third party insurance surcharges	2,388	2,497	2,605	2,735	2,915
Stamp duties n.e.i.	40,546	52,925	73,649	80,443	73,572
Licences and registration fees n.e.i.	1,386	1,683	1,958	1,960	2,095
Other taxes	6,725	8,398	8,991	9,712	10,160
<b>Total</b>	<b>189,726</b>	<b>213,154</b>	<b>255,021</b>	<b>268,434</b>	<b>281,344</b>
Paid to—					
Consolidated Fund (a)	131,971	149,535	182,603	191,075	198,732
Trust funds	57,754	63,619	72,418	77,358	82,612
	\$	\$	\$	\$	\$
Per head of population	58.39	64.58	76.04	78.58	80.94

(a) Known as Consolidated Revenue Fund prior to 1970-71.

VICTORIA—RATES OF PROBATE DUTY, 1971

On that part of the final balance which—				The rate of duty per \$1 shall be where the final balance passes to—			
				Category A	Category B	Category C	Category D
	\$			cents in \$			
Exceeds	1,200	Does not exceed	1,200	Nil	Nil	Nil	Nil
	3,000	but does not exceed	3,000	Nil	Nil	5	7.5
"	10,000	"	10,000	Nil	Nil	10	10
"	12,000	"	12,000	Nil	10	15	17.5
"	13,000	"	13,000	10	10	15	17.5
"	20,000	"	20,000	10	15	15	20
"	30,000	"	30,000	10	10	12.5	17.5
"	48,000	"	48,000	10	12.5	17.5	20
"	50,000	"	50,000	12.5	12.5	17.5	20
"	60,000	"	60,000	12.5	15	20	20
"	70,000	"	70,000	17.5	20	20	20
"	90,000	"	90,000	20	22.5	25	25
"	110,000	"	110,000	22.5	27.5	30	37.5
"	120,000	"	120,000	25	30	30	37.5
"	130,000	"	130,000	30	30	32.5	37.5
"	150,000	"	150,000	35	35	37.5	37.5
"	170,000	"	170,000	37.5	37.5	40	42.5
"	170,000	"	189,334 (a)	37.5	..	..	..
"	170,000	"	194,332 (b)	..	40	..	..
"	170,000	"	227,680 (c)	..	..	42.5	..
"	170,000	"	233,250 (d)	..	..	..	45
When the final balance exceeds (a), (b), (c), or (d), then the whole of the final balance is subject to a duty of				\$22.50 per \$100	\$25.00 per \$100	\$30.00 per \$100	\$33.00 per \$100

NOTE. Categories of beneficiaries shown above are :

- A. Widow, widower, children under 21 years of age, wholly dependent adult children, or wholly dependent widowed mother.
- B. Children over the age of 21 years not being wholly dependent, or grandchildren.
- C. Brothers, sisters, parents.
- D. Other beneficiaries.

VICTORIA—STATE LAND TAX ASSESSMENTS, 1970  
(Based on unimproved value of holdings at 31 December 1969)

Unimproved value of holdings—	Number of taxpayers	Total unimproved value (a)	Tax payable
\$		\$'000	\$'000
6,001 to 7,000	17,473	114,285	122
7,001 „ 8,000	11,797	88,863	227
8,001 „ 9,000	7,955	67,989	250
9,001 „ 10,000	6,172	58,957	242
10,001 „ 12,000	8,597	94,918	387
12,001 „ 14,000	5,435	70,660	287
14,001 „ 16,000	4,290	64,030	259
16,001 „ 17,500	2,358	39,559	159
17,501 „ 20,000	3,294	61,836	257
20,001 „ 30,000	6,628	161,120	805
30,001 „ 40,000	2,838	98,108	643
40,001 „ 50,000	1,538	68,813	512
50,001 „ 60,000	918	50,408	419
60,001 „ 70,000	575	37,242	345
70,001 „ 80,000	478	35,782	362
80,001 „ 100,000	603	53,894	616
100,001 „ 150,000	669	81,580	1,193
150,001 „ 170,000	167	26,705	455
170,001 „ 200,000	162	29,818	571
200,001 „ 300,000	248	60,602	1,374
300,001 „ 400,000	149	51,759	1,292
400,001 „ 1,000,000	226	137,943	3,987
1,000,001 and over	133	398,573	12,924
Total	82,703	1,953,443	27,688

(a) Of land not exempted from land tax.

VICTORIA—STATE LAND TAX ASSESSMENTS

Year	Number of taxpayers	Total tax payable	Average tax payable per taxpayer	Total unimproved value (a)
		\$'000	\$	\$'000
1966	98,760	20,397	206.53	1,953,974
1967	100,471	20,585	204.88	2,064,136
1968	104,500	21,261	203.45	2,160,795
1969	77,158	20,000	259.21	1,567,532
1970	82,703	27,688	334.79	1,953,443

(a) Of land not exempted from land tax.



VICTORIA—LIQUOR TAX  
(\$'000)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Licences—					
Victuallers	6,543	7,272	7,706	8,090	8,218
Spirit merchants and grocers	1,814	1,820	2,158	2,415	2,634
Others	83	88	164	176	203
Club certificates	405	400	433	489	544
Permits—extended hours, etc.	114	129	134	165	189
Fees	31	34	37	36	38
<b>Total</b>	<b>8,991</b>	<b>9,744</b>	<b>10,632</b>	<b>11,371</b>	<b>11,827</b>

VICTORIA—TATTERSALL LOTTERIES : SUBSCRIPTIONS, DUTY PAID, ETC.  
(\$'000)

Year	Subscriptions to consultations	Duty paid to Consolidated Revenue	Allocated to—	
			Hospitals and Charities Fund	Mental Hospitals Fund
1966-67	20,580	6,410	6,000	410
1967-68	19,420	6,085	5,585	500
1968-69	19,440	5,990	5,375	615
1969-70	21,400	6,504	5,684	820
1970-71	21,360	6,436	5,346	1,090

VICTORIA—TOTALISATOR INVESTMENTS, INVESTMENTS WITH  
LICENSED BOOKMAKERS, AND TOTAL RACING TAXATION  
(\$'000)

Year	Totalisator investments		Invest- ments with licensed book- makers (a)	Racing taxation			
	On- course	Off- course		Totali- sator	Book- makers' turnover	Other (b)	Total
1966-67	36,627	143,984	168,381	10,447	3,058	833	14,337
1967-68	37,383	162,870	172,603	11,969	3,132	829	15,929
1968-69	39,085	185,869	172,388	13,410	3,117	845	17,373
1969-70	43,259	202,733	183,296	15,240	3,301	903	19,445
1970-71	47,776	225,863	196,166	16,793	3,532	896	21,222

(a) Estimated.

(b) Includes entertainments (admission) tax, stamp duty on betting tickets, and club and bookmakers' licences, etc.

**VICTORIA—TAXES ON THE OWNERSHIP AND OPERATION  
OF MOTOR VEHICLES  
(\$'000)**

Paid to	1966-67	1967-68	1968-69	1969-70	1970-71
<b>VEHICLE REGISTRATION FEES AND TAXES</b>					
Country Roads Board Fund—					
Motor registration fees, etc.	25,914	27,302	29,300	31,062	33,118
Additional registration fees (part)	1,587	1,703	1,849	2,034	2,112
Level Crossings Fund—					
Additional registration fees (part)	793	851	924	1,017	1,056
Road (Special Projects) Fund—					
Increase in registration fees (Act No. 7283)	8,185	9,944	13,979	14,708	15,558
Transport Regulation Fund—					
Motor omnibus registration fees	12	12	10	10	10
<b>Total</b>	<b>36,491</b>	<b>39,812</b>	<b>46,062</b>	<b>48,832</b>	<b>51,853</b>
<b>DRIVERS, ETC., LICENCES AND FEES</b>					
Consolidated Fund—					
Drivers licence fees (part)	1,356	1,380	1,613	1,574	2,382
Country Roads Board Fund—					
Drivers licence fees (part)	693	712	828	810	828
Drivers test fees	194	223	243	268	275
Municipalities Assistance Fund—					
Drivers licence fees (part)	677	695	809	790	1,187
Drivers Licence Suspense Account—					
Drivers licence fees (part)	..	..	..	..	384
<b>Total</b>	<b>2,921</b>	<b>3,010</b>	<b>3,493</b>	<b>3,443</b>	<b>5,057</b>
<b>STAMP DUTY (VEHICLE REGISTRATION)</b>					
Consolidated Fund	4,896	5,436	5,976	6,688	7,007
<b>ROAD TRANSPORT TAXES</b>					
Country Roads Board Fund—					
Sale of log books	5	22	11	11	10
Transport Regulation Fund—					
Licences, etc.	918	873	909	943	984
Permits	850	875	892	933	933
<b>Total</b>	<b>1,773</b>	<b>1,770</b>	<b>1,813</b>	<b>1,887</b>	<b>1,927</b>
<b>ROAD MAINTENANCE CONTRIBUTIONS</b>					
Country Roads Board Fund—					
Road charges under Commercial Goods Vehicles Act	6,732	7,248	7,842	8,555	8,903

VICTORIA—TAXES ON THE OWNERSHIP AND OPERATION  
OF MOTOR VEHICLES—*continued*  
(S'000)

Paid to	1966-67	1967-68	1968-69	1969-70	1970-71
<b>MOTOR CAR THIRD PARTY INSURANCE SURCHARGES</b>					
Consolidated Fund	2,388	2,497	2,605	2,735	2,915
<b>TOTAL</b>					
Consolidated Fund	8,640	9,313	10,194	10,997	12,305
Country Roads Board Fund	35,125	37,210	40,073	42,740	45,247
Level Crossings Fund	793	851	924	1,017	1,056
Municipalities Assistance Fund	677	695	809	790	1,187
Road (Special Projects) Fund	8,185	9,944	13,979	14,708	15,558
Transport Regulation Fund	1,780	1,760	1,811	1,887	1,927
Drivers Licence Suspense Account	..	..	..	..	384
<b>Total</b>	<b>55,201</b>	<b>59,772</b>	<b>67,789</b>	<b>72,139</b>	<b>77,663</b>

NOTE. Deductions from third party insurance premiums—credited to the Hospitals and Charities Fund in following years—are included in "other taxes" in the table on page 992, and amounted to \$679,000 in 1966-67, \$1,745,000 in 1967-68, \$1,837,000 in 1968-69, \$1,929,000 in 1969-70, and \$2,062,000 in 1970-71.

VICTORIA—STAMP DUTIES : RATES PAYABLE AS AT 1 JANUARY 1972

Dutiable class	Duty payable
<b>BILLS OF EXCHANGE—</b>	
Payable on demand (cheque, etc.)	6c
Others (including promissory notes)	not above \$50 5c
	to \$100 10c
	to \$150 15c
	to \$200 20c
	for extra \$100 or part 10c
SHARE TRANSFERS—On sale for full value—	} Up to \$100—per \$25 or part 14c
Based on consideration	
TRANSFER OF REAL PROPERTY—	} For each \$100 or part—
Gifts and settlements (a)—Based on value	
Other transfers on sale—Based on consideration	up to 7,000 1.50
	over 7,000 to 15,000 1.75
	" 15,000 " 100,000 2.00
	" 100,000 " 500,000 2.25
	" 500,000 " 1,000,000 2.50
	" 1,000,000 3.00
LEASES AND ASSIGNMENTS OF LEASES OF REAL PROPERTY	variable scale according to nature
INSURANCE COMPANIES (OTHER THAN LIFE)—Annual licences	} each \$200 (or part) of annual premium income \$12
LIFE ASSURANCE POLICIES—On the sum insured	
	over \$2,000—\$1 for first \$2,000 plus per \$200 or part of remainder 20c
POWER OF ATTORNEY OR APPOINTMENT OF AGENT	\$2
INSTALLMENT PURCHASE (including hire purchase)	Purchase price \$20 or more 1.8%
MORTGAGES, BONDS, DEBENTURES AND COVENANTS—On amount secured	up to \$8,000 \$4
	up to \$10,000—\$4 for first \$8,000 plus per \$200 or part of remainder 60c
	over \$10,000—\$10 for first \$10,000 plus per \$200 or part of remainder 70c
CREDIT AND RENTAL BUSINESS	Based on amount of credit, etc., or rental 1.8%

VICTORIA—STAMP DUTIES : RATES PAYABLE AS AT 1 JANUARY 1972—*continued*

Dutiable class	Duty payable
GUARANTEES AND INDEMNITIES	50c
OTHER AGREEMENTS AND INSTRUMENTS—	
Partnerships, sale of business, etc.	} \$3 each
Caveats	
Licence to use real property, etc.	
Transfer of mortgage	
Discharge of mortgage of real property	
Discharge of mortgage of personal property (other than of a life policy)	
Appointment of trustee	
Discharge of mortgage of a life policy	50c
DEEDS—not otherwise chargeable	\$3
MOTOR CAR—	
On every application for registration and every notice of acquisition of a motor car or trailer—	
For every \$200 and part of \$200 of the market value of such motor car or trailer	\$3
STATEMENT ON SALE OF CATTLE OR SWINE—	
(i) Cattle Statement	
For every \$5 and part of \$5	} 2c
(a) of the amount of the purchase money in respect of one head of cattle sold singly; or	
(b) of the total amount of the purchase money in respect of any number of cattle sold in one lot	
Provided that the stamp duty in respect of the amount of the purchase money of any one head of cattle, whether sold singly or as part of a lot, shall not exceed 20 cents.	
(ii) Swine Statement	
For every \$5 and part of \$5	} 4c
(a) of the amount of the purchase money in respect of one pig sold singly; or	
(b) of the total amount of the purchase money in respect of any number of pigs sold in one lot	
Provided that the stamp duty in respect of the amount of the purchase money of any one pig, whether sold singly or as part of a lot, shall not exceed 32 cents.	

NOTE. Exemptions from duty are allowed in certain specific cases.

(a) As from 1 January 1972 the *Gift Duty Act* 1971, administered by the Commissioner of Probate Duties, imposed duty on gifts (including gifts and settlements of property) formerly imposed only under the Stamps Acts. However, where a gift involves the transfer of real property, stamp duty is still charged at the rates shown on page 997 but the amount paid is allowed as a deduction from the duty payable under the *Gift Duty Act*.

AUSTRALIA—GENERAL RATES OF INCOME TAX: INDIVIDUALS,  
1971-72 INCOME YEAR (a)

Total taxable income—		Tax on amount in Column 1	Tax on each \$1 of balance of income
Column 1 exceeding—	Column 2 not exceeding—		
\$	\$	\$	cents
Nil	200	Nil	0.3
200	300	0.60	1.2
300	400	1.80	2.7
400	500	4.50	4.1
500	600	8.60	5.5
600	800	14.10	7.4
800	1,000	28.90	9.7
1,000	1,200	48.30	11.3
1,200	1,400	70.90	12.8
1,400	1,600	96.50	14.3
1,600	1,800	125.10	15.8
1,800	2,000	156.70	17.3
2,000	2,400	191.30	19.5
2,400	2,800	269.30	22.1
2,800	3,200	357.70	24.4
3,200	3,600	455.30	26.7
3,600	4,000	562.10	28.8
4,000	4,800	677.30	31.9
4,800	5,600	932.50	34.5
5,600	6,400	1,208.50	37.0
6,400	7,200	1,504.50	39.4
7,200	8,000	1,819.70	41.7
8,000	8,800	2,153.30	43.9
8,800	10,000	2,504.50	46.5
10,000	12,000	3,062.50	50.6
12,000	16,000	4,074.50	56.4
16,000	20,000	6,330.50	62.4
20,000	..	8,826.50	66.7

(a) Additional tax equal to 4.375 per cent of the tax at general rates is also payable for the 1971-72 financial year.

VICTORIA—INCOME TAX: INDIVIDUALS, 1970-71  
(1969-70 INCOME YEAR)

Grade of actual income (a)	Number of taxpayers			Actual income	Taxable income	Net income tax assessed
	Males	Females	Persons			
\$				\$'000	\$'000	\$'000
417- 599	12,261	24,163	36,424	18,752	18,007	373
600- 799	15,220	32,942	48,162	33,530	31,018	975
800- 999	14,180	30,460	44,640	40,153	36,743	1,634
1,000- 1 199	15,285	32,630	47,915	52,653	47,549	2,663
1,200- 1,399	17,928	36,712	54,640	71,074	63,193	4,153
1,400- 1,599	19,805	40,354	60,159	90,328	80,271	5,923
1,600- 1,799	21,233	46,501	67,734	115,183	102,341	8,495
1,800- 1,999	22,516	46,464	68,980	131,050	116,081	10,737
2,000- 2,199	25,599	45,867	71,466	149,959	132,037	13,372
2,200- 2,399	29,763	40,264	70,027	161,055	140,584	15,486
2,400- 2,599	34,979	34,492	69,471	173,631	149,588	17,606
2,600- 2,799	41,136	27,452	68,588	185,058	156,756	19,432
2,800- 2,999	46,768	20,749	67,517	195,729	163,032	21,084
3,000- 3,999	261,155	52,785	313,940	1,093,276	881,853	129,595
4,000- 5,999	281,963	30,235	312,198	1,493,678	1,170,225	217,249
6,000- 7,999	73,337	8,427	81,764	556,154	433,313	102,425
8,000- 9,999	23,208	3,190	26,398	233,051	185,166	52,215
10,000-19,999	23,103	3,477	26,580	348,327	290,499	105,850
20,000-29,999	3,093	423	3,516	83,774	73,841	35,197
30,000-39,999	775	141	916	31,161	28,005	14,887
40,000-59,999	432	64	496	23,607	21,288	12,182
60,000-99,999	163	20	183	13,613	12,156	7,450
100,000 and over	84	10	94	15,894	13,961	9,055
<b>Total</b>	<b>983,986</b>	<b>557,822</b>	<b>1,541,808</b>	<b>5,310,692</b>	<b>4,347,505</b>	<b>808,038</b>

(a) Actual income is defined briefly as "Gross income, including exempt income, less expenses incurred in gaining that income".

NOTE. Particulars shown in the above table relate to individuals who were assessed for income tax in the Victorian office of the Taxation Department.

AUSTRALIA—RATES OF INCOME TAX PAYABLE  
BY COMPANIES, 1971-72 (1970-71 INCOME YEAR)

Type of company	Taxable income	
	1st \$10,000— Rate per cent	Balance— Rate per cent
Private (a)	37.5	42.5
Public—		
Co-operative	42.5	47.5
Life assurance—		
Mutual	37.5	42.5
Other life assurance—		
Resident—		
Mutual income	37.5	42.5
Other income	47.5	47.5
Non-resident—		
Mutual income	37.5	42.5
Dividend income	(b) 42.5	47.5
Other income	47.5	47.5
Non-profit—		
Friendly society dispensary	(c) 37.5	37.5
Other	(d) 42.5	47.5
Other—		
Resident	47.5	47.5
Non-resident—		
Dividend income	42.5	47.5
Other income	47.5	47.5

- (a) Under Division 7 of Part III of the *Income Tax Assessment Act 1936-1972* a private company is liable to pay additional tax upon the amount, if any, by which dividends paid by the company within the prescribed period fall short of a sufficient distribution as defined. The rate of additional tax for the financial year 1971-72 is 50 per cent.
- (b) Maximum income subject to this rate is \$10,000 less mutual income.
- (c) No tax is payable by a non-profit company unless its taxable income exceeds \$416. Where the taxable income of a non-profit company that is a friendly society dispensary exceeds \$416 but does not exceed \$1,664 the tax payable by the company is limited to one half of the amount by which the taxable income exceeds \$416, less any rebate or credit to which the company is entitled.
- (d) No tax will be payable by a non-profit company unless its taxable income exceeds \$416. Where the taxable income of a non-profit company other than a friendly society dispensary exceeds \$416 but does not exceed \$1,830 the tax payable by the company is limited to 55 per cent of the amount by which the taxable income exceeds \$416, less any rebate or credit to which the company is entitled.

## State pensions and gratuities

(1972 : pages 635-9)

VICTORIA—GOVERNMENT EXPENDITURE ON PENSIONS,  
GRATUITIES, ETC.  
(\$'000)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
State Superannuation Fund—					
Railways	5,073	5,273	5,451	5,724	6,176
Other	6,357	7,257	8,443	9,624	11,365
Total State Superannuation Fund	11,431	12,530	13,894	15,348	17,541
Police Pensions Fund	380	380	380	380	..
Police Superannuation Fund	116	54	6	5	5
Coal Mine Workers Pensions Fund	139	105	30	54	20
Parliamentary Contributory Retirement Fund (a)	105	103	42	..	..
Parliamentary Contributory Superannuation Fund	..	..	44	352	429
Married Women's Superannuation Fund	..	..	28	2	10
Married Women Teachers Pensions Fund (b)	48	42	..	..	..
Other pensions, gratuities, etc.	77	85	86	132	202
Grand total	12,295	13,299	14,509	16,273	18,207

(a) Fund closed and replaced by Parliamentary Contributory Superannuation Fund which came into operation on 1 December 1968.

(b) Fund closed and replaced by Married Women's Superannuation Fund as from 1 February 1969.

## VICTORIA—STATE SUPERANNUATION FUND

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Receipts—	\$'000	\$'000	\$'000	\$'000	\$'000
Contributions—					
Officers	13,333	14,297	16,170	18,725	21,763
Consolidated Fund (a)	11,376	12,436	13,818	15,244	17,419
Interest	6,237	6,907	7,790	8,687	9,771
Other	118	94	207	192	225
Total	31,064	33,734	37,985	42,848	49,177
Disbursements—					
Pension payments	14,990	16,203	17,772	19,369	21,871
Lump sum payments	2,271	2,893	3,549	4,737	6,771
Contributions refunded	1,218	1,399	1,686	2,034	1,876
Transfer to Pensions					
Supplementation Fund	909	1,028	1,057	2,175	3,756
Other	2	35	11	38	219
Total	19,390	21,558	24,075	28,354	34,493
Balance in Fund at 30 June	124,258	136,435	150,345	164,839	179,524
Contributors at 30 June—	number	number	number	number	number
Males	(b)45,200	45,911	(b)46,700	(b)47,000	(b)47,000
Females	(b) 8,070	8,087	(b) 8,100	(b) 9,819	(b)10,000
Total	(b)53,270	53,998	(b)54,800	(b)56,819	(b)57,000
Pensioners at 30 June—					
Ex-employees—					
Males	(b) 8,440	8,464	8,583	8,829	(b) 8,900
Females	(b) 1,600	1,662	1,752	1,853	(b) 1,900
Widows	(b) 7,240	7,397	7,533	7,744	(b) 8,000
Children	(b) 940	988	1,054	1,094	(b) 1,100
Total	(b)18,220	18,511	18,922	19,520	(b)19,900

(a) These figures do not agree with those shown in the preceding table, as the latter include the Consolidated Fund's share of pensions accrued at the end of each year.

(b) Estimated.



## Gross expenditure on works, services, etc.

(1972 : pages 640-1)

VICTORIA—GROSS EXPENDITURE ON WORKS, SERVICES, ETC.  
(\$'000)

Expenditure on—	1966-67	1967-68	1968-69	1969-70	1970-71
Public works—					
Railways	16,336	16,541	16,863	16,135	15,874
Tramways	..	..	..	..	2,150
Roads and bridges	1,672	1,841	4,476	1,778	1,307
Harbours and rivers	2,906	1,886	4,432	2,687	4,333
Water supply	18,280	18,380	18,156	24,519	26,789
Sewerage	966	1,166	1,754	1,173	1,462
Electricity supply	15,500	14,500	15,750	19,250	5,000
Gas and Fuel Corporation	60	70	80	40	100
Public buildings—					
Schools, etc.	35,928	39,718	42,192	45,616	52,501
Hospitals, etc.	16,964	17,336	17,260	18,694	18,960
Other	13,049	13,297	11,440	11,167	9,280
Municipalities—loans, grants, etc.	1,806	2,361	2,235	3,708	4,178
Housing	1,899	2,758	2,705	1,935	2,671
Other public works	583	610	547	883	581
Primary production—					
Land settlement	2,688	2,308	1,927	2,250	1,327
Soldier settlement	13	2	..	2	..
Drought, etc., relief	208	915	4,131	488	74
Forestry	2,152	2,759	3,020	3,365	3,516
Mining, n.e.i.	145	230	254	254	282
Cool stores	184	235	80	66	56
Destruction of vermin and noxious weeds	2,065	2,084	2,143	2,261	2,592
Other primary production (a)	3,234	3,853	3,540	2,972	2,552
Other purposes	923	1,532	1,721	2,149	3,527
Total works, etc., expenditure	137,562	144,383	154,707	161,393	159,111
Funding of Consolidated Revenue deficits	4,000	4,000	..	2,887	..
Grand total	141,562	148,383	154,707	164,279	159,111

NOTE. On 1 July 1970 there was established by the *Public Account Act 1970*, a Trust Fund, the Works and Services Account, into which was to be paid amounts appropriated from the Consolidated Fund to be applied under Parliamentary authority as expenditure on works and services. This Account superseded the Loan Fund which provided the amounts expended on works and services up to the end of 1969-70 as shown in the above table. Expenditure shown for the year 1970-71 represents payments from the Works and Services Account.

(a) Includes allocations to the Rural Finance and Settlement Commission to enable the Commission to assist industries (principally primary) in country areas.

**Public debt**  
(1972 : pages 641-6)

**VICTORIA—STATE PUBLIC DEBT : SUMMARY OF TRANSACTIONS**  
(\$A'000)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
<b>DEBT MATURING IN AUSTRALIA</b>					
Debt outstanding at 1 July	1,626,901	1,755,151	1,896,159	2,033,067	2,175,649
New debt incurred—					
Commonwealth Government loan flotations	300,736	317,543	277,113	367,951	362,429
Domestic raisings	1,444	3,771	1,581	..	1
Less conversion and redemption loans	163,111	161,646	131,604	206,934	240,081
Total new debt incurred	139,070	159,668	147,089	161,016	122,349
Less repurchases and redemptions from National Debt Sinking Fund	10,820	18,660	10,181	18,435	23,278
Net increase in debt	128,250	141,008	136,908	142,581	99,071
Debt outstanding at 30 June	1,755,151	1,896,159	2,033,067	2,175,649	2,274,719
<b>DEBT MATURING IN LONDON</b>					
Debt outstanding at 1 July	105,505	94,705	62,151	59,665	45,158
New debt incurred—					
Commonwealth Government loan flotations	..	..	..	1,496	..
Less conversion and redemption loans	2,500	16,408	..	..	..
Total new debt incurred	-2,500	-16,408	..	-1,496	..
Less repurchases and redemptions from National Debt Sinking Fund	8,300	2,616	2,486	13,011	2,668
Adjustment due to variation in rate of exchange	..	-13,530	..	..	..
Net increase in debt	-10,800	-32,554	-2,486	-14,507	-2,668
Debt outstanding at 30 June	94,705	62,151	59,665	45,158	42,490
<b>DEBT MATURING IN NEW YORK, CANADA, SWITZERLAND, AND THE NETHERLANDS</b>					
Debt outstanding at 1 July	49,138	43,213	40,301	37,562	33,554
New debt incurred—					
Commonwealth Government loan flotations	..	..	..	1,343	..
Less conversion and redemption loans	3,285	..	..	..	..
Total new debt incurred	-3,285	..	..	-1,343	..
Less repurchases and redemptions from National Debt Sinking Fund	2,639	2,912	2,739	2,800	3,138
Adjustment due to variation in rate of exchange	..	..	..	+135	+216
Net increase in debt	-5,924	-2,912	-2,739	-4,008	-2,922
Debt outstanding at 30 June	43,213	40,301	37,562	33,554	(a) 30,632
<b>TOTAL</b>					
Debt outstanding at 1 July	1,781,543	1,893,069	1,998,611	2,130,294	2,254,361
New debt incurred—					
Commonwealth Government loan flotations	300,736	317,543	277,113	367,951	362,429
Domestic raisings	1,444	3,771	1,581	..	1
Less conversion and redemption loans	168,896	178,054	131,604	209,773	240,081
Total new debt incurred	133,284	143,260	147,089	158,178	122,349
Less repurchases and redemptions from National Debt Sinking Fund	21,759	24,188	15,406	34,246	29,084
Adjustment due to variation in rate of exchange	..	-13,530	..	+135	+216
Net increase in debt	111,525	105,542	131,683	124,067	93,481
Debt outstanding at 30 June	1,893,069	1,998,611	2,130,294	2,254,361	2,347,842

(a) Includes New York, \$A23,769,000 ; Canada, \$A2,547,000 ; Switzerland, \$A2,784,000 ; and the Netherlands \$A1,533,000.

VICTORIA—DUE DATES OF LOANS AT 30 JUNE 1971  
(\$A'000)

Due date (financial year)	Amount maturing—				Total
	In Australia	In London	In New York	Elsewhere overseas	
1971-72	223,984	..	2,261	..	226,245
1972-73	185,039	11,938	2,588	..	199,564
1973-74	183,082	..	..	..	183,082
1974-75	101,053	..	..	..	101,053
1975-76	137,430	600	..	(a) 2,784	140,814
1976-77	83,950	..	..	..	83,950
1977-78	129,932	4,530	..	..	134,462
1978-79	106,175	18,581	1,787	..	126,542
1979-80	66,254	..	2,166	..	68,420
1980-81	68,928	..	2,335	(b) 2,547	73,809
1981-82	55,939	6,199	3,709	(c) 1,533	67,380
1982-83	18,104	..	6,176	..	24,280
1983-84	88,725	643	..	..	89,368
1984-85	117,705	..	..	..	117,705
1985-86	79,363	..	2,748	..	82,111
1986-87	57,700	..	..	..	57,700
1987-88	98,790	..	..	..	98,790
1988-89	131,261	..	..	..	131,261
1989-90	107,890	..	..	..	107,890
1991-92	34,791	..	..	..	34,791
1994-95	8,985	..	..	..	8,985
1999-2000	6,911	..	..	..	6,911
2000-01	26,264	..	..	..	26,264
2001-02	48,305	..	..	..	48,305
2003-04	84,314	..	..	..	84,314
2005-06	20,026	..	..	..	20,026
Not yet fixed	3,821	..	..	..	3,821
Total	2,274,719	42,490	23,769	6,864	2,347,842

(a) Maturing in Switzerland.

(b) Maturing in Canada.

(c) Maturing in the Netherlands.

VICTORIA—PUBLIC DEBT : LOANS OUTSTANDING

At 30 June—	Amount of loans maturing in—						Total debt	
	Australia	London	New York	Canada	Switzerland	The Netherlands	Amount	Per head of population
	\$A'000	\$A'000	\$A'000	\$A'000	\$A'000	\$A'000	\$A'000	\$A
1967	1,755,151	94,705	35,658	2,897	2,600	2,059	1,893,069	578.37
1968	1,896,159	62,151	33,060	2,721	2,600	1,921	1,998,611	601.69
1969	2,033,067	59,665	30,500	2,678	2,600	1,784	2,130,294	630.02
1970	2,175,649	45,158	26,637	2,672	2,600	1,647	2,254,361	655.34
1971	2,274,719	42,490	23,769	2,547	2,784	1,533	2,347,842	671.34

VICTORIA—RATES OF INTEREST ON PUBLIC DEBT  
AT 30 JUNE 1971

Rate of interest	Amount maturing—				Total
	In Australia	In London	In New York	Elsewhere overseas	
per cent	\$A'000	\$A'000	\$A'000	\$A'000	\$A'000
7.0	102,220	..	..	..	102,220
6.8	64,655	..	..	..	64,655
6.6	29,805	..	..	..	29,805
6.5	115,085	..	..	..	115,085
6.4	147,868	..	..	..	147,868
6.0	54,817	1,243	..	..	56,060
5.9	13,353	..	..	..	13,353
5.8	30,041	..	..	..	30,041
5.75	20,594	..	2,748	(a) 2,547	25,889
5.6	39,321	..	..	..	39,321
5.5	20,327	41,248	9,885	..	71,459
5.4	120,084	..	..	..	120,084
5.375	67,305	..	..	..	67,305
5.3	10,186	..	..	..	10,186
5.25	459,169	..	4,501	..	463,670
5.2	34,986	..	..	..	34,986
5.0	672,969	..	4,047	(b) 1,533	678,549
4.8	17,509	..	..	..	17,509
4.75	86,437	..	2,588	..	89,024
4.625	14,150	..	..	..	14,150
4.5	64,828	..	..	(c) 2,784	67,612
4.25	81,251	..	..	..	81,251
3.875	106	..	..	..	106
3.4875	1	..	..	..	1
3.1	553	..	..	..	553
3.0	1,844	..	..	..	1,844
2.7125	221	..	..	..	221
2.325	1,096	..	..	..	1,096
1.0	3,938	..	..	..	3,938
Total	2,274,719	42,490	23,769	6,864	2,347,842
Average rate of interest	% 5.41	% 5.52	% 5.32	% 5.08	% 5.41

(a) Maturing in Canada.  
(b) Maturing in the Netherlands.  
(c) Maturing in Switzerland.

VICTORIA—ANNUAL INTEREST LIABILITY  
ON PUBLIC DEBT (a)

At 30 June—	Payable in Australia	Payable in overseas countries	Total	Per head of population	Average rate
	\$A'000	\$A'000	\$A'000	\$A	per cent
1967	85,417	6,516	91,933	28.09	4.86
1968	92,892	5,180	98,072	29.52	4.91
1969	100,963	4,948	105,911	31.32	4.97
1970	111,941	4,253	116,193	33.78	5.15
1971	123,121	3,955	127,076	36.35	5.41

(a) Calculated at the end of each year in respect of the ensuing year.

VICTORIA—INTEREST AND EXPENSES OF PUBLIC DEBT  
(\$'000)

Year	Interest paid on loans maturing—				Total interest	Exchange on payment of interest overseas	Commission on payment of interest overseas, expenses of conversion loans, etc.	Grand total (a)
	In Australia	In London	In New York	Elsewhere overseas				
1966-67	78,450	3,566	984	205	83,204	2,238	376	85,818
1967-68	86,369	3,165	879	199	90,611	1,579	376	92,567
1968-69 (b)	94,295	3,082	1,743	373	99,493	(b)	400	99,893
1969-70 (b)	104,852	2,808	1,585	370	109,615	(b)	400	110,015
1970-71 (b)	113,374	2,455	1,392	(c) 352	117,574	(b)	420	117,994

(a) Includes \$A4,254,000 contributed each year by the Commonwealth Government in accordance with the provisions of the Financial Agreement, but excludes interest paid on advances received from the Commonwealth Government for housing and soldier settlement.

(b) For each of the years 1968-69 to 1970-71 exchange on payments of interest overseas has been included with interest paid in overseas countries.

(c) Includes Canada, \$A148,000 ; Switzerland, \$A121,000 ; and the Netherlands, \$A84,000.

VICTORIA—NATIONAL DEBT SINKING FUND : RECEIPTS  
(\$'000)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Contributed under Financial Agreement—					
Victoria	17,522	18,613	20,031	20,910	22,291
Commonwealth	4,524	4,885	5,189	5,600	5,926
Total contributions under Financial Agreement	22,046	23,498	25,220	26,510	28,217
Interest on investments	Dr. 10	5	30	28	27
Special contributions by Victoria	102	25	25	25	25
Interest accrued on securities	..	..	Dr. 109	229	..
Total	22,138	23,528	25,167	26,793	28,270
Total to date	272,202	295,730	320,897	347,689	375,959

VICTORIA—NATIONAL DEBT SINKING FUND : SECURITIES  
 REPURCHASED AND REDEEMED  
 (\$A'000)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Australia—					
Face value	10,820	18,660	10,181	18,435	23,278
Net cost	10,807	18,652	10,180	18,414	23,274
London—					
Face value	8,300	2,616	2,486	13,011	2,668
Net cost	8,302	2,783	2,357	12,723	2,324
New York—					
Face value	2,464	2,598	2,560	2,521	2,868
Net cost	2,408	2,410	2,323	2,205	2,629
Canada—					
Face value	175	177	42	142	131
Net cost	172	160	37	109	117
Netherlands—					
Face value	..	137	137	137	139
Net cost	..	138	139	139	139
Total—					
Face value	21,759	24,188	15,406	34,246	29,084
Net cost	21,689	24,142	15,036	33,591	28,483
Total to date—					
Net cost	271,542	295,684	310,720	344,311	372,794

PRIVATE FINANCE  
 (1972 : pages 646-92)

**Banking**  
 (1972 : pages 646-9)

AUSTRALIA—MAJOR TRADING BANKS' L.G.S. RATIO (a)  
 (per cent)

Month	1969	1970	1971
January	26.8	24.6	24.5
February	28.3	25.4	25.9
March	28.0	25.3	25.6
April	25.7	23.1	23.7
May	24.0	21.8	22.2
June	22.9	20.5	21.3
July	21.9	20.0	21.2
August	22.5	20.4	21.7
September	23.0	20.9	22.8
October	23.1	21.2	24.3
November	23.3	22.1	25.1
December	23.4	22.6	26.3
Average for year	24.4	22.3	23.7

(a) The L.G.S. ratio is the ratio of L.G.S. assets (liquid and government securities) to deposits.

**Reserve Bank of Australia**  
(1972 : pages 649-50)

AUSTRALIA—RESERVE BANK : RURAL CREDITS  
DEPARTMENT : AVERAGE LIABILITIES AND ASSETS  
(\$m)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Liabilities (excluding capital and contingencies)	215.7	250.4	284.7	401.9	342.2
Assets—					
Loans, advances, etc.	245.7	283.0	319.8	440.6	384.8
Other assets	0.1	(a)	0.1	..	..
Total assets	245.8	283.1	319.9	440.6	384.8

(a) Under \$50,000.

AUSTRALIA—RESERVE BANK :  
CENTRAL BANKING BUSINESS (INCLUDING NOTE ISSUE  
DEPARTMENT): AVERAGE LIABILITIES AND ASSETS  
(\$m)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Liabilities—					
Capital and reserve funds	74	72	61	100	173
Australian notes on issue	909	990	1,071	1,176	1,309
Statutory Reserve Deposit—					
Accounts of trading banks	476	480	523	647	644
Other deposits of trading banks	93	73	83	45	57
Deposits of savings banks	456	505	568	596	551
Other liabilities	278	227	225	285	400
Total	2,286	2,348	2,531	2,849	3,134
Assets—					
Gold and foreign exchange	1,174	1,042	1,090	1,043	1,493
Australian notes and coin	24	18	14	10	10
Cheques and bills of other banks	6	5	5	5	4
Australian Government securities—					
Redeemable in Australia—					
Treasury bills and Treasury notes	314	187	300	433	293
Other	440	728	713	817	855
Bills receivable and remittances in transit	29	31	35	35	41
Loans, advances, and all other assets	300	336	374	506	438
Total	2,286	2,348	2,531	2,849	3,134

AUSTRALIA—RESERVE BANK : NET PROFITS  
(\$m)

Department	1966-67	1967-68	1968-69	1969-70	1970-71
Central banking	7.9	4.5	5.7	8.9	11.3
Note issue	34.3	23.0	23.8	36.3	46.9
Rural credits	1.3	1.5	1.6	1.9	1.6
Total	43.6	29.0	31.1	47.1	59.8

AUSTRALIA—RESERVE BANK : DISTRIBUTION OF PROFITS  
(\$m)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Commonwealth of Australia	38.8	26.2	26.6	41.6	54.2
Reserve Bank reserve fund	3.5	1.3	2.9	3.6	4.0
Rural Credits Department—					
Reserve fund	0.7	0.7	0.8	0.9	0.8
Development fund	0.7	0.7	0.8	0.9	0.8
Total	43.6	29.0	31.1	47.1	59.8

### Trading banks

(1972 : pages 650-2)

VICTORIA—TRADING BANKS : NUMBER OF BRANCHES AND AGENCIES

Bank	At 30 June 1970		At 30 June 1971	
	Branches	Agencies	Branches	Agencies
<b>Major trading banks—</b>				
Commonwealth Trading Bank of Australia	139	85	140	91
Australia and New Zealand Banking Group Ltd (a)	222	89	373	103
The Bank of Adelaide	2	..	2	6
Bank of New South Wales	175	12	177	12
The Commercial Bank of Australia Ltd	168	60	167	54
The Commercial Banking Co. of Sydney Ltd	143	40	146	39
The English, Scottish, and Australian Bank Ltd (a)	161	28	..	..
The National Bank of Australasia Ltd	243	79	243	81
Total major trading banks	1,253	393	1,248	386
<b>Other trading banks—</b>				
Bank of New Zealand	1	..	1	..
Banque Nationale de Paris	1	..	1	..
Total other trading banks	2	..	2	..
Total all trading banks	1,255	393	1,250	386
Metropolitan area	727	188	726	190
Remainder of State	528	205	524	196

(a) As from 1 October 1970 the Australia and New Zealand Banking Group Ltd took over the banking business of the Australia and New Zealand Bank Ltd and the English, Scottish, and Australian Bank Ltd.



VICTORIA—MAJOR TRADING BANKS : AVERAGES OF DEPOSITS  
AND ADVANCES, MONTH OF JUNE 1971  
(\$'000)

Bank	Deposits repayable in Australia			Loans (a), advances, and bills discounted
	Not bearing interest	Bearing interest	Total	
Commonwealth Trading Bank of Australia	130,870	154,728	285,597	208,821
Private trading banks—				
Australia and New Zealand Banking Group Ltd	347,774	286,087	633,861	448,391
The Bank of Adelaide	3,612	1,530	5,142	4,274
Bank of New South Wales	131,676	118,228	249,904	204,340
The Commercial Bank of Australia Ltd	120,542	133,361	253,903	189,539
The Commercial Banking Co. of Sydney Ltd	68,766	81,835	150,601	80,096
The National Bank of Australasia Ltd	185,186	202,911	388,096	233,916
<b>Total</b>	<b>988,424</b>	<b>978,679</b>	<b>1,967,103</b>	<b>1,369,378</b>

(a) Excludes loans to authorised dealers in the short-term money market.

VICTORIA—MAJOR TRADING BANKS : AVERAGES  
OF DEPOSITS AND ADVANCES  
(\$'000)

Month of June—	Deposits repayable in Australia			Loans (a), advances, and bills discounted
	Not bearing interest	Bearing interest	Total	
1967	839,150	789,346	1,628,495	900,943
1968	891,749	850,568	1,742,317	1,026,653
1969	906,590	978,101	1,884,690	1,103,548
1970	946,468	990,144	1,936,611	1,206,903
1971	988,424	978,679	1,967,103	1,369,378

(a) Excludes loans to authorised dealers in the short-term money market.

VICTORIA—MAJOR TRADING BANKS : CLASSIFICATION OF ADVANCES  
(\$m)

Classification	At second Wednesday of July—				
	1967	1968	1969	1970	1971
<b>Resident borrowers—</b>					
<b>Business advances—</b>					
Agriculture, grazing, and dairying	150.7	193.1	207.6	209.1	203.3
Manufacturing	225.7	240.4	226.0	258.1	309.9
Transport, storage, and communication	19.3	19.1	23.4	22.8	23.5
Finance	46.3	65.1	58.5	77.3	84.8
Commerce	164.9	168.1	193.2	194.8	199.2
Building and construction	32.2	38.0	41.4	44.2	42.6
Other businesses	88.2	114.1	133.5	152.0	235.9
Unclassified	12.6	9.7	17.7	12.6	16.7
<b>Total business advances</b>	<b>739.9</b>	<b>847.6</b>	<b>901.3</b>	<b>971.0</b>	<b>1,115.9</b>
Advances to public authorities	12.0	15.3	17.7	23.7	36.7
Personal advances	140.3	165.6	184.4	199.3	202.6
Advances to non-profit organisations	14.2	16.9	17.4	19.6	18.3
<b>Total advances to resident borrowers</b>	<b>906.4</b>	<b>1,045.4</b>	<b>1,120.8</b>	<b>1,213.6</b>	<b>1,373.5</b>
<b>Non-resident borrowers</b>	<b>0.5</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.9</b>
<b>Grand total</b>	<b>906.9</b>	<b>1,046.6</b>	<b>1,121.9</b>	<b>1,214.7</b>	<b>1,375.3</b>

VICTORIA—TRADING BANKS (a) : AVERAGE  
WEEKLY DEBITS TO CUSTOMERS' ACCOUNTS  
(\$m)

Year	Average weekly debits	Year	Average weekly debits
1961-62	590.0	1966-67	940.0
1962-63	650.5	1967-68	1,041.8
1963-64	733.2	1968-69	1,214.1
1964-65	825.3	1969-70	1,413.3
1965-66	847.7	1970-71	1,647.3

(a) Also includes the Rural Credits Department of the Reserve Bank and the Commonwealth Development Bank.

**Commonwealth Banking Corporation**  
(1972 : pages 653-5)

AUSTRALIA—COMMONWEALTH TRADING BANK :  
DEPOSITS, ADVANCES, AND NUMBER OF ACCOUNTS

At 30 June—	Deposits repayable in Australia (Average for month of June)			Advances	Number of accounts
	Bearing interest	Not bearing interest	Total		
	\$m	\$m	\$m	\$m	'000
1967	517	497	1,014	561	972
1968	580	542	1,122	667	1,008
1969	683	597	1,280	718	1,054
1970	751	627	1,378	832	1,096
1971	832	670	1,502	955	1,154

AUSTRALIA—COMMONWEALTH SAVINGS BANK :  
NUMBER OF ACTIVE ACCOUNTS, AMOUNT AT  
CREDIT OF DEPOSITORS, LOANS AND ADVANCES  
OUTSTANDING, ETC.

At 30 June—	Number of active accounts	Amount at credit of depositors	Loans and advances outstanding	Commonwealth and other securities held
	'000	\$m	\$m	\$m
1967	6,582	2,493	742	1,515
1968	6,822	2,645	838	1,577
1969	7,038	2,817	927	1,648
1970	7,236	2,959	991	1,682
1971	7,462	3,142	1,095	1,744

AUSTRALIA AND VICTORIA—COMMONWEALTH DEVELOPMENT BANK:  
LOANS APPROVED, 14 JANUARY 1960 TO 30 JUNE 1972

Particulars	Rural loans		Industrial loans		Total	
	Number	Amount	Number	Amount	Number	Amount
		\$'000		\$'000		\$'000
Australia	27,693	335,204	3,134	106,077	30,827	441,281
Victoria	4,724	51,241	705	25,402	5,429	76,643

AUSTRALIA AND VICTORIA—COMMONWEALTH  
DEVELOPMENT BANK: EQUIPMENT FINANCE  
UNDER HIRE PURCHASE ARRANGEMENTS,  
14 JANUARY 1960 TO 30 JUNE 1972

Particulars	Number of transactions	Amount financed
		\$'000
Australia	154,234	482,738
Victoria	31,251	107,718

AUSTRALIA—COMMONWEALTH DEVELOPMENT BANK: LOANS TO  
RURAL AND OTHER INDUSTRIES OUTSTANDING AT 30 JUNE 1971  
(\$'000)

Rural industries		Non-rural industries	
Type of industry	Loans outstanding	Type of industry	Loans outstanding
Sheep	86,538	Building materials and fittings	2,454
Cattle	37,647	Chemical products	1,010
Dairying	18,508	Electrical manufacturing	865
Wheat and other grain crops	28,572	Foodstuffs and preservation	7,944
Fruit	6,128	Engineering	5,671
Poultry	4,114	Other manufacturing	2,962
Miscellaneous	10,314	Transport, storage, and communication	1,453
		Miscellaneous	13,289
Total	191,821	Total	35,648

**State Savings Bank of Victoria**  
(1972 : pages 656-60)

VICTORIA—STATE SAVINGS BANK: ACCOUNTS AND DEPOSITS (a)

At 30 June—	Pass-book and cheque accounts		Deposit stock accounts		School bank accounts	
	Number of operative accounts	Amount at credit of depositors	Number of operative accounts	Amount at credit of stockholders	Number of operative accounts	Amount at credit of depositors
	'000	\$'000	'000	\$'000	'000	\$'000
1967	1,912	820,102	37	133,187	438	8,471
1968	1,962	863,568	41	155,781	451	8,759
1969	2,012	911,658	54	176,429	464	9,124
1970	2,087	964,161	61	182,817	457	8,257
1971	2,167	1,033,968	63	184,156	432	7,561

(a) Excluding Christmas Club accounts. At 30 June 1971 the amount at credit of 204,678 Christmas Club members was \$9,953,429.

VICTORIA—STATE SAVINGS BANK TRANSACTIONS  
(\$'000)

Year	Deposits	Withdrawals	Interest paid	Amount at credit of depositors
1966-67	1,390,326	1,343,254	25,633	966,307
1967-68	1,568,130	1,533,657	27,408	1,033,823
1968-69	1,800,632	1,767,385	30,479	1,104,253
1969-70	2,043,393	2,016,591	32,541	1,163,596
1970-71	2,395,170	2,358,006	34,881	1,235,641

VICTORIA—STATE SAVINGS BANK : ADVANCES AND BALANCES  
OUTSTANDING FOR MORTGAGE AND OTHER LOANS (a),  
SAVINGS BANK AND CREDIT FONCIER DEPARTMENTS  
(\$m)

Year	Advances					Balances outstanding at end of year	
	Savings bank			Credit foncier		Savings bank	Credit foncier
	Housing (b)	Farms	Churches, etc.	Housing	Farms		
1966-67	39.3	3.7	1.5	19.3	0.3	123.2	193.4
1967-68	52.5	3.3	1.4	11.6	0.3	166.5	184.9
1968-69	56.6	3.6	1.1	12.9	0.1	211.7	176.4
1969-70	59.3	3.5	0.9	14.8	..	255.0	169.8
1970-71	68.6	2.6	1.2	11.8	..	305.3	160.5

(a) Excludes personal loans and loans to finance the extension of electric power lines in rural areas.  
(b) Excludes loans to co-operative housing societies and deposits with the Home Finance Trust.

**Private savings banks**  
(1972 : pages 660-1)

**VICTORIA—PRIVATE SAVINGS BANKS :  
DEPOSITS AND PROPORTION OF ALL  
VICTORIAN SAVINGS BANK DEPOSITS**

At 30 June—	Deposits in Victoria	Proportion of deposits with all savings banks in Victoria
	\$'000	per cent
1967	517,608	26.9
1968	577,647	27.7
1969	634,767	28.3
1970	686,409	28.8
1971	756,321	29.4

**Total deposits, etc., in savings banks**  
(1972 : page 661)

**VICTORIA—SAVINGS BANKS : DEPOSITS**

Savings bank	Depositors' balances at 30 June—				
	1967	1968	1969	1970	1971
	\$'000	\$'000	\$'000	\$'000	\$'000
State Savings Bank of Victoria (a)	966,056	1,033,644	1,104,088	1,163,381	1,235,368
Commonwealth Savings Bank of Australia	443,049	474,238	505,480	536,971	583,663
Private savings banks—					
Australia and New Zealand Savings Bank Ltd (b)	138,241	152,339	166,107	176,569	284,390
The Bank of Adelaide Savings Bank Ltd	911	1,057	1,270	1,345	1,519
Bank of New South Wales Savings Bank Ltd	123,892	135,893	147,369	157,070	171,510
The Commercial Savings Bank of Australia Ltd	50,896	58,305	66,345	73,693	81,926
C.B.C. Savings Bank Ltd	59,669	64,504	69,463	74,255	80,137
E.S. and A. Savings Bank Ltd (b)	59,977	68,797	76,655	83,880	..
The National Bank Savings Bank Ltd	84,022	96,752	107,558	119,597	136,839
<b>Total deposits</b>	<b>1,926,713</b>	<b>2,085,529</b>	<b>2,244,335</b>	<b>2,386,761</b>	<b>2,575,352</b>
	\$	\$	\$	\$	\$
Deposits per head of population	588.65	627.85	663.75	693.83	735.32

(a) Including school bank and deposit stock accounts, but excluding balances held in London.

(b) As from 1 October 1970 the Australia and New Zealand Savings Bank Ltd took over the banking business of the E.S. and A. Savings Bank Ltd.

**Life insurance**  
(1972 : pages 662-4)

**VICTORIA—LIFE INSURANCE : PREMIUM RECEIPTS AND POLICY  
PAYMENTS (INCLUDING ANNUITIES)  
(\$'000)**

Year	Premiums received (including single premiums)	Payments			
		Claims	Surrenders	Annuities and cash bonuses	Total
1966	135,758	47,899	20,215	1,937	70,051
1967	150,452	49,549	22,495	2,084	74,128
1968	165,691	54,300	26,833	2,160	83,292
1969	184,696	59,655	32,413	2,132	94,201
1970	209,873	69,723	41,084	2,201	113,007

**VICTORIA—LIFE INSURANCE : NEW POLICIES ISSUED  
(EXCLUDING ANNUITIES)**

Particulars		1966	1967	1968	1969	1970
<b>Ordinary business—</b>						
Number of policies		90,534	99,900	109,475	117,981	129,778
Sum insured	\$'000	477,124	543,700	634,683	755,927	917,392
Annual premiums	"	10,180	11,807	14,952	16,970	19,834
<b>Superannuation business—</b>						
Number of policies		19,295	17,785	17,624	15,373	15,795
Sum insured	\$'000	290,222	348,803	423,265	533,588	798,199
Annual premiums	"	7,440	8,385	9,629	12,085	19,376
<b>Industrial business—</b>						
Number of policies		34,661	34,427	34,037	36,370	37,621
Sum insured	\$'000	35,866	38,311	39,643	45,579	55,286
Annual premiums	"	1,350	1,438	1,515	1,734	1,995

VICTORIA—LIFE INSURANCE: POLICIES DISCONTINUED OR REDUCED  
(EXCLUDING ANNUITIES)

Cause of discontinuance	1968		1969		1970	
	Number of policies	Sum insured (\$'000)	Number of policies	Sum insured (\$'000)	Number of policies	Sum insured (\$'000)
<b>ORDINARY BUSINESS</b>						
Death or disability	5,997	12,850	6,097	13,572	6,305	15,722
Maturity, expiry, etc.	20,439	44,861	20,714	52,758	22,113	61,398
Surrender	26,047	82,419	28,213	94,194	32,567	115,260
Forfeiture	14,766	72,364	13,870	71,871	15,959	99,956
Other (a)	-355	15,999	-293	16,906	-4,411	8,442
<b>Total</b>	<b>66,894</b>	<b>228,494</b>	<b>68,601</b>	<b>249,301</b>	<b>72,533</b>	<b>300,778</b>
<b>SUPERANNUATION BUSINESS</b>						
Death or disability	510	5,024	584	5,907	449	7,047
Maturity, expiry, etc.	1,944	24,356	1,926	22,444	2,177	28,585
Surrender	8,204	99,990	7,570	139,755	10,275	197,243
Forfeiture	395	7,751	285	4,780	341	7,525
Other (a)	3,710	34,970	6,036	40,948	8,483	85,209
<b>Total</b>	<b>14,763</b>	<b>172,092</b>	<b>16,401</b>	<b>213,835</b>	<b>21,725</b>	<b>325,608</b>
<b>INDUSTRIAL BUSINESS</b>						
Death or disability	3,962	900	3,563	905	3,721	978
Maturity, expiry, etc.	21,239	3,279	22,875	3,655	23,456	3,845
Surrender	17,207	9,426	15,365	9,407	14,261	10,102
Forfeiture	7,652	10,208	7,916	10,712	7,668	12,326
Other (a)	502	454	-599	-56	893	559
<b>Total</b>	<b>50,562</b>	<b>24,266</b>	<b>49,120</b>	<b>24,624</b>	<b>49,999</b>	<b>27,809</b>

(a) Includes net loss or gain resulting from transfers, cancellations of, and alterations to, policies, etc.  
NOTE. Minus sign (—) indicates an increase in existing business in the registers concerned due to an excess of transfers from other States or conversions from other classes of business over discontinuances in those registers.

VICTORIA—LIFE INSURANCE: BUSINESS IN EXISTENCE  
(EXCLUDING ANNUITIES)

Particulars		1966	1967	1968	1969	1970
<b>Ordinary business—</b>						
Number of policies		1,086,596	1,123,141	1,165,722	1,215,130	1,272,375
Sum insured	\$'000	3,230,539	3,572,264	3,978,453	4,485,109	5,101,723
Annual premiums	"	82,189	89,437	99,502	111,092	124,389
<b>Superannuation business—</b>						
Number of policies		122,125	119,368	122,229	121,010	115,080
Sum insured	\$'000	1,346,885	1,544,686	1,795,859	2,114,374	2,586,963
Annual premiums	"	33,777	38,914	44,586	52,951	63,725
<b>Industrial business—</b>						
Number of policies		788,952	772,705	756,180	743,268	730,890
Sum insured	\$'000	276,027	293,090	308,467	329,395	356,872
Annual premiums	"	11,261	11,085	12,325	13,057	13,940

**Fire, marine, and general insurance**

(1972 : pages 664-9)

**VICTORIA—FIRE, MARINE, AND GENERAL INSURANCE :  
PERCENTAGE OF CLAIMS TO PREMIUM INCOME**

Class of business	1966-67	1967-68	1968-69	1969-70	1970-71
Fire	38.10	38.63	42.61	46.42	33.76
Householders' comprehensive	27.39	26.43	34.01	30.98	31.76
Sprinkler leakage	54.05	72.75	53.19	83.96	92.37
Loss of profits	25.65	29.39	49.11	20.91	16.64
Hailstone	168.25	107.05	46.89	142.71	65.18
Marine	56.97	60.36	68.68	66.04	47.96
Motor vehicles ( other than motor cycles)	68.45	69.38	72.52	75.42	70.38
Motor cycles	57.45	46.17	61.54	70.34	40.81
Compulsory third party (motor vehicles)	98.13	108.83	92.74	126.42	98.01
Employers' liability and workers compensation	60.68	63.86	63.11	62.89	55.75
Personal accident	43.33	40.18	44.54	43.95	41.79
Public risk third party	59.85	54.87	37.15	52.39	45.39
General property	53.50	44.97	75.57	31.80	36.58
Plate glass	59.40	57.91	60.56	63.39	64.84
Boiler	25.00	25.69	18.79	33.77	35.73
Livestock	49.84	64.50	63.18	50.94	64.08
Burglary	85.65	65.88	62.52	53.67	54.81
Guarantee	28.33	20.97	14.57	16.03	12.78
Pluvius	45.65	31.47	37.21	69.77	77.45
Aviation	59.54	72.14	75.78	55.73	58.03
All risks	69.24	59.77	65.60	70.09	57.86
Contractors' all risks	50.40	74.79	104.65	45.90	71.53
Television	32.43	29.77	22.22	52.75	53.53
Other	32.13	41.37	33.37	34.40	31.76
<b>All classes</b>	<b>57.84</b>	<b>59.18</b>	<b>59.44</b>	<b>67.35</b>	<b>58.26</b>



VICTORIA—FIRE, MARINE, AND GENERAL INSURANCE :  
TOTAL REVENUE : CLASS OF BUSINESS  
(\$'000)

Class of business	1966-67	1967-68	1968-69	1969-70	1970-71
PREMIUMS (LESS RETURNS, REBATES, AND BONUSES)					
Fire	27,182	29,699	31,485	34,604	37,879
Householders' comprehensive	13,372	15,535	17,137	19,934	22,612
Sprinkler leakage	74	83	94	106	97
Loss of profits	4,031	5,181	5,875	6,151	7,654
Hailstone	1,011	574	1,030	967	922
Marine	8,653	9,331	11,514	12,769	15,494
Motor vehicles (other than motor cycles)	53,011	56,173	58,426	65,927	75,402
Motor cycles	47	55	78	118	225
Compulsory third party (motor vehicles)	24,654	27,492	31,615	35,820	43,572
Employers' liability and workers compensation (a)	54,315	56,766	58,566	62,586	70,222
Personal accident	7,291	8,239	8,783	10,094	11,482
Public risk third party	3,848	4,860	5,496	6,414	7,720
General property	286	358	397	434	652
Plate glass	1,000	1,102	1,146	1,180	1,271
Boiler	232	301	298	610	924
Livestock	307	397	459	534	527
Burglary	3,623	3,984	4,925	5,394	5,823
Guarantee	420	601	597	655	872
Pluvius	46	42	43	43	41
Aviation	435	499	574	872	1,991
All risks	1,866	2,348	2,657	2,925	3,946
Contractors' all risks	1,127	1,187	1,548	2,063	2,518
Television	37	28	27	91	48
Other	2,652	3,051	4,354	4,724	4,916
<b>Total premiums</b>	<b>209,519</b>	<b>227,886</b>	<b>247,124</b>	<b>275,014</b>	<b>316,808</b>
OTHER REVENUE (NET OF EXPENSES)					
Interest, dividends, rents, etc.	11,482	12,654	13,666	15,614	20,461
TOTAL REVENUE					
<b>Grand total</b>	<b>221,001</b>	<b>240,540</b>	<b>260,790</b>	<b>290,627</b>	<b>337,269</b>

(a) See references pages 835-6.

**VICTORIA—FIRE, MARINE, AND GENERAL INSURANCE :  
TOTAL EXPENDITURE : CLASS OF BUSINESS  
(\$'000)**

Class of business	1966-67	1967-68	1968-69	1969-70	1970-71
<b>GROSS CLAIMS (LESS AMOUNTS RECOVERABLE)</b>					
Fire	10,356	11,473	13,416	16,063	12,787
Householders' comprehensive	3,663	4,106	5,828	6,175	7,181
Sprinkler leakage	40	60	50	89	89
Loss of profits	1,034	1,523	2,885	1,286	1,274
Hailstone	1,701	615	483	1,380	601
Marine	4,930	5,632	7,908	8,433	7,431
Motor vehicles (other than motor cycles)	36,284	38,974	42,371	49,724	53,066
Motor cycles	27	25	48	83	92
Compulsory third party (motor vehicles)	24,192	29,920	29,321	45,282	42,704
Employers' liability and workers compensation	32,960	36,250	36,960	39,358	39,148
Personal accident	3,159	3,311	3,912	4,436	4,799
Public risk third party	2,303	2,667	2,042	3,360	3,504
General property	153	161	300	138	238
Plate glass	594	638	694	748	824
Boiler	58	77	56	206	330
Livestock	153	256	290	272	338
Burglary	3,103	2,625	3,079	2,895	3,191
Guarantee	119	126	87	105	111
Pluvius	21	13	16	30	32
Aviation	259	360	435	486	1,155
All risks	1,292	1,403	1,743	2,050	2,284
Contractors' all risks	568	888	1,620	947	1,801
Television	12	8	6	48	26
Other	852	1,262	1,453	1,625	1,561
<b>Total claims</b>	<b>127,833</b>	<b>142,374</b>	<b>155,001</b>	<b>185,219</b>	<b>184,567</b>
<b>OTHER EXPENDITURE</b>					
Contributions to fire brigades	4,842	5,542	6,078	6,871	8,231
Commission and agents' charges	20,227	22,071	24,106	26,982	28,994
Expenses of management	33,073	36,000	38,723	43,452	50,090
Taxation	5,216	7,288	7,749	9,144	10,335
<b>Total other expenditure</b>	<b>63,358</b>	<b>70,901</b>	<b>76,656</b>	<b>86,449</b>	<b>97,650</b>
<b>TOTAL EXPENDITURE</b>					
<b>Grand total</b>	<b>191,191</b>	<b>213,275</b>	<b>231,658</b>	<b>271,667</b>	<b>282,218</b>

VICTORIA—MOTOR VEHICLE INSURANCE (COMPULSORY THIRD PARTY):  
NUMBER OF MOTOR VEHICLES INSURED, 1970-71

Class of motor vehicle	Motor cars usually garaged—		Total
	Within a radius of 20 miles of the G.P.O., Melbourne	Outside a radius of 20 miles of the G.P.O., Melbourne	
Private and business	746,923	397,900	1,144,823
Goods carrying	94,393	128,978	223,371
Hire	4,331	3,361	7,692
Hire and drive yourself	1,040	323	1,363
Passenger transport	347	413	760
Miscellaneous	10,641	56,803	67,444
Motor cycle	13,089	12,945	26,034
Total	870,764	600,723	1,471,487

VICTORIA—STATE MOTOR CAR INSURANCE OFFICE :  
PREMIUMS RECEIVED, CLAIMS PAID, ETC.  
(\$'000)

Year	Premiums received less reinsurances, rebates, etc.	Increase in unearned premium provision	Claims paid and outstanding	Expenses	Underwriting loss
1966-67	13,555	1,098	12,242	1,020	805
1967-68	14,665	629	15,745	1,136	2,846
1968-69	17,880	1,472	15,724	1,241	558
1969-70	19,625	829	31,149	1,472	13,825
1970-71	21,711	1,157	22,392	1,606	3,445

VICTORIA—STATE ACCIDENT INSURANCE OFFICE :  
PREMIUMS RECEIVED, CLAIMS PAID, ETC.  
(\$'000)

Year	Premiums received less reinsurances, rebates, etc.	Increase in unearned premium provision	Claims paid and outstanding	Expenses	Underwriting profit
1966-67	9,250	546	5,680	651	2,373
1967-68	9,155	-471	7,079	673	1,874
1968-69	9,911	- 23	8,204	691	1,040
1969-70	9,760	27	7,228	755	1,751
1970-71	11,780	121	8,748	775	2,136

NOTE. Minus sign (-) denotes a reduction in unearned premium provision.

## Export Payments Insurance Corporation

(1972 : pages 669-70)

## AUSTRALIA—EXPORT PAYMENTS INSURANCE CORPORATION

Particulars	1967-68	1968-69	1969-70	1970-71
<b>Business on Corporation's account—</b>				
Number of policies and guarantees	692	746	809	941
	\$'000	\$'000	\$'000	\$'000
Face value of policies and guarantees current	271,075	298,829	343,064	511,105
Maximum contingent liability	141,108	158,966	190,067	301,061
Premium income	651	730	861	1,025
Operating costs	388	426	517	585
Claims paid (gross)	854	388	353	939
Recoveries	591	263	212	693
Underwriting reserve	1,420	1,897	2,401	2,997
<b>Business on Government's account—</b>				
Overseas investment insurance—				
Number of policies	29	41	56	78
	\$'000	\$'000	\$'000	\$'000
Face value of policies current	12,097	19,813	19,505	44,535
Maximum contingent liability	10,887	17,832	17,555	40,081
National interest insurance—				
Number of policies	(a) 5	1	2	(a) 4
	\$'000	\$'000	\$'000	\$'000
Face value of policies current	(a)2,278	1,208	2,420	(b)63,792
Maximum contingent liability	(a)2,007	1,087	2,183	(b)42,487

(a) Includes warehousing insurance.

(b) Three large policies were issued in the national interest during the year.

**Building societies**  
(1972 : pages 670-1)

VICTORIA—PERMANENT BUILDING SOCIETIES (a)

Particulars	1968-69	1969-70	1970-71
Number of societies	40	46	46
Number of shareholders (b)	11,385	16,188	30,783
Number of borrowers	18,044	19,330	21,144
Value of transactions—	\$'000	\$'000	\$'000
Income—			
Interest on mortgage loans	5,206	6,786	8,586
Other	515	692	1,020
Total	5,721	7,478	9,606
Expenditure—			
Interest payable	2,999	3,950	5,081
Administration, etc.	743	1,047	1,334
Total	3,742	4,997	6,414
Loans and advances—			
Paid	27,545	33,020	36,191
Repaid	11,103	12,974	12,922
Deposits—			
Received	58,494	62,065	73,558
Repaid	35,115	49,880	56,952
Liabilities—			
Investing members' funds—			
Paid-up capital	19,511	27,218	40,974
Reserves, etc.	4,210	4,375	4,492
Borrowing members' funds—			
Share subscriptions	149	169	191
Other	27	20	21
Deposits	52,234	65,190	81,850
Loans (including bank overdraft)	5,821	7,585	8,435
Other	2,108	1,608	1,829
Total	84,059	106,164	137,792
Assets—			
Loans on mortgage	78,832	98,799	121,376
Land and house property	875	944	998
Other investments	2,778	3,580	9,408
Cash and deposits	1,136	2,335	5,203
Other	437	507	807
Total	84,059	106,164	137,792

(a) Excludes Starr-Bowkett Societies.

(b) Includes 720 shareholders holding borrowers' shares in 1968-69, 1,204 in 1969-70, and 2,734 in 1970-71.

## Co-operative organisations

(1972 : pages 671-3)

VICTORIA—CO-OPERATIVE ORGANISATIONS : PRODUCER AND  
CONSUMER SOCIETIES, 1970-71

Particulars	Societies—			Total all societies
	Producers	Consumers	Producers and consumers	
Number of societies	91	49	10	150
Number of members	89,506	44,305	22,458	156,269
Value of transactions during the year—	\$'000	\$'000	\$'000	\$'000
Income—				
Sales	97,846	13,958	61,934	173,738
Other	6,359	516	524	7,399
Total	104,205	14,474	62,458	181,137
Expenditure—				
Purchases	65,103	11,583	49,329	126,014
Working expenses, etc.	32,015	2,368	10,820	45,202
Interest on loans, etc.	1,081	211	308	1,601
Rebates and bonuses	1,653	205	26	1,884
Total	99,852	14,366	60,484	174,702
Dividend on share capital	1,115	50	547	1,712
Liabilities—				
Share capital	17,636	2,057	6,890	26,583
Loan capital	4,868	1,889	2,564	9,322
Bank overdraft	17,153	641	1,219	19,012
Accumulated profits	1,918	684	555	3,157
Reserve funds	20,258	848	5,403	26,508
Sundry creditors	14,323	859	9,111	24,293
Other	4,087	377	2,133	6,597
Total	80,243	7,354	27,874	115,472
Assets—				
Land and buildings	} 32,156	2,837	17,137	52,131
Fittings, plant, and machinery				
Stock	13,183	1,716	3,089	17,988
Sundry debtors	23,905	1,845	7,124	32,875
Cash in bank, on hand, or on deposit	2,648	161	271	3,080
Profit and loss account	2,623	560	11	3,194
Other	5,727	235	243	6,204
Total	80,243	7,354	27,874	115,472

## VICTORIA—CO-OPERATIVE ORGANISATIONS : CREDIT SOCIETIES

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Number of societies	146	153	159	172	180
Number of members	26,641	31,363	35,905	43,857	57,646
Transactions during the year—	\$'000	\$'000	\$'000	\$'000	\$'000
Income—					
Interest	421	541	725	1,046	1,591
Other income	20	28	44	64	97
Total	440	570	769	1,110	1,687
Expenditure—					
Interest on deposits	237	314	408	587	890
Working expenses	146	201	293	476	884
Total	383	515	701	1,064	1,774
Liabilities—					
Share capital	244	294	342	406	514
Reserves	63	85	112	144	191
Depositors	5,481	7,094	9,444	13,541	20,699
Sundry creditors	53	74	71	72	80
Other	185	213	408	700	873
Total	6,027	7,761	10,377	14,862	22,356
Assets—					
Loans to members	5,209	6,571	8,947	12,616	19,267
Cash at bank or on hand	346	384	402	677	749
Other	472	806	1,028	1,570	2,340
Total	6,027	7,761	10,377	14,862	22,356

## Public Trustee

(1972 : pages 673-4)

VICTORIA—PUBLIC TRUSTEE : COMMON FUND  
(\$'000)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Proceeds of realisations, rents, interest, etc.	11,792	12,181	13,064	15,364	15,195
Investments, distributions, claims, etc.	9,344	10,700	10,244	13,572	13,172
Cash variation	2,448	1,481	2,820	1,792	2,023
Balance at 1 July	17,634	20,082	21,563	24,383	26,175
Balance at 30 June	20,082	21,563	24,383	26,175	28,198

**VICTORIA—APPLICATIONS BY PUBLIC TRUSTEE  
FOR PROBATE, LETTERS OF ADMINISTRATION, ETC.,  
AND NUMBER OF WILLS LODGED FOR CUSTODY**

Year	Number of applications	Number of wills
1966-67	1,120	2,555
1967-68	1,058	2,465
1968-69	1,050	2,659
1969-70	1,083	2,951
1970-71	987	2,535

**Trustee companies**

(1972 : pages 674-5)

**VICTORIA—TRUSTEE COMPANIES : VALUE OF ESTATES  
ADMINISTERED AT 30 JUNE  
(\$m)**

Particulars	1967	1968	1969	1970	1971
Stock and debentures	109.9	123.5	127.0	131.7	126.0
Advances on mortgages	53.5	53.7	62.9	65.9	71.5
Property and livestock	76.8	74.5	77.5	78.4	76.2
Shares	193.7	205.6	226.5	232.4	202.8
Fixed and other deposits	11.6	12.5	20.7	20.9	22.8
Cash at bank	20.1	19.8	13.9	12.4	12.5
Other	20.0	21.3	23.1	26.8	26.7
<b>Total</b>	<b>485.6</b>	<b>510.9</b>	<b>551.6</b>	<b>568.5</b>	<b>538.5</b>



**Probate**  
1972 : pages 675-7)

VICTORIA—PROBATES, LETTERS OF ADMINISTRATION, ETC.

Year	Number of estates	Gross value of estates—		Liabilities	Net value of estates	Average net value per estate
		Real	Personal			
		\$'000	\$'000			
MALES						
1967	11,474	78,302	137,043	25,028	190,317	16,587
1968	11,721	77,742	148,078	24,969	200,851	17,136
1969	12,145	94,691	163,244	30,974	226,961	18,688
1970	12,897	113,851	198,500	36,218	276,134	21,411
1971	12,426	98,053	185,591	33,996	249,648	20,091
FEMALES						
1967	8,294	42,262	69,057	7,423	103,896	12,527
1968	8,668	44,154	82,960	8,145	118,969	13,725
1969	8,631	47,137	84,678	8,597	123,218	14,276
1970	9,390	56,043	102,328	10,829	147,542	15,713
1971	8,995	53,183	89,252	10,473	131,962	14,671
TOTAL						
1967	19,768	120,564	206,100	32,451	294,213	14,883
1968	20,389	121,896	231,038	33,114	319,820	15,686
1969	20,776	141,828	247,922	39,571	350,179	16,854
1970	22,287	169,894	300,829	47,047	423,675	19,010
1971	21,421	151,235	274,843	44,469	381,610	17,815

**VICTORIA—NUMBER AND NET VALUE OF ESTATES OF  
DECEASED PERSONS**

Group	1969		1970		1971	
	Number	Net value	Number	Net value	Number	Net value
	\$'000		\$'000		\$'000	
<b>\$</b>						
<b>MALES</b>						
Under 200	364	36	403	40	420	41
200- 599	763	290	804	308	768	298
600- 999	572	453	606	477	533	422
1,000- 1,999	1,187	1,741	1,150	1,700	1,122	1,674
2,000- 3,999	1,677	4,927	1,620	4,770	1,638	4,803
4,000- 5,999	1,127	5,572	1,215	6,017	1,268	6,261
6,000- 7,999	958	6,690	957	6,701	975	6,868
8,000- 9,999	882	7,915	984	8,837	850	7,642
10,000- 19,999	2,052	28,424	2,176	30,303	2,207	30,841
20,000- 29,999	745	18,125	780	19,162	812	19,828
30,000- 49,999	723	28,043	838	32,284	769	29,945
50,000- 99,999	679	46,764	871	60,397	685	47,237
100,000-199,999	305	41,411	354	48,352	272	36,965
200,000 and over	111	36,567	139	56,783	107	56,823
<b>Total males</b>	<b>12,145</b>	<b>226,961</b>	<b>12,897</b>	<b>276,134</b>	<b>12,426</b>	<b>249,648</b>
<b>\$</b>						
<b>FEMALES</b>						
Under 200	201	19	209	21	229	22
200- 599	520	205	511	199	481	189
600- 999	382	304	424	335	375	296
1,000- 1,999	871	1,284	860	1,271	833	1,218
2,000- 3,999	1,228	3,597	1,327	3,892	1,166	3,433
4,000- 5,999	946	4,664	1,004	4,991	908	4,526
6,000- 7,999	817	5,716	803	5,623	770	5,379
8,000- 9,999	740	6,658	802	7,203	801	7,202
10,000- 19,999	1,553	21,383	1,800	25,070	1,814	25,212
20,000- 29,999	508	12,436	578	14,224	619	15,051
30,000- 49,999	418	16,186	517	19,870	505	19,318
50,000- 99,999	301	20,676	350	23,877	355	24,359
100,000-199,999	107	13,807	149	20,194	101	13,450
200,000 and over	39	16,283	56	20,771	38	12,307
<b>Total females</b>	<b>8,631</b>	<b>123,218</b>	<b>9,390</b>	<b>147,542</b>	<b>8,995</b>	<b>131,962</b>
<b>Grand total</b>	<b>20,776</b>	<b>350,179</b>	<b>22,287</b>	<b>423,675</b>	<b>21,421</b>	<b>381,610</b>

**Transfer of land**  
(1972 : pages 677-81)

**VICTORIA—NUMBER OF TITLES OF LAND ISSUED**

Year	Certificates of title	Crown grants	Crown leases	Total titles
1967	49,476	1,221	461	51,158
1968	53,422	1,223	256	54,901
1969	51,002	834	229	52,065
1970	54,636	988	237	55,861
1971	49,336	848	230	50,414

VICTORIA—DEALINGS LODGED AT THE TITLES OFFICE  
UNDER THE TRANSFER OF LAND ACT

Year	Number of transfers	Mortgages (a)		Number of—			Total dealings
		Number	Amount	Entries of executor, administrator, or survivor	Plans of subdivision	Caveats	
			\$'000				
1966-67	109,192	58,057	475,260	15,707	4,340	17,769	67,601
1967-68	110,618	60,073	531,764	15,688	4,149	18,456	74,733
1968-69	115,367	63,367	595,570	15,966	4,458	19,839	79,079
1969-70	118,957	65,005	675,651	15,888	4,501	21,584	84,276
1970-71	114,989	65,713	711,055	16,693	4,241	23,031	88,202

(a) Excluding certain mortgages, principally to trading banks to secure overdrafts on current accounts.

VICTORIA—DEALINGS UNDER THE PROPERTY LAW ACT

Year	Mortgages (a)		Reconveyances		Conveyances	
	Number	Amount	Number	Amount (b)	Number	Amount
		\$'000		\$'000		\$'000
1966-67	1,128	11,783	1,370	2,592	3,032	28,189
1967-68	1,173	12,894	1,410	2,884	3,059	28,531
1968-69	1,342	16,392	1,436	2,858	2,896	41,268
1969-70	993	14,095	1,444	4,747	3,112	35,414
1970-71	971	17,749	1,378	3,203	2,622	38,878

(a) Excluding certain mortgages, principally to trading banks to secure overdrafts on current accounts.

(b) Excluding repayments designated "principal and interest".

VICTORIA—MORTGAGES (a) OF REAL ESTATE LODGED FOR REGISTRATION

Type of mortgagee	1968-69		1969-70		1970-71	
	Number	Amount	Number	Amount	Number	Amount
		\$'000		\$'000		\$'000
Banks	23,425	181,655	22,571	180,556	23,188	193,780
Building societies	3,638	28,689	4,305	36,917	4,141	39,052
Co-operative housing societies	3,289	22,486	2,818	20,821	3,000	24,326
Insurance companies	2,628	52,942	2,650	59,763	2,254	56,117
Government institutions	4,833	31,771	4,204	34,454	3,832	42,081
Trustee institutions	537	13,217	473	13,055	445	10,779
Other mortgagees	26,359	281,199	28,977	344,179	29,824	362,669
Total	64,709	611,959	65,998	689,746	66,684	728,804

(a) Excluding certain mortgages, principally to trading banks to secure overdrafts on current accounts.

**VICTORIA—STOCK MORTGAGES AND LIENS  
ON WOOL AND CROPS**

Security	1967	1968	1969	1970	1971
<b>Stock mortgages—</b>					
Number	468	494	484	861	1,602
Amount	\$'000 1,366	1,529	1,629	1,174	1,160
<b>Liens on wool—</b>					
Number	15	15	29	31	140
Amount	\$'000 139	178	323	138	614
<b>Liens on crops—</b>					
Number	71	429	429	180	273
Amount	\$'000 174	526	459	353	715
<b>Total—</b>					
Number	554	938	942	1,072	2,015
Amount	\$'000 1,679	2,233	2,411	1,665	2,488

**VICTORIA—BILLS OF SALE**

Security	1967	1968	1969	1970	1971
<b>Bills of sale—</b>					
Number	17,248	22,265	26,773	27,133	27,323
Amount	\$'000 24,194	30,077	36,755	40,850	45,618

**Companies**

(1972 : pages 681-2)

**VICTORIA—COMPANIES REGISTERED, ETC.**

Particulars	1967	1968	1969	1970	1971
<b>New companies registered—</b>	number	number	number	number	number
Victorian	3,304	4,138	4,751	5,634	5,895
Other	333	345	429	552	516
<b>Total</b>	<b>3,637</b>	<b>4,483</b>	<b>5,180</b>	<b>6,186</b>	<b>6,411</b>
	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Nominal capital of new companies—</b>					
Victorian	122,276	162,878	212,023	418,939	224,371
Other	205,366	307,795	450,731	559,613	361,536
<b>Total</b>	<b>327,642</b>	<b>470,673</b>	<b>662,754</b>	<b>978,552</b>	<b>585,907</b>
	'000	'000	'000	'000	'000
<b>Approximate number of existing companies (at end of year)—</b>					
Victorian	47	50	54	59	64
Other	4	4	4	4	5
<b>Total</b>	<b>50</b>	<b>54</b>	<b>58</b>	<b>63</b>	<b>69</b>
	\$'000	\$'000	\$'000	\$'000	\$'000
<b>Increase in nominal capital of Victorian com- panies during year</b>	217,980	268,159	536,469	803,510	832,693

**Stock Exchange of Melbourne**  
(1972 : pages 682-6)

**MELBOURNE STOCK EXCHANGE—ISSUES LISTED (a)  
AND NOMINAL VALUE**

Class of security	Listed at 30 September—				Listed at 30 June—			
	1968		1969		1970		1971	
	No. of issues	Nominal value	No. of issues	Nominal value	No. of issues	Nominal value	No. of issues	Nominal value
	\$m	\$m		\$m		\$m		\$m
Commonwealth loans	51	8,269	65	9,099	67	9,364	97	9,565
Semi-government and Fiji loans	906	887	946	969	955	901	972	998
Company debentures	687	963	778	1,209	801	1,345	812	1,416
Company unsecured notes	188	213	162	204	147	188	115	160
Preference shares	240	141	235	149	237	142	223	130
Industrial	776	3,516	790	3,691	799	3,913	764	4,069
Mining	155	527	261	702	361	797	438	1,215
<b>Total</b>	<b>3,003</b>	<b>14,516</b>	<b>3,237</b>	<b>16,023</b>	<b>3,367</b>	<b>16,650</b>	<b>3,421</b>	<b>17,553</b>

(a) Includes options.

**MELBOURNE STOCK EXCHANGE—VOLUME OF TURNOVER OF SECURITIES  
(million units)**

Class of security	1966-67	1967-68	1968-69	1969-70	1970-71
Commonwealth loans	170.0	166.6	228.8	139.7	257.6
Semi-government and Fiji loans	19.2	12.1	12.2	15.5	22.1
Company debentures, unsecured notes	15.7	16.2	16.2	18.4	24.8
<b>Total loan securities</b>	<b>204.9</b>	<b>194.9</b>	<b>257.2</b>	<b>173.6</b>	<b>304.5</b>
Preference shares	2.0	2.3	3.3	2.2	1.7
Industrial	137.8	235.0	273.2	245.0	260.5
Mining	65.1	228.9	296.0	1,122.6	788.5
<b>Total share securities</b>	<b>204.9</b>	<b>466.2</b>	<b>572.5</b>	<b>1,369.8</b>	<b>1,050.7</b>

NOTE. Each unit is equivalent to \$1.

MELBOURNE STOCK EXCHANGE—NUMBER OF TRANSACTIONS AND  
VALUE OF TURNOVER OF STOCKS AND SHARES

Class of security	1967-68		1968-69		1969-70		1970-71	
	Trans- actions	Value	Trans- actions	Value	Trans- actions	Value	Trans- actions	Value
	'000	\$m	'000	\$m	'000	\$m	'000	\$m
Commonwealth loans	11.9	167.2	12.2	231.5	11.4	132.0	9.2	229.8
Semi-government and Fiji loans	4.4	12.0	4.1	12.0	4.2	15.0	4.1	21.1
Company debentures, unsecured notes	7.5	15.5	6.2	15.6	6.7	17.7	5.2	21.9
<b>Total loan securities</b>	<b>23.8</b>	<b>194.7</b>	<b>22.5</b>	<b>259.1</b>	<b>22.3</b>	<b>164.7</b>	<b>18.5</b>	<b>272.8</b>
Preference shares	4.6	2.9	4.4	3.9	2.8	3.0	2.6	1.8
Industrial	431.4	472.7	439.9	478.8	352.0	377.2	295.6	391.3
Mining	496.1	423.6	486.8	458.6	921.3	823.8	597.5	593.2
<b>Total share securities</b>	<b>932.1</b>	<b>899.2</b>	<b>931.1</b>	<b>941.3</b>	<b>1,276.1</b>	<b>1,204.0</b>	<b>895.7</b>	<b>986.3</b>
<b>Grand total</b>	<b>955.9</b>	<b>1,093.9</b>	<b>953.6</b>	<b>1,200.4</b>	<b>1,298.4</b>	<b>1,368.7</b>	<b>914.2</b>	<b>1,259.1</b>

**Short-term money market**

(1972 : pages 686-8)

AUSTRALIA—SHORT-TERM MONEY MARKET : AUTHORISED DEALERS'  
LIABILITIES CLASSIFIED BY TYPE OF CLIENT AT 30 JUNE (a)  
(\$m)

Clients	1967	1968	1969	1970	1971
All trading banks	121.5	117.6	90.0	158.4	189.2
Savings banks	56.2	26.5	36.0	37.3	77.7
Insurance offices	10.8	20.1	32.4	24.4	26.8
Superannuation, pension, and provident funds	11.7	4.6	8.9	16.6	22.4
Hire purchase and other instalment credit companies	5.9	2.8	2.4	7.9	6.1
Companies (not elsewhere included)	120.2	156.8	140.3	143.7	155.3
Commonwealth and State Governments	57.4	78.1	62.3	47.7	91.9
Local and semi-government authorities (not elsewhere included)	56.5	72.2	75.3	87.7	70.0
All other lenders (including marketing boards and trustee companies)	33.6	20.6	45.9	36.2	41.5
<b>Total</b>	<b>473.7</b>	<b>499.3</b>	<b>493.4</b>	<b>559.9</b>	<b>680.8</b>

(a) Liabilities to Reserve Bank as lender of last resort are excluded.

AUSTRALIA—SHORT-TERM MONEY MARKET : AUTHORISED DEALERS :  
INTEREST RATES  
(per cent per annum)

Month	Interest rates on loans accepted during month				Weighted average interest rate on loans outstanding (a)
	At call		For fixed periods		
	Minimum	Maximum	Minimum	Maximum	
June 1967	2.00	6.50	3.00	5.50	4.46
June 1968	3.00	6.75	3.75	5.40	4.29
June 1969	2.00	7.50	4.00	6.75	4.59
Sept. 1969	3.00	7.50	3.50	6.10	4.54
Dec. 1969 (b)	2.00	7.75	3.00	7.00	4.40
Mar. 1970	1.00	8.75	2.75	8.00	4.45
June 1970	3.50	8.80	4.50	8.50	6.12
Sept. 1970	2.00	8.25	4.00	7.50	5.18
Dec. 1970 (b)	1.00	9.00	3.50	7.00	4.90
Mar. 1971	1.00	8.75	3.00	7.50	4.97
June 1971	2.00	9.50	4.00	8.00	5.91

(a) Weighted average of weekly figures.

(b) Excludes one Wednesday.

AUSTRALIA—SHORT-TERM MONEY MARKET : AUTHORISED DEALERS :  
SELECTED ASSETS (a)  
(\$m)

Month	Commonwealth Government securities (face value)			Commercial bills	Banks' Certificates of Deposit
	Treasury notes	Other	Total		
June 1967	13.7	454.1	467.7	32.8	(c)
June 1968	116.2	375.1	491.3	35.7	(c)
June 1969	46.4	459.2	505.6	28.9	15.0
Sept. 1969	73.4	453.5	526.9	42.2	3.4
Dec. 1969 (b)	76.6	482.2	558.8	32.5	5.5
Mar. 1970	85.3	522.5	607.8	38.6	3.9
June 1970	7.6	567.7	575.4	38.3	3.6
Sept. 1970	7.3	568.9	576.2	41.1	3.1
Dec. 1970 (b)	69.6	523.4	593.0	30.1	3.0
Mar. 1971	147.6	526.6	674.2	28.6	2.9
June 1971	20.6	661.4	682.0	45.4	3.4

(a) Average of weekly figures.

(b) Excludes one Wednesday.

(c) Not applicable.

**Finance companies**  
(1972 : pages 688-90)

VICTORIA—FINANCE COMPANIES : AMOUNTS FINANCED (a)  
(\$m)

Year	Instalment credit for retail sales	Wholesale hire purchase	Other consumer and commercial loans	Factoring	Total
1966-67	159.7	165.9	163.5	35.8	524.9
1967-68	193.1	190.5	199.5	34.7	617.9
1968-69	224.4	210.7	258.0	30.7	723.9
1969-70	262.3	241.8	337.0	39.6	880.7
1970-71	267.9	252.6	(b) 383.4	48.3	952.1

(a) The actual amount of cash provided. It excludes interest, insurance, hiring and other charges, and initial deposits. For purchases of existing agreements and trade debts purchased, it represents the amount of cash paid to the seller.

(b) Other consumer and commercial loans in the year ended 30 June 1971 included \$46.6m personal loans.

VICTORIA—FINANCE COMPANIES : BALANCES OUTSTANDING  
(\$m)

At 30 June—	Instalment credit for retail sales	Wholesale hire purchase	Other consumer and commercial loans	Factoring	Total
1967	253.7	25.5	202.3	8.2	489.7
1968	292.4	28.0	230.5	9.7	560.6
1969	338.9	34.9	267.7	9.6	651.1
1970	393.6	37.1	336.7	13.5	780.9
1971	426.0	41.3	(a) 405.6	13.5	886.4

(a) Other consumer and commercial loans at 30 June 1971 included \$65.5m personal loans.

VICTORIA—FINANCE COMPANIES : COLLECTIONS AND OTHER LIQUIDATIONS OF BALANCES (a)  
(\$m)

Year	Instalment credit for retail sales	Wholesale hire purchase	Other consumer and commercial loans	Factoring	Total
1966-67	200.5	159.1	174.4	39.5	573.4
1967-68	209.4	189.2	200.6	36.7	635.9
1968-69	241.8	205.8	259.2	34.4	741.2
1969-70	280.0	241.9	328.1	43.0	893.0
1970-71	316.3	252.2	(b) 384.4	56.9	1,009.8

(a) Covers cash collections of capital repayments, hiring charges, interest and insurance, and also other liquidations such as bad debts written off and rebates for early payouts.

(b) Other consumer and commercial loans in the year ended 30 June 1971 included \$52.0m personal loans.



**Instalment credit for retail sales**

(1972 : pages 690-2)

**AUSTRALIA—INSTALMENT CREDIT FOR RETAIL SALES, 1970-71**

(Retail businesses plus non-retail finance businesses)

(\$m)

State	Amount financed (a)				Balances outstanding at 30 June 1971 (e)
	Motor vehicles, tractors, etc. (b)	Plant and machinery (c)	Household and personal goods (d)	Total all goods	
New South Wales (f)	367.2	37.0	164.5	568.7	815.6
Victoria	227.0	25.0	104.8	356.7	512.8
Queensland	129.9	19.6	56.2	205.6	308.1
South Australia (g)	94.3	5.5	32.0	131.8	190.4
Western Australia	101.8	13.8	27.1	142.8	204.4
Tasmania	26.7	4.1	9.6	40.5	58.4
<b>Australia</b>	<b>947.0</b>	<b>104.9</b>	<b>394.2</b>	<b>1,446.1</b>	<b>2,089.7</b>

(a) Includes amounts financed on both hire purchase and other instalment credit schemes. Amount financed is cash value of goods less deposit, interest, hiring charges, and insurance.

(b) Includes new and used motor cars, motor cycles, commercial vehicles, tractors, caravans, and motor parts and accessories.

(c) Includes farm machinery and implements, earthmoving equipment, aircraft, industrial plant and machinery, business machines and equipment (including commercial refrigeration equipment), etc.

(d) Includes furniture and furnishings, domestic refrigerators, electrical goods, television and accessories, radios, musical instruments, bicycles, and other household and personal goods.

(e) Includes hiring charges, interest, and insurance.

(f) Includes Australian Capital Territory.

(g) Includes Northern Territory.

**VICTORIA—INSTALMENT CREDIT FOR RETAIL SALES : AMOUNTS FINANCED BY COMMODITY GROUPS (a)**

(\$m)

Year	Motor vehicles, tractors, etc. (b)	Plant and machinery (c)	Household and personal goods (d)	Total all goods
<b>RETAIL BUSINESSES</b>				
1966-67	5.0	0.9	69.3	75.2
1967-68	5.3	0.5	72.2	78.0
1968-69	6.6	0.8	75.9	83.3
1969-70	5.9	0.6	80.4	86.9
1970-71	6.2	0.5	85.7	92.5
<b>NON-RETAIL FINANCE BUSINESSES</b>				
1966-67	131.2	17.1	14.5	162.8
1967-68	158.3	17.5	17.2	193.0
1968-69	182.0	22.5	18.6	223.2
1969-70	217.3	25.0	18.0	260.2
1970-71	220.8	24.4	19.0	264.2
<b>ALL BUSINESSES</b>				
1966-67	136.3	18.0	83.8	238.1
1967-68	163.6	18.0	89.4	271.0
1968-69	188.5	23.3	94.5	306.4
1969-70	223.1	25.5	98.4	347.1
1970-71	227.0	25.0	104.8	356.7

(a) Includes amounts financed on both hire purchase and other instalment credit schemes. Amount financed is cash value of goods less deposit, interest, hiring charges, and insurance.

(b) Includes new and used motor cars, motor cycles, commercial vehicles, tractors, caravans, and motor parts and accessories.

(c) Includes farm machinery and implements, earthmoving equipment, aircraft, industrial plant and machinery, business machines and equipment (including commercial refrigeration equipment), etc.

(d) Includes furniture and furnishings, domestic refrigerators, electrical goods, television and accessories, radios, musical instruments, bicycles, and other household and personal goods.

**VICTORIA—INSTALMENT CREDIT FOR RETAIL SALES :  
BALANCES OUTSTANDING**

At 30 June—	Outstanding balances			Type of credit			
	Retail businesses	Non-retail finance businesses	Total	Hire purchase		Other instalment credit	
				Balance outstanding	Percentage of total	Balance outstanding	Percentage of total
	\$m	\$m	\$m	\$m		\$m	
1967	86.8	254.5	341.3	174.7	51.2	166.7	48.8
1968	82.6	291.2	373.8	173.1	46.3	200.7	53.7
1969	84.8	333.6	418.4	180.6	43.2	237.8	56.8
1970	88.6	385.6	474.3	194.8	41.1	279.5	58.9
1971	94.6	418.2	512.8	208.1	40.6	304.7	59.4

**VICTORIA—RETAIL HIRE PURCHASE OPERATIONS**

Class of goods	1966-67	1967-68	1968-69	1969-70	1970-71
NUMBER OF AGREEMENTS MADE					
Motor vehicles, tractors, etc. (a)	51,685	48,865	47,546	44,701	42,849
Plant and machinery (b)	9,250	8,564	8,633	7,683	6,918
Household and personal (c)	283,290	273,849	276,251	277,347	265,463
<b>Total agreements</b>	<b>344,225</b>	<b>331,278</b>	<b>332,430</b>	<b>329,731</b>	<b>315,230</b>
VALUE OF GOODS PURCHASED (d)					
	(\$m)				
Motor vehicles, tractors, etc. (a)	78.7	83.0	82.8	94.4	99.5
Plant and machinery (b)	23.5	23.4	28.0	30.5	31.9
Household and personal (c)	45.8	48.6	52.5	55.1	54.6
<b>Total value</b>	<b>148.1</b>	<b>155.1</b>	<b>163.3</b>	<b>180.0</b>	<b>186.0</b>
AMOUNT FINANCED UNDER AGREEMENTS (e)					
	(\$m)				
Motor vehicles, tractors, etc. (a)	53.8	56.8	58.9	69.5	73.0
Plant and machinery (b)	16.5	16.4	20.0	22.1	22.6
Household and personal (c)	38.0	39.9	43.1	45.4	46.1
<b>Total amount financed</b>	<b>108.2</b>	<b>113.1</b>	<b>122.0</b>	<b>137.1</b>	<b>141.8</b>
BALANCES OUTSTANDING AT END OF YEAR (f)					
	(\$m)				
<b>All classes of goods</b>	<b>174.7</b>	<b>173.1</b>	<b>180.6</b>	<b>194.8</b>	<b>208.1</b>

(a) Includes new and used motor cars, motor cycles, commercial vehicles, tractors, caravans, and motor parts and accessories.

(b) Includes farm machinery and implements, earthmoving equipment, aircraft, industrial plant and machinery, business machines and equipment (including commercial refrigeration equipment), etc.

(c) Includes furniture and furnishings, domestic refrigerators, electrical goods, television and accessories, radios, musical instruments, bicycles, and other household and personal goods.

(d) Value at net cash or list price (excluding hiring charges and insurance).

(e) Excludes hiring charges and insurance.

(f) Includes hiring charges and insurance.

## 10

TRADE, TRANSPORT, AND  
COMMUNICATIONSRETAIL TRADE  
(1972 : pages 693-4)VICTORIA—VALUE OF RETAIL SALES (a)  
(\$m)

Commodity group	1966-67	1967-68	1968-69	1969-70	1970-71
Groceries	324.4	349.8	375.0	399.0	428.9
Butchers' meat	175.6	187.4	188.0	202.4	211.1
Other food (b)	285.5	301.6	304.4	324.9	349.2
<b>Total food and groceries</b>	<b>785.5</b>	<b>838.8</b>	<b>867.4</b>	<b>926.3</b>	<b>989.2</b>
Beer, wine, and spirits (c)	217.8	240.7	256.4	277.8	292.2
Clothing and drapery	331.7	356.9	366.4	395.0	425.1
Footwear	60.6	63.5	65.5	70.1	74.8
Domestic hardware, china, etc. (d)	51.2	54.8	62.1	68.3	73.7
Electrical goods (e)	111.9	117.1	128.8	136.4	155.4
Furniture and floor coverings	91.8	97.6	104.6	114.2	127.4
Chemists' goods	102.1	109.3	123.7	134.5	147.1
Newspapers, books, and stationery	73.7	78.5	83.0	88.2	92.8
Other goods (f)	215.8	219.9	235.6	258.7	277.0
<b>Total (excluding motor vehicles, parts, petrol, etc.)</b>	<b>2,042.1</b>	<b>2,177.1</b>	<b>2,293.5</b>	<b>2,469.5</b>	<b>2,654.7</b>
<b>Motor vehicles, parts, petrol, etc. (g)</b>	<b>680.2</b>	<b>760.1</b>	<b>795.0</b>	<b>871.8</b>	<b>931.6</b>
<b>GRAND TOTAL</b>	<b>2,722.3</b>	<b>2,937.2</b>	<b>3,088.5</b>	<b>3,341.3</b>	<b>3,586.3</b>

(a) Compiled on a basis comparable with the 1961-62 Retail Census.

(b) Includes fresh fruit and vegetables, confectionery, soft drinks, ice cream, cakes, pastry, fish, etc., but excludes some delivered milk and bread.

(c) Excludes sales made by licensed clubs, canteens, etc.

(d) Excludes basic building materials, builders' hardware, and supplies.

(e) Includes radios, television and accessories, musical instruments, domestic refrigerators.

(f) Includes tobacco, cigarettes, sporting goods, jewellery, etc.

(g) Excludes tractors, farm machinery and implements, earthmoving equipment, etc.

OVERSEAS AND INTERSTATE TRADE  
(1972 : pages 694–704)

Overseas trade of Victoria  
(1972 : pages 698–702)

VICTORIA—OVERSEAS TRADE : RECORDED VALUES OF IMPORTS INTO  
AND EXPORTS FROM VICTORIAN PORTS  
(\$'000 f.o.b.)

Year	Imports	Exports			Excess of imports
		Australian produce	Re-exports	Total	
1966–67	1,072,514	785,462	15,725	801,187	271,327
1967–68	1,130,741	661,989	23,766	685,755	444,986
1968–69	1,182,747	688,402	19,177	707,579	475,168
1969–70	1,347,053	883,768	28,828	912,596	434,457
1970–71	1,458,583	995,867	39,041	1,034,908	423,675

VALUE OF AUSTRALIAN TRADE, AND PROPORTION  
HANDLED AT VICTORIAN PORTS

Year	Australian trade			Proportion of Australian trade handled at Victorian ports		
	Imports	Exports	Total	Imports	Exports	Total
	\$'000 f.o.b.			per cent		
1966–67	3,045,341	3,023,925	6,069,266	35.2	26.5	30.9
1967–68	3,264,473	3,044,675	6,309,148	34.6	22.5	28.8
1968–69	3,468,505	3,374,263	6,842,768	34.1	21.0	27.6
1969–70	3,881,227	4,131,543	8,012,770	34.7	22.1	28.2
1970–71	4,150,073	4,374,681	8,524,754	35.1	23.6	29.2

VICTORIA—CLASSIFICATION OF OVERSEAS IMPORTS AND EXPORTS  
(\$'000 f.o.b.)

Division number	Description	Imports		Exports	
		1969-70	1970-71	1969-70	1970-71
00	Live animals	1,836	2,056	1,395	1,631
01	Meat and meat preparations	736	385	127,469	134,444
02	Dairy products and eggs	2,672	2,796	68,948	70,018
03	Fish and fish preparations	8,198	11,866	4,248	11,165
04	Cereals and cereal preparations	1,449	1,827	77,443	141,920
05	Fruit and vegetables	8,910	9,484	52,140	64,617
06	Sugar and sugar preparations and honey	1,214	1,308	494	989
07	Coffee, tea, cocoa, spices and manufactures thereof	21,369	21,770	1,614	3,118
08	Feeding-stuff for animals (except unmilled cereals)	927	1,537	4,806	5,759
09	Miscellaneous preparations chiefly for food	1,277	2,063	947	781
11	Beverages	2,397	2,952	1,789	2,071
12	Tobacco and tobacco manufactures	15,189	15,492	470	1,116
21	Hides, skins and fur skins, undressed	1,173	826	38,467	34,219
22	Oil-seeds, oil nuts and oil kernels	697	352	199	254
23	Crude rubber (including synthetic and reclaimed)	15,484	11,923	360	582
24	Wood, timber and cork	9,447	9,230	95	61
25	Pulp and waste paper	10,420	10,134	27	24
26	Textile fibres and their waste	22,750	24,953	244,317	188,386
27	Crude fertilisers and crude minerals (except coal, petroleum, and precious stones)	17,948	13,257	338	305
28	Metalliferous ores and metal scrap	355	246	17,696	17,011
29	Crude animal and vegetable materials, n.e.s.	5,055	6,173	7,387	8,472
32	Coal, coke and briquettes	70	60	441	294
33	Petroleum and petroleum products	73,692	43,511	14,271	22,832
34	Petroleum gases and other gaseous hydrocarbons	18	6	(a)	(a)
41	Animal oils and fats	110	163	11,890	12,201
42	Fixed vegetable oils and fats	4,225	4,942	11	16
43	Animal and vegetable oils and fats, processed, and waxes of animal or vegetable origin	994	829	501	397
51	Chemical elements and compounds	36,631	43,034	3,233	4,038
52	Mineral tar and crude chemicals from coal, petroleum and natural gas	1,590	2,320	1	5
53	Dyeing, tanning and colouring materials	10,562	12,183	1,718	2,410
54	Medicinal and pharmaceutical products	13,249	13,917	4,290	6,543

VICTORIA—CLASSIFICATION OF OVERSEAS IMPORTS AND EXPORTS—*continued*  
(\$'000 f.o.b.)

Division number	Description	Imports		Exports	
		1969-70	1970-71	1969-70	1970-71
55	Essential oils and perfume materials; toilet, polishing and cleansing preparations	4,166	4,165	1,069	894
56	Fertilisers, manufactured	2,084	2,397	74	53
57	Explosives and pyrotechnic products	3,110	4,440	2,150	2,370
58	Plastic materials, regenerated cellulose and artificial resins	48,939	46,514	2,967	4,343
59	Chemical materials and products, n.e.s.	15,622	18,683	13,643	14,293
61	Leather, leather manufactures, n.e.s., and dressed fur skins	4,334	3,605	2,285	2,803
62	Rubber manufactures, n.e.s.	11,659	15,173	3,888	4,679
63	Wood and cork manufactures (except furniture)	5,598	6,086	634	885
64	Paper, paperboard and manufactures thereof	38,266	40,951	2,113	2,461
65	Textile yarn, fabrics, made-up articles and related products	123,666	132,056	7,682	10,000
66	Non-metallic mineral manufactures, n.e.s.	23,224	26,213	4,907	5,622
67	Iron and steel	36,333	47,594	2,697	3,598
68	Non-ferrous metals	9,508	11,278	23,345	34,800
69	Manufactures of metal, n.e.s.	33,078	35,581	15,519	23,618
71	Machinery (except electric)	232,626	269,102	26,135	34,298
72	Electrical machinery, apparatus and appliances	81,052	96,291	9,650	12,772
73	Transport equipment	212,439	231,196	51,070	77,732
81	Sanitary, plumbing, heating and lighting fixtures and fittings	2,420	2,625	551	738
82	Furniture	1,901	2,253	267	407
83	Travel goods, handbags and similar articles	1,530	1,625	31	37
84	Clothing and clothing accessories; articles of knitted or crocheted fabric	13,184	14,999	3,123	3,905
85	Footwear, gaiters, and similar articles and parts therefor	6,634	6,839	200	365
86	Professional, scientific and controlling instruments; photographic and optical goods, watches and clocks	44,940	50,028	7,601	10,316
89	Miscellaneous manufactured articles, n.e.s.	49,473	58,809	5,279	7,671
9A	Commodities and transactions of merchandise trade, not elsewhere classified	42,860	48,191	(b) 17,512	(b) 23,252
	Total merchandise	1,339,291	1,448,292	891,393	1,017,589
9B	Commodities and transactions not included in merchandise trade	7,762	10,291	21,203	17,319
	Total	1,347,053	1,458,583	912,596	1,034,908

(a) Included in Division 9A.

(b) Includes Division 34.

**VICTORIA—OVERSEAS IMPORTS AND EXPORTS : COUNTRIES OF  
ORIGIN AND CONSIGNMENT  
(\$'000 f.o.b.)**

Country	Imports			Exports		
	1968-69	1969-70	1970-71	1968-69	1969-70	1970-71
Belgium-Luxembourg	8,687	9,492	11,011	8,325	8,664	9,054
Canada	46,754	49,865	48,994	24,167	26,548	18,497
Ceylon	5,830	4,177	4,671	4,962	5,653	5,039
China (mainland)	9,550	10,811	9,727	19,609	33,613	22,994
China, Republic of (Taiwan)	4,723	6,429	8,582	5,091	6,849	9,628
Czechoslovakia	2,951	2,730	2,947	1,339	1,563	823
Finland	5,293	5,295	7,190	238	267	331
France	28,793	33,482	29,419	37,245	38,097	34,065
Germany, Federal Republic of	89,431	113,450	133,932	26,126	26,281	28,252
Greece	1,285	1,791	1,563	1,475	3,948	5,247
Hong Kong	14,358	19,092	20,512	17,594	21,308	23,048
India	10,054	10,591	11,704	5,584	9,100	9,430
Indonesia	6,697	2,911	3,584	5,259	8,535	9,567
Iran	1,731	1,937	3,050	3,614	5,270	3,745
Iraq	10,526	9,151	9,240	1,567	779	554
Italy	30,519	28,000	31,937	26,285	28,500	18,684
Japan	147,918	177,408	204,072	107,526	141,100	176,793
Kuwait	18,309	19,387	11,756	1,305	1,725	1,838
Malaysia	10,234	10,617	9,015	13,576	13,461	17,937
Mexico	722	1,228	233	7,694	5,318	5,728
Netherlands	17,460	22,369	23,925	9,128	15,056	15,649
New Zealand	23,108	26,736	35,135	45,516	58,820	79,725
Pakistan	5,291	6,209	5,420	1,045	8,746	3,026
Papua New Guinea	5,475	6,307	6,686	11,771	14,118	25,124
Philippines	735	858	1,330	13,178	13,287	14,067
Poland	1,049	798	1,006	3,896	5,275	4,369
Qatar	12,556	11,039	730	102	134	328
Saudi Arabia	10,594	10,118	3,385	5,010	5,659	8,796
Singapore	2,627	3,008	4,455	16,024	24,538	36,155
South Africa	4,860	5,683	4,909	18,878	30,672	40,680
Spain	3,593	4,500	6,009	4,029	5,339	3,668
Sweden	18,504	18,692	24,703	2,076	3,426	3,762
Switzerland	14,443	21,094	20,639	781	1,309	2,000
Thailand	642	743	1,108	6,958	7,906	11,496
United Kingdom	275,526	304,681	328,811	100,565	120,940	114,360
United States of America	267,149	315,965	363,015	83,942	112,906	116,362
U.S.S.R.	735	1,492	992	8,916	16,074	24,301
Yugoslavia	239	313	319	5,981	7,039	9,918
Other and unknown	63,796	68,604	62,867	51,202	74,773	119,868
<b>Total</b>	<b>1,182,747</b>	<b>1,347,053</b>	<b>1,458,583</b>	<b>707,579</b>	<b>912,596</b>	<b>1,034,908</b>

**Customs and excise revenue**  
(1972 : pages 703-4)

**VICTORIA—GROSS EXCISE DUTY COLLECTED  
ON PRINCIPAL COMMODITIES**

Article and unit of quantity	Quantity on which duty was collected			Gross excise duty collected		
	1968-69	1969-70	1970-71	1968-69	1969-70	1970-71
	'000	'000	'000	\$'000	\$'000	\$'000
Spirits (potable) proof gal	600	642	658	5,903	6,357	6,572
Tobacco lb	1,674	1,495	1,342	3,750	3,348	3,209
Cigars and cigarettes lb	20,275	17,933	17,819	85,329	75,260	81,201
Petrol gal	616,031	643,179	627,036	75,772	79,111	93,068
All other articles (a)	..	..	..	113,464	115,142	121,823
<b>Total</b>	..	..	..	284,218	279,218	305,873

(a) Includes excise duty collected on beer, which is not available for separate publication.

**VICTORIA—OVERSEAS TRADE AND GROSS REVENUE COLLECTED  
AT VICTORIAN PORTS, 1970-71  
(\$'000)**

Particulars	Melbourne (a)	Geelong	Portland	Western Port	Total
Overseas trade—					
Imports	1,396,920	49,672	5,259	6,732	1,458,583
Exports	860,398	133,016	32,783	8,711	1,034,908
<b>Total</b>	2,257,318	182,688	38,042	15,443	2,493,491
Gross revenue—					
Customs	179,534	1,058	569	..	181,161
Excise	295,769	7,034	3,070	..	305,873
<b>Total</b>	475,303	8,092	3,639	..	487,034

(a) Includes Port of Melbourne, Melbourne Airport, and parcels post.



AUSTRALIA—VALUE OF OVERSEAS TRADE, GROSS CUSTOMS, AND EXCISE  
DUTY COLLECTED BY STATES, 1970-71  
(\$'000)

State	Imports	Exports	Excess of exports	Gross duty collected	
				Customs	Excise
New South Wales	1,822,118	1,113,501	—708,617	230,825	400,004
<b>Victoria</b>	<b>1,458,583</b>	<b>1,034,908</b>	<b>—423,675</b>	<b>181,161</b>	<b>305,873</b>
Queensland	321,638	789,180	467,542	34,571	141,793
South Australia	198,358	393,737	195,379	24,663	94,462
Western Australia	278,344	862,421	584,077	32,262	88,978
Tasmania	45,719	143,198	97,479	3,554	27,605
Northern Territory	23,670	36,459	12,789	3,588	4,187
Australian Capital Territory	1,643	1,276	— 367	158	30
<b>Australia</b>	<b>4,150,073</b>	<b>4,374,681</b>	<b>224,608</b>	<b>510,782</b>	<b>1,062,933</b>

NOTE. Minus (—) sign denotes excess of imports.

### TRANSPORT

(1972 : pages 705-43)

#### Shipping

(1972 : pages 705-8)

#### VICTORIA—TASMANIA : SEAROAD SERVICE (a), 1970-71

Name of vessel	Passengers	Accompanied vehicles	Trade vehicles (b)	Mail vans
<i>Princess of Tasmania</i>	66,798	16,313	2,692	296
<i>Australian Trader</i>	36,233	13,460	2,235	302
<i>Bass Trader</i>	383	214	2,070	6
Other A.C.S.C. vessels	22	345	1,841	..
<b>Total</b>	<b>103,436</b>	<b>30,332</b>	<b>8,838</b>	<b>604</b>

(a) Excludes commercial cargo which consists of unit loads, i.e. containers, trailers, timber packs, etc., as well as commercial vehicles.

(b) Motor vehicles available for sale.

#### VICTORIA—OVERSEAS AND INTERSTATE SHIPPING

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Entrances					
number	3,706	3,550	3,618	3,696	3,920
'000 net tons	17,439	17,161	17,944	20,516	24,055
Clearances					
number	3,710	3,548	3,591	3,682	3,925
'000 net tons	17,427	17,142	17,769	20,458	24,080

**VICTORIA—NATIONALITY OF SHIPPING**  
(\*000 net tons)

Vessels registered at ports in—	Vessels entered		Vessels cleared	
	1969-70	1970-71	1969-70	1970-71
Australia	4,766	9,575	4,728	9,493
Denmark	169	159	164	155
France	444	126	441	129
Germany, Federal Republic of	710	662	721	667
Greece	752	721	753	724
Hong Kong	104	45	109	43
India	168	138	166	138
Italy	567	537	567	534
Japan	1,024	1,219	998	1,237
Liberia	1,844	1,745	1,829	1,767
Nauru	43	99	43	99
Netherlands	919	651	886	675
Antilles (Netherlands)	499	343	525	338
New Zealand	159	190	158	196
Norway	1,545	1,075	1,589	1,053
Panama	324	435	318	443
Singapore	45	105	41	106
South Africa	40	102	40	102
Sweden	587	667	593	670
United Kingdom	5,061	4,693	5,042	4,731
United States of America	196	196	203	196
U.S.S.R.	119	121	119	126
Yugoslavia	70	57	64	64
Other	361	394	361	394
<b>Total</b>	<b>20,516</b>	<b>24,055</b>	<b>20,458</b>	<b>24,080</b>

**VICTORIA—VESSELS ENTERED AT EACH PORT**

Class of vessel	Melbourne		Geelong		Portland		Western Port	
	1969-70	1970-71	1969-70	1970-71	1969-70	1970-71	1969-70	1970-71
	NUMBER							
Overseas—								
Direct	251	269	112	143	26	36	30	41
Other	1,650	1,352	249	212	88	71	28	51
Interstate	953	1,197	156	199	32	23	118	326
<b>Total</b>	<b>2,854</b>	<b>2,818</b>	<b>517</b>	<b>554</b>	<b>146</b>	<b>130</b>	<b>176</b>	<b>418</b>
	NET TONS (*000)							
Overseas—								
Direct	985	1,079	813	1,043	210	262	373	499
Other	10,399	8,608	2,994	2,018	408	346	476	828
Interstate	2,330	4,023	782	1,580	180	163	553	3,605
<b>Total</b>	<b>13,714</b>	<b>13,710</b>	<b>4,588</b>	<b>4,641</b>	<b>799</b>	<b>771</b>	<b>1,402</b>	<b>4,932</b>

VICTORIA—CARGOES DISCHARGED AND SHIPPED AT EACH PORT  
(‘000 tons)

Particulars	Melbourne		Geelong		Portland		Western Port	
	1969-70	1970-71	1969-70	1970-71	1969-70	1970-71	1969-70	1970-71
DISCHARGED								
Interstate—								
Weight	1,516	1,471	1,096	979	100	12	75	49
Measure	910	832	..	..	..	..	19	11
Overseas—								
Weight	3,514	2,220	3,812	2,373	162	132	902	419
Measure	2,075	2,183	11	6	..	1	..	..
SHIPPED								
Interstate—								
Weight	655	746	560	488	3	6	920	5,408
Measure	1,019	935	..	..	..	..	2	1
Overseas—								
Weight	1,379	1,516	1,758	2,209	230	502	36	606
Measure	811	1,138	23	3	5	1	..	..

NOTE. 1 ton measurement = 40 cu ft.

VICTORIA—OVERSEAS CARGOES DISCHARGED AND SHIPPED ACCORDING  
TO GEOGRAPHIC TRADE AREAS  
(tons)

Geographic trade area of origin or consignment	1968-69		1969-70		1970-71	
	Discharged	Shipped	Discharged	Shipped	Discharged	Shipped
North America and Hawaiian Islands—						
Weight	736,092	140,947	566,877	172,564	530,996	333,865
Measure	383,146	55,771	362,581	57,660	392,183	98,381
South America—						
Weight	11,217	9,076	3,934	12,338	3,670	46,914
Measure	151	2,342	825	2,816	911	4,582
Europe (incl. U.S.S.R.)—						
Weight	270,393	284,544	192,877	466,855	239,913	719,096
Measure	801,840	259,046	887,245	290,750	837,850	306,854
Africa—						
Weight	72,507	38,794	76,960	135,212	75,777	787,909
Measure	21,726	42,510	26,333	55,148	27,294	55,486
Asia—						
Weight	6,676,465	1,299,814	6,759,155	2,251,062	3,682,392	2,548,483
Measure	631,275	160,102	671,747	241,292	758,085	417,906
Papua New Guinea, New Zealand, and Pacific Islands—						
Weight	698,803	277,952	579,407	360,425	437,162	397,084
Measure	131,352	142,799	136,337	189,587	173,842	257,562
Indian Ocean Islands and Antarctic Area—						
Weight	258,138	5,556	210,886	3,580	173,745	56
Measure	..	65	443	1,695	169	2,092
<b>Total</b>						
Weight	8,723,615	2,056,683	8,390,096	3,402,036	5,143,655	4,833,407
Measure	1,969,490	662,635	2,085,511	838,948	2,190,334	1,142,863

NOTE. 1 ton measurement = 40 cu ft.

**VICTORIA—OVERSEAS CARGOES DISCHARGED AND SHIPPED  
ACCORDING TO NATIONALITIES OF VESSELS  
(‘000 tons)**

Vessels registered at ports in—	1968-69		1969-70		1970-71	
	Discharged	Shipped	Discharged	Shipped	Discharged	Shipped
Australia	14	..	94	62	213	200
Bermuda	..	..	96	37	66	..
Denmark	361	34	100	39	93	42
France	290	14	565	40	134	15
Germany, Federal Republic of	335	64	441	87	369	151
Greece	325	101	359	336	159	487
Hong Kong	121	69	42	107	18	58
India	52	27	130	82	29	24
Italy	18	6	42	36	47	18
Japan	826	146	818	288	681	701
Liberia	1,983	169	1,985	271	826	871
Netherlands	199	171	239	504	280	361
Antilles (Netherlands)	229	..	637	10	315	73
New Zealand	121	92	129	143	157	192
Norway	1,721	427	1,112	336	661	453
Panama	89	36	193	80	130	122
Sweden	276	171	234	229	250	288
United Kingdom	3,526	995	2,888	1,278	2,484	1,425
United States of America	58	38	129	41	79	116
U.S.S.R.	6	11	50	41	64	26
Other	143	148	193	194	279	353
<b>Total</b>	<b>10,693</b>	<b>2,719</b>	<b>10,476</b>	<b>4,241</b>	<b>7,334</b>	<b>5,976</b>

NOTE. In the above table tons measurement has been added to tons weight.

### Port Phillip Sea Pilots

(1972 : page 709)

**VICTORIA—NUMBER OF SHIPS PILOTED THROUGH  
PORT PHILLIP HEADS (a)**

Year	Number of ships	Year	Number of ships	Year	Number of ships
1960	3,768	1964	4,505	1968	4,614
1961	4,288	1965	4,738	1969	4,559
1962	4,177	1966	4,759	1970	4,810
1963	4,333	1967	4,606	1971	4,863

(a) From 1969, figures include ships piloted through the entrance of the port of Western Port.

**Melbourne Harbor Trust**

(1972 : pages 709–11)

**VICTORIA—MELBOURNE HARBOR TRUST : REVENUE, EXPENDITURE, ETC.**  
(\$'000)

Particulars	1967	1968	1969	1970	1971
<b>REVENUE</b>					
Wharfage and tonnage rates	6,692	8,357	8,901	9,475	10,038
Rent of sheds	586	638	576	458	679
Special berth charges	381	489	461	402	363
Rent of lands	965	1,154	1,665	1,951	2,220
Crane fees	1,793	2,043	1,937	1,963	1,618
Other	796	892	781	798	1,345
<b>Total revenue</b>	<b>11,213</b>	<b>13,573</b>	<b>14,321</b>	<b>15,047</b>	<b>16,263</b>
<b>EXPENDITURE AND APPROPRIATIONS</b>					
Administration and general expenses	908	1,098	1,590	1,331	1,584
Port operating expenses	2,642	2,821	3,074	3,304	3,929
Maintenance—					
Dredging	203	266	315	826	938
Harbour	116	101	117	156	156
Wharves	581	593	691	687	774
Approaches	152	119	133	139	173
Railways	80	80	53	59	68
Cargo handling equipment	358	371	362	369	429
Other properties	54	55	62	83	33
Interest	1,706	1,780	1,927	2,032	2,329
Depreciation and renewals	1,427	2,295	2,536	2,799	3,024
Insurance	103	108	113	120	134
Sinking fund	435	600	200	800	800
General reserve	1,037	1,600	1,400	500	..
Payments to Consolidated Revenue	1,346	1,468	1,506	1,559	1,634
Other	2	(a)	(a)	36	23
<b>Total expenditure and appropriations</b>	<b>11,150</b>	<b>13,355</b>	<b>14,079</b>	<b>14,800</b>	<b>16,029</b>
<b>CAPITAL OUTLAY</b>					
Land and property	201	291	56	107	1,272
Reclamation	408	359	80	199	975
Deepening waterways	1,235	2,517	3,238	1,061	1,624
Wharves and sheds construction	2,095	3,214	2,548	2,472	1,651
Cargo handling equipment	91	537	395	527	453
Approaches construction	355	412	587	695	374
Floating plant	51	167	731	18	15
Other works, etc.	769	588	674	1,014	1,030
<b>Total capital outlay</b>	<b>5,205</b>	<b>8,085</b>	<b>8,309</b>	<b>6,093</b>	<b>7,394</b>
<b>Loan indebtedness at 31 December</b>	<b>34,484</b>	<b>36,029</b>	<b>37,889</b>	<b>40,690</b>	<b>44,059</b>

(a) Under \$500.

**Geelong Harbor Trust**

(1972 : pages 711-2)

**VICTORIA—GEELONG HARBOR TRUST : REVENUE, EXPENDITURE, ETC.**  
( '\$000 )

Particulars	1967	1968	1969	1970	1971
<b>REVENUE</b>					
Wharfage, tonnage, and special berth rates	2,464	2,428	2,536	2,937	2,724
Shipping services	851	801	756	909	853
Rents, fees, and licences	47	51	49	82	117
Freezing works and abattoirs	64	80	100	104	100
Other	53	5	10	22	58
<b>Total revenue</b>	<b>3,479</b>	<b>3,365</b>	<b>3,451</b>	<b>4,054</b>	<b>3,852</b>
<b>EXPENDITURE AND APPROPRIATIONS</b>					
Management expenses	382	432	466	517	601
Shipping services	614	670	687	775	841
Maintenance—					
Wharves and approaches	89	91	79	111	187
Harbour	81	99	109	118	183
Floating plant	16	18	22	19	26
Other	26	25	20	24	41
Interest on loans	400	413	422	388	376
Sinking fund	77	79	81	80	69
Depreciation provision	603	693	737	740	861
Port development fund	500	250	700	500	500
Other	66	68	75	85	93
<b>Total expenditure and appropriations</b>	<b>2,854</b>	<b>2,838</b>	<b>3,398</b>	<b>3,357</b>	<b>3,778</b>
<b>CAPITAL OUTLAY (NET)</b>					
Floating plant	651	131	19	9	..
Land and property	138	77	210	101	40
Deepening waterways	1,942	313	8	..	..
Wharves and approaches	553	709	718	788	120
Other	36	46	34	11	6
<b>Total capital outlay</b>	<b>3,320</b>	<b>1,276</b>	<b>989</b>	<b>909</b>	<b>166</b>
<b>LOAN INDEBTEDNESS AT 31 DECEMBER</b>					
State Government	118	118	87	81	74
Public	7,618	7,815	8,007	6,982	6,854
<b>Total loan indebtedness</b>	<b>7,736</b>	<b>7,933</b>	<b>8,094</b>	<b>7,063</b>	<b>6,928</b>

**Portland Harbor Trust**

(1972 : pages 712-4)

**VICTORIA—PORTLAND HARBOR TRUST : REVENUE, EXPENDITURE, ETC.**  
(\$'000)

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
<b>REVENUE</b>					
Wharfage rates	156	159	224	246	282
Tonnage rates	26	23	26	37	58
Shipping services	108	101	139	192	290
State Government grant	615	760	616	650	692
Grain terminal	207	17	144	341	563
Other	57	86	83	67	74
<b>Total revenue</b>	<b>1,169</b>	<b>1,146</b>	<b>1,232</b>	<b>1,533</b>	<b>1,959</b>
<b>EXPENDITURE AND APPROPRIATIONS</b>					
Administration	76	92	103	118	131
Maintenance	66	70	96	86	97
Shipping services	88	77	98	158	210
Depreciation	27	27	27	34	41
Interest on loans	739	807	846	911	958
Sinking fund	52	53	53	51	50
Loan redemption	36	43	49	60	74
Grain terminal (excl. depreciation)	73	35	61	104	282
Other	2	2	6	5	6
<b>Total expenditure and appropriations</b>	<b>1,159</b>	<b>1,206</b>	<b>1,339</b>	<b>1,527</b>	<b>1,849</b>
<b>CAPITAL OUTLAY</b>					
Port rail system	49	66	89	7	2
Reclamation	114	59	51	17	26
Grain terminal	131	79	226	664	22
Deepening waterways	51	26	52	28	26
Wharves and sheds	395	388	41	20	275
Breakwater construction	42	..	37	15	12
Floating plant	..	..	423	152	..
Other	196	278	180	112	96
<b>Total</b>	<b>978</b>	<b>896</b>	<b>1,099</b>	<b>1,015</b>	<b>459</b>
<b>Loan indebtedness at 30 June—</b>					
State Government	4,083	3,673	3,673	3,673	3,673
Public	13,939	14,826	15,610	16,492	16,968
<b>Total loan indebtedness</b>	<b>18,022</b>	<b>18,499</b>	<b>19,283</b>	<b>20,165</b>	<b>20,641</b>

**Railways**

(1972 : pages 715-24)

**VICTORIA—TOTAL CAPITAL COST OF RAILWAYS,  
ETC.: EQUIPMENT AND ROLLING STOCK  
(\$'000)**

At 30 June—	Railways		Road motor services	Total capital cost (a)
	Lines open	Lines in process of construction		
1967	345,813	389	45	346,247
1968	357,135	120	36	357,291
1969	368,036	426	28	368,490
1970	377,939	432	20	378,391
1971	386,769	427	19	387,215

(a) Written down in accordance with *Railways (Finances Adjustment) Act* 1936, and allowing for depreciation since 1 July 1937. Particulars are exclusive of the cost of stores and materials on hand and in course of manufacture.

**VICTORIA—RAILWAYS STAFF : NUMBERS, SALARIES, ETC.**

Period	Number of employees at end of year			Salaries, wages, and travelling expenses
	Permanent	Supernumerary and casual	Total	
				\$'000
1966-67	15,704	11,038	26,742	79,464
1967-68	15,422	11,989	27,411	82,862
1968-69	15,179	11,197	26,376	87,529
1969-70	14,588	11,709	26,297	93,415
1970-71	14,040	11,991	26,031	101,825

**VICTORIA—RAILWAYS ROLLING STOCK IN SERVICE  
(EXCLUDING ROAD MOTOR SERVICES)**

Rolling stock in service	1966-67	1967-68	1968-69	1969-70	1970-71
<b>Locomotives—</b>					
Steam	132	50	72	45	38
Electric	35	35	35	35	35
Diesel electric	199	220	237	240	246
Other (a)	87	90	90	33	95
<b>Total</b>	<b>453</b>	<b>395</b>	<b>434</b>	<b>353</b>	<b>414</b>
<b>Passenger coaches—</b>					
Electric suburban	1,116	1,113	1,110	1,104	1,090
Other (b)	675	659	659	637	616
<b>Total</b>	<b>1,791</b>	<b>1,772</b>	<b>1,769</b>	<b>1,741</b>	<b>1,706</b>
<b>Goods stock (c)</b>	<b>21,725</b>	<b>21,489</b>	<b>21,374</b>	<b>21,113</b>	<b>20,000</b>
<b>Service stock</b>	<b>1,625</b>	<b>1,625</b>	<b>1,625</b>	<b>1,619</b>	<b>1,617</b>

(a) Other locomotives comprise diesel hydraulic locomotives, cranes, rail motor diesel power units, and non-passenger carrying rail tractors.

(b) Passenger coaches owned jointly with New South Wales and South Australia have been included.

(c) All parcels and brake vans and standard gauge stock have been included.



VICTORIA—RAILWAYS ROUTE MILEAGE  
(EXCLUDING ROAD MOTOR SERVICES)  
(route miles)

Lines open for traffic		1966-67	1967-68	1968-69	1969-70	1970-71
Single track	—Broad gauge (a)	3,711	3,694	3,648	3,637	3,637
	—Narrow gauge	8	8	8	8	8
Double track	—Broad gauge (a)	431	433	440	440	440
Other multi-track	—Broad gauge (a)	79	80	80	80	80
Total route mileage		4,230	4,215	4,176	4,165	4,165

(a) Broad gauge refers to 5 ft 3 in and 4 ft 8½ in gauge track.

VICTORIA—RAILWAYS TRAFFIC (EXCLUDING ROAD MOTOR SERVICES)

Traffic			1966-67	1967-68	1968-69	1969-70	1970-71
Traffic train mileage—	Country	'000	4,798	4,833	4,741	4,738	4,768
	Suburban	'000	8,504	8,420	8,139	8,361	8,315
	Goods	'000	6,733	6,633	6,809	7,445	7,747
Total		'000	20,035	19,886	19,689	20,544	20,830
Passenger journeys—	Country	'000	4,674	4,535	4,078	4,000	4,080
	Suburban	'000	141,593	141,733	140,788	140,309	138,131
Total		'000	146,267	146,268	144,866	144,309	142,211
Goods and livestock carried		'000 tons	12,075	11,116	11,316	11,835	12,490

**VICTORIA—RAILWAYS GOODS AND LIVESTOCK TRAFFIC**  
**(EXCLUDING ROAD MOTOR GOODS SERVICES)**  
('000 tons)

Class of goods	Quantity carried				
	1966-67	1967-68	1968-69	1969-70	1970-71
Butter	69	65	68	77	74
Grain—					
Barley	196	136	191	234	276
Wheat	1,869	1,231	1,689	1,588	2,541
Other	322	161	359	312	356
Flour	145	167	157	172	176
Bran, pollard, and sharps	51	50	44	57	45
Fruit—					
Fresh	86	99	83	94	96
Dried	103	72	64	54	59
Beer	140	144	137	144	138
Briquettes	1,487	1,416	1,028	1,203	1,060
Cement	807	766	765	852	844
Coal—					
Black	213	170	75	13	11
Brown	363	326	200	180	172
Galvanised iron	116	71	91	102	94
Iron, steel, bar rods, etc., unprepared	462	498	661	713	531
Manures	1,171	877	914	883	822
Motor cars and bodies	197	218	225	288	308
Petrol, benzine, etc.	145	165	182	313	327
Pulpwood	124	101	72	68	61
Pulp and paper	135	138	150	164	172
Timber	252	262	253	260	244
Wool	141	128	140	168	172
All other goods	3,322	3,520	3,489	3,602	3,669
Total goods	11,916	10,781	11,037	11,541	12,248
Total livestock	158	335	279	294	242
Grand total goods and livestock	12,075	11,116	11,316	11,835	12,490

## VICTORIA—RAILWAYS REVENUE AND EXPENDITURE

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
	\$'000	\$'000	\$'000	\$'000	\$'000
REVENUE					
Passenger, etc., business—					
Passenger fares	30,162	30,330	30,507	31,754	31,859
Parcels, mails, etc.	4,135	4,077	4,149	4,122	4,097
Other	88	104	103	104	112
Goods, etc., business—					
Goods	61,531	55,465	56,637	59,641	62,829
Livestock	1,026	1,703	1,265	1,521	1,221
Miscellaneous	769	637	631	607	550
Miscellaneous—					
Dining car and refreshment services	3,464	3,451	3,467	3,461	3,583
Rentals	1,880	2,101	2,178	2,340	2,468
Bookstalls	1,053	1,052	1,061	1,096	1,085
Advertising	228	234	234	246	251
Melbourne Underground Rail Loop Authority special levy					447
Other	241	240	359	227	256
<b>Total revenue</b>	<b>104,579</b>	<b>99,394</b>	<b>100,591</b>	<b>105,119</b>	<b>108,759</b>
EXPENDITURE					
Working expenses—					
Way and works	19,940	20,695	22,372	23,969	26,153
Rolling stock	28,740	27,484	29,137	30,589	33,469
Traffic	34,611	35,876	37,688	40,505	44,107
Electrical engineering branch	4,427	4,494	4,425	4,683	4,681
Stores branch	1,563	1,585	1,633	1,670	1,838
Pensions	5,073	5,273	5,451	5,724	6,176
Service grants and retiring gratuities	1,146	1,116	1,146	1,419	1,463
Contributions to Railway Renewals and Replacement Fund	400	400	400	400	400
Contributions to Railway Accident and Fire Insurance Fund	1,441	1,740	2,116	1,813	1,497
Pay-roll tax	1,852	1,874	1,982	2,125	2,325
Long service leave	1,521	1,606	1,829	2,118	2,551
Appropriation to Melbourne Underground Rail Loop Authority construction					447
Other (a) (b)	2,846	3,061	3,164	3,697	4,108
<b>Total working expenses</b>	<b>103,560</b>	<b>105,204</b>	<b>111,344</b>	<b>118,712</b>	<b>129,215</b>
<b>Net revenue</b>	<b>+1,019</b>	<b>-5,810</b>	<b>-10,753</b>	<b>-13,593</b>	<b>-20,456</b>
Debt charges—					
Interest charges and expenses (b)	4,546	5,377	6,221	7,062	8,081
Exchange on interest payments and redemption	132	119	106	99	91
Contribution to National Debt Sinking Fund	213	251	288	330	365
<b>Net result for year</b>	<b>-3,872</b>	<b>-11,557</b>	<b>-17,368</b>	<b>-21,084</b>	<b>-28,993</b>
Proportion of working expenses to revenue	%	%	%	%	%
	99.0	105.8	110.7	112.9	118.8

(a) Including interest paid to Commonwealth under Railways Standardisation Agreement, namely, 1967, \$220,000; 1968, \$215,103; 1969, \$210,204; 1970, \$205,306; and 1971, \$200,408.

(b) Including loan conversion expenses.

**VICTORIA—RAILWAYS REVENUE AND EXPENDITURE PER AVERAGE  
MILE OPEN (EXCLUDING ROAD MOTOR SERVICES)**

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Average number of miles open for traffic	4,218	4,210	4,190	4,170	4,166
Gross revenue per average mile open	\$ 24,777	23,594	23,992	25,193	26,091
Working expenses per average mile open	\$ 24,519	24,961	26,543	28,431	30,978

**VICTORIA—ROAD MOTOR SERVICES  
(Under the control of the Railways Commissioners)**

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Car mileage	283,301	241,069	258,561	270,241	264,150
Passenger journeys	1,033,774	888,834	902,967	926,435	902,700
Gross revenue	\$ 70,287	62,216	62,378	65,516	64,010
Working expenses	\$ 136,571	119,601	128,057	153,455	161,068
Capital expenditure at end of year (less depreciation written off)	\$ 44,990	36,374	27,758	20,471	19,292

NOTE. The apparent discrepancy between the amount of working expenses and revenue was brought about by revenue not having received a proportion of combined rail and road services earnings, while working expenses have been charged with road motor operating cost in full.

**Tramway and omnibus services**

(1972 : pages 724-8)

**VICTORIA—MELBOURNE AND METROPOLITAN TRAMWAYS BOARD :  
TRAMWAYS**

Period	Track open at end of year		Tram mileage	Passenger journeys	Operating receipts	Operating expenses	At end of year	
	Double	Single					Rolling stock	Persons employed
	miles	miles					'000	'000
1966-67	134	4	16,571	131,876	15,921	16,440	693	3,745
1967-68	134	3	16,480	127,575	15,628	16,604	691	3,726
1968-69	134	3	16,069	119,009	15,946	17,042	698	3,525
1969-70	134	3	15,273	110,692	16,682	17,766	698	(b)4,159
1970-71	135	2	14,899	109,779	16,576	18,881	(a)696	(b)4,323

(a) Includes 42 in reserve or idle.

(b) Includes omnibus employees. Tramways employees not available separately.

VICTORIA—MELBOURNE AND METROPOLITAN TRAMWAYS BOARD :  
REVENUE, EXPENDITURE, ETC.  
(\$'000)

Particulars	1967-68	1968-69	1969-70	1970-71
REVENUE				
Traffic receipts	18,864	19,269	20,141	20,107
Miscellaneous operating receipts	176	176	176	179
Non-operating receipts	287	240	251	231
Total revenue	19,327	19,685	20,568	20,517
EXPENDITURE				
Traffic operation costs	9,325	9,595	9,788	11,070
Maintenance—				
Permanent way	903	934	970	988
Tramcars	2,480	2,550	2,685	2,850
Buses	851	921	989	1,078
Electrical equipment of lines and substations	526	537	594	675
Buildings and grounds	245	264	302	330
Electric traction energy	884	874	831	812
Fuel oil for buses	197	190	186	218
Bus licence and road tax fees	23	21	21	22
General administration and stores department costs	1,166	1,173	1,394	1,563
Pay-roll tax	355	367	380	427
Workers compensation payments	407	465	418	524
Depreciation	1,001	1,018	1,008	937
Non-operating expenses	76	96	86	92
Provisions—				
Long service leave	292	290	396	350
Retiring gratuities	543	486	671	532
Accrued sick leave	92	70	96	61
Public risk insurance	231	300	220	288
Interest on loans	1,274	1,311	1,358	1,448
Total expenditure	20,871	21,462	22,393	24,265
Net surplus (+) or deficit (—)	-1,544	-1,777	-1,825	-3,748
Capital outlay	938	691	695	712
Loan indebtedness at 30 June	23,840	24,224	24,874	26,010

VICTORIA—MELBOURNE AND METROPOLITAN TRAMWAYS BOARD :  
MOTOR OMNIBUS SYSTEMS

Period	Route miles	Bus mileage	Passenger journeys	Operating receipts	Operating expenses	At end of year	
						Rolling stock	Persons employed
		'000	'000	\$'000	\$'000	number	number
1966-67	126	6,931	25,107	3,315	4,024	223	817
1967-68	140	7,335	25,576	3,413	4,192	233	844
1968-69	139	7,099	24,271	3,499	4,324	226	791
1969-70	139	6,923	22,353	3,635	4,540	277	(b) 4,159
1970-71	139	7,018	22,753	3,710	4,991	(a) 273	(b) 4,323

(a) Includes 38 in reserve or idle.

(b) Includes tramways employees. Omnibus employees not available separately.

VICTORIA—MELBOURNE AND METROPOLITAN TRAMWAYS BOARD :  
TRAMWAYS: OPERATING RECEIPTS, OPERATING EXPENSES, ETC.  
PER MILE, ETC.

Period	Operating receipts			Operating expenses		Ratio operating expenses to operating receipts
	Amount	Per vehicle mile	Per passenger	Amount	Per vehicle mile	
	\$'000	cents	cents	\$'000	cents	per cent
1966-67	15,921	96.08	12.07	16,440	99.21	103.26
1967-68	15,628	94.83	12.25	16,604	100.75	106.25
1968-69	15,946	99.24	13.40	17,042	106.06	106.87
1969-70	16,682	109.23	15.07	17,766	116.33	106.50
1970-71	16,576	111.25	15.10	18,881	128.74	113.91

VICTORIA—MELBOURNE AND METROPOLITAN TRAMWAYS BOARD :  
MOTOR OMNIBUS SYSTEMS: OPERATING RECEIPTS, OPERATING  
EXPENSES, ETC., PER MILE, ETC.

Period	Operating receipts			Operating expenses		Ratio operating expenses to operating receipts
	Amount	Per vehicle mile	Per passenger	Amount	Per vehicle mile	
	\$'000	cents	cents	\$'000	cents	per cent
1966-67	3,315	47.83	13.20	4,024	58.06	121.39
1967-68	3,413	46.53	13.34	4,192	57.15	122.82
1968-69	3,499	49.29	14.42	4,324	60.91	123.58
1969-70	3,635	52.51	16.26	4,540	65.58	124.91
1970-71	3,710	52.86	16.31	4,991	71.11	134.53

VICTORIA—PRIVATE MOTOR OMNIBUS SERVICES

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71	
Number of vehicles	2,701	2,846	2,811	2,899	2,875	
Mileage—Petrol vehicles	'000 miles	35,114	36,079	34,627	34,349	32,980
Diesel vehicles	'000 miles	16,713	19,995	20,308	22,679	24,809
Total mileage	'000 miles	51,826	56,074	54,935	57,028	57,789
Revenue	\$'000	19,628	21,297	22,057	23,721	26,330
Expenditure—						
Drivers' wages		6,273	6,904	7,270	7,974	9,104
Repairs and maintenance		2,431	2,646	2,734	2,913	3,149
Depreciation		1,910	2,062	2,045	2,181	2,239
Other		6,620	7,441	7,343	7,997	8,674
Total expenditure		17,234	19,053	19,392	21,065	23,166
Assets (a)—						
Motor vehicles		5,199	5,758	5,645	5,988	6,258
Other assets		7,444	8,120	8,609	9,671	10,264
Total assets		12,643	13,878	14,254	15,659	16,522
Liabilities (a)		4,534	5,650	5,762	6,546	7,042

(a) Incomplete. Assets and liabilities of operators engaged solely in school bus services are not available.

## VICTORIA—TRAMWAYS IN PROVINCIAL CITIES

Period	Track open		Tram mileage	Passenger journeys	Traffic receipts	Operating expenses	Rolling stock	Persons employed
	Double	Single						
	miles	miles						
1966-67	5	18	836	3,861	282	755	48	184
1967-68	5	18	824	3,537	265	753	48	185
1968-69	5	18	828	3,237	264	744	46	174
1969-70	5	18	801	2,902	262	761	48	168
1970-71	5	18	720	2,608	235	812	48	162

## Motor vehicles

(1972 : pages 728-30)

## VICTORIA—REGISTRATION AND LICENCE RATES AT 1 MARCH 1972

Type of registration or licence	Annual rate
REGISTRATION	
Motor cycle (without trailer, etc.)	\$4.10
Motor cycle (with trailer, etc., attached)	\$6.10
Motor car (private use)	\$0.60 for each power-weight unit (a)
Motor car (private and business use)	\$0.75 for each power-weight unit (a)
Trailer (attached to motor car)	From \$2.50 each, according to the unladen weight and use
Motor car (commercial passenger vehicle) operating on a stage omnibus service or a temporary school service licence	\$15
Motor car (used for carrying passengers or goods for hire or in the course of trade)	From \$1.10 to \$1.60 for each power-weight unit (a) according to the unladen weight and the type of tyres
Motor car (constructed for the carriage of goods) owned by primary producer and used solely in connection with his business	From \$0.30 to \$1.30 for each power-weight unit (a) according to the number of wheels and the type of tyres. (When more than one motor car is so owned, the rate shall apply to one motor car only.)
Mobile crane, self-propelled (used otherwise than for lifting and towing vehicles)	\$27.10 (Unless a lower fee would otherwise have been payable.)
LICENCE	
Driver's or rider's licence	\$12 issued for a three year period. (An additional fee of \$6 is payable by all applicants for new licences.)
Learner's permit	\$2 for motor cycles only
Instructor's licence	\$40 issued for a three year period

(a) The number of power-weight units is that number which is equal to the sum of the horsepower and the weight in hundredweights of a motor car unladen and ready for use.

NOTE. The minimum annual fee for the registration of any motor vehicle other than a motor cycle is \$12.

## VICTORIA—DRIVERS' AND RIDERS' LICENCES IN FORCE AT 30 JUNE

Type of licence	1967	1968	1969	1970	1971
Driver's	1,280,459	1,337,381	1,399,903	1,464,523	1,524,104
Rider's	32,832	34,292	35,894	37,551	42,292
Total	1,313,291	1,371,673	1,435,797	1,502,074	1,566,396

**VICTORIA—GROSS REVENUE COLLECTED BY MOTOR  
REGISTRATION BRANCH  
(\$'000)**

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Registrations and tax	43,299	47,219	54,190	57,842	61,270
Drivers' licences	2,746	2,792	3,272	3,177	4,823
Other	612	748	764	810	887
<b>Total</b>	<b>46,657</b>	<b>50,759</b>	<b>58,226</b>	<b>61,829</b>	<b>66,980</b>

**VICTORIA—MOTOR VEHICLES ON THE REGISTER  
ACCORDING TO TYPE AT 31 DECEMBER**

Type of vehicle	1955	1962	1969	1970
Cars (a)	422,543	611,496	852,365	903,247
Station wagons	5,690	69,528	184,825	194,893
Utilities	75,721	94,470	91,719	92,323
Panel vans	19,913	31,328	37,724	38,950
Trucks (b)	70,362	79,482	94,992	97,328
Omnibuses	2,580	3,409	4,625	4,962
<b>Total (excluding motor cycles)</b>	<b>596,809</b>	<b>889,713</b>	<b>1,266,250</b>	<b>1,331,703</b>
<b>Motor cycles (c)</b>	<b>26,406</b>	<b>15,802</b>	<b>19,881</b>	<b>24,847</b>
<b>Grand total</b>	<b>623,215</b>	<b>905,515</b>	<b>1,286,131</b>	<b>1,356,550</b>

(a) Includes ambulances and hearses.

(b) Includes trucks and truck-type vehicles, but excludes tractors, plant, and trailers.

(c) Includes motor scooters.



VICTORIA—CENSUS OF MOTOR VEHICLES :  
PRELIMINARY STATEMENT, 30 SEPTEMBER 1971 (a)  
(‘000)

Type of vehicle	Number
Motor vehicles—	
Cars	927.7
Station wagons	200.9
Light commercial type vehicles—	
Open	89.4
Closed	46.2
Trucks (carrying capacity 20 cwt and over)—	
Rigid	79.1
Articulated	9.4
Other truck types	4.5
Buses	5.1
Total (excluding motor cycles)	1,362.2
Motor cycles	28.2

(a) As from 1 January 1972 a revised classification of motor vehicles has been adopted and used also as the basis for a census of motor vehicles on register at 30 September 1971. Data for the categories "light commercial type vehicles", "trucks", and "other truck types" are not strictly comparable as between the revised classification and that which it replaces.

VICTORIA—REGISTRATION OF NEW MOTOR CARS AND  
STATION WAGONS ACCORDING TO MAKE  
(Includes Commonwealth-owned vehicles other than those of the defence services)

Make	Motor cars (a)			Station wagons		
	1969	1970	1971	1969	1970	1971
Austin	3,057	3,268	1,797	1	..	..
B.M.W.	118	181	163	..	..	..
Chrysler (b)	9,227	8,212	9,538	2,221	1,633	1,707
Datsun	3,385	4,274	5,444	247	165	365
Fiat	993	1,015	684	2	13	4
Ford	18,808	22,193	20,535	3,544	3,708	3,838
Hillman	2,962	2,510	(b)	525	443	(b)
Holden (c)	30,167	32,172	32,144	7,505	7,371	7,228
Honda	530	856	911	..	..	1
Jaguar	159	305	505	..	..	..
M.G.	405	383	245	..	..	..
Mazda	3,254	4,014	5,165	278	295	248
Mercedes Benz	624	588	587	..	..	..
Mitsubishi	151	283	(b)	..	..	(b)
Morris	5,215	4,104	2,849	..	..	..
Peugeot	640	520	450	62	25	3
Renault	1,389	1,550	1,473	..	..	..
Statesman	..	..	729	..	..	..
Toyota	6,882	7,136	6,591	440	381	141
Triumph	513	637	683	..	..	..
Volkswagen	1,952	2,506	2,827	498	526	535
Other	1,665	1,295	1,341	66	49	69
Total	92,096	98,002	94,661	15,389	14,609	14,139

(a) Includes ambulances, hearses, and cars other than sedans.

(b) Since 1 January 1971 all registrations of Hillman and Mitsubishi are included with Chrysler.

(c) Excludes Statesman, which is shown separately.

VICTORIA—REGISTRATIONS OF NEW MOTOR VEHICLES OTHER THAN  
MOTOR CARS, STATION WAGONS, AND MOTOR CYCLES  
ACCORDING TO MAKE

(Includes Commonwealth-owned vehicles other than those of the defence services)

Make	1970				1971			
	Utilities	Panel vans	Other (a)	Total	Utilities	Panel vans	Other (a)	Total
Austin (b)	121	..	..	121	84	..	..	84
B.M.C. (b)	89	3	96	188	148	2	16	166
Bedford	3	..	1,445	1,448	..	..	1,363	1,363
Chrysler (c)	429	1	..	430	680	14	771	1,465
Commer	..	33	265	298	(c)	(c)	(c)	(c)
Datsun	271	49	464	784	383	90	389	862
Dodge	320	8	642	970	(c)	(c)	(c)	(c)
Ford	1,865	989	1,371	4,225	1,908	1,371	999	4,278
Holden	2,979	1,866	..	4,845	2,692	1,649	11	4,352
International	76	25	1,563	1,664	27	5	1,556	1,588
Land Rover	293	20	31	344	214	9	18	241
Mazda	39	201	75	315	77	233	60	370
Morris (b)	..	471	..	471	..	391	..	391
Toyota	359	145	924	1,428	340	238	597	1,175
Volkswagen	53	43	783	879	10	3	1,097	1,110
Other	75	79	857	1,011	119	80	839	1,038
Total	6,972	3,933	8,516	19,421	6,682	4,085	7,716	18,483

(a) Other vehicles including trucks, omnibuses, milk tankers, petrol tankers, etc.

(b) B.M.C. includes all Austin and Morris commercial vehicles except Austin 15 hp utilities and Morris 10 hp panel vans.

(c) Since 1 January 1971 all Dodge, Commer, Hillman, and Mitsubishi vehicles are included with Chrysler.

**Transport Regulation Board**

(1972 : pages 731-6)

**VICTORIA—TRANSPORT REGULATION BOARD : LICENCES ISSUED :  
SUMMARY OF FINANCIAL OPERATIONS**

Particulars	1966-67	1967-68	1968-69	1969-70	1970-71
Licences issued "as of right"—					
25 miles radius of the G.P.O. or P.O.—					
Melbourne	14,831	15,147	15,316	15,466	15,622
Ballarat, Bendigo, and Geelong	1,512	1,507	1,544	1,514	1,546
25 miles radius of owner's place of business	6,821	6,909	6,970	6,904	6,779
Primary producers (vehicles over 2 tons load capacity)	17,414	17,313	17,522	17,705	17,271
Butter, milk, and cheese factories	694	546	501	428	388
50 miles radius of owner's place of business (vehicles up to 4 tons load capacity)	49,498	51,618	53,886	55,553	56,215
Third Schedule commodities	12,548	12,684	13,062	13,136	13,111
Approved decentralised secondary industries	768	799	899	969	1,058
"Discretionary" licences—					
Passenger	6,576	6,543	6,563	6,563	6,823
Temporary passenger	214	177	172	165	156
Goods (4 years)	11,582	12,518	13,357	14,208	14,454
Temporary goods	756	807	590	534	532
Goods—passenger	46	38	34	32	30
<b>Total licences issued</b>	<b>123,260</b>	<b>126,606</b>	<b>130,416</b>	<b>133,177</b>	<b>133,985</b>
<b>Financial transactions—</b>	<b>\$'000</b>	<b>\$'000</b>	<b>\$'000</b>	<b>\$'000</b>	<b>\$'000</b>
Revenue	2,383	2,403	2,511	2,662	2,702
Expenditure (including payments to local authorities for road maintenance, comfort stations, and bus shelters)	1,860	1,990	2,172	2,452	2,831
<b>Balance</b>	<b>523</b>	<b>413</b>	<b>339</b>	<b>210</b>	<b>-129</b>
<b>Road charges collected and transferred direct to Country Roads Board</b>	<b>6,733</b>	<b>7,248</b>	<b>7,841</b>	<b>8,558</b>	<b>8,905</b>
<b>Motor boat registration fees collected and paid to Tourist Fund</b>	<b>193</b>	<b>219</b>	<b>233</b>	<b>254</b>	<b>282</b>
<b>Log book fees (b)</b>	<b>5</b>	<b>21</b>	<b>11</b>	<b>11</b>	<b>11</b>

(a) Includes amount recouped from Country Roads Board for road charges collected.

(b) As from 15 May 1967 all collections paid to Country Roads Board.

**Road traffic accidents**  
(1972 : pages 737-9)

**VICTORIA—ROAD TRAFFIC ACCIDENTS INVOLVING CASUALTIES :  
NUMBER OF PERSONS KILLED OR INJURED**

Period	Number of accidents	Persons killed	Persons injured	Per 100,000 of mean population		
				Number of accidents	Persons killed	Persons injured
1955-56	10,606	582	13,483	415	23	527
1956-57	10,804	589	14,120	411	22	538
1957-58	11,233	571	15,015	418	21	559
1958-59	12,462	661	16,784	453	24	610
1959-60	12,267	698	16,595	435	25	589
1960-61	12,140	773	16,757	420	27	579
1961-62	11,639	818	16,074	394	28	544
1962-63	12,330	803	17,149	409	27	569
1963-64	13,067	838	18,401	425	27	599
1964-65	14,432	907	20,482	460	29	653
1965-66	14,110	933	20,277	442	29	635
1966-67	14,077	963	19,994	433	30	615
1967-68	15,113	868	21,932	458	26	664
1968-69	15,622	964	22,498	465	29	670
1969-70	17,030	1,065	24,502	498	31	716
1970-71	15,327	996	22,067	440	29	634

**VICTORIA—ROAD TRAFFIC ACCIDENTS INVOLVING CASUALTIES :  
DESCRIPTION OF PERSONS KILLED OR INJURED**

Description	1968-69		1969-70		1970-71	
	Killed	Injured	Killed	Injured	Killed	Injured
Drivers of motor vehicles	391	9,109	418	10,198	355	8,746
Motor cyclists	29	642	19	729	36	986
Passengers (any type)	289	8,997	315	9,732	338	8,870
Pedestrians	215	2,716	270	2,797	235	2,578
Pedal cyclists	36	991	40	1,015	31	859
Other	4	43	3	31	1	28
<b>Total</b>	<b>964</b>	<b>22,498</b>	<b>1,065</b>	<b>24,502</b>	<b>996</b>	<b>22,067</b>

**VICTORIA—ROAD TRAFFIC ACCIDENTS INVOLVING CASUALTIES :  
AGE OF PERSONS KILLED OR INJURED**

Age group (years)	1968-69		1969-70		1970-71	
	Killed	Injured	Killed	Injured	Killed	Injured
Under 5	29	774	36	874	41	776
5 and under 7	15	462	16	467	20	420
7 and under 17	76	2,513	82	2,754	91	2,599
17 and under 21	163	4,734	191	5,088	205	4,846
21 and under 30	211	5,314	197	5,855	190	5,298
30 and under 40	102	2,627	113	2,896	102	2,427
40 and under 50	97	2,380	115	2,615	84	2,155
50 and under 60	109	1,710	107	1,788	92	1,650
60 and over	159	1,627	208	1,778	170	1,622
Not stated	3	357	..	387	1	274
<b>Total</b>	<b>964</b>	<b>22,498</b>	<b>1,065</b>	<b>24,502</b>	<b>996</b>	<b>22,067</b>

**Civil aviation**  
(1972 : pages 739-43)

VICTORIA—DOMESTIC PASSENGER MOVEMENTS  
ON REGULAR AIR SERVICES, 1971

Airport	Passenger movements	Airport	Passenger movements
Melbourne	2,811,816	Warrnambool (a)	2,823
Portland (a)	2,455	Hamilton	7,519
Mildura	14,394		

(a) Commuter services to these airports were substituted in August 1971.

VICTORIA—REGULAR INTERSTATE AND INTRASTATE  
AIR SERVICES TERMINATING IN VICTORIA, 1971

Particulars		Interstate	Intrastate	Total
Miles flown	'000	30,239	68	30,307
Passenger miles	'000	1,402,534	1,027	1,403,561
Freight—				
Short tons		54,986	21	55,007
Ton miles	'000	23,767	3	23,770
Mail—				
Short tons		4,743	2	4,745
Ton miles	'000	2,163	..	2,163

VICTORIA—CIVIL AVIATION

Particulars	1967	1968	1969	1970	1971
Registered aircraft owners	370	391	362	435	475
Registered aircraft	742	754	785	807	795
Student pilot licences	2,672	2,548	2,559	2,886	2,927
Private pilot licences	2,253	2,510	2,844	3,023	3,225
Commercial pilot licences	515	613	597	743	761
Airline pilot licences	533	535	824	893	914
Aircraft maintenance engineer licences	864	873	900	909	990

VICTORIA—ESSENDON AIRPORT

Particulars	1967	1968	1969	1970	1971
Domestic aircraft movements (a)	49,939	50,066	54,192	58,860	27,652
Domestic passengers embarked	976,779	1,075,898	1,201,469	1,341,985	663,180
Domestic passengers disembarked	984,911	1,069,415	1,229,748	1,357,028	678,149
International aircraft movements (b)	1,036	1,018	1,021	634	..
Passengers arriving /departing overseas	48,445	49,277	56,064	34,626	..

(a) Domestic operations transferred from Essendon to Tullamarine from 20 June 1971.

(b) International operations transferred from 1 July 1970.

## VICTORIA—MELBOURNE (TULLAMARINE) AIRPORT

Particulars	1970	1971
Domestic aircraft movements (a)	..	30,411
Domestic passengers embarked	..	737,360
Domestic passengers disembarked	..	733,127
International aircraft movements (b)	1,531	4,309
Passengers arriving/departing overseas	65,907	185,094

(a) Domestic operations transferred from Essendon to Tullamarine from 20 June 1971.

(b) International operations transferred from 1 July 1970.

## COMMUNICATIONS

(1972 : pages 744-51)

## Postmaster-General's Department

(1972 : pages 744-51)

## VICTORIA—POST OFFICES, TELEPHONE OFFICES, PERSONS EMPLOYED

Period	Number of post offices	Number of telephone offices	Persons employed					Total
			Permanent	Temporary and exempt	Semi- and non-official postmasters and staffs	Mail contractors	Other (a)	
1966-67	2,044	91	16,571	9,990	2,341	1,021	812	30,735
1967-68	1,981	77	17,312	9,753	2,267	1,052	791	31,175
1968-69	1,900	63	18,081	9,124	2,159	898	782	31,044
1969-70	1,827	56	18,346	9,429	2,036	984	768	31,563
1970-71	1,759	50	19,240	9,338	1,930	899	694	32,101

(a) Includes telephone office-keepers and part-time temporary and exempt employees.

## VICTORIA—MONEY ORDERS AND POSTAL ORDERS

Period	Money Orders (a)				Postal Orders			
	Issued		Paid		Issued		Paid	
	Number	Value	Number	Value	Number	Value	Number	Value
	'000	\$'000	'000	\$'000	'000	\$'000	'000	\$'000
1966-67	3,070	112,445	2,883	111,563	3,239	4,343	4,472	5,147
1967-68	2,763	115,739	2,573	115,197	3,303	5,484	3,410	5,330
1968-69	2,166	47,189	2,086	46,767	3,543	6,925	3,495	6,484
1969-70	1,926	38,931	1,936	37,709	3,808	8,086	3,714	7,277
1970-71	1,487	33,454	1,481	33,004	4,158	11,007	3,888	9,597

(a) These figures include Official Money Orders used in bringing to account Telephone Account Collections and War Service Homes Repayments. The practice was discontinued towards the end of 1967-68.

**VICTORIA—LETTERS, ETC, POSTED AND RECEIVED**  
(’000)

Period	Letters, postcards, etc.	Registered articles (except parcels)	Newspapers and packets	Parcels (including those registered)
<b>POSTED FOR DELIVERY WITHIN AUSTRALIA</b>				
1966-67	604,213	2,475	104,711	5,168
1967-68	580,820	2,385	100,854	5,531
1968-69	575,773	2,307	100,878	5,473
1969-70	559,138	2,262	94,188	5,652
1970-71	640,991	2,145	85,800	5,777
<b>DISPATCHED TO AND RECEIVED FROM PLACES OVERSEAS</b>				
1966-67	82,866	1,087	16,137	672
1967-68	83,387	1,151	15,447	705
1968-69	91,724	1,171	14,372	734
1969-70	77,142	1,249	13,860	792
1970-71	86,076	1,326	14,846	899
<b>TOTAL POSTED IN VICTORIA AND RECEIVED FROM OVERSEAS</b>				
1966-67	687,079	3,562	120,848	5,840
1967-68	664,207	3,536	116,301	6,236
1968-69	667,497	3,478	115,250	6,207
1969-70	636,280	3,511	108,048	6,444
1970-71	727,067	3,471	100,646	6,676

**VICTORIA—RADIO COMMUNICATION STATIONS AUTHORISED AT 30 JUNE**

Class of station	1967	1968	1969	1970	1971
<b>Transmitting and receiving—</b>					
<b>Fixed stations (a)—</b>					
Aeronautical	4	4	4	4	4
Services with other countries	12	12	12	12	..
Other	216	223	226	262	277
<b>Land stations (b)—</b>					
Aeronautical	27	28	24	49	52
<b>Base stations—</b>					
Land mobile services	1,453	1,527	1,693	2,066	2,351
Harbour mobile services	21	22	23	31	37
Coast (c)	16	16	20	25	27
Special experimental	141	143	153	169	159
<b>Mobile stations (d)—</b>					
Aeronautical	422	449	437	512	510
Land mobile services	16,633	17,795	20,225	25,005	27,447
Harbour mobile services	159	163	178	257	252
Ships	526	626	728	914	989
Amateur stations	1,648	1,723	1,785	1,925	1,966
<b>Total transmitting and receiving</b>	<b>21,278</b>	<b>22,731</b>	<b>25,508</b>	<b>31,231</b>	<b>34,071</b>
<b>Receiving only—</b>					
<b>Fixed stations (a)</b>	<b>197</b>	<b>198</b>	<b>199</b>	<b>198</b>	<b>198</b>
<b>Grand total</b>	<b>21,475</b>	<b>22,929</b>	<b>25,707</b>	<b>31,429</b>	<b>34,269</b>

(a) Stations established at fixed locations for communication with other stations similarly established.

(b) Stations established at fixed locations for communication with mobile stations.

(c) Land stations for communication with ocean-going vessels.

(d) Equipment installed in motor vehicles and harbour vessels.

## VICTORIA—TELEPHONE SERVICES AT 30 JUNE

Particulars	1967	1968	1969	1970	1971
Telephone exchanges	1,506	1,425	1,353	1,312	1,274
Public telephones	7,344	7,373	7,463	7,505	7,610
Services in operation	693,134	727,575	770,162	824,227	864,044
Instruments connected	957,668	1,019,603	1,080,223	1,182,149	1,239,652
Instruments per 1,000 of population	292.7	306.7	319.2	343.3	353.5

## VICTORIA—NUMBER OF BROADCASTING AND TELEVISION LICENCES IN FORCE AT 30 JUNE

Class of licence	1967	1968	1969	1970	1971
Broadcasting station (a)	20	20	20	20	20
Television station (b)	9	9	9	9	9
Broadcast receiver	114,778	94,982	80,685	72,051	64,298
Television receiver	92,822	96,789	73,078	107,362	115,613
Combined broadcast and television receiver	598,035	629,729	647,814	675,457	690,464
Amateur	1,648	1,723	1,785	1,925	1,966

(a) Excluding eight broadcasting stations (including three shortwave) operated by the national broadcasting service. In 1970-71 seven broadcasting stations (including two shortwave) have been excluded.

(b) Excluding eight television stations operated by the national television service.



# *Historical Statistics*

# HISTORICAL STATISTICS

The following tables provide a historical summary of some statistics relating to Victoria.

A blank space indicates that the figures are not available.

A two dot leader (..) indicates nil.

A line drawn across a column between two consecutive figures indicates a break in the continuity of the series; see footnotes for further explanation.

## DEMOGRAPHY

### VICTORIA—POPULATION

Year	Population at 31 December (a) (b)				Mean population (a) (b)		Population of Melbourne (b) (d)
	Males	Females	Total persons	Masculinity (c)	Year ended 30 June	Year ended 31 December	
1836	186	38	224	489.47			200
1837	984	280	1,264	351.43		744	
1838	3,080	431	3,511	714.62		2,388	
1839	4,104	1,718	5,822	238.88		4,667	
1840	7,254	3,037	10,291	238.85		8,057	4,000
1841	14,391	6,025	20,416	238.85		15,354	4,479
1842	15,691	8,108	23,799	193.52		22,108	
1843	15,892	8,211	24,103	193.55		23,951	
1844	17,626	9,108	26,734	193.52		25,419	
1845	20,624	10,656	31,280	193.54		29,007	
1846	23,531	14,803	38,334	158.96		34,807	12,351
1847	26,004	16,932	42,936	153.58		40,635	
1848	30,697	20,693	51,390	148.34		47,163	
1849	39,556	26,664	66,220	148.35		58,805	
1850	45,495	30,667	76,162	148.35		71,191	
1851	58,235	39,254	97,489	148.35		86,826	23,143
1852	110,825	57,496	168,321	192.75		132,905	
1853	146,456	75,980	222,436	192.76		195,379	
1854	185,249	98,693	283,942	187.70		253,189	76,565
1855	226,462	120,843	347,305	187.40		315,624	
1856	251,349	139,035	390,384	180.78		368,845	
1857	291,523	164,999	456,522	176.68		423,453	110,110
1858	314,923	181,223	496,146	173.78		476,334	
1859	325,259	195,813	521,072	166.11		508,609	
1860	330,302	207,932	538,234	158.85		529,653	
1861	320,888	218,876	539,764	146.61		538,999	139,916
1862	322,298	229,090	551,388	140.69		545,576	
1863	324,731	243,175	567,906	133.54		559,647	148,873
1864	341,102	256,901	598,003	132.78		582,955	154,385
1865	348,717	269,074	617,791	129.60		607,897	160,586
1866	354,757	278,845	633,602	127.22		625,697	167,476
1867	360,112	288,190	648,302	124.96		640,952	174,366
1868	371,066	300,258	671,324	123.58		659,813	181,945
1869	383,665	313,097	696,762	122.54		684,043	190,212
1870	397,230	326,695	723,925	121.59		710,344	202,975
1871	407,628	338,822	746,450	120.31		735,188	215,991
1872	411,027	348,401	759,428	117.98		752,939	229,125
1873	416,756	357,052	773,808	116.72		766,618	236,990
1874	421,201	364,907	786,108	115.43		779,958	242,800
1875	424,269	370,665	794,934	114.46		790,521	245,873
1876	428,243	377,181	805,424	113.54		800,179	248,878

VICTORIA—POPULATION—*continued*

Year	Population at 31 December (a) (b)				Mean population (a) (b)		Population of Melbourne (b) (d)
	Males	Females	Total persons	Masculinity (c)	Year ended 30 June	Year ended 31 December	
1877	433,777	385,158	818,935	112.62		812,180	253,577
1878	438,077	391,841	829,918	111.80		824,427	260,738
1879	442,699	399,058	841,757	110.94		835,838	271,100
1880	450,558	408,047	858,605	110.42		850,181	281,037
1881	457,782	416,183	873,965	110.00		866,285	288,169
1882	466,788	425,977	892,765	109.58		883,365	297,937
1883	477,671	434,782	912,453	109.86		902,609	313,550
1884	490,266	445,511	935,777	110.05		924,115	334,030
1885	504,097	455,741	959,838	110.61		947,808	358,500
1886	523,864	469,853	993,717	111.50		976,778	381,590
1887	541,216	484,260	1,025,476	111.76		1,009,597	405,520
1888	571,425	507,652	1,079,077	112.56		1,052,277	432,350
1889	582,672	522,266	1,104,938	111.57		1,092,008	459,360
1890	595,519	538,209	1,133,728	110.65		1,119,333	482,600
1891	606,395	551,977	1,158,372	109.86		1,146,050	486,620
1892	608,666	560,081	1,168,747	108.67		1,163,560	469,390
1893	609,500	566,670	1,176,170	107.56		1,172,459	449,560
1894	609,379	572,776	1,182,155	106.39		1,179,163	444,340
1895	607,933	577,743	1,185,676	105.23		1,183,916	452,210
1896	599,497	580,353	1,179,850	103.30		1,182,763	458,300
1897	599,621	582,485	1,182,106	102.94		1,180,978	466,895
1898	598,332	583,949	1,182,281	102.46		1,182,194	480,390
1899	599,765	588,776	1,188,541	101.87		1,185,411	489,600
1900	601,773	594,440	1,196,213	101.23		1,192,377	494,905
1901	608,436	601,464	1,209,900	101.16	1,197,438	1,203,137	501,580
1902	604,318	603,913	1,208,231	100.07	1,207,236	1,207,527	502,840
1903	599,590	604,792	1,204,742	99.20	1,206,498	1,205,296	505,760
1904	597,617	607,991	1,205,608	98.29	1,203,347	1,202,814	511,520
1905	598,134	612,287	1,210,421	97.69	1,203,846	1,206,046	519,925
1906	600,856	618,976	1,219,832	97.07	1,209,319	1,213,672	530,660
1907	605,775	627,032	1,232,807	96.61	1,219,304	1,225,503	543,115
1908	614,937	635,512	1,250,449	96.76	1,232,489	1,240,488	557,350
1909	631,021	646,001	1,277,022	97.68	1,249,987	1,261,169	573,255
1910	646,482	654,926	1,301,408	98.71	1,271,500	1,282,477	588,000
1911	668,818	671,075	1,339,893	99.66	1,301,138	1,320,652	612,190
1912	690,056	692,497	1,382,553	99.65	1,337,796	1,357,824	636,200
1913	707,444	707,972	1,415,416	99.93	1,378,226	1,395,881	660,160
1914	713,307	721,881	1,435,188	98.81	1,412,176	1,427,512	680,470
1915	694,210	730,235	1,424,445	95.07	1,433,971	1,431,632	688,890
1916	666,245	738,418	1,404,663	90.23	1,424,896	1,414,480	702,120
1917	671,075	745,985	1,417,060	89.96	1,408,480	1,411,381	716,150
1918	684,243	753,002	1,437,245	90.87	1,416,900	1,424,054	730,830
1919	739,956	763,079	1,503,035	96.97	1,442,619	1,473,013	750,940
1920	753,803	774,106	1,527,909	97.38	1,497,806	1,512,093	776,840
1921	765,306	785,421	1,550,727	97.44	1,524,498	1,537,042	800,520
1922	789,517	800,756	1,590,273	98.60	1,552,601	1,570,883	831,060
1923	807,884	817,571	1,625,455	98.82	1,589,673	1,607,850	861,760
1924	825,919	831,232	1,657,151	99.36	1,625,703	1,641,944	889,720
1925	840,817	843,234	1,684,051	99.71	1,657,111	1,671,537	917,080
1926	855,035	856,952	1,711,987	99.78	1,683,724	1,696,758	945,500
1927	870,718	871,114	1,741,832	99.95	1,711,855	1,727,734	971,000
1928	879,478	882,268	1,761,746	99.68	1,741,432	1,751,974	990,650
1929	886,472	891,797	1,778,269	99.40	1,761,212	1,770,133	1,006,000
1930	892,422	900,183	1,792,605	99.14	1,778,761	1,786,217	999,650
1931	896,429	907,141	1,803,570	98.82	1,792,802	1,799,241	995,600
1932	900,663	912,724	1,813,387	98.68	1,804,014	1,808,618	993,800
1933	904,868	919,349	1,824,217	98.42	1,814,797	1,820,497	995,800
1934	909,806	926,854	1,836,660	98.16	1,824,660	1,830,326	1,000,000
1935	910,740	930,855	1,841,595	97.84	1,835,578	1,838,206	1,008,300
1936	913,959	935,648	1,849,607	97.68	1,841,636	1,845,941	1,016,500
1937	916,974	940,017	1,856,991	97.55	1,850,071	1,853,765	1,024,300
1938	924,034	947,065	1,871,099	97.57	1,858,585	1,865,251	1,035,600
1939	929,470	953,663	1,883,133	97.46	1,872,287	1,878,918	1,050,700
1940	947,037	967,881	1,914,918	97.85	1,886,751	1,900,426	1,083,000
1941	964,619	981,806	1,946,425	98.25	1,916,727	1,932,412	1,114,900
1942	970,729	991,829	1,962,558	97.87	1,948,710	1,959,496	1,143,900
1943	979,549	1,002,067	1,981,616	97.75	1,965,473	1,973,533	1,156,600
1944	986,889	1,011,065	1,997,954	97.61	1,981,997	1,989,870	1,168,900
1945	994,784	1,020,323	2,015,107	97.50	1,998,202	2,006,649	1,180,200
1946	1,006,395	1,033,374	2,039,769	97.39	2,015,197	2,025,475	1,189,800
1947	1,016,724	1,045,985	2,062,709	97.20	2,039,348	2,053,916	1,228,300
1948	1,039,037	1,069,088	2,108,125	97.19	2,070,116	2,091,581	1,247,800
1949	1,071,759	1,097,125	2,168,884	97.69	2,115,830	2,142,529	1,272,300
1950	1,114,497	1,122,685	2,237,182	99.27	2,174,844	2,209,013	1,302,200

VICTORIA—POPULATION—*continued*

Year	Population at 31 December (a) (b)				Mean population (a) (b)		Population of Melbourne (b) (d)
	Males	Females	Total persons	Masculinity (c)	Year ended 30 June	Year ended 31 December	
1951	1,150,009	1,149,529	2,299,538	100.04	2,242,882	2,276,272	1,330,800
1952	1,189,262	1,177,457	2,366,719	101.00	2,309,708	2,343,610	1,359,100
1953	1,212,060	1,203,975	2,416,035	100.67	2,372,366	2,395,851	1,388,800
1954	1,244,739	1,233,247	2,477,986	100.93	2,422,839	2,452,741	1,524,111
1955	1,281,891	1,264,441	2,546,332	101.38	2,485,222	2,520,481	1,575,300
1956	1,319,445	1,298,667	2,618,112	101.60	2,556,148	2,592,670	1,629,400
1957	1,348,351	1,332,204	2,680,555	101.21	2,625,609	2,656,363	1,677,100
1958	1,379,587	1,365,308	2,745,165	101.07	2,687,115	2,717,371	1,726,100
1959	1,413,523	1,397,906	2,811,429	101.12	2,749,994	2,783,951	1,777,700
1960	1,453,815	1,434,475	2,888,290	101.35	2,819,650	2,857,032	1,831,100
1961	1,485,348	1,469,951	2,955,299	101.05	2,893,417	2,926,075	(e)1,984,936
1962	1,511,418	1,499,625	3,011,043	100.79	2,956,769	2,983,715	2,029,240
1963	1,540,749	1,530,297	3,071,046	100.68	3,011,833	3,041,442	2,077,560
1964	1,573,966	1,563,955	3,137,921	100.64	3,073,384	3,105,685	2,130,980
1965	1,602,058	1,593,802	3,195,860	100.52	3,136,319	3,165,594	2,180,800
1966	1,627,787	1,622,056	3,249,843	100.35	3,194,035	3,221,403	(e)2,230,793
1967	1,653,363	1,650,243	3,303,606	100.19	3,249,885	3,277,183	2,283,000
1968	1,679,213	1,677,614	3,356,827	100.10	3,302,366	3,328,451	2,331,000
1969	1,710,586	1,710,592	3,421,178	100.00	3,356,773	3,388,417	2,389,700
1970	1,739,916	1,742,115	3,482,031	99.87	3,420,609	3,450,523	2,447,600
1971	(f)1,765,554	(f)1,770,856	(f)3,536,410	(f) 99.70	3,481,370	(f)3,510,006	(e)2,503,450

(a) All estimates have been corrected for discrepancies disclosed by the various Censuses up to the Census of 30 June 1971.

Figures from 1939 to 1946 include all living Australian defence service personnel irrespective of whether they were within Australia or overseas, but exclude members of Allied Services and prisoners of war and internees from overseas. The population estimates from 1947 onwards include defence personnel in Australia and are exclusive of members of the forces overseas.

(b) Figures for 1961 and subsequent years include full-blood Aborigines.

(c) Number of males per 100 females.

(d) Figures shown for the population of Melbourne from 1841 to 1861 inclusive are as at the following Census dates: 2 March for 1841, 1846, and 1851, 26 April 1854, 29 March 1857, and 7 April 1861. The definition of Melbourne and suburbs in these years was adjusted from time to time to encompass that area which at any particular date was, for practical purposes, considered to comprise the metropolis. From 1863 to 1953 the figures shown are estimates as at 31 December, those for 1954 and subsequent years are estimates or Census counts at 30 June.

The figures shown for the years 1863 to 1921 relate to the population within a 10 mile radius of the Melbourne G.P.O. From 1921 to 1960 the figures relate to the population of the City of Melbourne and adjoining municipal areas within boundaries defined for Census purposes at the respective Censuses of 1921, 1933, 1947, and 1954. In defining this area at each Census it was found necessary to include only portions of certain local government areas which embraced the more distant suburbs. In each case the Census definition was also used in each subsequent year prior to the following Census. From 1961 onwards the figures relate to the population within a new fixed outer boundary embracing an area referred to as the Melbourne Statistical Division. This boundary was designed to circumscribe an area which would contain the limits of urban development of Melbourne for at least twenty years, and which would generally be socially and economically oriented to Melbourne.

(e) Intercensal estimates of population are not available for urban Melbourne, the population of which was 1,858,534, 2,108,401, and 2,394,117 at the Censuses of 1961, 1966, and 1971, respectively.

(f) Subject to revision.

VICTORIA—MARRIAGES, DIVORCES, BIRTHS, AND DEATHS

Year	Marriages (a)		Divorces (c)		Births (a)		Deaths (a)		Infant mortality (a)	
	Number	Rate (b)	Petitions	Decrees granted	Number	Rate (d)	Number	Rate (e)	Number	Rate (f)
1836	..	..	..	..	1	..	3	..	..	..
1837	1	1.34	..	..	7	9.41	1	1.34	..	..
1838	15	6.28	..	..	28	11.73	20	8.38	..	..
1839	57	12.21	..	..	142	30.43	67	14.36	..	..
1840	177	21.97	..	..	358	44.43	198	24.57	..	..
1841	406	26.44	..	..	618	40.25	319	20.78	..	..
1842	514	23.25	..	..	1,025	46.36	413	18.68	..	..
1843	364	15.20	..	..	1,317	54.99	313	13.07	..	..
1844	328	12.90	..	..	1,336	52.56	240	9.44	..	..
1845	316	10.89	..	..	1,521	52.44	327	11.27	..	..
1846	301	8.65	..	..	1,596	45.85	328	9.42	..	..
1847	337	8.29	..	..	1,661	40.88	361	8.88	..	..
1848	351	7.44	..	..	1,789	37.93	405	8.59	..	..
1849	593	10.08	..	..	1,913	32.53	593	10.08	..	..
1850	969	13.61	..	..	2,673	37.55	780	10.96	..	..

VICTORIA—MARRIAGES, DIVORCES, BIRTHS, AND DEATHS—*continued*

Year	Marriages (a)		Divorces (c)		Births (a)		Deaths (a)		Infant mortality (a)	
	Number	Rate (b)	Petitions	Decrees granted	Number	Rate (d)	Number	Rate (e)	Number	Rate (f)
1851	1,023	11.78	..	..	3,049	35.12	1,165	13.42		
1852	1,958	14.73	..	..	3,756	28.26	2,105	15.84		
1853	2,703	13.83	..	..	3,025	15.48	3,213	16.44		
1854	3,765	14.87	..	..	7,542	29.79	6,261	24.73		
1855	3,847	12.19	..	..	11,941	37.83	6,603	20.92		
1856	4,116	11.16	..	..	14,420	39.10	5,728	15.53		
1857	4,524	10.68	..	..	17,384	41.05	7,449	17.59		
1858	4,552	9.56	..	..	19,929	41.84	9,015	18.93		
1859	4,769	9.38	..	..	22,092	43.44	9,469	18.62		
1860	4,351	8.21	..	..	22,863	43.17	12,061	22.77		
1861	4,434	8.23	14	1	23,461	43.53	10,522	19.52		
1862	4,525	8.29	26	11	24,391	44.71	10,080	18.48		
1863	4,227	7.55	21	7	23,906	42.72	9,502	16.98	2,844	118.97
1864	4,554	7.81	21	13	25,680	44.05	8,887	15.24	2,778	108.18
1865	4,497	7.40	13	11	25,915	42.63	10,461	17.21	3,538	136.52
1866	4,253	6.80	19	6	25,010	39.97	12,286	19.64	3,838	153.46
1867	4,490	7.01	19	8	25,608	39.95	11,733	18.31	3,534	138.00
1868	4,692	7.11	24	7	27,243	41.29	10,067	15.26	3,054	112.10
1869	4,735	6.92	22	15	26,040	38.07	10,630	15.54	3,284	126.11
1870	4,732	6.66	18	9	27,151	38.22	10,420	14.67	3,203	117.97
1871	4,693	6.38	17	7	27,382	37.24	9,918	13.49	3,114	113.72
1872	4,791	6.36	26	2	27,361	36.34	10,831	14.38	3,334	121.85
1873	4,974	6.49	21	10	28,100	36.65	11,501	15.00	3,181	113.20
1874	4,925	6.31	26	6	26,800	34.36	12,222	15.67	3,341	124.66
1875	4,985	6.31	25	14	26,720	33.80	15,287	19.34	3,811	142.63
1876	4,949	6.18	31	8	26,769	33.45	13,561	16.95	2,980	111.32
1877	5,103	6.28	40	11	26,010	32.02	12,776	15.73	3,299	126.84
1878	5,092	6.18	22	9	26,581	32.24	12,702	15.41	3,262	122.72
1879	4,986	5.97	24	4	26,839	32.11	12,120	14.50	3,219	119.94
1880	5,286	6.22	22	11	26,148	30.76	11,652	13.71	3,105	118.75
1881	5,896	6.81	28	9	27,145	31.33	12,302	14.20	3,119	114.90
1882	6,309	7.14	38	12	26,747	30.28	13,634	15.43	3,722	139.16
1883	6,771	7.50	44	27	27,541	30.51	13,006	14.41	3,150	114.37
1884	7,218	7.81	36	12	28,850	31.22	13,505	14.61	3,281	113.73
1885	7,395	7.80	43	22	29,975	31.63	14,364	15.15	3,771	125.80
1886	7,737	7.92	44	16	30,824	31.56	14,952	15.31	3,924	127.30
1887	7,768	7.69	34	23	33,043	32.73	16,005	15.85	4,296	130.01
1888	8,946	8.50	42	29	34,503	32.79	16,287	15.48	4,401	127.55
1889	9,194	8.42	45	25	36,359	33.30	19,392	17.76	5,549	152.62
1890	9,187	8.21	18	40	37,578	33.57	18,012	16.09	4,412	117.41
1891	8,780	7.66	154	99	38,505	33.60	18,631	16.26	4,861	126.24
1892	7,723	6.64	172	92	37,831	32.51	15,851	13.62	4,041	106.82
1893	7,004	5.97	131	92	36,552	31.18	16,508	14.08	4,302	117.70
1894	7,029	5.96	148	83	34,258	29.05	15,430	13.09	3,567	104.12
1895	7,181	6.07	138	85	33,706	28.47	15,636	13.21	3,450	102.36
1896	7,625	6.45	141	108	32,178	27.21	15,714	13.29	3,540	110.01
1897	7,568	6.41	161	117	31,310	26.51	15,126	12.81	3,235	103.32
1898	7,620	6.45	145	87	30,172	25.52	18,695	15.81	4,047	134.13
1899	8,140	6.87	163	107	31,008	26.16	16,578	13.99	3,541	114.20
1900	8,308	6.97	161	93	30,779	25.81	15,215	12.76	2,936	95.39
1901	8,406	6.99	150	83	31,008	25.77	15,904	13.22	3,192	102.94
1902	8,477	7.02	157	109	30,461	25.23	16,177	13.40	3,308	108.60
1903	7,605	6.31	200	101	29,569	24.53	15,595	12.94	3,146	106.40
1904	8,210	6.83	178	141	29,763	24.74	14,393	11.97	2,319	77.92
1905	8,774	7.28	191	137	30,107	24.96	14,676	12.17	2,508	83.30
1906	8,930	7.36	176	125	30,844	25.41	15,237	12.55	2,866	92.92
1907	9,575	7.81	186	134	31,365	25.59	14,539	11.86	2,277	72.60
1908	9,335	7.53	191	152	31,097	25.07	15,766	12.71	2,676	86.05
1909	9,431	7.48	191	139	31,544	25.01	14,436	11.45	2,251	71.36
1910	10,239	7.98	195	141	31,437	24.51	14,732	11.49	2,417	76.88
1911	11,088	8.40	267	214	33,026	25.01	15,216	11.52	2,269	68.70
1912	11,738	8.64	305	252	35,796	26.36	16,589	12.22	2,666	74.48
1913	11,324	8.11	299	239	35,970	25.77	15,474	11.09	2,537	70.53
1914	11,829	8.29	318	243	36,222	25.37	16,503	11.56	2,835	78.27
1915	12,832	8.96	286	219	35,009	24.45	15,823	11.05	2,408	68.78
1916	11,342	8.02	271	207	34,235	24.20	16,489	11.66	2,555	74.63
1917	9,505	6.73	267	202	33,033	23.40	14,555	10.31	1,877	56.82
1918	9,156	6.43	317	236	31,597	22.19	15,177	10.66	1,951	61.75
1919	11,706	7.95	492	348	31,619	21.47	19,370	13.15	2,147	67.90
1920	14,898	9.85	521	375	36,213	23.95	16,832	11.13	2,669	73.70

VICTORIA—MARRIAGES, DIVORCES, BIRTHS, AND DEATHS—*continued*

Year	Marriages (a)		Divorces (c)		Births (a)		Deaths (a)		Infant mortality (a)	
	Number	Rate (b)	Petitions	Decrees granted	Number	Rate (d)	Number	Rate (e)	Number	Rate (f)
1921	13,676	8.90	463	389	35,591	23.16	16,165	10.52	2,582	72.55
1922	12,996	8.27	485	378	36,288	23.10	15,155	9.65	1,936	53.35
1923	13,126	8.16	536	431	35,877	22.31	17,219	10.71	2,356	65.67
1924	13,296	8.10	549	408	36,140	22.01	16,503	10.05	2,216	61.32
1925	13,370	8.00	547	458	35,922	21.49	15,837	9.47	2,047	56.98
1926	13,405	7.90	587	470	35,362	20.84	16,335	9.63	1,969	55.68
1927	13,608	7.88	599	517	35,074	20.30	16,773	9.71	1,966	56.05
1928	13,186	7.53	616	484	34,498	19.69	17,708	10.11	1,919	55.63
1929	12,935	7.31	540	548	33,604	18.98	16,717	9.44	1,587	47.23
1930	11,641	6.52	496	388	33,127	18.55	15,959	8.93	1,544	46.61
1931	10,182	5.66	490	425	30,332	16.86	17,033	9.47	1,349	44.47
1932	11,744	6.49	549	459	27,464	15.19	16,805	9.29	1,181	43.00
1933	12,668	6.96	601	499	28,392	15.60	17,456	9.59	1,148	40.43
1934	13,862	7.57	668	621	27,828	15.20	18,648	10.19	1,242	44.63
1935	15,409	8.38	750	608	27,884	15.17	18,456	10.04	1,148	41.17
1936	15,915	8.62	768	690	28,883	15.65	18,778	10.17	1,222	42.31
1937	16,226	8.75	900	800	29,731	16.04	18,613	10.04	1,091	36.70
1938	17,113	9.17	946	830	30,344	16.27	18,955	10.16	1,038	34.21
1939	17,368	9.24	890	805	30,493	16.23	20,169	10.73	1,085	35.58
1940	22,299	11.73	897	822	31,962	16.82	20,293	10.68	1,261	39.45
1941	20,898	10.81	981	842	34,406	17.80	20,522	10.62	1,246	36.21
1942	23,636	12.06	1,224	959	35,927	18.33	21,973	11.21	1,497	41.67
1943	18,356	9.30	1,596	1,383	39,117	19.82	21,327	10.81	1,399	35.76
1944	17,857	8.97	1,964	1,694	39,358	19.78	20,502	10.30	1,258	31.96
1945	16,501	8.22	2,108	1,759	41,200	20.53	20,496	10.21	1,155	28.03
1946	21,405	10.57	2,239	1,651	46,693	23.05	21,534	10.63	1,268	27.16
1947	20,437	9.95	1,959	2,294	47,366	23.06	21,442	10.44	1,245	26.28
1948	20,035	9.58	1,927	1,681	46,099	22.04	21,825	10.43	1,103	23.93
1949	20,066	9.37	2,059	1,780	46,873	21.88	21,991	10.26	1,026	21.89
1950	20,320	9.20	1,878	1,604	49,830	22.56	22,341	10.11	1,001	20.09
1951	21,117	9.28	1,840	1,730	50,553	22.21	23,446	10.30	1,143	22.61
1952	20,220	8.63	1,853	1,616	53,738	22.93	23,322	9.95	1,198	22.29
1953	19,238	8.03	1,896	2,128	53,561	22.36	22,650	9.45	1,133	21.15
1954	19,404	7.91	1,800	1,539	54,660	22.29	22,554	9.20	1,055	19.30
1955	20,056	7.96	1,621	1,691	56,336	22.35	22,527	8.94	1,035	18.37
1956	20,137	7.77	1,773	1,270	58,393	22.52	23,886	9.21	1,128	19.32
1957	20,239	7.62	1,680	1,362	60,464	22.76	24,131	9.08	1,219	20.16
1958	20,649	7.60	1,594	1,717	61,269	22.55	23,625	8.69	1,178	19.23
1959	20,456	7.35	1,666	1,877	62,245	22.36	25,078	9.01	1,320	21.21
1960	20,627	7.22	1,817	1,313	64,025	22.41	24,547	8.59	1,182	18.46
1961	21,264	7.27	2,306	1,257	65,886	22.52	24,500	8.37	1,173	17.80
1962	22,393	7.51	2,174	1,623	65,890	22.09	25,847	8.66	1,219	18.50
1963	22,061	7.25	2,186	1,626	65,649	21.59	26,920	8.85	1,242	18.92
1964	24,169	7.78	2,390	2,151	64,990	20.93	27,548	8.87	1,098	16.89
1965	26,421	8.35	2,532	2,103	63,550	20.08	28,031	8.86	1,109	17.45
1966	27,089	8.41	2,645	2,144	64,008	19.87	28,673	8.90	1,116	17.44
1967	28,004	8.55	2,732	2,054	65,485	19.98	28,373	8.66	1,101	16.81
1968	29,724	8.93	2,803	2,525	70,228	21.10	29,967	9.00	1,010	14.38
1969	30,860	9.11	3,068	2,235	71,035	20.96	28,976	8.55	1,066	15.01
1970	31,729	9.20	3,691	2,604	73,019	21.16	30,335	8.79	1,060	14.52
1971	32,386	(g)9.23	4,271	3,079	75,498	(g)21.51	30,598	(g)8.72	1,107	14.66

- (a) The Registration Act providing for the legal registration of births, deaths, and marriages in Victoria was passed in 1853. Prior to this date Victorian vital statistics were obtained from parish and church records which were regarded as being incomplete for statistical purposes. For this reason the numbers of vital events and their corresponding rates for this period must be treated with caution. In particular, it is thought that in the year in which the new registration system was introduced (1853) both births and deaths were understated, the correct totals in each case would probably have exceeded five thousand. Figures for 1966 and subsequent years include particulars of full-blood Aboriginals.
- (b) Number of marriages per 1,000 of the mean population.
- (c) From 1861 to 1909 nullities of marriage are excluded. Figures for 1910 and subsequent years include nullities of marriage and judicial separations. The dissolution of marriage component of figures before 1957 represents decrees nisi. The *Divorce Act* 1889 assented to in 1891 increased the grounds on which divorce could be granted and simplified the mode of procedure. The Commonwealth *Matrimonial Causes Act* 1959 which came into operation on 1 February 1961 introduced changed provisions for divorce. Figures for 1961 and subsequent years may not, therefore, be comparable with those for earlier years. Total petitions filed may include petitions filed by, and total decrees granted may include decrees granted to, both parties in the same action.
- (d) Number of births per 1,000 of the mean population.
- (e) Number of deaths per 1,000 of the mean population.
- (f) Number of deaths under one year per 1,000 live births.
- (g) Subject to revision.

## VICTORIA—POPULATION INCREASE

Year (a)	Natural increase (b) (c)	Apparent net migration (c) (d)	Total increase (e)	Rate of natural increase (c) (f)	Rate of apparent net migration (c) (g)	Rate of population growth
						per cent
1836	-2	226	224	..	..	..
1837	6	1,034	1,040	8.06	1,389.78	464.29
1838	8	2,239	2,247	3.35	937.60	177.77
1839	75	2,236	2,311	16.07	479.11	65.82
1840	160	4,309	4,469	19.86	534.81	76.76
1841	299	9,826	10,125	19.47	639.96	98.39
1842	612	2,771	3,383	27.68	125.34	16.57
1843	1,004	-700	304	41.92	-29.23	1.28
1844	1,096	1,535	2,631	43.12	60.39	10.92
1845	1,194	3,352	4,546	41.16	115.56	17.00
1846	1,268	5,786	7,054	36.43	166.23	22.55
1847	1,300	3,302	4,602	31.99	81.26	12.01
1848	1,384	7,070	8,454	29.35	149.91	19.69
1849	1,320	13,510	14,830	22.45	229.74	28.86
1850	1,893	8,049	9,942	26.59	113.06	15.01
1851	1,884	19,443	21,327	21.70	223.93	28.00
1852	1,651	69,181	70,832	12.42	520.53	72.66
1853	(h)	54,303	54,115	(h)	277.94	32.15
1854	1,281	60,225	61,506	5.06	237.87	27.65
1855	5,338	58,025	63,363	16.91	183.84	22.32
1856	8,692	34,387	43,079	23.57	93.23	12.40
1857	9,935	56,203	66,138	23.46	132.73	16.94
1858	10,914	28,710	39,624	22.91	60.27	8.68
1859	12,623	12,303	24,926	24.82	24.19	5.02
1860	10,802	6,360	17,162	20.39	12.01	3.29
1861	12,939	-11,409	1,530	24.01	-21.17	0.28
1862	14,311	-2,687	11,624	26.23	-4.93	2.15
1863	14,404	2,114	16,518	25.74	3.78	3.00
1864	16,793	13,304	30,097	28.81	22.82	5.30
1865	15,454	4,334	19,788	25.42	7.13	3.31
1866	12,724	3,087	15,811	20.34	4.93	2.56
1867	13,875	825	14,700	21.65	1.29	2.32
1868	17,176	5,846	23,022	26.03	8.86	3.55
1869	15,410	10,028	25,438	22.53	14.66	3.79
1870	16,731	10,432	27,163	23.55	14.69	3.90
1871	17,464	5,061	22,525	23.75	6.88	3.11
1872	16,530	3,552	12,978	21.95	-4.72	1.74
1873	16,599	-2,219	14,380	21.65	-2.89	1.89
1874	14,578	-2,278	12,300	18.69	-2.92	1.59
1875	11,433	-2,607	8,826	14.46	-3.30	1.12
1876	13,208	-2,718	10,490	16.51	-3.40	1.32
1877	13,234	-277	13,511	16.29	0.34	1.68
1878	13,879	-2,896	10,983	16.83	-3.51	1.34
1879	14,719	-2,880	11,839	17.61	-3.45	1.43
1880	14,496	2,352	16,848	17.05	2.77	2.00
1881	14,843	517	15,360	17.13	0.60	1.79
1882	13,113	5,687	18,800	14.84	6.44	2.15
1883	14,535	5,153	19,688	16.10	5.71	2.21
1884	15,345	7,979	23,324	16.61	8.63	2.56
1885	15,611	8,450	24,061	16.47	8.92	2.57
1886	15,872	18,007	33,879	16.25	19.44	3.53
1887	17,038	14,721	31,759	16.88	14.58	3.20
1888	18,216	35,385	53,601	17.31	33.63	5.23
1889	16,967	8,894	25,861	15.54	8.14	2.40
1890	19,566	9,224	28,790	17.48	8.24	2.61
1891	19,874	4,770	24,644	17.34	4.16	2.17
1892	21,980	-11,605	10,375	18.89	-9.97	0.90
1893	20,044	-12,621	7,423	17.10	-10.76	0.64
1894	18,828	-12,843	5,985	15.97	-10.89	0.51
1895	18,070	-14,549	3,521	15.26	-12.29	0.30
1896	16,464	-22,290	-5,826	13.92	-18.85	-0.49
1897	16,184	-13,928	2,256	13.70	-11.79	0.19
1898	11,477	-11,302	175	9.71	-9.56	0.01
1899	14,430	-8,170	6,260	12.17	-6.89	0.53
1900	15,564	-7,892	7,672	13.05	-6.62	0.65
1901	15,104	-1,417	13,687	12.55	-1.18	1.14
1902	14,284	-15,953	-1,669	11.83	-13.21	-0.14
1903	13,974	-17,463	-3,489	11.59	-14.49	-0.29
1904	15,370	-14,504	866	12.78	-12.06	0.07
1905	15,431	-10,618	4,813	12.79	-8.80	0.40
1906	15,607	-6,196	9,411	12.86	-5.11	0.78
1907	16,826	-3,851	12,975	13.73	-3.14	1.06
1908	15,331	2,311	17,642	12.36	1.86	1.43
1909	17,108	9,465	26,573	13.57	7.50	2.13
1910	16,705	7,681	24,386	13.03	5.99	1.91

VICTORIA—POPULATION INCREASE—*continued*

Year (a)	Natural increase (b)	Apparent net migration (d)	Total increase (e)	Rate of natural increase (f)	Rate of apparent net migration (g)	Rate of population growth  per cent
1911	17,810	20,675	38,485	13.49	15.66	2.96
1912	19,207	23,453	42,660	14.15	17.27	3.18
1913	20,496	12,367	32,863	14.68	8.86	2.38
1914	19,719	53	19,772	13.81	0.04	1.40
1915	19,186	-29,929	-10,743	13.40	-20.91	-0.75
1916	17,746	-37,528	-19,782	12.55	-26.53	-1.39
1917	18,478	-6,081	12,397	13.09	-4.31	0.88
1918	16,420	3,765	20,185	11.53	2.64	1.42
1919	12,249	53,541	65,790	8.32	36.35	4.58
1920	19,381	5,493	24,874	12.82	3.63	1.65
1921	19,426	3,392	22,818	12.64	2.21	1.49
1922	21,133	18,413	39,546	13.45	11.72	2.55
1923	18,658	16,524	35,182	11.60	10.28	2.21
1924	19,637	12,059	31,696	11.96	7.34	1.95
1925	20,085	6,815	26,900	12.02	4.08	1.62
1926	19,027	8,909	27,936	11.21	5.25	1.66
1927	18,301	11,544	29,845	10.59	6.68	1.74
1928	16,790	3,124	19,914	9.58	1.78	1.14
1929	16,887	364	16,523	9.54	-0.21	0.94
1930	17,168	-2,832	14,336	9.61	-1.59	0.81
1931	13,299	-2,334	10,965	7.39	-1.30	0.61
1932	10,659	-842	9,817	5.89	-0.47	0.54
1933	10,936	-106	10,830	6.01	-0.06	0.60
1934	9,180	3,263	12,443	5.02	1.78	0.68
1935	9,428	-4,493	4,935	5.13	-2.44	0.27
1936	10,105	-2,093	8,012	5.47	-1.13	0.44
1937	11,118	-3,734	7,384	6.00	-2.01	0.40
1938	11,389	2,719	14,108	6.11	1.46	0.76
1939	10,324	1,718	12,034	5.49	0.91	0.64
1940	11,669	20,268	31,785	6.14	10.66	1.69
1941	13,884	18,995	31,507	7.18	9.83	1.65
1942	13,954	5,527	16,133	7.12	2.82	0.83
1943	17,790	3,789	19,058	9.01	1.92	0.97
1944	18,856	955	16,338	9.48	0.48	0.82
1945	20,704	-1,812	17,153	10.32	-0.90	0.86
1946	25,159	327	24,662	12.42	0.16	1.22
1947	25,924	-2,952	22,940	12.62	-1.44	1.13
1948	24,274	21,142	45,416	11.61	10.11	2.20
1949	24,882	35,877	60,759	11.61	16.75	2.88
1950	27,489	40,809	68,298	12.44	18.47	3.15
1951	27,107	35,249	62,356	11.91	15.49	2.79
1952	30,416	36,765	67,181	12.98	15.69	2.92
1953	30,911	18,405	49,316	12.90	7.68	2.08
1954	32,106	29,845	61,951	13.09	12.17	2.56
1955	33,809	34,537	68,346	13.41	13.70	2.76
1956	34,507	37,273	71,780	13.31	14.38	2.82
1957	36,333	26,110	62,443	13.68	9.83	2.39
1958	37,644	26,966	64,610	13.85	9.92	2.41
1959	37,167	29,097	66,264	13.35	10.45	2.41
1960	39,478	37,383	76,861	13.82	13.08	2.73
1961	41,385	15,310	56,696	14.14	5.23	1.96
1962	40,043	15,701	55,744	13.42	5.26	1.89
1963	38,729	21,274	60,003	12.73	6.99	1.99
1964	37,442	29,433	66,875	12.06	9.48	2.18
1965	35,519	22,420	57,939	11.22	7.08	1.85
1966	35,335	18,648	53,983	10.97	5.79	1.69
1967	37,112	16,651	53,763	11.32	5.08	1.65
1968	40,261	12,960	53,221	12.10	3.89	1.61
1969	42,059	22,292	64,351	12.41	6.58	1.92
1970	42,684	18,169	60,853	12.37	5.27	1.78
1971	44,900	9,479	54,379	12.79	2.70	1.56

- (a) For the period September 1939 to June 1947 troop movements were excluded and deaths of defence personnel, whether in Australia or overseas, included. Thus, for these years, the figures for natural increase and net migration do not equal the total increase figure.
- (b) Excess of births over deaths. Figures for 1966 and subsequent years include full-blood Aborigines.
- (c) See note (a) to preceding table. For the reasons stated there, the natural increase and apparent net migration, together with their corresponding rates for this period, must be treated with caution.
- (d) Derived by subtracting natural increase from the estimated total population increase. See also note (a) above.
- (e) Figures for 1961 and subsequent years include full-blood Aborigines.
- (f) Excess of births over deaths per 1,000 of mean population.
- (g) Apparent net migration per 1,000 of mean population.
- (h) Not calculated. See note (a) to preceding table.



**INDUSTRIAL CONDITIONS, EMPLOYMENT, AND PRICES**  
**MELBOURNE—BASIC WAGE RATES FIXED BY COMMONWEALTH**  
**CONCILIATION AND ARBITRATION COMMISSION (a)**

(\$)

Payable from—	Adult males	Payable from—	Adult males	Payable from—	Adult males	Payable from—	Adult males
1907	4.20	1927 November	9.00	1935 December	6.60	1943 August	9.90
1911	4.55	1928 February	8.95	1936 March	6.60	November	9.80
1914	5.05	May	8.80	June	6.60	1944 February	9.70
1915	5.30	August	8.75	September	6.60	May	9.70
1916	6.15	November	8.60	December	6.90	August	9.80
1917	6.30	1929 February	8.60	1937 March	6.90	November	9.80
1918	6.20	May	8.95	June	6.90	1945 February	9.80
1919	6.50	August	9.00	July (b)	7.20	May	9.80
1920	7.10	November	9.00	September	7.30	August	9.80
1921	8.60	1930 February	9.00	October (b)	7.60	November	9.80
1922 February	8.05	May	8.60	December	7.70	1946 February	9.80
May	7.80	August	8.55	1938 March	7.70	May	9.80
August	8.10	November	8.30	June	7.70	August	9.90
November	8.25	1931 February (b)	7.02	September	7.80	November	9.90
1923 February	8.20	May	6.84	December	7.90	December (b)	10.60
May	8.15	August	6.57	1939 March	7.90	1947 February	10.70
August	8.75	November	6.34	June	8.10	May	10.70
November	9.15	1932 February	6.34	September	8.10	August	10.80
1924 February	8.75	May	6.39	December	8.00	November	10.90
May	8.55	August	6.30	1940 February	8.10	1948 February	11.30
August	8.50	November	6.17	May	8.20	May	11.50
November	8.45	1933 February	6.03	August	8.40	August	11.70
1925 February	8.40	May	6.33	November	8.40	November	12.00
May	8.55	August	6.24	1941 February	8.60	1949 February	12.30
August	8.70	November	6.28	May	8.70	May	12.50
November	8.75	1934 February	6.33	August	8.70	August	12.80
1926 February	8.75	May (b)	6.40	November	8.80	November	13.00
May	8.85	June	6.40	1942 February	8.90	1950 February	13.40
August	9.20	September	6.40	May	9.20	May	13.70
November	8.90	December	6.40	August	9.40	August	14.00
1927 February	8.85	1935 March	6.60	November	9.70	November	14.30
May	8.75	June	6.60	1943 February	9.80		
August	8.70	September	6.60	May	9.80		

Payable from—	Adult males	Adult females (c)	Payable from—	Adult males	Adult females (c)	Payable from—	Adult males	Adult females (c)
1950 December (b)	16.20	12.15	1952 August	22.40	16.80	1958 21 May (b)	26.00	19.50
1951 February	17.00	12.75	November	22.80	17.10	1959 11 June (b)	27.50	20.60
May	17.70	13.25	1953 February	22.90	17.15	1961 7 July (b)	28.70	21.50
August	18.90	14.15	May	23.20	17.40	1964 19 June (b)	30.70	23.00
November	19.90	14.90	August (d)	23.50	17.60	1966 11 July (b)	32.70	24.50
1952 February	20.90	15.65	1956 June (b)	24.50	18.35	1967 1 July (e)	(e)	(e)
May	21.20	15.90	1957 15 May (b)	25.50	19.10			

(a) Prior to 30 June 1956 the Commonwealth Court of Conciliation and Arbitration.

(b) Rates declared subsequent to an inquiry as distinct from automatic adjustments in accordance with a price index.

(c) As a result of the 1949-1950 Basic Wage Inquiry the then Commonwealth Court of Conciliation and Arbitration fixed the basic weekly wage for adult females at 75 per cent of the corresponding male rate from the beginning of the first pay period commencing in December 1950. This percentage continued to be prescribed in subsequent inquiries. Prior to December 1950 the relationship of female basic wages to male basic wages varied from award to award but was generally between 54 and 56 per cent.

(d) The system of making regular quarterly adjustments was introduced in 1921 and was discontinued after the August 1953 adjustment.

(e) Basic wages and margins eliminated from Commonwealth awards and total wages introduced. Following this decision, award rates for adult males and adult females have been increased at various times by granting general increases in award total wages (see following tables).

**MELBOURNE—MINIMUM WAGE : ADULT MALES,**  
**WEEKLY RATES AS PRESCRIBED BY COMMONWEALTH**  
**CONCILIATION AND ARBITRATION COMMISSION (a)**

(\$)

Date operative (b)	11 July 1966	1 July 1967	25 October 1968	19 December 1969	1 January 1971	19 May 1972
Minimum weekly rate	36.45	37.45	38.80	42.30	46.30	51.00

(a) Victorian Wages Boards adopted a similar concept to the Commonwealth provision.

(b) Rates are operative from the beginning of the first pay period commencing on or after the date shown.

GENERAL WEEKLY INCREASES IN AWARD "TOTAL WAGES":  
COMMONWEALTH AWARDS (a)

Date operative (b) 1 July 1967 25 October 1968 19 December 1969 1 January 1971 (c) 19 May 1972 (c)

	\$	\$			\$
Adult males	1.00	1.35	3 per cent	6 per cent	2.00
Adult females	1.00	1.35	3 per cent	6 per cent	2.00

- (a) Most Victorian Wages Boards adopted Commonwealth determinations.  
(b) Operative from the beginning of the first pay period commencing on or after the date shown.  
(c) Workers covered by most Victorian Wages Boards received the increase from the dates shown.

MELBOURNE—VICTORIAN STATE BASIC WAGE  
(\$)

Date operative (a)	Adult males	Adult females	Date operative (a)	Adult males	Adult females	Date operative (a)	Adult males	Adult females
1953 November (b)	23.70	17.75	1955 May	23.70	17.75	1959 June-July (d)	27.50	20.60
1954 February	23.80	17.85	August	24.00	18.00	1961 July-August (d)	28.70	21.50
May	23.70	17.75	November	24.60	18.45	1964 June-July (d)	30.70	23.00
August	23.60	17.70	1956 February	25.10	18.80	1966 11 July	32.70	24.50
November	23.40	17.55	May	25.60	19.20	1967 1 July	(e)	(e)
1955 February	23.50	17.60	August (c)	26.30	19.70			

- (a) Up to August 1956 rates were operative from the beginning of the first pay period commencing in the month shown.  
(b) Prior to November 1953 Wages Boards usually adopted Commonwealth basic wage rates.  
(c) Automatic adjustments discontinued.  
(d) Wages Boards adopted Commonwealth basic wage rates during the month shown.  
(e) Basic wages and margins deleted from determinations and wage rates expressed as total wages. Following this, wage rates for adult males and adult females in determinations have been increased, at various times, by granting general increases in award total wages (see previous table).

VICTORIA—INDUSTRIAL DISPUTES: TRADE UNIONS

Year	Industrial disputes during year (a)				Trade unions at 31 December			
	Number of disputes	Workers involved (b)	Working days lost	Estimated loss in wages	Number of separate unions	Members		
				\$'000		Males	Females	Total
						'000	'000	'000
1912					151	109.9	6.7	116.6
1913	29	6,177	77,587	71.5	162	122.4	7.7	130.2
1914	44	7,051	93,932	79.2	170	128.9	9.9	138.8
1915	38	6,243	63,678	57.0	161	129.1	12.9	142.0
1916	55	15,668	167,897	229.4	151	130.0	17.6	147.6
1917	52	18,090	820,034	757.9	156	129.9	18.9	148.7
1918	33	5,748	160,540	198.7	158	130.7	21.4	152.1
1919	62	22,606	601,256	785.6	160	138.0	26.6	164.6
1920	53	39,808	816,710	930.5	158	154.4	32.8	187.1
1921	20	6,280	212,728	139.3	159	161.1	34.9	196.0
1922	29	6,130	64,701	95.4	169	168.4	37.9	206.3
1923	29	7,050	98,880	217.0	160	165.4	40.7	206.0
1924	30	10,037	66,567	101.5	158	179.6	37.5	217.0
1925	19	8,600	131,737	261.6	154	182.5	38.4	220.9
1926	33	8,565	100,735	212.8	157	188.6	42.0	230.6
1927	24	9,221	54,367	88.9	149	201.5	46.1	247.6
1928	21	5,876	110,659	192.9	151	194.9	47.3	242.2
1929	11	21,612	1,296,676	2,261.1	151	192.8	48.0	240.8
1930	5	408	7,744	14.5	151	184.7	44.6	229.3
1931	10	4,643	27,862	49.8	150	166.1	37.9	204.0
1932	12	6,585	99,638	131.2	151	160.0	37.0	197.0
1933	12	7,450	26,693	40.8	149	156.4	38.7	195.1
1934	19	8,428	108,872	164.9	149	154.0	41.9	195.9
1935	20	7,901	45,713	62.6	147	159.1	40.0	199.1
1936	10	1,823	12,251	19.8	147	160.6	41.0	201.6
1937	11	3,814	70,753	114.4	147	168.7	41.1	209.8
1938	19	10,290	104,336	175.2	147	176.2	38.8	215.0
1939	10	2,169	27,313	39.9	149	176.6	40.2	216.8
1940	19	8,664	108,035	202.7	147	190.2	42.1	232.3

VICTORIA—INDUSTRIAL DISPUTES : TRADE UNIONS—*continued*

Year	Industrial disputes during year (a)				Trade unions at 31 December			
	Number of disputes	Workers involved (b)	Working days lost	Estimated loss in wages	Number of separate unions	Members		
						Males	Females	Total
				\$'000		'000	'000	'000
1941	22	20,117	139,167	242.4	146	215.8	54.5	270.3
1942	20	12,119	35,658	62.0	142	n.a.	n.a.	302.8
1943	40	19,259	76,686	130.8	142	228.6	83.2	311.8
1944	53	13,642	72,618	146.4	141	232.9	82.1	315.0
1945	34	29,227	51,208	99.3	139	232.5	74.2	306.6
1946	35	76,817	507,290	1,087.3	151	255.4	69.0	324.4
1947	17	7,934	334,185	834.9	152	266.7	70.8	337.5
1948	21	41,889	159,903	481.3	156	288.8	74.8	363.7
1949	20	22,018	60,112	231.8	150	302.1	80.4	382.5
1950	33	73,987	1,208,365	4,791.4	152	325.2	81.1	406.3
1951	41	27,219	42,210	208.1	156	346.1	87.3	433.4
1952	33	61,920	116,339	678.2	159	337.8	78.6	416.3
1953	53	68,126	57,160	352.7	159	339.6	84.8	424.4
1954	76	44,813	135,611	920.4	158	350.1	83.8	433.9
1955	66	35,542	138,507	870.7	160	357.5	88.9	446.4
1956	54	37,877	111,665	772.3	162	356.5	84.8	441.3
1957	47	9,181	13,444	91.2	162	356.2	86.8	443.0
1958	66	46,718	99,855	680.7	161	355.3	88.9	444.2
1959	60	32,241	35,890	262.9	159	369.2	92.1	461.3
1960	98	86,004	102,805	794.2	157	381.1	98.1	479.2
1961	91	52,747	72,471	609.6	156	385.8	101.0	486.8
1962	166	73,245	100,606	837.3	155	393.7	104.3	498.0
1963	180	87,978	172,963	1,510.2	154	401.3	113.6	514.9
1964	206	190,075	359,567	3,428.2	157	410.3	115.5	525.8
1965	208	121,798	214,300	2,061.6	156	418.0	119.8	537.8
1966	179	101,490	219,605	2,097.2	154	415.9	123.4	539.4
1967	212	84,521	107,312	1,106.6	152	413.9	131.6	545.5
1968	327	172,803	243,924	2,731.3	153	417.6	133.0	550.7
1969	367	356,429	717,121	8,619.6	152	421.7	138.0	559.8
1970	447	(c)333,000	(c)510,800	6,793.7	156	437.9	153.6	591.5
1971	362	(c)380,100	(c)689,600	9,726.5	158	450.9	166.8	617.7

(a) Refers only to disputes involving a stoppage of work of 10 man-days or more in the establishment where the stoppage occurred. Disputes not settled at the end of a year are included as new disputes in the figures for the following year. Statistical collection commenced in 1913.

(b) Includes persons thrown out of work at the establishments where the stoppages occurred but not themselves parties to the dispute.

(c) To nearest hundred.

n.a.: Not available.

## VICTORIA—WORKERS COMPENSATION BUSINESS

Year	Wages on which premiums charged	Gross premiums less adjustments	New claims arising during year		Claims paid	Claims outstanding
			Fatal	Non-fatal		
	\$'000	\$'000			\$'000	\$'000
1952-53	943,606	11,060	262	116,889	5,144	4,570
1953-54	1,023,396	12,186	292	125,247	8,360	6,554
1954-55	1,149,556	13,466	459	155,050	10,928	9,036
1955-56	1,235,138	16,472	513	174,511	12,366	11,198
1956-57	1,348,690	20,230	512	164,579	13,004	14,724
1957-58	1,396,354	24,886	586	174,168	14,748	18,532
1958-59	1,482,000	26,506	578	184,902	15,530	22,090
1959-60	1,624,292	27,340	669	186,136	17,080	24,198
1960-61	1,838,378	28,922	573	193,598	18,060	25,512
1961-62	1,850,370	27,214	534	187,953	19,716	27,132
1962-63	1,933,160	28,020	544	196,076	20,482	29,420
1963-64	2,118,939	29,859	628	209,044	22,480	32,233
1964-65	2,382,194	34,539	613	221,474	22,815	34,823
1965-66	2,404,459	48,816	525	205,735	24,925	42,277
1966-67	2,730,791	52,521	490	203,537	25,787	48,864
1967-68	2,979,540	54,797	718	204,057	29,828	56,224
1968-69	3,286,808	57,160	663	203,111	32,528	63,487
1969-70	3,455,975	60,396	683	205,034	34,310	69,544
1970-71	3,932,840	71,409	813	205,859	37,456	77,464

NOTE. All insurers, and employers for whom a certificate of a scheme of compensation is in force, must submit a statistical return to the Government Statist annually.

VICTORIA—WORKERS COMPENSATION CLAIMS : INDUSTRIAL ACCIDENTS AND JOURNEY, RECESS, AND OTHER DISEASE CASES

INDUSTRIAL ACCIDENTS

Year	Males			Females		
	Number of accidents		Cost of claims	Number of accidents		Cost of claims
	Fatal	Non-fatal		Fatal	Non-fatal	
			\$'000			\$'000
1957-58 (a)	21	31,226	(b) 5,980	..	3,235	428
1958-59 (a)	15	32,344	(b) 6,210	..	3,263	400
1959-60	63	32,819	6,230	..	3,531	474
1960-61	56	33,009	5,834	1	3,750	(b) 484
1961-62	65	31,547	6,999	.	3,516	554
1962-63	58	30,030	6,592	1	3,802	638
1963-64	56	32,213	7,265	2	4,308	656
1964-65	47	30,315	7,143	2	4,147	736
1965-66	50	31,005	7,653	..	4,602	900
1966-67	43	32,153	9,490	2	5,052	1,125
1967-68	40	28,196	8,930	1	4,754	1,125
1968-69	50	26,269	9,209	1	4,403	1,243
1969-70	49	27,210	9,185	..	4,609	1,327
1970-71	33	26,491	9,687	..	4,477	1,423

JOURNEY, RECESS, AND OTHER DISEASE CASES (c)

Year	Males				Females					
	Number of cases				Number of cases					
	Journey and recess		Other disease cases		Journey and recess		Other disease cases		Cost of claims	
	Fatal	Non-fatal	Fatal	Non-fatal	Fatal	Non-fatal	Fatal	Non-fatal		
									\$'000	
1957-58 (a)	11	1,920	262	4,828	3,414	2	791	2	1,042	292
1958-59 (a)	5	2,052	315	4,343	3,422	2	749	3	1,072	279
1959-60	84	2,054	270	4,315	3,502	3	826	6	1,037	339
1960-61	80	2,110	270	4,075	3,190	5	907	4	978	326
1961-62	86	2,003	312	3,928	3,950	4	891	9	999	384
1962-63	86	1,775	289	2,278	3,060	6	812	7	781	334
1963-64	73	1,902	290	2,661	3,225	4	1,042	5	1,106	387
1964-65	74	1,750	387	2,448	3,813	5	909	6	997	352
1965-66	74	1,698	315	2,172	3,449	6	942	5	1,132	445
1966-67	41	1,758	222	1,566	3,276	4	1,002	4	721	405
1967-68	49	1,542	255	1,285	3,443	1	963	2	701	400
1968-69	54	1,513	256	1,123	3,744	2	921	4	650	390
1969-70	60	1,575	245	1,084	3,405	3	950	4	683	384
1970-71	59	1,496	255	1,017	3,512	1	968	6	593	368

(a) For 1957-58 and 1958-59 all accidents involving "effects of poisons, reduced temperature, heat, other effects of weather, drowning, and electrocution" were classified as "diseases".  
From 1959-60 onwards all those of an accidental nature were classified as "accidents".

(b) Non-fatal claims only.

(c) Details of claims arising on journeys to or from employment, during a recess period, or from certain disease cases. It should be noted that cases where disease has been precipitated or aggravated by an industrial accident are included in the industrial accidents portion of this table for 1962-63 and subsequent years.

NOTE. Details of non-fatal accident claims have only been tabulated where the employee was incapacitated for one week or more.

The figures represent workers compensation claims finalised during the year concerned, and are subject to the limitations expressed by the Workers Compensation Act. The following definition has been applied: "An industrial accident is a compensated work injury causing death, permanent disability, or absence of the injured person from work for one week or more, excluding journey cases, cases occurring during a recess period, and all disease cases except where the disease is considered to be precipitated or aggravated by an accidental event."

**VICTORIA—EMPLOYED WAGE AND SALARY EARNERS (a)**  
(‘000)

June	Employees of government (b)			Employees of private employers			Total employees		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
1947							452.6	190.5	643.1
1948							473.3	196.7	670.0
1949							494.7	204.9	699.6
1950							517.8	213.0	730.8
1951							536.1	223.0	759.1
1952							539.0	210.3	749.3
1953							536.8	209.2	746.0
1954	158.9	31.8	190.7	404.5	184.9	589.4	563.4	216.7	780.1
1955	163.0	34.5	197.5	421.2	192.6	613.8	584.2	227.1	811.3
1956	165.0	36.6	201.6	427.6	199.1	626.7	592.6	235.7	828.3
1957	166.8	37.0	203.8	432.3	201.8	634.1	599.1	238.8	837.9
1958	171.0	37.9	208.9	439.0	206.3	645.3	610.0	244.2	854.2
1959	173.9	39.7	213.6	447.9	213.7	661.6	621.8	253.4	875.2
1960	172.8	41.1	213.9	470.7	228.6	699.3	643.5	269.7	913.2
1961	179.8	43.0	222.8	463.8	223.2	687.0	643.6	266.2	909.8
1962	179.3	44.7	224.0	475.0	231.8	706.8	654.3	276.5	930.8
1963	183.4	45.7	229.1	491.8	239.7	731.5	675.2	285.4	960.6
1964	187.0	47.9	234.9	515.8	252.7	768.5	702.8	300.6	1,003.3
1965	188.8	50.0	238.8	534.7	266.3	801.0	723.5	316.3	1,039.8
1966	194.7	56.6	251.3	541.0	304.6	845.6	735.7	361.2	1,096.9
1967	197.8	59.0	256.8	549.9	317.5	867.4	747.7	376.5	1,124.2
1968	203.4	60.7	264.1	560.1	327.5	887.6	763.5	388.2	1,151.7
1969	203.0	64.7	267.7	579.2	341.1	920.3	782.2	405.8	1,188.0
1970	205.9	68.5	274.4	595.1	357.6	952.7	801.0	426.1	1,227.1
1971	208.3	71.1	279.4	604.4	368.9	973.3	812.7	440.0	1,252.7
1972	211.1	67.8	278.9	610.6	377.2	987.8	821.7	445.0	1,266.7

(a) The figures relate to civilian wage and salary earners and thus exclude employers, self employed persons, unpaid helpers, and the defence forces. Also excluded are employees in agriculture and private domestic service.

(b) Commonwealth, State, local, and semi-government authorities.

NOTE. The estimates of wage and salary earners in civilian employment are based on comprehensive data (benchmarks) derived from the Population Censuses of June 1947, 1954, 1961, 1966, and 1971. For the intercensal periods, the figures are estimates designed to measure changes in the sector of employment to which the benchmarks relate and are obtained from three main sources, namely:

- (i) current pay-roll tax returns;
- (ii) current returns from government bodies; and
- (iii) some other direct current records of employment (e.g., hospitals).

Data from these sources have been supplemented by estimates of the changes in the number of wage and salary earners not covered by the foregoing collections. It should be noted that the series is subject to revision.

*June 1947 to June 1953*

The figures are based on benchmarks derived from the 1947 Population Census. The data are not comparable with the subsequent series. (Note that for 1947 to 1953 figures have been estimated on a basis approximately comparable with the 1954 to 1965 data for Australia only (not for States) to provide a broad measure of long-term trends.)

*June 1954 to June 1965*

The estimates are based on benchmarks derived from the Population Censuses of June 1954 and 1961.

*June 1966 to June 1971*

The estimates in this period are based on benchmarks derived from the Population Census of June 1966. Because of the adoption of a new definition of the labour force in the 1966 Census, these estimates are not comparable with those for periods prior to June 1966. At the 1966 Census, labour force status was based on a person's actual activity during a specified week. The Census definitions prior to the 1966 Census were such that a person's labour force status tended to be determined according to his major activity, and hence many part-time employees were classified as not employed. Full-blooded Aborigines were also included.

*June 1972*

At the June 1971 Population Census trainee teachers were for the first time classified as not in the labour force and have been excluded from the June 1972 estimate of employed wage and salary earners.

SIX STATE CAPITAL CITIES COMBINED—RETAIL PRICE INDEX NUMBERS (a)  
(Base : year 1911 = 100)

Year	Index number	Year	Index number	Year	Index number	Year	Index number	Year	Index number
1901	88	1916(b)	132	1931	145	1946	190	1961	471
1902	93	1917(b)	141	1932	138	1947	198	1962	469
1903	91	1918(b)	150	1933	133	1948	218	1963	472
1904	86	1919(b)	170	1934	136	1949	240	1964	483
1905	90	1920(b)	193	1935	138	1950	262	1965	502
1906	90			1936	141			1966	517
1907	90	1921(b)	168	1937	145	1951	313	1967	534
1908	95	1922(b)	162	1938	149	1952	367	1968	548
1909	95	1923	166	1939	153	1953	383	1969	564
1910	97	1924	164	1940	159	1954	386	1970	586
		1925	165			1955	394		
1911	100	1926	168	1941	167	1956	419	1971	621
1912	110	1927	166	1942	181	1957	429	1972	658
1913	110	1928	167	1943	188	1958	435		
1914(b)	114	1929	171	1944	187	1959	443		
1915(b)	130	1930	162	1945	187	1960	459		

(a) These index numbers are derived by linking a number of indexes that differ greatly in scope. Although they are for the six State capital cities combined it is considered that a comparable index for Melbourne would not vary significantly from these figures.  
(b) November.

PRIMARY AND SECONDARY INDUSTRIES AND CONSTRUCTION

VICTORIA—NUMBER OF RURAL HOLDINGS AND LAND UTILISATION

Season	Total number of holdings	Area utilised for—				Balance of holdings	Total area occupied
		Crops (a)	Fallow	Sown pasture (b)	Native pasture		
		acres	acres	acres	acres	acres	acres
1836-37		50					
1837-38		150					
1838-39		2,069					
1839-40							
1840-41		3,210					
1841-42		4,881					
1842-43		8,124					
1843-44		12,073					
1844-45		16,529					
1845-46		25,134					
1846-47		31,578					
1847-48		36,290					
1848-49		40,279					
1849-50		45,975					
1850-51		52,341					
1851-52		57,472					
1852-53		36,771					
1853-54		34,816					
1854-55		54,905					
1855-56	4,326	115,135		76			
1856-57	7,523	179,983		107			1,532,349
1857-58	10,259	237,729		440			2,113,135
1858-59	11,573	298,960	5,999	602			2,519,157
1859-60	13,175	358,728	11,225	5,864			3,015,607

VICTORIA—NUMBER OF RURAL HOLDINGS AND LAND UTILISATION—*continued*

Season	Total number of holdings	Area utilised for—				Balance of holdings	Total area occupied
		Crops (a)	Fallow	Sown pasture (b)	Native pasture		
		acres	acres	acres	acres		
1860-61	13,653	387,283	20,458	11,640		3,517,034	
1861-62	14,960	410,406	16,835	12,654		4,090,784	
1862-63	16,416	423,597	18,342	23,491		4,722,050	
1863-64	17,679	454,238	22,218	31,342		5,554,531	
1864-65	18,355	416,149	26,389	36,925		6,125,204	
1865-66	20,063	448,194	33,042	48,960		6,785,225	
1866-67	22,698	503,444	31,000	58,471		7,373,279	
1867-68	25,828	533,646	33,452	64,107		8,108,465	
1868-69	29,218	578,567	56,598	77,700		8,884,193	
1869-70	30,214	680,907	49,372	97,255		8,849,486	
1870-71	31,842	692,840	69,191	146,984		9,530,638	
1871-72	33,720	714,334	79,584	143,302		10,100,679	
1872-73	34,596	689,649	75,601	197,841		10,711,745	
1873-74	36,602	706,363	66,989	191,644		11,493,545	
1874-75	38,468	695,821	77,912	238,043		12,264,576	
1875-76	40,852	736,520	97,133	293,178		13,084,233	
1876-77	43,057	813,195	84,159	333,751		13,855,003	
1877-78	45,448	1,026,530	75,675	318,297		14,806,926	
1878-79	47,050	1,132,215	97,669	379,394		15,901,403	
1879-80	48,969	1,221,644	165,154	301,477		16,620,900	
1880-81	49,637	1,548,809	194,140	254,994		18,141,124	
1881-82	n.a.	1,538,672	144,326	238,721			
1882-83	33,952	1,596,969	159,302	284,645			
1883-84	37,146	1,759,413	174,607	281,903			
1884-85	38,139	1,813,233	183,197	327,063			
1885-86	38,384	1,867,496	210,451	327,210			
1886-87	38,216	1,863,503	277,788	276,291			
1887-88	37,615	2,054,004	364,354	158,047			
1888-89	35,727	2,047,190	332,586	184,966			
1889-90	36,497	2,097,945	379,701	149,616			
1890-91	36,013	2,031,955	385,572	235,241			
1891-92	35,945	2,117,404	395,189	174,982			
1892-93	35,223	2,243,257	493,744	233,114			
1893-94	34,549	2,337,525	457,177	224,306			
1894-95	34,249	2,432,984	346,259	201,056			
1895-96	33,684	2,413,235	291,028	180,251			
1896-97	34,354	2,663,797	261,619	172,582			
1897-98	34,990	2,745,039	399,535	115,738			
1898-99	39,877	3,210,523	517,242	150,157			
1899-1900	42,210	3,159,312	509,244	151,949			
1900-01	41,881	3,114,132	602,870	207,896			
1901-02	43,625	2,965,681	681,778	162,954			
1902-03	43,768	3,246,568	492,305	565,635			
1903-04	49,002	3,389,069	632,521	962,665			
1904-05	52,598	3,321,785	853,829	953,543	24,424,192	2,627,699	
1905-06	54,275	3,219,962	1,049,915	1,040,335	25,993,204	3,215,110	
1906-07	56,411	3,303,586	990,967	1,095,642	26,737,250	3,181,914	
1907-08	57,798	3,232,523	894,300	1,095,471	28,517,766	3,573,332	
1908-09	59,357	3,461,761	1,034,422	1,029,711	28,890,720	3,409,060	
1909-10	61,811	3,658,535	1,175,750	988,671	29,100,868	3,161,750	
1910-11	66,651	3,952,070	1,434,177	991,195	29,040,458	2,314,903	
1911-12	66,849	3,640,241	1,469,608	1,041,772	28,126,287	3,784,979	
1912-13	68,703	4,079,356	1,627,223	1,085,346	27,586,020	2,840,853	
1913-14	70,535	4,391,321	1,738,572	1,094,566	27,891,288	2,711,909	
1914-15	71,828	4,622,759	1,346,545	1,202,130	28,779,637	2,352,997	
1915-16	73,004	5,711,265	1,358,343	1,182,995	27,518,875	2,468,454	
1916-17	73,610	4,851,335	1,899,559	1,292,817	27,768,798	2,056,020	
1917-18	74,024	4,110,225	1,672,729	1,268,310	28,134,593	2,226,700	
1918-19	74,330	3,942,899	1,548,121	1,269,493	28,937,298	2,436,323	
1919-20	75,340	4,000,815	1,357,536	1,002,244	30,428,408	2,191,930	

VICTORIA—NUMBER OF RURAL HOLDINGS AND LAND UTILISATION—*continued*

Season	Total number of holdings	Area utilised for—				Balance of holdings	Total area occupied
		Crops (a)	Fallow	Sown pasture (b)	Native pasture		
		acres	acres	acres	acres	acres	acres
1920-21	77,148	4,489,503	1,935,747	1,051,290	28,631,075	2,401,005	38,508,620
1921-22	79,655	4,530,312	2,052,964	1,032,104	28,049,049	2,293,793	37,958,222
1922-23	80,523	4,862,548	2,186,881	957,454	27,683,684	2,249,685	37,940,252
1923-24	80,386	4,682,144	2,294,297	1,024,591	27,349,979	2,324,378	37,675,389
1924-25	80,037	4,761,394	2,215,270	944,339	26,428,546	2,456,675	36,806,224
1925-26	78,167	4,433,492	2,457,136	933,271	25,934,665	2,779,469	36,538,033
1926-27	77,180	4,735,173	2,569,021	952,239	25,352,507	3,043,941	36,652,881
1927-28	75,774	4,942,258	2,692,044	1,005,513	25,571,091	3,618,712	37,829,618
1928-29	74,912	5,505,651	2,683,462	1,154,718	25,026,843	4,000,128	38,370,802
1929-30	74,161	5,579,258	2,482,662	1,141,157	25,246,821	3,888,421	38,338,319
1930-31	74,537	6,715,660	2,590,629	1,234,612	23,502,255	3,762,860	37,806,016
1931-32	74,996	5,407,109	2,145,819	1,412,846	24,785,559	3,524,711	37,276,044
1932-33	75,392	5,115,745	2,633,287	1,514,582	24,929,639	3,511,049	37,704,302
1933-34	75,386	5,266,913	2,543,043	1,620,870	25,295,249	4,051,943	38,778,018
1934-35	74,473	4,677,683	2,216,464	1,909,443	25,533,832	4,523,751	38,861,173
1935-36	73,772	4,438,761	2,358,777	2,252,541	25,492,357	4,586,511	39,128,947
1936-37	72,845	4,407,312	2,483,163	2,466,887	26,243,612	4,225,464	39,826,438
1937-38	72,792	4,662,354	2,604,556	2,815,770	25,590,288	4,715,174	40,388,142
1938-39	72,452	5,019,299	2,543,225	3,083,878	25,691,495	4,452,812	40,790,709
1939-40	72,557	5,002,362	2,377,405	3,460,191	25,203,840	4,609,428	40,653,226
1940-41	72,382	4,467,191	1,887,418	3,619,335	26,815,139	4,545,317	41,334,400
1941-42	72,027	4,731,712	2,101,360	3,809,954	25,868,021	4,780,953	41,292,000
1942-43	71,489	3,838,415	1,660,171	(c)	(c)	(c)	41,034,507
1943-44	70,961	3,478,889	1,719,363	3,838,917	27,491,111	4,746,802	41,275,082
1944-45	70,856	4,310,152	1,694,097	3,604,036	26,476,978	4,745,000	40,830,263
1945-46	70,652	5,327,122	2,394,032	3,944,249	24,276,246	4,581,474	40,523,123
1946-47	70,750	5,102,980	2,460,350	4,074,525	23,924,504	4,493,246	40,055,605
1947-48	70,910	5,023,149	2,527,306	5,189,320	22,621,277	3,983,550	39,344,602
1948-49	71,049	4,644,841	2,343,685	5,815,951	22,302,254	3,760,565	38,867,296
1949-50	70,486	4,480,202	2,429,888	7,820,176	17,011,850	6,600,202	38,342,318
1950-51	69,698	4,351,220	2,153,611	7,142,966	20,591,114	3,869,539	38,108,450
1951-52	69,298	4,270,512	2,026,965	6,796,760	21,099,484	3,741,838	37,935,559
1952-53	69,353	4,285,770	2,294,891	7,055,693	19,630,507	4,601,416	37,868,277
1953-54	69,392	4,479,568	2,287,090	7,461,426	18,494,017	4,823,642	37,545,743
1954-55	69,551	4,394,451	2,196,192	8,155,154	18,139,856	4,927,939	37,813,592
1955-56	69,528	4,542,096	1,982,742	8,647,395	17,867,705	4,815,693	37,855,631
1956-57	69,509	3,637,352	1,879,812	9,311,988	18,023,841	4,805,759	37,658,752
1957-58	69,590	4,051,249	1,644,764	9,766,317	17,635,472	4,723,891	37,821,693
1958-59	69,770	4,790,989	2,187,212	9,401,182	16,423,300	4,952,745	37,755,428
1959-60	69,778	4,482,757	2,180,266	9,734,070	16,407,248	4,932,189	37,736,530
1960-61	69,623	4,504,732	2,217,789	10,047,015	15,902,874	5,261,909	37,934,319
1961-62	69,866	4,532,686	2,286,771	12,015,351	14,523,330	4,395,884	37,754,022
1962-63	69,700	5,036,686	2,521,355	12,629,254	13,955,046	3,566,501	37,708,842
1963-64	69,775	4,899,557	2,524,863	14,063,510	13,047,464	3,262,156	37,797,550
1964-65	69,737	5,019,479	2,484,423	14,829,588	12,467,690	3,043,155	37,844,335
1965-66	69,199	4,969,436	2,620,326	15,230,525	11,719,266	3,304,050	37,843,603
1966-67	68,466	5,143,495	2,751,499	16,116,362	11,608,075	3,033,512	38,652,943
1967-68	72,802	5,202,729	2,646,502	17,162,895	11,760,668	2,790,956	39,563,750
1968-69	71,056	6,156,483	2,727,322	18,002,707	9,930,368	2,364,747	39,181,537
1969-70	69,498	5,374,775	1,745,132	20,163,324	9,354,727	2,419,494	39,057,452
1970-71	68,555	4,197,171	2,300,327	21,447,461	8,872,545	2,127,024	38,944,528

(a) Commencing with season 1960-61 the area of pasture cut for hay or seed has been excluded from the area of crops.

(b) Includes oats, barley, and lucerne sown for grazing.

(c) Information not collected.

n.a. : Not available.



## VICTORIA—WHEAT, OATS, AND BARLEY FOR GRAIN

Season	Wheat			Oats			Barley		
	Area	Production	Yield per acre	Area	Production	Yield per acre	Area	Production	Yield per acre
	acres	bushels	bushels	acres	bushels	bushels	acres	bushels	bushels
1836	50	..	..	..	..	..	..	..	..
1837	..	..	..	..	..	..	..	..	..
1838	83	..	..	22	..	..	..	..	..
1839	1,302	12,600	9.7	252	..	..	161	..	..
1840	1,940	50,420	26.0	820	26,950	32.9	300	9,000	30.0
1841	1,702	47,840	28.1	1,285	37,325	29.0	353	9,385	26.6
1842	2,432	55,360	22.8	2,410	66,100	27.4	761	20,025	26.3
1843	4,674	104,040	22.3	2,560	70,789	27.7	1,063	25,156	23.7
1844	6,920	138,436	20.0	3,083	43,361	14.1	1,636	40,080	24.5
1845	11,466	234,734	20.5	4,817	71,368	14.8	749	39,289	52.5
1846-47	15,802	345,946	21.9	6,099	185,856	30.5	1,692	47,737	28.2
1847-48	17,680	349,730	19.8	7,173	207,385	28.9	2,162	29,115	13.5
1848-49	19,388	410,220	21.2	8,289	78,877	9.5	2,580	36,403	14.1
1849-50	24,247	525,190	21.7	5,379	129,602	24.1	2,304	53,913	23.4
1850-51	28,510	556,167	19.5	5,008	99,535	19.9	2,102	40,144	19.1
1851-52	29,624	733,321	24.8	6,426	132,311	20.6	1,327	34,331	25.9
1852-53	16,823	498,704	29.6	2,947	96,980	32.9	411	9,431	22.9
1853-54	7,554	154,202	20.4	2,289	50,787	22.2	411	10,269	25.0
1854-55	12,827	250,091	19.5	5,341	130,746	24.5	691	14,339	20.8
1855-56	42,686	1,148,011	26.9	17,800	614,614	34.5	1,549	45,151	29.1
1856-57	80,155	1,858,756	23.2	25,025	641,679	25.6	2,234	69,548	31.1
1857-58	87,230	1,808,439	20.7	40,222	1,249,800	31.1	5,409	156,459	28.9
1858-59	78,234	1,563,113	20.0	77,526	2,160,358	27.9	5,322	115,619	21.7
1859-60	107,092	2,296,157	21.4	90,167	2,553,637	28.3	4,102	98,433	24.0
1860-61	161,252	3,459,914	21.5	86,337	2,633,693	30.5	4,123	83,854	20.3
1861-62	196,922	3,607,727	18.3	91,061	2,136,430	23.5	3,419	68,118	19.9
1862-63	162,009	3,008,487	18.6	108,196	2,504,301	23.1	6,830	143,056	20.9
1863-64	149,392	1,338,762	9.0	152,326	3,497,520	23.0	7,795	130,664	16.8
1864-65	125,040	1,899,378	15.2	144,303	2,694,445	18.7	7,648	124,849	16.3
1865-66	178,628	3,514,227	19.7	102,817	2,279,468	22.2	6,887	153,490	22.3
1866-67	208,588	4,641,205	22.3	129,284	3,880,406	30.0	9,915	299,217	30.2
1867-68	216,989	3,411,663	15.7	125,345	2,333,472	18.6	15,982	324,706	20.3
1868-69	259,804	4,229,228	16.3	114,936	2,258,523	19.7	19,222	292,665	15.2
1869-70	288,514	5,697,056	19.7	144,791	3,761,408	26.0	28,115	691,248	24.6
1870-71	284,167	2,870,409	10.1	149,309	2,237,010	15.0	19,646	240,825	12.3
1871-72	334,609	4,500,795	13.5	175,944	3,299,889	18.8	16,772	335,506	20.0
1872-73	326,564	5,391,104	16.5	125,505	2,454,225	19.6	21,251	443,221	20.9
1873-74	349,976	4,752,289	13.6	110,991	1,741,451	15.7	25,333	502,601	19.8
1874-75	332,936	4,850,165	14.6	114,921	2,121,612	18.5	29,505	619,896	21.0
1875-76	321,401	4,978,914	15.5	124,100	2,719,795	21.9	31,568	700,665	22.2
1876-77	401,417	5,279,730	13.2	115,209	2,294,225	19.9	25,034	530,323	21.2
1877-78	564,564	7,018,257	12.4	105,234	2,040,486	19.4	19,116	378,706	19.8
1878-79	691,622	6,060,737	8.8	134,428	2,366,026	17.6	22,871	417,157	18.2
1879-80	707,188	9,398,858	13.3	167,615	4,023,271	24.0	43,182	1,065,430	24.7
1880-81	977,285	9,727,369	10.0	134,089	2,362,425	17.6	68,630	1,068,830	15.6
1881-82	926,729	8,714,377	9.4	146,995	3,612,111	24.6	48,652	927,566	19.1
1882-83	969,362	8,751,454	9.0	169,892	4,446,027	26.2	43,721	758,477	17.3
1883-84	1,104,392	15,570,245	14.1	188,161	4,717,624	25.1	46,832	1,069,803	22.8
1884-85	1,096,354	10,433,146	9.5	187,710	4,392,695	23.4	62,273	1,082,430	17.4
1885-86	1,020,082	9,170,538	9.0	215,994	4,692,303	21.7	74,112	1,302,854	17.6
1886-87	1,052,685	12,190,036	11.5	185,765	4,256,079	22.9	37,031	827,852	22.4
1887-88	1,232,943	13,328,765	10.8	199,036	4,562,530	22.9	40,983	956,476	23.3
1888-89	1,217,191	8,647,709	7.1	197,518	2,803,800	14.2	83,483	1,131,427	13.6
1889-90	1,178,735	11,495,720	9.8	236,496	5,644,867	23.9	90,724	1,831,132	20.2
1890-91	1,145,163	12,751,295	11.1	221,048	4,919,325	22.3	87,751	1,571,599	17.9
1891-92	1,332,683	13,679,268	10.3	190,157	4,455,551	23.4	45,021	844,198	18.8
1892-93	1,342,504	14,814,645	11.0	177,645	4,574,816	25.8	37,533	774,207	20.6
1893-94	1,469,359	15,255,200	10.4	218,904	4,951,371	22.6	49,105	1,033,861	21.1
1894-95	1,373,668	11,445,878	8.3	266,444	5,633,286	21.1	97,360	1,596,463	16.4
1895-96	1,412,736	5,669,174	4.0	255,503	2,880,045	11.3	78,438	715,592	9.1
1896-97	1,580,613	7,091,029	4.5	419,460	6,816,951	16.3	62,373	815,605	13.1
1897-98	1,657,450	10,580,217	6.4	294,183	4,809,479	16.3	37,205	758,454	20.4
1898-99	2,154,163	19,581,304	9.1	266,159	5,523,419	20.8	47,859	1,112,567	23.2
1899-1900	2,165,693	15,237,948	7.0	271,280	6,116,046	22.5	79,573	1,466,088	18.4

VICTORIA—WHEAT, OATS, AND BARLEY FOR GRAIN—*continued*

Season	Wheat			Oats			Barley		
	Area	Production	Yield per acre	Area	Production	Yield per acre	Area	Production	Yield per acre
	acres	bushels	bushels	acres	bushels	bushels	acres	bushels	bushels
1900-01	2,017,321	17,847,321	8.8	362,689	9,582,332	26.4	58,853	1,215,478	20.7
1901-02	1,754,417	12,127,382	6.9	329,150	6,724,900	20.4	32,423	693,831	21.4
1902-03	1,994,271	2,569,364	1.3	433,489	4,402,982	10.2	37,716	561,144	14.9
1903-04	1,968,599	28,525,579	14.5	433,638	13,434,952	31.0	47,760	1,262,923	26.4
1904-05	2,277,537	21,092,139	9.3	344,019	6,203,429	18.0	46,089	874,099	19.0
1905-06	2,070,517	23,417,670	11.3	312,052	7,232,425	23.2	40,938	1,062,139	26.0
1906-07	2,031,893	22,618,043	11.1	380,493	8,845,654	23.3	52,816	1,255,442	23.8
1907-08	1,847,121	12,100,780	6.6	398,749	5,201,408	13.0	63,074	1,059,295	16.8
1908-09	1,779,905	23,345,649	13.1	419,869	11,124,940	26.5	64,648	1,511,181	23.4
1909-10	2,097,162	28,780,100	13.7	384,226	7,913,423	20.6	58,603	1,023,384	17.5
1910-11	2,398,089	34,813,019	14.5	392,681	9,699,127	24.7	52,687	1,340,387	25.4
1911-12	2,164,066	20,891,877	9.7	302,238	4,585,326	15.2	53,541	1,024,584	19.1
1912-13	2,085,216	26,223,104	12.6	439,242	8,323,639	19.0	71,631	1,744,527	24.4
1913-14	2,565,861	32,936,245	12.8	442,060	8,890,321	20.1	83,351	1,812,899	9.6
1914-15	2,863,535	3,940,947	1.4	434,815	1,608,419	3.7	62,492	600,599	9.6
1915-16	3,679,971	58,521,706	15.9	353,932	9,328,894	26.4	61,400	1,734,511	28.3
1916-17	3,125,692	51,162,438	16.4	441,598	8,289,289	18.8	93,015	1,799,784	19.4
1917-18	2,690,216	37,737,552	14.0	293,214	6,141,287	20.9	84,931	1,970,650	23.2
1918-19	2,214,490	25,239,871	11.4	342,867	5,274,984	15.4	100,198	2,028,635	20.3
1919-20	1,918,269	14,858,380	7.8	559,547	6,603,067	11.8	85,323	1,528,654	17.9
1920-21	2,295,865	39,468,625	17.2	443,636	10,907,191	24.6	93,954	2,495,762	26.6
1921-22	2,611,198	43,867,596	16.8	318,681	6,082,258	19.1	100,127	2,336,246	23.3
1922-23	2,644,314	35,697,220	13.5	492,356	8,093,459	16.4	102,773	2,442,041	23.8
1923-24	2,455,117	37,795,704	15.4	520,654	9,366,205	18.0	56,564	1,455,435	25.7
1924-25	2,705,323	47,364,495	17.5	517,229	9,572,003	18.5	63,764	1,444,823	22.7
1925-26	2,513,494	29,255,534	11.6	437,696	4,998,165	11.4	103,395	1,774,963	17.2
1926-27	2,915,315	46,886,020	16.1	303,424	4,884,006	16.1	88,896	1,920,722	21.6
1927-28	3,064,172	26,160,814	8.5	529,392	4,682,724	8.9	76,768	1,552,109	20.2
1928-29	3,718,904	46,818,833	12.6	347,021	5,602,409	16.1	75,451	1,556,118	20.6
1929-30	3,566,135	25,412,587	7.1	630,234	5,058,541	8.0	97,678	2,183,325	22.4
1930-31	4,600,200	53,814,369	11.7	371,024	6,893,827	18.6	87,518	1,983,130	22.7
1931-32	3,565,872	41,955,856	11.8	439,626	6,450,281	14.7	66,381	1,256,678	18.9
1932-33	3,230,955	47,843,129	14.8	368,846	6,363,853	17.3	93,555	1,995,446	21.3
1933-34	3,052,931	42,613,106	14.0	525,976	6,778,754	12.9	106,339	1,888,981	17.8
1934-35	2,458,583	25,850,528	10.5	506,638	5,248,787	10.4	87,599	1,609,518	18.4
1935-36	2,323,753	37,552,062	16.2	505,623	6,365,056	12.6	116,371	2,314,427	19.9
1936-37	2,393,827	42,844,816	17.9	381,069	6,107,885	16.0	100,003	2,143,109	21.4
1937-38	2,686,057	48,173,191	17.9	394,436	5,327,199	13.5	139,777	2,708,519	19.4
1938-39	2,748,362	18,104,639	6.6	657,999	2,909,260	4.4	175,891	1,671,809	9.5
1939-40	2,827,417	45,054,592	15.9	439,555	8,280,602	18.8	204,239	3,738,113	18.3
1940-41	2,672,728	13,521,422	5.1	559,200	2,624,298	4.7	187,649	1,186,979	6.3
1941-42	2,757,080	46,953,840	17.0	421,942	8,149,277	19.3	204,279	4,792,040	23.5
1942-43	2,145,156	41,803,107	19.5	428,043	6,637,944	15.5	77,842	1,273,704	16.4
1943-44	1,793,428	19,733,322	11.0	426,305	3,704,985	8.7	83,259	1,078,128	13.0
1944-45	2,141,729	3,497,677	1.6	722,169	1,335,429	1.9	129,054	359,536	2.8
1945-46	3,251,393	29,633,760	9.1	511,483	7,401,816	14.5	134,132	1,743,754	13.0
1946-47	3,501,135	48,970,908	14.0	453,898	6,401,430	14.1	138,022	2,321,912	16.8
1947-48	3,227,162	46,962,385	14.6	650,119	15,380,970	23.7	164,189	3,576,771	21.8
1948-49	2,995,705	49,063,560	16.4	539,603	7,489,601	13.9	195,779	3,547,691	18.1
1949-50	2,828,273	57,433,835	20.3	483,190	8,718,307	18.0	236,123	4,876,180	20.7
1950-51	2,735,473	51,235,929	18.7	527,217	9,034,005	17.1	217,096	4,510,079	20.8
1951-52	2,463,574	45,994,752	18.7	676,503	11,151,260	16.5	186,224	3,619,576	19.4
1952-53	2,232,097	50,334,634	22.6	756,129	12,599,050	16.7	234,597	4,734,175	20.2
1953-54	2,389,304	53,697,611	22.5	583,075	9,851,708	16.9	374,555	7,932,103	21.2
1954-55	2,390,173	48,484,543	20.3	644,444	10,020,742	15.5	280,595	4,945,720	17.6
1955-56	2,141,410	41,083,071	19.2	871,068	14,858,117	17.1	309,111	6,876,861	22.2
1956-57	1,565,220	35,282,188	22.5	612,587	9,555,123	15.6	345,282	7,549,140	21.9
1957-58	1,834,842	32,134,257	17.5	622,245	9,527,653	15.3	351,744	5,446,991	15.5
1958-59	1,810,026	42,696,801	23.6	970,688	23,338,679	24.0	362,871	8,580,799	23.6
1959-60	2,260,730	38,792,616	17.2	673,002	12,701,029	18.9	277,601	5,592,845	20.1
1960-61	2,671,601	67,586,836	25.3	834,920	20,665,818	24.7	309,293	7,718,384	25.0
1961-62	2,848,781	56,878,353	20.0	774,404	16,311,610	21.1	225,492	4,654,467	20.6
1962-63	3,124,790	67,899,180	21.7	932,168	27,042,057	29.0	194,296	5,468,284	28.1
1963-64	3,109,044	76,302,219	24.5	910,063	19,884,808	21.8	190,137	4,025,514	21.2
1964-65	3,236,039	78,165,690	24.2	966,280	22,445,992	23.2	186,937	4,334,472	23.2
1965-66	3,074,103	60,591,349	19.7	965,702	17,783,622	18.4	192,278	3,217,656	16.7
1966-67	3,138,029	70,896,266	22.6	1,078,877	31,248,286	29.0	227,650	5,420,545	23.8
1967-68	3,223,880	28,217,203	8.8	722,928	6,859,360	9.5	305,013	2,708,719	8.9
1968-69	3,984,084	90,727,726	22.8	991,334	30,230,084	30.5	409,021	8,884,624	21.7
1969-70	3,298,254	83,543,852	25.3	883,651	25,927,064	29.3	486,624	11,372,639	23.4
1970-71	1,879,044	36,901,274	19.6	986,511	25,717,127	26.1	664,927	14,037,623	21.1

## VICTORIA—MAIZE FOR GRAIN, HAY, AND POTATOES

Season	Maize for grain			Hay			Potatoes		
	Area	Production	Yield per acre	Area	Production	Yield per acre	Area	Production	Yield per acre
	acres	bushels	bushels	acres	tons	tons	acres	tons	tons
1838	20	..	..	..	..	..	20	..	..
1839	140	..	..	..	..	..	192	..	..
1840	..	..	..	..	..	..	150	300	2.0
1841	82	1,200	14.6	450	900	2.0	932	3,734	4.0
1842	68	1,360	20.0	850	2,300	2.7	1,419	5,996	4.2
1843	78	..	..	1,622	2,661	1.6	2,069	6,933	3.4
1844	106	3,290	31.0	1,773	6,459	3.6	2,487	12,418	5.0
1845	76	1,980	26.1	5,000	9,640	1.9	2,042	11,138	5.5
1846-47	122	3,330	27.3	4,547	9,303	2.0	2,140	9,024	4.2
1847-48	131	3,630	27.7	5,074	9,891	1.9	2,638	7,255	2.8
1848-49	148	3,928	26.5	5,903	10,625	1.8	2,578	11,988	4.7
1849-50	29	235	8.1	11,181	15,640	1.4	2,151	5,929	2.8
1850-51	24	4	0.2	13,567	20,971	1.5	2,838	5,613	2.0
1851-52	11	586	53.3	16,822	29,692	1.8	2,376	5,988	2.5
1852-53	1	61	61.0	14,101	21,287	1.5	1,978	4,512	2.3
1853-54	20	60	3.0	21,829	33,918	1.6	1,636	2,752	1.7
1854-55	36	387	10.8	31,514	53,627	1.7	3,297	8,383	2.5
1855-56	121	3,142	26.0	40,189	83,285	2.1	11,017	59,797	5.4
1856-57	327	8,308	25.4	51,987	81,151	1.6	16,281	36,895	2.3
1857-58	446	6,558	14.7	75,536	137,476	1.8	20,698	51,116	2.5
1858-59	480	9,698	20.2	86,163	113,543	1.3	30,026	108,467	3.6
1859-60	738	7,375	10.0	98,570	135,643	1.4	27,622	48,967	1.8
1860-61	1,650	25,045	15.2	90,920	144,211	1.6	24,842	77,258	3.1
1861-62	1,714	20,788	12.1	74,681	92,497	1.2	27,174	59,364	2.2
1862-63	1,250	19,720	15.8	101,639	110,680	1.1	24,821	50,597	2.0
1863-64	1,711	33,534	19.6	96,350	121,840	1.3	27,584	74,947	2.7
1864-65	597	3,980	6.7	85,146	97,731	1.1	31,172	59,828	1.9
1865-66	326	4,767	14.6	97,902	96,101	1.0	31,644	83,196	2.6
1866-67	1,627	27,520	16.9	92,472	161,243	1.7	32,403	88,880	2.7
1867-68	579	11,345	19.6	108,373	140,592	1.3	35,831	117,787	3.3
1868-69	863	17,048	19.8	112,282	122,800	1.1	36,204	79,944	2.2
1869-70	1,080	22,141	20.5	140,435	224,816	1.6	41,216	127,645	3.1
1870-71	1,014	20,028	19.8	163,181	183,708	1.1	39,026	127,579	3.3
1871-72	1,709	30,833	18.0	103,206	144,637	1.4	39,064	125,841	3.2
1872-73	1,910	37,703	19.7	121,375	159,964	1.3	38,517	132,997	3.5
1873-74	1,959	40,347	20.6	115,672	147,398	1.3	38,349	109,822	2.9
1874-75	1,523	24,263	15.9	119,031	157,261	1.3	35,183	124,310	3.5
1875-76	2,346	37,177	15.8	155,274	206,613	1.3	36,901	124,377	3.4
1876-77	1,609	25,909	16.1	147,408	180,560	1.2	40,450	134,082	3.3
1877-78	1,215	22,050	18.1	176,951	208,151	1.2	37,107	115,419	3.1
1878-79	1,939	40,754	21.0	172,799	209,028	1.2	36,527	98,958	2.7
1879-80	2,447	61,887	25.3	201,451	292,407	1.5	41,600	167,943	4.0
1880-81	1,769	49,299	27.9	249,656	300,581	1.2	45,951	129,262	2.8
1881-82	1,783	81,007	45.4	212,150	238,793	1.1	39,129	134,290	3.4
1882-83	2,702	131,620	48.7	309,382	327,385	1.1	34,267	129,605	3.8
1883-84	2,570	117,294	45.6	302,957	433,143	1.4	40,195	161,088	4.0
1884-85	3,854	176,388	45.8	339,725	371,046	1.1	38,763	161,119	4.2
1885-86	4,530	181,240	40.0	421,036	442,118	1.1	42,602	163,202	3.8
1886-87	4,901	231,447	47.2	445,150	483,049	1.1	49,974	170,661	3.4
1887-88	6,031	318,551	52.8	441,812	624,122	1.4	48,263	198,225	4.1
1888-89	5,789	267,155	46.1	411,332	308,117	0.7	43,074	131,149	3.0
1889-90	8,447	357,047	42.3	451,546	666,385	1.5	47,139	157,104	3.3
1890-91	10,357	574,083	55.4	413,052	567,779	1.4	53,818	204,155	3.8
1891-92	8,230	461,957	56.1	369,498	514,406	1.4	57,334	200,523	3.5
1892-93	6,667	373,183	56.0	512,648	740,049	1.4	40,594	142,623	3.5
1893-94	6,485	180,442	27.8	412,223	503,355	1.2	40,909	144,708	3.5
1894-95	5,675	294,555	51.9	492,578	621,547	1.3	56,383	196,706	3.5
1895-96	7,186	351,891	49.0	464,482	390,861	0.8	43,895	117,238	2.7
1896-97	9,752	566,027	58.0	416,667	449,056	1.1	43,532	146,555	3.4
1897-98	10,847	515,025	47.5	580,000	659,635	1.1	44,197	67,296	1.5
1898-99	10,647	587,064	55.1	565,345	723,299	1.3	41,252	161,142	3.9
1899-1900	11,037	624,844	56.6	450,189	596,193	1.3	55,469	173,381	3.1
1900-01	9,389	604,180	64.3	502,105	677,757	1.3	38,477	123,126	3.2
1901-02	10,020	615,472	61.4	659,239	884,369	1.3	40,058	125,474	3.1
1902-03	10,306	750,524	68.8	580,884	601,272	1.0	49,706	168,759	3.4
1903-04	11,810	904,239	76.6	733,353	1,233,063	1.7	48,930	167,736	3.4
1904-05	11,394	623,736	54.7	452,459	514,316	1.1	46,912	92,872	2.0

VICTORIA—MAIZE FOR GRAIN, HAY, AND POTATOES—*continued*

Season	Maize for grain			Hay			Potatoes		
	Area	Production	Yield per acre	Area	Production	Yield per acre	Area	Production	Yield per acre
	acres	bushels	bushels	acres	tons	tons	acres	tons	tons
1905-06	11,785	641,216	54.4	591,771	864,177	1.5	44,670	115,352	2.6
1906-07	11,559	704,961	61.0	621,139	881,276	1.4	55,372	166,839	3.0
1907-08	10,844	508,761	46.9	682,194	682,370	1.0	54,149	135,110	2.5
1908-09	14,004	650,462	46.5	956,371	1,415,746	1.5	47,903	152,840	3.2
1909-10	19,112	1,158,031	60.6	864,359	1,186,738	1.4	62,390	174,970	2.8
1910-11	20,151	982,103	48.7	832,669	1,292,410	1.6	62,904	163,312	2.6
1911-12	18,223	792,660	43.5	860,205	1,032,288	1.2	47,692	119,092	2.5
1912-13	19,986	715,299	35.8	1,203,728	1,572,933	1.3	47,575	191,112	4.0
1913-14	17,962	800,529	44.6	977,684	1,350,374	1.4	74,574	176,602	2.4
1914-15	19,433	1,018,419	52.4	895,755	568,956	0.6	65,495	189,225	2.9
1915-16	22,258	999,886	44.9	1,330,455	2,342,094	1.8	56,910	173,821	3.1
1916-17	23,076	1,172,330	50.8	897,186	1,232,721	1.4	73,618	187,992	2.6
1917-18	20,987	1,152,787	54.9	748,808	949,545	1.3	66,966	182,195	2.7
1918-19	22,559	711,679	31.6	984,479	1,113,861	1.1	51,620	137,533	2.7
1919-20	23,474	878,922	37.4	1,116,998	1,242,489	1.1	53,918	145,888	2.7
1920-21	24,149	1,065,880	44.1	1,333,397	1,984,854	1.5	62,687	171,628	2.7
1921-22	23,227	951,960	41.0	1,159,135	1,548,453	1.3	63,895	173,660	2.7
1922-23	25,846	879,915	34.0	1,261,408	1,665,089	1.3	61,741	148,354	2.4
1923-24	29,104	1,464,731	50.3	1,277,606	1,541,287	1.2	59,306	238,520	4.0
1924-25	23,126	891,987	38.6	1,120,312	1,492,588	1.3	61,295	139,043	2.3
1925-26	21,913	768,761	35.1	1,013,613	929,068	0.9	63,369	160,729	2.5
1926-27	20,046	685,407	34.2	1,080,993	1,387,971	1.3	66,185	162,909	2.5
1927-28	17,645	757,780	43.0	908,804	1,001,251	1.1	77,649	230,348	3.0
1928-29	16,077	679,810	42.3	1,005,063	1,267,437	1.3	68,412	140,158	2.0
1929-30	17,640	533,719	30.3	865,015	963,089	1.1	58,789	171,747	2.9
1930-31	16,227	692,896	42.7	1,277,398	1,605,900	1.3	67,590	173,341	2.6
1931-32	15,714	611,902	38.9	955,839	1,069,276	1.1	69,929	206,489	3.0
1932-33	16,425	477,145	29.1	1,044,523	1,386,028	1.3	69,783	182,471	2.6
1933-34	19,538	644,033	33.0	1,196,259	1,353,796	1.1	60,856	142,132	2.3
1934-35	18,727	719,360	38.4	1,261,552	1,464,264	1.2	54,214	109,329	2.0
1935-36	20,377	638,643	31.3	1,140,361	1,346,953	1.2	44,287	104,125	2.4
1936-37	20,115	794,506	39.5	1,181,612	1,403,049	1.2	45,627	196,623	4.3
1937-38	20,879	783,835	37.5	1,079,039	1,245,935	1.2	41,105	134,712	3.3
1938-39	18,485	416,578	22.5	1,104,558	892,975	0.8	34,396	81,415	2.4
1939-40	18,963	380,698	20.1	1,204,810	1,820,878	1.5	32,177	87,931	2.7
1940-41	15,382	702,956	45.7	672,955	580,237	0.9	44,195	216,568	4.9
1941-42	9,594	305,875	31.9	1,007,979	1,443,505	1.4	33,392	118,454	3.5
1942-43	7,131	271,321	38.1	788,792	1,050,107	1.3	51,757	195,138	3.8
1943-44	6,598	150,433	22.8	740,672	963,103	1.3	70,430	217,380	3.1
1944-45	4,544	165,347	36.4	901,983	704,246	0.8	83,238	305,216	3.7
1945-46	6,809	307,934	45.2	1,060,496	1,444,250	1.4	63,000	230,749	3.7
1946-47	8,107	356,898	44.0	677,787	985,224	1.5	56,400	223,782	4.0
1947-48	7,968	323,984	40.7	657,146	1,042,438	1.6	59,400	184,882	3.1
1948-49	6,460	259,898	40.2	591,341	933,983	1.6	45,785	166,105	3.6
1949-50	5,136	194,121	37.8	606,525	1,000,855	1.7	50,651	167,881	3.3
1950-51	4,089	186,672	45.7	557,454	894,585	1.6	52,482	139,391	2.7
1951-52	4,115	167,942	40.8	640,418	1,046,764	1.6	42,108	178,399	4.2
1952-53	5,175	203,427	39.3	752,932	1,245,217	1.7	52,851	133,148	2.5
1953-54	5,613	298,044	53.1	807,223	1,360,662	1.7	52,745	213,714	4.1
1954-55	4,379	228,781	52.3	739,099	1,207,679	1.6	44,075	206,577	4.7
1955-56	3,535	175,813	49.7	879,288	1,525,997	1.7	37,020	163,239	4.4
1956-57	2,727	80,798	29.6	781,952	1,423,341	1.8	39,706	227,307	5.7
1957-58	4,278	241,764	56.5	870,958	1,413,399	1.6	49,846	251,159	5.0
1958-59	3,881	203,366	52.4	1,282,140	2,299,233	1.8	46,122	259,346	5.6
1959-60	3,383	180,454	53.3	847,548	1,351,003	1.6	48,506	242,548	5.0
1960-61	2,985	171,104	57.3	1,286,246	2,337,912	1.8	38,672	180,819	4.7
1961-62	3,309	191,774	58.0	922,032	1,585,160	1.7	36,469	196,032	5.4
1962-63	3,634	216,164	59.5	1,250,541	2,376,378	1.9	43,024	254,473	5.9
1963-64	3,399	203,405	59.8	1,138,484	1,947,332	1.7	39,626	200,384	5.1
1964-65	2,353	114,182	48.5	1,306,366	2,505,951	1.9	32,931	183,665	5.6
1965-66	1,683	101,489	60.3	1,150,345	1,872,834	1.6	34,333	240,786	7.0
1966-67	1,407	72,118	51.3	1,558,482	2,981,847	1.9	37,167	225,186	6.1
1967-68	917	31,975	34.9	1,165,211	1,556,462	1.3	40,329	215,941	5.4
1968-69	1,161	72,161	62.2	1,828,612	3,635,319	2.0	39,979	299,961	7.5
1969-70	1,145	71,930	62.8	1,199,957	2,460,953	2.1	39,765	279,553	7.0
1970-71	1,322	62,136	47.0	1,266,259	2,455,328	1.9	34,965	299,100	8.6

## VICTORIA—VINEYARDS AND ORCHARDS

Season	Vineyards				Orchards				
	Total area	Wine made	Dried fruit produced—		Total area	Fruit produced—			
			Raisins and sultanas	Currants		Apples	Pears	Peaches	Oranges
	acres	gallons	cwt	cwt	acres	bushels	bushels	bushels	bushels
1842	4								
1843	4								
1844	10	100							
1845	37	214							
1846-47	78	2,600							
1847-48	102	1,300							
1848-49	108	6,306							
1849-50	165	5,220							
1850-51	162	4,621							
1851-52	174	6,447							
1852-53	108	4,500							
1853-54	162	9,680							
1854-55	181	9,600							
1855-56	208	9,372							
1856-57	280	10,936							
1857-58	401	5,761							
1858-59	548	7,740			397				
1859-60	811	13,966			976				
1860-61	1,138	12,129			1,576				
1861-62	1,464	47,568			1,537				
1862-63	2,007	91,893			1,876				
1863-64	3,076	120,894			2,326				
1864-65	3,594	110,042			2,361				
1865-66	4,078	176,959			3,449				
1866-67	4,111	284,118			2,809				
1867-68	4,340	459,072			3,635				
1868-69	4,046	448,547			4,041				
1869-70	4,950	577,287			4,627				
1870-71	5,466	629,219			4,670				
1871-72	5,523	713,589			5,805				
1872-73	5,485	527,592			5,690				
1873-74	5,222	562,713			6,148				
1874-75	4,937	577,493			6,317				
1875-76	5,081	755,000			5,945				
1876-77	4,765	481,588			6,400				
1877-78	4,419	457,535			7,174				
1878-79	4,434	410,333			7,457				
1879-80	4,284	574,143			8,269				
1880-81	4,980	484,028			9,795				
1881-82	4,923	539,191			9,267				
1882-83	5,732	516,763			10,048				
1883-84	7,326	723,560			11,365				
1884-85	9,042	760,752			13,180				
1885-86	9,775	1,003,827			15,934				
1886-87	10,310	986,041			15,989				
1887-88	11,195	1,167,874			16,328				
1888-89	12,886	1,209,442		140	16,415				
1889-90	15,662	1,578,590	281	9	22,754				
1890-91	20,686	2,008,493	475	30	26,955				
1891-92	25,295	1,554,130	1,461	32	30,293				
1892-93	28,052	1,694,745	1,805	134	31,370				
1893-94	30,275	1,490,184	8,977	212	34,584				
1894-95	30,307	1,909,972	18,207	239	36,291				
1895-96	30,275	2,226,999	11,183	686	36,014				
1896-97	27,943	2,822,263	11,276	762	36,013				
1897-98	27,701	1,919,389	13,234	462	35,422				
1898-99	27,568	1,882,209	17,979	1,033	41,448				
1899-1900	27,550	933,282	17,847	3,315	44,975				
1900-01	30,634	2,578,187	29,370	3,715	48,552	893,418	251,384	160,968	37,184
1901-02	28,592	1,981,475	27,533	2,546	50,055	652,525	118,742	284,312	60,150
1902-03	28,374	1,547,188	35,534	3,722	50,497	903,853	248,030	173,414	23,210
1903-04	28,513	2,551,150	53,447	7,490	51,357	805,034	158,186	260,589	27,670
1904-05	28,016	1,832,386	30,295	5,974	52,751	1,019,816	188,849	230,130	34,088
1905-06	26,402	1,726,444	42,975	6,403	52,274	578,700	219,864	132,870	21,364

VICTORIA—VINEYARDS AND ORCHARDS—continued

Season	Vineyards				Orchards				
	Total area	Wine made	Dried fruit produced—		Total area	Fruit produced—			
			Raisins and sultanas	Currants		Apples	Pears	Peaches	Oranges
	acres	gallons	cwt	cwt	acres	bushels	bushels	bushels	bushels
1906-07	25,855	2,044,833	98,127	11,730	54,021	1,010,381	303,647	276,077	23,431
1907-08	26,465	1,365,600	68,617	10,440	54,111	618,424	182,609	290,178	28,620
1908-09	24,430	1,437,106	69,536	11,929	54,946	1,241,826	373,145	282,040	22,363
1909-10	22,768	991,941	81,044	27,408	56,108	1,121,702	253,195	291,766	34,027
1910-11	23,412	1,362,420	79,318	26,394	57,375	1,667,271	640,436	317,317	59,723
1911-12	24,193	983,423	102,924	46,789	59,985	1,330,961	239,431	260,258	48,982
1912-13	24,579	1,206,111	109,677	48,337	63,209	2,036,756	669,898	289,731	44,039
1913-14	22,435	1,121,491	120,303	62,098	67,183	1,653,035	476,430	361,414	63,542
1914-15	21,801	605,636	111,006	28,527	74,302	509,697	401,301	277,435	83,220
1915-16	22,353	1,380,367	180,104	76,556	80,120	2,953,968	601,357	303,992	63,434
1916-17	23,264	1,302,660	142,970	66,449	83,087	617,929	661,962	787,406	59,985
1917-18	25,236	800,068	104,911	53,799	83,818	1,864,508	414,721	430,770	75,315
1918-19	26,072	1,349,309	135,060	68,234	85,130	807,573	756,688	569,639	100,553
1919-20	27,441	1,634,680	211,307	55,661	86,336	2,227,317	723,857	960,773	137,184
1920-21	29,255	2,222,305	116,887	62,919	87,768	1,451,069	759,148	728,272	169,335
1921-22	33,175	1,335,066	190,451	75,042	89,491	1,768,800	681,024	905,477	237,949
1922-23	38,892	1,717,490	285,520	98,081	86,014	2,089,017	666,631	966,952	259,330
1923-24	42,599	2,177,127	438,827	150,867	85,570	1,665,308	858,611	938,908	210,595
1924-25	42,467	1,368,765	366,999	104,948	85,358	2,233,230	910,915	990,683	310,890
1925-26	40,712	1,637,274	351,506	123,733	82,665	2,063,214	840,113	1,221,582	286,216
1926-27	40,612	2,346,314	657,714	135,464	83,215	543,106	500,995	925,353	276,407
1927-28	40,988	1,739,560	402,321	73,101	81,397	3,712,359	1,058,481	1,350,701	378,101
1928-29	41,565	1,942,701	771,119	189,985	79,322	626,294	772,216	1,043,840	354,817
1929-30	40,594	1,363,575	783,654	178,226	80,820	2,779,107	1,166,418	1,191,253	385,106
1930-31	38,720	1,254,615	447,546	156,689	79,490	1,515,419	707,145	1,028,493	516,133
1931-32	38,215	1,530,061	594,044	156,651	76,834	1,015,169	878,171	697,204	647,410
1932-33	39,144	1,610,649	851,361	156,291	77,173	3,217,074	1,172,204	1,351,330	566,398
1933-34	40,485	1,691,391	679,240	149,520	76,945	2,418,430	1,005,775	970,541	658,641
1934-35	41,180	1,276,176	592,740	176,020	76,254	2,085,081	1,021,780	1,173,031	639,325
1935-36	41,081	1,683,049	709,720	84,420	75,788	2,417,425	1,492,062	915,811	618,290
1936-37	41,895	1,818,917	745,340	152,200	76,760	2,873,327	1,657,763	1,269,716	580,526
1937-38	41,883	1,433,637	970,080	178,960	75,067	2,454,471	1,527,032	1,695,094	691,563
1938-39	42,436	825,056	673,180	206,020	71,300	1,574,916	1,204,340	1,653,792	700,990
1939-40	42,594	1,126,350	946,560	212,840	70,315	1,603,034	1,298,787	1,201,378	544,208
1940-41	43,238	1,208,452	826,840	132,580	69,756	2,497,277	1,677,504	1,479,866	729,970
1941-42	42,554	1,161,888	950,400	174,760	69,413	1,603,273	1,232,723	1,291,756	614,670
1942-43	42,634	1,381,936	928,780	172,400	69,776	845,184	1,581,841	1,178,242	556,500
1943-44	42,711	1,319,630	977,020	199,740	70,024	2,326,224	1,421,706	1,469,813	637,798
1944-45	42,914	784,886	661,520	137,160	68,245	1,138,801	1,750,802	1,404,870	663,418
1945-46	42,843	1,915,705	859,900	128,700	69,479	2,597,618	1,464,075	1,086,841	655,562
1946-47	42,948	3,081,622	744,300	121,760	71,312	1,111,780	2,215,592	1,350,113	666,774
1947-48	43,784	2,958,292	943,200	161,720	71,513	1,991,297	1,854,909	1,619,066	720,581
1948-49	45,609	3,080,512	714,100	159,340	71,746	1,847,793	2,018,632	1,192,953	715,579
1949-50	45,386	3,230,129	843,880	138,600	71,046	810,836	1,884,012	1,236,733	638,816
1950-51	45,313	2,357,716	560,140	121,620	69,911	1,987,059	2,515,219	1,359,951	744,930
1951-52	45,267	3,472,352	896,680	77,160	68,715	1,579,123	2,538,109	1,590,702	484,235
1952-53	45,968	2,266,446	1,101,960	131,780	67,234	1,962,604	2,438,616	1,419,969	579,151
1953-54	45,777	2,327,302	1,021,460	93,380	66,180	2,338,903	3,152,432	1,804,896	678,064
1954-55	45,757	1,611,923	987,360	93,500	66,091	2,580,148	3,331,360	1,549,029	650,795
1955-56	44,817	1,341,797	588,340	103,000	65,214	2,648,892	2,742,863	1,162,447	770,503
1956-57	44,902	2,369,176	1,001,700	79,080	63,319	2,621,487	3,432,090	878,560	711,453
1957-58	44,767	2,582,492	1,134,840	83,060	66,221	3,125,088	3,730,427	1,287,011	796,625
1958-59	44,801	2,354,076	1,054,140	95,520	66,746	2,969,521	3,279,535	1,033,712	830,115
1959-60	44,129	2,146,676	895,280	66,620	68,567	3,005,669	3,582,549	1,210,021	1,028,711
1960-61	44,649	3,020,960	1,020,040	111,660	71,415	3,134,917	3,704,278	955,224	689,413
1961-62	45,105	3,604,607	1,297,240	54,280	72,712	3,045,808	4,605,808	1,686,496	985,167
1962-63	45,662	2,433,269	881,180	50,720	75,855	4,059,045	3,848,614	1,811,799	1,163,735
1963-64	46,501	3,704,891	1,322,760	78,680	76,796	3,298,851	4,771,604	1,827,910	1,134,375
1964-65	47,996	3,656,299	1,323,060	89,540	75,509	4,394,197	4,025,455	2,362,620	1,244,293
1965-66	48,617	3,151,285	1,188,360	62,540	74,891	4,205,028	5,453,339	2,602,822	1,011,647
1966-67	49,164	3,554,934	1,392,560	71,760	73,519	4,356,989	4,700,818	2,731,525	1,143,770
1967-68	48,725	5,180,157	1,184,440	63,320	71,425	3,874,995	5,341,706	3,344,333	1,121,274
1968-69	48,970	6,240,585	757,920	53,740	71,598	4,857,746	3,419,992	2,721,995	1,359,792
1969-70	49,838	7,250,881	1,341,420	67,660	70,883	5,330,770	7,043,916	2,974,780	1,279,843
1970-71	50,932	6,616,478	811,700	60,680	66,613	5,078,604	7,061,229	2,925,282	1,785,772

## VICTORIA—LIVESTOCK AND PASTORAL PRODUCTION

Year	Livestock (a)				Greasy wool production (b)	Milk production for all purposes (c)	Butter production (factory and farm) (c)	Cheese production (factory and farm) (c)
	Horses	Cattle	Sheep	Pigs				
1836-37	75	155	41,332					
1837-38	n.a.	n.a.	n.a.					
1838-39	524	13,272	310,946					
1839-40	n.a.	n.a.	n.a.					
1840-41	2,372	50,837	782,283					
1841-42	n.a.	n.a.	n.a.					
1842-43	4,065	100,792	1,404,333					
1843-44	6,278	167,156	1,602,798					
1844-45	7,076	187,873	1,860,912					
1845-46	9,289	231,602	1,792,527	3,986				
1846-47	11,400	290,439	2,996,992	5,501				
1847-48	13,292	322,824	4,164,263	5,015				
1848-49	16,495	386,688	5,130,277	5,659				
1849-50	16,733	346,562	5,318,046	n.a.				
1850-51	21,219	378,806	6,032,783	9,260				
1851-52	22,086	390,923	6,589,923	7,372				
1852-53	34,021	431,380	6,551,506	8,996				
1853-54	15,166	410,139	5,594,220	n.a.				
1854-55	27,038	481,640	5,332,007	9,278				
1855-56	33,430	534,113	4,577,872	20,686				
1856-57	47,832	646,613	4,641,548	52,227				
1857-58	55,683	614,537	4,766,022	43,632				
1858-59	68,323	699,330	5,578,413	37,756				
1859-60	69,288	683,534	5,794,127	50,965				
1860-61	76,536	722,332	5,780,896	61,259				
1861-62	84,057	628,092	6,239,258	43,480				
1862-63	86,067	576,601	6,764,851	52,991				
1863-64	103,328	675,272	7,115,943	79,655				
1864-65	117,182	640,625	8,406,234	113,530				
1865-66	121,051	621,337	8,835,380	75,869				
1866-67	121,381	598,968	8,833,139	74,708				
1867-68	131,148	650,592	9,532,811	141,522				
1868-69	143,934	693,582	9,756,819	136,206				
1869-70	161,830	692,518	9,923,663	111,464				
1870-71	167,220	721,096	10,761,887	130,946				
1871-72	181,643	799,509	10,002,381	177,447				
1872-73	185,796	812,289	10,575,219	193,722				
1873-74	180,342	883,763	11,323,080	160,336				
1874-75	180,254	958,658	11,221,036	137,941				
1875-76	196,184	1,054,598	11,749,532	140,765				
1876-77	194,768	1,128,265	11,278,893	175,578				
1877-78	203,150	1,169,576	10,117,867	183,391				
1878-79	210,105	1,184,843	9,379,276	177,373				
1879-80	216,710	1,129,358	8,651,775	144,733				
1880-81	275,516	1,286,267	10,360,285	241,936				
1881-82	278,195	1,286,677	10,267,265	239,926				
1882-83	280,874	1,287,088	10,174,246	237,917	56,223			
1883-84	286,779	1,297,546	10,739,021	233,525	65,930			
1884-85	293,846	1,287,945	10,637,412	234,347	61,369			
1885-86	304,098	1,290,790	10,681,837	239,837	53,390			
1886-87	308,553	1,303,265	10,700,403	240,957	57,439			
1887-88	315,000	1,333,873	10,623,985	243,461	48,420			
1888-89	323,115	1,370,660	10,818,575	245,818	54,144			
1889-90	329,335	1,394,209	10,882,231	249,673	56,955			
1890-91	436,469	1,782,881	12,692,843	282,457	55,559			
1891-92	440,696	1,812,104	12,928,148	286,780	76,504	16,704	3,311	
1892-93	439,596	1,824,704	12,965,306	290,339	80,445	120,981	23,510	4,057
1893-94	436,903	1,817,291	13,098,725	328,162	64,722	125,269	28,160	3,749
1894-95	431,547	1,835,900	13,180,943	337,588	72,767	117,374	36,468	4,153
1895-96	(d)424,995	(d)1,795,314	(d)12,791,084	(d)339,718	89,435	128,563	40,667	5,053
1896-97	n.a.	n.a.	n.a.	n.a.	74,264	122,873	37,873	4,743
1897-98	n.a.	n.a.	n.a.	n.a.	62,190	117,640	35,136	4,313
1898-99	n.a.	n.a.	(d)12,300,000	(d)425,000	75,055	114,511	34,080	4,397
1899-1900	n.a.	n.a.	n.a.	n.a.	67,921	147,367	53,328	4,513
1900-01	392,237	1,602,384	10,841,790	350,370	90,493	158,677	55,604	4,284
1901-02	(d)387,277	(d)1,623,282	(d)10,673,265	(d)334,295	86,787	155,880	46,858	3,975
1902-03	(d)382,317	(d)1,644,180	(d)10,504,741	(d)318,220	78,498	139,838	39,228	3,850
1903-04	(d)377,357	(d)1,665,978	(d)10,336,216	(d)302,145	61,867	173,224	46,686	5,682
1904-05	372,397	1,685,976	10,167,691	286,070	86,126	175,348	61,003	4,748
1905-06	385,513	1,737,690	11,455,115	273,682	74,747	162,380	57,607	4,297
1906-07	406,840	1,804,323	12,937,440	220,452	78,258	146,656	68,088	4,878
1907-08	424,648	1,842,807	14,146,734	211,002	87,481	181,814	63,746	4,398
1908-09	424,903	1,574,162	12,545,742	179,358	82,066	148,122	48,461	4,329
1909-10	442,829	1,549,640	12,937,983	217,921	90,093	162,995	55,167	5,026

VICTORIA—LIVESTOCK AND PASTORAL PRODUCTION—*continued*

Year	Livestock (a)				Greasy wool production (b)	Milk production for all purposes (c)	Butter production (factory and farm) (c)	Cheese production (factory and farm) (c)
	Horses	Cattle	Sheep	Pigs				
					'000 lb	'000 gal	'000 lb	'000 lb
1910-11	472,080	1,547,569	12,882,665	333,281	126,804	196,674	70,604	4,531
1911-12	507,813	1,647,127	13,857,804	348,069	135,463	238,150	86,500	4,550
1912-13	530,494	1,508,089	11,892,224	240,072	113,763	199,297	67,656	4,177
1913-14	562,331	1,528,553	12,113,682	221,277	131,834	216,948	73,382	4,856
1914-15	552,053	1,362,542	12,051,685	243,196	120,407	193,653	62,421	4,396
1915-16	493,779	1,043,604	10,545,632	192,002	107,330	142,115	42,345	3,497
1916-17	514,403	1,175,098	12,576,587	254,436	119,845	186,593	59,569	5,870
1917-18	514,061	1,371,049	14,760,013	323,159	130,425	199,738	64,407	5,284
1918-19	523,788	1,596,544	15,773,902	267,819	151,647	207,102	66,241	6,055
1919-20	513,500	1,631,120	14,422,745	186,810	157,847	196,884	60,218	7,735
1920-21	487,503	1,575,159	12,171,084	175,275	115,251	204,522	64,938	3,636
1921-22	496,124	1,750,369	12,325,818	230,770	128,513	245,181	82,981	5,676
1922-23	494,947	1,785,660	11,765,520	294,962	127,468	249,322	84,356	3,754
1923-24	486,075	1,591,367	11,059,761	259,795	107,513	260,953	86,890	7,217
1924-25	473,236	1,605,554	12,649,898	288,509	133,485	294,765	100,849	6,194
1925-26	463,051	1,513,787	13,740,500	339,601	139,076	255,120	81,747	5,280
1926-27	447,988	1,435,761	14,919,653	284,271	151,625	258,437	81,995	5,997
1927-28	428,666	1,327,077	15,557,067	212,785	148,504	260,648	84,271	5,622
1928-29	412,867	1,304,426	16,498,222	222,084	179,854	279,032	93,728	5,506
1929-30	393,015	1,335,242	17,427,203	265,978	160,663	274,172	90,639	6,955
1930-31	379,872	1,429,920	16,477,995	281,245	146,863	313,815	110,006	8,064
1931-32	375,459	1,637,530	16,376,217	286,780	159,722	362,868	132,133	7,724
1932-33	372,907	1,900,922	17,512,394	287,627	170,808	396,716	144,565	9,188
1933-34	361,005	2,002,235	17,195,969	240,530	161,146	368,806	134,942	8,364
1934-35	357,877	2,085,080	16,783,631	265,006	156,762	403,039	147,649	10,096
1935-36	356,106	2,091,246	17,457,291	314,301	163,398	399,742	148,134	10,974
1936-37	357,158	2,005,759	17,663,103	318,673	163,049	423,305	154,771	13,350
1937-38	359,106	1,880,429	18,863,467	285,259	178,890	408,271	141,322	16,466
1938-39	343,828	1,697,295	17,007,352	252,462	165,829	377,881	130,574	19,553
1939-40	326,217	1,787,597	18,251,870	297,655	179,126	456,919	164,826	24,495
1940-41	318,441	1,922,336	20,412,362	397,945	187,831	447,872	156,345	18,377
1941-42	302,401	1,986,544	20,598,201	285,227	212,919	428,691	140,815	22,521
1942-43	292,534	2,022,892	19,614,040	307,929	208,204	381,640	125,675	25,267
1943-44	277,662	2,013,033	19,220,457	337,878	196,415	360,532	111,637	26,661
1944-45	253,782	1,903,110	16,457,101	296,232	177,143	360,501	105,717	27,462
1945-46	232,473	1,827,087	14,655,277	271,887	152,398	375,639	114,572	33,504
1946-47	227,164	2,060,061	16,598,490	290,450	197,076	445,536	134,935	39,527
1947-48	221,454	2,174,203	17,931,173	271,492	199,531	428,569	128,968	36,239
1948-49	213,090	2,224,543	19,170,312	223,823	204,080	462,446	136,947	41,162
1949-50	200,143	2,230,948	19,161,043	212,901	225,243	469,253	144,863	47,493
1950-51	186,415	2,216,253	20,011,933	237,127	218,266	445,671	132,263	50,570
1951-52	169,246	2,214,530	21,537,229	213,670	224,958	446,818	135,166	49,851
1952-53	153,662	2,297,208	21,368,196	182,824	252,195	436,417	130,319	50,145
1953-54	140,818	2,370,184	21,438,007	232,384	223,481	474,358	144,247	58,211
1954-55	132,172	2,456,303	22,329,515	263,666	253,364	536,835	179,608	45,476
1955-56	118,705	2,616,587	23,343,212	227,223	273,356	577,475	204,633	31,382
1956-57	107,859	2,765,049	25,830,544	258,336	299,572	587,199	200,081	46,070
1957-58	98,067	2,749,611	27,090,469	278,628	296,490	565,439	194,595	33,293
1958-59	91,452	2,651,022	26,925,365	253,125	298,844	582,948	198,650	39,140
1959-60	81,225	2,624,019	26,596,613	284,505	322,999	598,323	201,394	43,151
1960-61	64,462	2,863,799	26,619,849	318,523	322,011	596,706	201,448	44,798
1961-62	61,540	3,155,877	27,532,550	325,120	330,716	630,948	215,327	53,632
1962-63	58,172	3,225,196	27,471,730	297,791	316,705	667,562	228,166	57,469
1963-64	55,593	3,300,724	28,412,835	322,051	334,288	694,990	232,393	56,447
1964-65	55,843	3,316,407	30,437,154	378,055	361,530	745,896	248,506	60,975
1965-66	n.a.	3,396,984	30,968,459	383,509	366,943	750,915	250,680	58,158
1966-67	54,687	3,528,159	31,239,391	350,591	378,457	796,673	266,907	67,907
1967-68	n.a.	3,474,216	27,908,754	376,990	332,427	734,203	241,240	73,570
1968-69	n.a.	3,877,826	30,184,874	421,655	364,347	815,791	280,206	75,256
1969-70	53,082	4,462,391	33,156,830	495,128	427,206	892,378	313,753	73,866
1970-71	n.a.	5,060,711	33,761,487	519,779	430,875	898,970	299,486	78,935

(a) 1836-37 to 1900-01 number at 31 March.  
 1901-02 to 1941-42 number at 1 March.  
 1942-43 to 1970-71 number at 31 March.  
 (b) Includes dead and fellmongered wool and wool exported on skins.  
 (c) 1907-08 to 1915-16 year ended December of first mentioned year.  
 1916-17 to 1970-71 year ended 30 June.  
 (d) Estimated.  
 n.a. : Not available.



VICTORIA—NET VALUE OF PRODUCTION OF PRIMARY INDUSTRIES  
EXCLUDING MINING (a)  
(\$'000)

Year	Agri- culture	Pastoral	Dairy- ing	Poultry	Bee- farming (b)	Total rural	Trapping (b)	Forestry (b) (c)	Fish- eries (b)	Total non- rural	Total primary indust- ries exclud- ing mining
1928-29	28,176	36,541	19,232	5,691	166	89,806	1,780	1,836	348	3,964	93,770
1929-30	17,360	26,052	17,063	6,341	120	66,936	1,343	1,789	447	3,579	70,515
1930-31	12,628	18,836	14,526	5,710	91	51,791	720	1,225	333	2,278	54,069
1931-32	22,978	17,222	14,968	5,512	75	60,755	674	1,083	306	2,063	62,818
1932-33	22,261	16,346	15,747	4,277	108	58,739	686	1,075	303	2,064	60,803
1933-34	20,154	31,807	12,465	4,486	35	68,947	834	1,177	265	2,276	71,223
1934-35	17,472	26,610	15,063	4,370	79	63,594	962	1,330	281	2,573	66,167
1935-36	23,434	34,845	18,689	4,667	155	81,790	1,616	1,384	294	3,294	85,084
1936-37	32,713	39,004	21,556	4,603	91	97,967	1,765	1,464	324	3,553	101,520
1937-38	29,925	37,066	20,990	5,804	120	93,905	1,699	2,058	336	4,093	97,998
1938-39	11,240	30,312	19,917	6,225	47	67,741	1,087	2,136	354	3,577	71,318
1939-40	23,814	32,869	24,665	6,200	126	87,674	1,742	2,218	399	4,359	92,033
1940-41	14,194	37,258	26,161	4,568	184	82,365	3,080	2,711	489	6,280	88,645
1941-42	31,022	40,936	25,203	5,273	266	102,700	4,255	3,189	775	8,219	110,919
1942-43	38,053	49,533	24,932	9,615	261	122,394	2,924	3,716	755	7,395	129,789
1943-44	32,126	52,263	27,641	10,304	146	122,480	5,568	3,904	692	10,164	132,644
1944-45	29,800	48,892	29,343	11,185	242	119,462	5,041	4,344	678	10,063	129,525
1945-46	44,862	36,196	30,064	11,332	230	122,684	6,348	4,822	932	12,102	134,786
1946-47	66,048	57,278	36,076	10,716	512	170,630	6,074	5,892	1,070	13,036	183,666
1947-48	99,752	85,506	39,832	11,950	392	237,432	6,870	6,988	900	14,758	252,190
1948-49	78,704	107,428	44,518	15,658	494	246,802	7,552	7,880	1,044	16,476	263,278
1949-50	107,810	155,258	54,350	16,464	472	334,354	6,244	11,140	1,230	18,614	352,968
1950-51	106,930	324,818	59,130	19,630	540	511,048	6,386	12,874	1,400	20,660	531,708
1951-52	128,168	199,616	78,304	25,140	426	431,654	6,654	16,958	1,412	25,024	456,678
1952-53	130,134	216,918	85,374	29,772	538	462,736	5,434	17,808	1,506	24,748	487,484
1953-54	131,248	217,860	92,404	27,982	804	470,298	4,094	23,520	1,668	29,282	499,580
1954-55	123,032	224,392	92,856	23,592	706	464,578	4,304	25,068	1,698	31,070	495,648
1955-56	132,930	209,640	108,602	25,236	820	477,228	6,394	27,156	1,468	35,018	512,246
1956-57	127,604	259,766	95,866	25,012	1,012	509,260	6,666	28,662	2,356	37,684	546,944
1957-58	129,942	231,940	92,306	28,084	536	482,808	6,574	30,506	2,208	39,288	522,096
1958-59	147,322	220,784	88,764	25,144	816	482,830	7,124	32,296	2,530	41,950	524,780
1959-60	137,824	271,260	94,938	29,272	856	534,150	6,984	25,953	3,542	36,479	570,629
1960-61	208,062	232,362	101,894	28,692	638	571,648	5,890	24,501	3,574	33,965	605,613
1961-62	176,490	231,056	87,044	24,878	830	520,298	5,620	23,363	3,482	32,465	552,763
1962-63	193,972	243,619	110,134	24,812	480	573,018	5,500	23,610	3,248	32,358	605,376
1963-64	218,136	299,160	121,386	30,104	1,150	669,936	5,914	25,308	4,202	35,424	705,360
1964-65	232,775	282,806	136,097	24,407	867	676,952	5,469	28,358	3,212	37,039	713,991
1965-66	202,674	317,194	135,601	28,192	989	684,650	5,421	28,870	3,797	38,088	722,738
1966-67	255,016	315,142	145,567	32,464	758	748,947	3,976	29,036	4,307	37,319	786,266
1967-68	169,501	254,187	140,097	27,705	782	592,272	3,409	27,448	5,153	36,010	628,282
1968-69	247,194	262,707	166,117	25,675	396	702,089	3,400	29,577	5,336	38,313	740,402
1969-70	231,413	307,734	187,340	25,409	821	752,717	2,884	29,673	5,304	37,861	790,578
1970-71	207,612	273,134	202,724	22,692	997	707,159	1,623	36,966	6,462	45,051	752,210

- (a) Depreciation and certain maintenance costs have not been deducted. Includes amounts paid as bounty, relief, etc.  
(b) Local value.  
(c) Figures for 1959-60 onwards not comparable with figures for previous years because of re-valuation of firewood.

VICTORIA — MINERAL PRODUCTION

Year	Gold		Black coal		Brown coal		Net value of total mining and quarrying production (b)
	Quantity	Value (a)	Quantity	Value (a)	Quantity	Value (a)	
	gross oz	\$'000	tons	\$'000	tons	\$'000	
1851	212,899	1,703					
1852	2,286,535	18,292					
1853	2,744,098	21,953					
1854	2,218,483	17,748					
1855	2,819,288	22,554					
1856	3,053,744	24,430					
1857	2,830,213	22,642					
1858	2,596,231	20,770					
1859	2,348,703	18,790					
1860	2,224,069	17,793					
1861	2,035,173	16,281					
1862	1,730,201	13,842					
1863	1,694,819	13,559					
1864	1,622,447	12,980					
1865	1,611,554	12,892					
1866	1,546,948	12,373					
1867	1,501,446	12,012					
1868	1,684,918	13,479					
1869	1,544,756	12,358					
1870	1,304,304	10,434	100	(c)			
1871	1,368,942	10,950					
1872	1,331,377	10,651	10	(c)			
1873	1,170,397	9,363	504	1			
1874	1,097,643	8,781	2,909	6			
1875	1,068,417	8,547					
1876	963,760	7,710	1,095	2			
1877	809,653	6,477	2,420	5			
1878	758,040	6,064					
1879	758,947	6,072					
1880	829,121	6,633					
1881	833,378	6,667					
1882	864,600	6,917					
1883	780,253	6,242					
1884	778,618	6,229	3,280	7			
1885	735,218	5,882					
1886	665,196	5,322	86	(c)			
1887	617,751	4,942	3,357	8			
1888	625,026	5,000	8,573	14			
1889	614,838	4,919	14,596	22			
1890	588,560	4,708	14,601	28	9,327	5	
1891	576,399	4,611	22,834	39			
1892	654,456	5,236	23,363	40			
1893	671,126	5,369	91,726	98			
1894	716,954	5,736	171,660	190			
1895	740,086	5,921	194,227	237			
1896	805,087	6,441	226,562	226			
1897	812,766	6,502	236,277	217			
1898	837,257	6,699	242,860	206			
1899	854,500	6,836	262,380	227			
1900	807,407	6,459	211,596	203			
	fine oz						
1901	730,453	6,206	209,329	294			
1902	720,866	6,124	225,164	312			
1903	767,297	6,519	64,200	82			
1904	765,600	6,504	121,741	140			
1905	747,166	6,347	155,135	158			
1906	772,290	6,561	160,631	161			
1907	695,576	5,909	138,584	159			
1908	671,208	5,702	113,462	159			
1909	654,222	5,558	128,173	154			
1910	570,383	4,845	369,059	378	450	1	

VICTORIA—MINERAL PRODUCTION—*continued*

Year	Gold		Black coal		Brown coal		Net value of total mining and quarrying production (b)
	Quantity	Value (a)	Quantity	Value (a)	Quantity	Value (a)	
	fine oz	\$'000	tons	\$'000	tons	\$'000	
1911	504,000	4,278	653,864	598			
1912	480,131	4,079	589,143	517			
1913	434,932	3,695	593,912	549			
1914	413,218	3,510	617,536	577			
1915	329,068	2,796	588,104	550	2,864	1	
1916	256,643	2,180	417,183	432	2,915	1	
1917	201,872	1,715	466,220	671	39,144	21	
1918	158,827	1,349	439,575	699	66,200	36	
1919	135,428	1,151	423,945	744	111,628	69	
1920	152,792	1,298	442,241	929	162,682	128	
1921	104,512	888	514,859	1,207	79,224	62	
1922	106,872	908	559,284	1,329	90,402	63	
1923	95,403	810	476,823	1,051	116,888	76	
1924	67,167	571	518,315	1,139	127,490	82	
1926	47,296	402	534,246	1,192	870,468	326	
1925	49,078	417	591,001	1,316	957,935	378	
1927	38,538	327	684,245	1,525	1,455,482	440	
1928	33,917	288	658,323	1,462	1,591,858	405	
1929	26,275	223	703,828	1,627	1,741,176	356	3,402
1930	24,119	205	703,487	1,618	1,831,507	347	3,480
1931	43,637	513	571,342	724	2,194,453	494	2,825
1932	47,745	712	432,353	551	2,612,512	544	2,189
1933	58,183	908	523,000	658	2,580,060	624	2,388
1934	70,196	1,208	356,958	431	2,617,534	524	2,762
1935	87,609	1,546	476,495	870	2,221,515	635	2,919
1936	117,596	1,986	426,725	781	3,044,897	646	3,587
1937	145,799	2,552	257,945	508	3,393,919	652	3,187
1938	144,243	2,563	307,258	573	3,675,450	703	3,453
1939	156,522	3,078	364,895	520	3,651,014	772	3,485
1940	180,567	3,848	267,694	461	4,278,475	783	4,222
1941	149,769	3,201	326,441	608	4,565,638	846	5,019
1942	101,497	2,122	312,854	822	4,933,861	939	4,427
1943	56,511	1,181	287,100	859	5,091,729	1,057	3,769
1944	54,086	1,137	257,692	816	5,016,437	1,133	3,088
1945	61,790	1,323	247,297	989	5,445,108	1,282	3,097
1946	86,993	1,873	191,290	795	5,707,039	1,413	3,470
1947	84,709	1,823	173,683	600	6,140,140	1,875	4,108
1948	68,579	1,476	167,540	695	6,592,291	2,375	4,594
1949	68,426	1,679	122,507	759	7,375,559	2,939	4,346
1950	67,826	2,101	126,431	764	7,327,119	3,413	4,526
1951	66,063	2,047	147,743	1,201	7,836,056	5,510	5,938
1952	66,777	2,073	143,820	1,506	8,103,764	6,953	8,418
1953	63,917	1,992	151,907	1,959	8,257,299	7,273	13,264
1954	52,665	1,640	141,318	1,803	9,331,255	7,890	14,554
1955	38,035	1,189	132,888	1,653	10,112,206	8,787	16,292
1956	38,846	1,216	118,827	1,354	10,559,801	9,288	17,738
1957	45,752	1,432	111,569	1,008	10,740,989	10,410	18,914
1958	41,476	1,358	108,359	1,037	11,643,629	11,537	19,888
1959	34,662	1,117	87,715	109	13,034,605	12,386	21,974
1960	28,566	893	76,972	835	14,967,202	13,689	24,202
1961	26,229	824	66,363	719	16,279,168	15,443	26,316
1962	28,262	637	56,721	633	17,137,438	15,682	32,958
1963	24,668	779	50,481	588	18,456,445	16,158	32,394
1964	21,284	665	47,058	544	19,034,792	17,304	33,652
1965	19,246	565	42,247	515	20,658,856	18,436	37,056
1966	21,005	610	35,519	497	21,782,977	20,064	39,958
1967	10,996	345	32,066	251	23,383,607	20,686	43,438
1968	11,069	344	26,314	209	22,970,653	21,555	47,382
1968-69	9,286	335	13,102	105	23,128,491	20,879	47,875
1969-70	8,671	293	401	6	23,926,874	22,131	n.a.
1970-71	5,878	200	20	(c)	22,814,369	22,975	n.a.

(a) Selling value at point of sale of mine or quarry products less transport costs from mine or quarry to point of sale, i.e., value of output at mine or quarry. Gold value excludes annual subsidy.  
 (b) Year ended 30 June. Not available prior to 1929.  
 (c) Less than \$500.  
 n.a.: Not available.

VICTORIA—NEW BUILDINGS COMPLETED

Year	Houses		Flats		Value of all buildings
	Number	Value (a)	Number (b)	Value (a)	(c)
		\$'000		\$'000	\$'000
1945-46	3,666	7,604	14	14	10,942
1946-47	7,436	18,720	86	198	22,134
1947-48	11,846	32,098	167	400	35,782
1948-49	14,278	45,084	368	1,056	54,714
1949-50	15,611	57,708	246	1,326	69,368
1950-51	21,194	88,560	333	1,368	104,280
1951-52	24,088	115,990	416	2,022	137,850
1952-53	21,284	114,222	692	4,176	153,938
1953-54	21,593	116,074	689	3,544	173,440
1954-55	23,839	135,276	781	3,664	197,864
1955-56	22,652	136,416	1,273	6,308	223,188
1956-57	20,185	131,542	897	4,680	229,660
1957-58	21,367	140,564	1,104	5,828	263,512
1958-59	24,329	161,916	1,434	7,628	274,874
1959-60	24,157	163,496	2,062	10,920	296,324
1960-61	22,094	157,596	4,183	27,072	326,304
1961-62	18,969	142,536	4,070	26,686	296,350
1962-63	20,328	154,358	3,772	23,184	333,568
1963-64	22,799	175,846	4,270	23,734	334,830
1964-65	22,821	185,692	8,674	47,564	402,280
1965-66	20,929	184,060	9,506	52,663	415,375
1966-67	22,126	203,556	10,138	55,958	471,943
1967-68	21,592	208,097	12,686	80,541	497,370
1968-69	22,731	230,420	13,775	90,085	578,126
1969-70	24,702	261,899	13,992	101,953	629,109
1970-71	25,179	278,109	12,087	85,717	667,966
1971-72	25,627	306,315	10,091	75,421	677,381

(a) Excludes value of land.  
 (b) Individual dwelling units.  
 (c) Includes houses and flats.

VICTORIA—FACTORIES

Year	Number	Average number of persons employed (a)	Salaries and wages paid (b)	Value of—		
				Output (c)	Production (d)	Land, buildings, plant, and machinery (e)
			\$'000	\$'000	\$'000	\$'000
1850	68					
1851	83					
1852	90					
1853	228					
1854	192					
1855	278					
1856	290					
1857	474					
1858	507					
1859	500					
1860	566	5,467				
1861	531	4,395				
1862	703	6,405				
1863	823	7,369				
1864	704	7,046				
1865	900	10,059				4,539
1866	983	11,488				5,281
1867	1,104	14,230				6,235
1868	1,316	16,770				8,445
1869	1,530	18,941				9,257
1870	1,579	17,758				9,045
1871	1,740	19,569				9,450
1872	1,770	21,591				9,998
1873	1,803	24,495				11,806
1874	2,104	28,036				13,598
1875	2,241	29,821				11,147
1876	2,302	31,478				12,051
1877	2,370	32,688				13,331
1878	2,343	33,278				13,597
1879	2,239	33,247				13,424
1880	2,468	38,178		26,742		15,005

VICTORIA—FACTORIES—*continued*

Year	Number	Average number of persons employed (a)	Salaries and wages paid (b)	Value of—		
				Output (c)	Production (d)	Land, buildings, plant, and machinery (e)
			\$'000	\$'000	\$'000	\$'000
1881	2,488	43,208				15,877
1882	2,512	45,698				17,039
1883	2,777	46,857				18,828
1884	2,856	49,393				20,400
1885	2,813	49,297				21,816
1886	2,770	45,773				22,137
1887	2,854	49,084				25,268
1888	2,975	54,488				29,584
1889	3,137	57,432				31,224
1890	3,104	56,369		44,781		30,637
1891	3,141	52,225				30,059
1892	2,952	43,200				26,713
1893	2,677	39,473				24,133
1894	2,632	41,000				22,929
1895	2,804	46,095				23,780
1896	2,810	50,448				23,603
1897	2,760	52,701				23,880
1898	2,869	54,778				23,754
1899	3,027	60,070				23,943
1900	3,097	64,207		38,958		23,790
1901	3,249	66,529				24,597
1902	4,003	73,063				26,507
1903	4,151	73,229	9,148			25,958
1904	4,208	76,287	9,589	46,252		27,336
1905	4,264	80,235	10,078	50,401		27,918
1906	4,360	85,229	10,937	56,205		29,025
1907	4,530	90,903	11,965	60,800		30,296
1908	4,608	93,808	12,761	61,576		31,093
1909	4,755	97,355	13,616	65,796		31,566
1910	4,873	102,176	15,202	73,322		33,227
1911	5,126	111,948	17,822	83,496		36,516
1912	5,263	116,108	20,204	90,822		38,915
1913	5,613	118,744	21,429	95,873		41,552
1914	5,650	118,399	22,200	98,880		43,951
1915	5,413	113,834	22,063	102,932		45,058
1916-17	5,445	116,970	23,667	120,095		47,568
1917-18	5,627	118,241	25,005	134,133		50,921
1918-19	5,720	122,349	28,161	160,391		54,637
1919-20	6,038	136,522	35,404	202,951	65,902	61,609
1920-21	6,532	140,743	42,754	212,016	74,258	70,986
1921-22	6,762	144,876	47,693	212,486	84,529	81,984
1922-23	7,096	152,625	51,094	222,573	89,654	92,846
1923-24	7,289	156,162	54,944	227,844	95,022	106,393
1924-25	7,425	154,158	54,888	236,355	97,132	122,064
1925-26	7,461	152,959	55,316	239,937	96,404	120,793
1926-27	7,690	161,639	59,791	254,796	105,246	127,700
1927-28	8,245	160,357	60,061	256,931	107,596	135,014
1928-29	8,197	156,568	58,934	255,795	106,051	139,819
1929-30	8,195	151,009	56,776	245,622	102,519	144,022
1930-31	8,199	126,016	42,719	186,852	78,828	141,980
1931-32	8,204	128,265	38,908	186,777	75,639	136,701
1932-33	8,612	144,428	42,437	204,171	82,162	135,655
1933-34	8,896	156,334	45,703	216,993	88,403	137,669
1934-35	9,100	169,691	50,550	234,366	97,525	141,183
1935-36	9,160	183,390	56,912	268,086	108,088	143,746
1936-37	9,165	191,383	61,974	285,384	117,424	150,324
1937-38	9,241	201,789	69,922	314,101	129,779	154,416
1938-39	9,250	201,831	72,054	305,936	131,992	161,193
1939-40	9,215	212,461	79,152	348,608	148,057	169,281
1940-41	9,121	237,636	99,594	418,698	178,001	184,101
1941-42	8,918	258,400	128,728	514,562	221,875	196,315
1942-43	8,738	262,357	146,670	555,358	242,760	209,211
1943-44	9,317	261,299	147,924	569,296	246,661	221,042
1944-45	9,669	257,633	141,122	574,844	244,754	232,760
1945-46	10,195	256,249	140,998	573,978	240,500	237,604
1946-47	10,949	265,757	155,988	630,874	262,992	243,754
1947-48	11,642	278,271	187,604	754,824	317,002	264,116
1948-49	12,702	292,006	224,820	893,676	365,520	298,926
1949-50	13,231	303,476	260,508	1,052,932	438,488	353,744

VICTORIA—FACTORIES—*continued*

Year	Number	Average number of persons employed (a)	Salaries and wages paid (b)	Value of—		
				Output (c)	Production (d)	Land, buildings, plant, and machinery (e)
			\$'000	\$'000	\$'000	\$'000
1950-51	13,504	316,792	326,414	1,350,066	551,320	415,174
1951-52	14,758	324,143	405,172	1,667,934	668,720	496,798
1952-53	15,154	310,759	421,756	1,720,292	716,064	565,380
1953-54	15,533	331,277	472,072	1,971,010	816,628	678,536
1954-55	15,861	346,648	525,500	2,201,312	904,446	825,342
1955-56	16,053	355,185	573,888	2,402,784	983,896	931,008
1956-57	16,232	355,204	593,216	2,552,282	1,056,062	1,067,168
1957-58	16,426	357,143	621,080	2,759,812	1,137,370	1,189,640
1958-59	16,527	362,979	648,672	2,866,126	1,217,895	1,293,880
1959-60	16,979	381,514	741,034	3,251,364	1,384,336	1,466,186
1960-61	17,173	387,430	775,998	3,331,524	1,417,545	1,641,886
1961-62	17,300	377,745	770,378	3,374,472	1,440,642	1,827,610
1962-63	17,501	397,156	838,862	3,706,850	1,601,792	1,957,456
1963-64	17,597	413,120	912,424	4,054,822	1,749,776	2,061,518
1964-65	17,925	432,389	1,028,492	4,500,786	1,949,665	2,233,660
1965-66	17,980	439,149	1,077,234	4,624,915	2,027,685	2,386,608
1966-67	18,054	445,557	1,167,872	5,050,515	2,236,370	2,616,978
1967-68	18,030	449,949	1,244,216	5,351,311	2,394,801	2,685,255
1968-69	11,838	431,651	1,342,076	(f)6,335,905	(g) 2,541,471	n.a.
1969-70	11,924	445,663	1,496,768	(f)6,995,465	(g) 2,795,822	n.a.

- (a) Average employment over whole year, including working proprietors.
  - (b) Excludes drawings of working proprietors.
  - (c) The value of factory output is the value of the goods manufactured or their value after passing through the particular process of manufacture and includes the amount received for repair work, work done on commission, and receipts for other factory work. The basis of valuation of the output is the selling value of the goods at the factory, exclusive of all delivery costs and charges and excise duties, but inclusive of bounty and subsidy payments to the manufacturer of the finished article.
  - (d) The value of production is the value added to raw materials by the process of manufacture. It is calculated by deducting from the value of factory output the value (at the factory) of those items of cost specified on the factory statistical collection form, namely, materials used, containers and packing, power, fuel, and light used, tools replaced, and materials used in repairs to plant (but not depreciation charges); the remainder constitutes the value added to raw materials in the process of manufacture, and represents the fund available for the payment of wages, taxation, rent, interest, insurance, etc., and profit.
  - (e) Depreciated values or book values at end of period and includes an allowance for rent capitalised where premises and plant and machinery are not owned by the occupier.
  - (f) Turnover, i.e., sales of goods whether produced by the establishment or not, plus transfers out of goods to other establishments of the same enterprise, plus bounties and subsidies on production, plus all other operating revenue from outside the enterprise (such as commission, repair, and service revenue), plus capital work done for own use, or for rental or lease.
  - (g) Value added, i.e., turnover, plus increase (or less decrease) in value of stocks, less purchases, transfers in, and selected expenses.
- n.a. : Not available.

**Note.** This series of factory statistics has not always been compiled on the same basis. The definition of the unit classified, the industrial classification of manufacturing establishments, and the content of the returns have all changed during the period covered by the table.

A July-June financial year was adopted in respect of 1916-17 (previously a calendar year was used) and, undoubtedly, within the very broad headings of various industrial classifications differences in administrative practices and coverage were also responsible for minor differences. Revisions, when introduced, could not always be carried through statistics for earlier years.

Returns were first collected through municipal authorities and for the period 1902 to 1954 by the Victoria Police under the supervision of the Government Statist. Between 1955 and 1958 dispatch and receipt of returns by mail was progressively introduced and the involvement of the Police ceased.

In these circumstances, the series can be regarded as divisible into a number of series of varying time spans rather than as a continuous series. Between 1902 and 1967-68 the definition of the unit treated was unchanged. However, a number of changes took place in the classification of the units in that period.

In 1968-69 the first of the Integrated Economic Censuses was conducted of manufacturing, mining, and wholesale and retail establishments. The integration of these economic censuses meant, that for the first time, they were being conducted on the basis of a common framework of reporting units and data concepts and in accordance with a standard industrial classification. For details see *Victorian Year Book* 1971, pages 368-89.

**SOCIAL CONDITIONS**  
**VICTORIA—PRIMARY AND SECONDARY EDUCATION**

Year	Government schools							Non-government schools						
	Number of schools (a)	Number of pupils (b)			Number of teachers (c)			Number of schools (a)	Number of pupils (b)			Number of teachers (d)		
		Males	Females	Persons	Males	Females	Persons		Males	Females	Persons	Males	Females	Persons
1852	98			7,369			17				472			
1853	152			11,270			54				1,763			
1854	259	9,606	7,772	17,378			132	1,303	1,426		2,729			
1855	370	11,417	9,826	21,243			168	1,483	1,752		3,235			
1856	455	13,654	12,385	26,039			n.a.	n.a.	n.a.		n.a.			
1857	540	17,481	15,753	33,234			139	1,348	2,089		3,437			
1858	595	20,610	18,277	38,887			145	1,569	1,976		3,545			
1859	605	22,663	19,698	42,361			167	1,346	2,558		3,904			
1860	665	25,167	21,520	46,687			221	1,938	3,043		4,981			
1861	671	28,120	23,225	51,345			211	1,968	3,160		5,128			
1862	673	31,268	25,883	57,151			316	3,633	4,757		8,390	167	388	555
1863	648	32,150	26,369	58,519	702	654	1,356	371	5,037	6,063	11,100	244	463	707
1864	647	31,450	25,532	56,982	730	675	1,405	300	4,539	5,043	9,163	192	391	583
1865	694	34,353	27,862	62,215	848	763	1,611	386	5,845	5,845	11,384	241	432	673
1866	730	36,582	29,455	66,037	886	835	1,721	476	7,064	8,128	15,192	311	595	906
1867	780	39,634	32,161	71,795	949	806	1,755	605	8,740	10,801	19,541	312	785	1,097
1868	802	42,471	34,774	77,245	980	920	1,900	628	8,729	11,910	20,639	480	870	1,290
1869	839	66,223	55,541	121,764	1,031	979	2,010	883	13,483	16,597	30,080	553	1,200	1,753
1870	908	67,225	56,160	123,385	1,097	1,041	2,138	959	14,028	16,940	30,968	590	1,277	1,867
1871	988	71,247	59,898	131,145	1,194	1,123	2,317	1,062	15,421	18,710	34,131	677	1,435	2,112
1872	1,048	73,826	62,136	135,962	1,250	1,166	2,416	888	11,186	13,595	24,781	605	1,236	1,841
1873	1,078	109,569	98,266	207,826	1,509	1,640	3,149	653	8,400	10,028	18,428	472	974	1,446
1874	1,111	111,408	104,736	216,144	1,767	1,948	3,715	610	10,652	11,796	22,448	550	959	1,509
1875	1,320	115,774	104,759	220,533	1,812	2,014	3,826	563	13,106	14,375	27,481	524	987	1,511
1876	1,498	122,350	109,210	231,560	1,819	1,953	3,772	645	13,455	15,392	28,847	542	1,104	1,646
1877	1,626	123,514	111,005	234,519	1,804	2,056	3,860	530	13,128	15,294	28,422	481	976	1,457
1878	1,664	121,471	109,698	231,169	1,824	2,082	3,906	592	17,890	19,192	37,082	608	1,078	1,686
1879	1,713	119,237	108,538	227,775	1,850	2,280	4,130	568	16,432	18,392	34,824	554	1,033	1,587
1880	1,810	120,123	109,600	229,723	1,857	2,351	4,208	643	13,308	14,826	28,134	425	1,091	1,516
1881	1,757	118,996	112,427	231,423	1,894	2,420	4,314	645	16,665	17,397	34,062	430	1,123	1,553
1882	1,762	114,520	108,425	222,945	1,828	2,351	4,179	655	16,490	17,953	34,443	424	1,127	1,551
1883	1,777	114,199	108,229	222,428	1,793	2,391	4,184	670	16,679	19,094	35,773	416	1,222	1,638
1884	1,803	114,286	107,768	222,054	1,783	2,432	4,215	655	17,090	18,025	35,115	449	1,186	1,638
1885	1,826	115,982	108,703	224,685	1,714	2,336	4,050	663	16,535	18,252	34,787	429	1,216	1,645
1886	1,870	119,133	111,443	230,576	1,712	2,466	4,178	631	16,950	18,561	35,811	408	1,272	1,680
1887	1,911	119,559	111,323	230,882	1,750	2,544	4,294	749	17,863	19,960	37,823	448	1,364	1,812
1888	1,933	125,645	116,401	242,046	1,693	2,541	4,234	753	19,395	20,895	40,291	437	1,441	1,878
1889	2,062	130,135	120,294	250,429	1,808	2,778	4,586	782	19,825	20,356	40,181	458	1,509	1,967
1890	2,170	129,932	120,165	250,097	1,845	2,863	4,708	791	20,186	19,995	40,181	479	1,558	2,037
1891	2,233	131,282	122,187	253,469	1,898	2,964	4,862	759	19,941	19,262	37,203	466	1,529	1,995
1892	2,140	129,209	120,577	249,786	1,910	3,067	4,977	745	17,568	18,776	36,344	434	1,539	1,973
1893	2,038	122,232	114,276	236,508	1,911	3,057	4,968	826	16,740	19,002	35,742	422	1,620	2,042
1894	1,956	119,697	111,624	231,321	1,778	2,851	4,629	867	17,863	20,199	38,062	445	1,696	2,141
1895	1,913	119,653	112,399	232,052	1,751	2,732	4,483	938	18,686	21,507	40,193	444	1,871	2,315
1896	1,886	121,178	114,439	235,617	1,760	2,737	4,497	930	19,681	22,363	42,044	444	1,913	2,357
1897	1,877	122,414	115,894	238,308	1,802	2,815	4,617	929	19,976	22,923	42,899	428	1,962	2,390
1898	1,877	122,614	115,743	238,357	1,788	2,830	4,618	945	20,551	23,375	43,926	436	2,004	2,440
1899	1,892	123,143	116,589	239,732	1,860	2,948	4,808	901	24,434	27,884	52,318	415	2,002	2,417
1900	1,948	125,661	118,006	243,667	1,897	3,080	4,977	884	23,475	28,359	51,834	397	1,951	2,348
1901	1,967	110,481	104,631	215,112	n.a.	n.a.	n.a.	862	21,289	24,251	45,540	385	2,017	2,402
1902	2,041	132,266	125,089	257,355	1,917	3,149	5,066	872	21,812	25,218	47,030	404	1,975	2,379
1903	1,988	129,330	122,325	251,655	1,990	3,047	5,037	798	21,429	24,221	45,650	407	1,962	2,369
1904	1,922	124,433	116,712	241,145	1,911	2,886	4,797	787	21,160	23,917	45,077	418	1,942	2,360
1905	1,935	121,510	113,104	234,614	1,881	2,808	4,689	771	21,485	24,455	45,936	421	1,868	2,289
1906	1,953	118,727	110,452	229,179	1,879	2,719	4,598	757	24,144	28,049	52,193	387	2,010	2,397
1907	1,974	119,553	111,806	231,359	2,009	3,102	5,111	751	24,843	28,523	53,371	412	1,901	2,313
1908	2,017	120,741	113,152	233,893	2,006	3,094	5,100	696	25,191	28,845	54,036	389	1,799	2,188
1909	2,035	120,654	112,683	233,337	2,102	3,190	5,292	678	24,998	28,023	53,821	381	1,797	2,178
1910	2,036	121,712	113,330	235,042	2,204	3,237	5,441	641	24,714	30,826	54,740	361	1,706	2,067
1911	2,059	121,275	113,491	234,766	2,218	3,354	5,572	587	25,936	29,957	55,893	337	1,638	1,975
1912	2,130	124,708	116,917	241,625	2,241	3,678	5,919	548	26,194	29,841	56,035	315	1,541	1,856
1913	2,169	127,079	118,503	245,582	2,371	3,804	6,175	512	27,182	30,516	57,698	321	1,525	1,846
1914	2,218	129,902	121,567	251,469	2,248	3,872	6,120	512	27,461	31,425	58,886	327	1,517	1,844
1915	2,274	132,243	123,850	256,093	2,297	4,215	6,512	509	28,211	32,654	60,865	331	1,548	1,879
1916	2,191	138,174	129,361	267,535	2,475	4,477	6,952	495	29,445	35,185	64,830	367	1,542	1,909
1917	2,251	134,283	127,479	261,762	2,481	4,551	7,032	495	29,526	34,843	64,369	427	1,543	1,970
1918	2,349	130,156	122,373	252,529	2,421	4,783	7,204	493	29,032	34,444	63,476	n.a.	n.a.	1,903
1919	2,406	127,857	119,934	247,791	2,485	4,801	7,286	486	30,088	33,018	63,106	385	1,606	1,991
1920	2,431	135,174	126,748	261,922	n.a.	n.a.	n.a.	489	30,963	35,482	66,445	380	1,570	1,950

VICTORIA—PRIMARY AND SECONDARY EDUCATION—*continued*

Year	Number of schools (a)	Government schools						Number of schools (a)	Non-government schools					
		Number of pupils (b)			Number of teachers (c)				Number of pupils (b)			Number of teachers (d)		
		Males	Females	Persons	Males	Females	Persons		Males	Females	Persons	Males	Females	Persons
1921	2,455	136,127	127,391	263,518	2,438	4,845	7,283	486	31,615	36,433	68,048	402	1,661	2,063
1922	2,526	139,122	128,126	267,248	2,522	4,913	7,435	486	31,429	36,244	67,673	421	1,688	2,109
1923	2,584	142,037	130,619	272,656	2,611	4,963	7,574	486	32,945	37,672	70,615	430	1,724	2,154
1924	2,634	142,947	131,865	274,812	2,660	5,073	7,733	490	33,391	38,534	71,925	432	1,731	2,163
1925	2,702	144,858	135,173	280,031	2,716	5,108	7,824	495	33,260	38,512	71,772	n.a.	n.a.	2,212
1926	2,714	147,521	136,482	284,003	3,081	5,490	8,571	493	33,925	39,324	73,249	n.a.	n.a.	2,220
1927	2,753	149,824	138,275	288,099	3,356	6,033	9,389	483	33,342	39,219	72,561	n.a.	n.a.	2,253
1928	2,763	150,711	138,823	289,534	3,629	5,922	9,551	500	35,701	39,438	75,139	n.a.	n.a.	2,325
1929	2,789	152,240	139,600	291,840	3,857	5,875	9,732	501	35,822	40,064	75,886	n.a.	n.a.	2,329
1930	2,758	154,004	140,784	294,788	3,963	5,730	9,693	502	35,837	40,107	75,944	n.a.	n.a.	2,400
1931	2,747	155,046	141,444	296,490	3,906	5,476	9,382	505	34,682	38,660	73,342	n.a.	n.a.	2,286
1932	2,767	154,448	141,863	296,311	3,940	5,263	9,203	504	35,369	38,341	73,710	n.a.	n.a.	2,309
1933	2,756	153,833	141,244	295,077	3,987	5,125	9,112	508	35,597	38,248	73,845	n.a.	n.a.	2,400
1934	2,764	151,369	139,618	290,987	4,028	4,974	9,002	510	36,275	39,508	75,783	n.a.	n.a.	2,498
1935	2,754	150,778	138,381	289,159	4,060	4,818	8,878	518	37,210	40,804	78,014	n.a.	n.a.	2,501
1936	2,749	148,322	135,884	284,206	4,179	4,660	8,839	520	37,615	42,178	79,793	n.a.	n.a.	2,556
1937	2,742	141,417	129,202	270,619	4,180	4,731	8,911	520	36,917	41,986	78,903	n.a.	n.a.	2,492
1938	2,745	138,099	126,254	264,353	4,222	4,593	8,815	516	38,463	41,698	80,161	n.a.	n.a.	2,654
1939	2,739	138,312	125,011	263,323	4,309	4,645	8,954	514	38,333	42,322	80,655	n.a.	n.a.	2,719
1940	2,724	137,327	124,803	262,130	4,398	4,702	9,100	518	38,565	42,812	81,377	n.a.	n.a.	2,733
1941	2,697	134,822	122,448	257,270	4,421	4,921	9,342	518	38,410	42,898	81,308	n.a.	n.a.	2,744
1942	2,634	127,896	117,642	245,538	4,471	5,104	9,575	513	38,476	42,684	81,160	n.a.	n.a.	2,754
1943	2,613	124,408	111,383	235,791	4,341	5,456	9,797	508	40,138	44,373	84,511	n.a.	n.a.	2,853
1944	2,530	123,901	110,919	234,820	4,476	5,741	10,217	502	40,318	45,289	85,607	n.a.	n.a.	2,952
1945	2,493	120,832	108,341	229,173	4,005	5,006	9,011	473	39,803	42,793	82,596	n.a.	n.a.	2,827
1946	2,423	123,163	110,500	233,663	4,491	5,223	9,714	470	40,263	43,213	83,476	n.a.	n.a.	2,860
1947	2,345	123,858	114,030	237,888	4,115	4,524	8,639	469	40,927	43,812	84,739	n.a.	n.a.	2,910
1948	2,278	111,028	100,813	211,841	4,166	4,645	8,811	470	41,471	45,200	86,671	n.a.	n.a.	2,985
1949	2,231	116,152	105,248	221,400	4,279	4,560	8,839	472	43,685	46,374	90,059	n.a.	n.a.	3,015
1950	2,183	123,112	112,679	235,791	4,665	4,962	9,627	476	46,810	49,818	96,628	n.a.	n.a.	3,147
1951	2,119	130,704	118,045	248,749	4,672	4,616	9,288	479	49,414	52,900	102,314	n.a.	n.a.	3,272
1952	2,100	140,618	126,963	267,581	4,851	4,797	9,648	478	52,756	56,201	108,957	n.a.	n.a.	3,353
1953	2,090	149,907	135,372	285,279	5,058	5,031	10,089	489	55,438	59,682	115,120	n.a.	n.a.	3,449
1954	2,049	159,404	143,589	302,993	5,362	5,146	10,508	494	60,259	63,243	123,502	877	2,707	3,584
1955	2,087	168,287	151,683	319,970	5,566	5,976	11,542	506	64,261	69,446	133,707	894	2,881	3,775
1956	2,103	178,335	160,318	338,653	5,942	6,101	12,043	521	69,348	72,077	141,425	951	2,969	3,920
1957	2,132	189,937	170,639	360,576	6,051	6,274	12,325	532	73,240	75,226	148,466	987	3,060	4,047
1958	2,153	202,471	181,446	383,917	6,508	7,221	13,729	533	76,951	78,574	155,525	1,052	3,188	4,240
1959	2,184	213,059	190,903	403,962	6,817	7,604	14,421	545	79,229	83,313	162,542	1,067	3,380	4,447
1960	2,208	223,285	199,110	422,395	7,237	7,744	14,981	546	78,876	81,699	160,575	1,125	3,564	4,689
1961	2,222	233,153	206,587	439,740	7,665	8,811	16,476	548	81,462	84,403	165,865	1,195	3,665	4,860
1962	2,210	242,569	214,050	456,619	8,308	9,416	17,724	551	82,914	86,050	168,964	1,275	3,827	5,102
1963	2,223	249,176	220,664	469,840	9,718	9,323	19,041	562	84,901	88,852	173,753	1,477	4,539	6,016
1964	2,229	258,450	228,742	487,192	10,409	10,185	20,594	568	87,387	91,263	178,650	1,573	4,757	6,330
1965	2,232	266,815	237,305	504,120	10,956	10,943	21,899	582	89,191	93,415	182,606	1,658	5,042	6,700
1966	2,242	277,153	246,633	523,786	11,518	11,545	23,063	579	89,196	93,659	182,855	1,803	5,278	7,081
1967	2,241	285,721	254,560	540,281	12,072	12,301	24,373	578	90,333	95,189	185,522	1,874	5,564	7,438
1968	2,247	293,459	262,379	555,838	12,779	13,324	26,103	579	91,711	96,862	188,573	2,029	5,868	7,897
1969	2,235	301,622	270,503	572,125	13,294	14,663	27,957	572	92,427	97,025	189,452	2,089	5,918	8,007
1970	2,215	308,199	277,241	585,440	13,428	15,492	28,920	581	93,451	97,577	191,028	2,323	6,393	8,716
1971	2,197	312,203	281,730	593,933	13,847	16,365	30,212	571	93,546	97,669	191,215	2,332	6,473	8,805

(a) First school for Aboriginal children 1836, first school for European children 1837.  
 Reliable statistics available from 1852.  
 1852 to 1900 number at 31 December.  
 1901 to 1947 government schools at 30 June.  
 1901 to 1953 non-government schools at 30 June.  
 1945 to 1971 non-government schools exclude registered commercial colleges.  
 1948 to 1971 government schools at 1 August or the first school day thereafter.  
 1954 to 1971 non-government schools at 1 August or the first school day thereafter.  
 Includes junior technical, correspondence, and special schools (see also non-government note above).  
 Excludes senior technical, coaching, and business schools.

(b) 1852 to 1868 average monthly gross number of pupils on rolls.  
 1869 to 1900 gross enrolments for year.  
 1901 gross enrolments six months ended 30 June 1901.  
 1902 to 1915 government schools gross enrolments during financial year.  
 1916 to 1947 government schools gross enrolments during calendar year.  
 1902 to 1953 non-government schools gross enrolments during final quarter of financial year.  
 1945 to 1971 non-government enrolments exclude those at registered commercial colleges.  
 1948 to 1971 government schools census enrolments at 1 August or on the first schoolday thereafter.  
 1954 to 1971 non-government schools census enrolments at 1 August or on the first schoolday thereafter.



VICTORIA—PRIMARY AND SECONDARY EDUCATION—*continued*

- Note changes in school leaving age :  
 1872 Education Act—education compulsory until the age of 15 years.  
 1889 compulsory attendance age reduced to 13 years.  
 1905 compulsory attendance age raised to 14 years.  
 1965 compulsory attendance age raised to 15 years.
- (c) 1863 to 1915 teachers in primary and secondary schools includes temporary teachers and excludes technical teachers.  
 1916 to 1946 includes classified and temporary teachers, student teachers in schools, and secondary teachers in technical schools (from 1926) and excludes student instructors in technical schools, senior technical (teaching) scholarship holders, and senior technical school teachers.  
 1916 to 1926 estimates have been made of male and female temporary (except 1926) and junior teachers in secondary schools.  
 1947 to 1962 comprises the primary and secondary divisions, excluding students in training, senior scholarship holders, and free place holders, but including student teachers in primary schools until 1957 and temporary and part-time teachers.  
 1963 to 1971 teachers at primary, secondary, junior technical, and ungraded schools.  
 1852 to 1900 at 31 December.  
 1902 to 1946 at 30 June.  
 1947 to 1949 at 31 December.  
 1950 primary at 31 December 1950 and secondary at 30 June 1951.  
 1951 to 1959 primary at 31 December and secondary at 30 June.  
 1960 at 30 June; males and females primary estimated.  
 1961 and 1962 at 30 June.  
 1963 to 1971 at 1 August or the first school day thereafter.
- (d) 1852 to 1900 at 31 December.  
 1901 to 1953 at 30 June.  
 1945 to 1971 teachers at non-government schools exclude those at registered commercial colleges.  
 1954 to 1971 at 1 August or the first school day thereafter.  
 1862 to 1971 teachers at non-government primary and secondary schools.  
 n.a. : Not available.

## VICTORIA—SENIOR TECHNICAL SCHOOLS

Year	Schools (a)	Staff (b)	Students (c)	Year	Schools (a)	Staff (b)	Students (c)
1877	23	54	1,518	1925	27	851	13,451
1878	22	68	1,915	1926	27	860	14,644
1879	23	64	1,997	1927	27	890	16,267
1880	26	16	2,048	1928	29	950	17,977
				1929	29	932	18,182
1881	25	16	2,167	1930	29	912	18,479
1882	27	16	2,797				
1883	35	16	3,629	1931	29	884	16,224
1884	38	17	3,802	1932	29	842	16,098
1885	42	21	3,607	1933	27	794	15,390
1886	39	110	3,291	1934	27	835	16,763
1887	37	143	4,440	1935	27	952	20,008
1888	35	187	6,024	1936	27	1,047	22,345
1889	35	219	6,138	1937	27	1,085	24,130
1890	26	195	6,899	1938	27	1,214	26,859
				1939	30	1,273	28,844
1891	25	196	8,500	1940	31	1,318	29,706
1892	25	185	7,436				
1893	23	112	2,401	1941	31	1,383	30,276
1894	24	147	2,947	1942	31	1,431	24,304
1895	24	124	3,003	1943	32	1,535	27,389
1896	18	107	3,049	1944	32	1,804	31,533
1897	18	100	2,664	1945	32	1,969	33,905
1898	18	90	2,969	1946	33	2,075	31,394
1899	18	97	2,891	1947	33	2,132	35,412
1900	18	106	2,980	1948	33	2,296	34,910
				1949	35	2,108	35,312
1901	18	123	3,176	1950	36	2,172	34,001
1902	18	128	3,081				
1903	18	138	3,173	1951	36	2,244	34,032
1903-04	17	137	3,125	1952	36	2,284	35,733
1904-05	17	139	3,235	1953	37	2,452	38,186
1905-06	17	158	3,506	1954	43	2,652	39,579
1906-07	16	165	3,599	1955	45	2,818	42,768
1907-08	16	149	3,799	1956	47	3,152	45,392
1908-09	17	186	3,963	1957	50	3,314	48,154
1909-10	18	199	4,293	1958	54	3,411	51,236
				1959	63	3,820	54,717
1910-11	18	199	4,311	1960	70	4,016	58,115
1911-12	19	209	4,440				
1912-13	21	255	4,901	1961	76	4,474	61,583
1913-14	22	280	6,050	1962	70	4,718	67,392
1914-15	22	320	6,842	1963	73	5,087	71,577
1915-16	23	333	7,508	1964	73	5,562	75,406
1917	22	n.a.	6,200	1965	79	6,069	79,287
1918	24	n.a.	6,713	1966	82	6,539	82,230
1919	24	n.a.	6,944	1967	83	6,827	84,259
1920	25	173	7,801	1968	83	7,661	85,898
				1969	90	6,606	74,948
1921	25	173	7,724	1970	93	7,108	69,836
1922	27	726	11,805				
1923	26	742	12,955	1971	98	7,541	67,100
1924	26	823	14,293				

VICTORIA—SENIOR TECHNICAL SCHOOLS—*continued*

- (a) 1877 to 1915—16 number of senior technical schools, which includes working men's colleges, schools of mines, and schools of art and design. The 1877 figure comprises a school of mines at Ballarat and twenty-two schools of art and design. The first working men's college (later R.M.I.T.) was opened in 1887.  
 1917 to 1961 number of senior technical schools at 31 December.  
 1944 to 1949 includes railway apprentice schools.  
 1962 to 1971 comprises technical schools, colleges, and institutes, including those affiliated with the Victoria Institute of Colleges. Excludes schools classified as "Junior technical schools only".
  - (b) 1877 to 1879 teaching staff at Ballarat School of Mines and schools of art and design.  
 1880 to 1885 staff at schools of mines only; staff at schools of art and design not available.  
 1886 to 1919 teaching staff at schools of mines, schools of art, working men's colleges, and technical colleges.  
 1920 and 1921 comprises Education Department teachers in technical schools. Excludes council teachers.  
 1922 to 1945 includes full-time Education Department teachers and full-time and part-time council teachers but excludes part-time Education Department teachers and trainee teachers.  
 1946 to 1968 comprises teachers in the Technical Division. Includes classified teachers, temporary teachers, and council teachers (full-time and part-time) but excludes student instructors in technical schools, technical teaching studentship holders, and senior teaching (technical) scholarship holders.  
 1969 to 1971 comprises members of the Technical Teaching Service. Includes Education Department teaching service and council employees but excludes tertiary teachers of the Victoria Institute of Colleges.
  - (c) 1877 to 1889 comprises average number of students at schools of mines, total students last term at working men's (technical from 1887) colleges, and number of students at schools of art and design.  
 1890 to 1892 number on the rolls of technological schools.  
 1893 to 1903 number on rolls of technical schools.  
 1903-04 to 1921 average number per term on the rolls of technical schools under the control of the Education Department.  
 1922 to 1945 gross enrolments at senior technical schools.  
 1946 to 1964 first term gross enrolments in senior technical schools and colleges.  
 1965 to 1968 course enrolments in senior technical schools and colleges.  
 1969 to 1971 course enrolments in senior technical schools, colleges, and institutes, excluding approved course enrolments at institutes and colleges affiliated with the Victoria Institute of Colleges.
- n.a.: Not available.

VICTORIA—PUBLIC EXAMINATIONS (a)

Year	Matriculation (b)			Year	Matriculation (b)		
	Attempted to pass fully	Passed fully	Percentage who passed		Attempted to pass fully	Passed fully	Percentage who passed
1855	16	16	100.0	1881	911	409	44.9
1856	7	7	100.0	1882	940	389	41.4
1857	n.a.	7	n.a.	1883	1,004	342	34.1
1858	n.a.	7	n.a.	1884	953	438	46.0
1859	n.a.	10	n.a.	1885	954	339	35.5
1860	29	14	48.3	1886	857	372	43.4
1861	29	20	69.0	1887	971	385	39.6
1862	27	16	59.3	1888	995	442	44.4
1863	48	29	60.4	1889	992	464	46.8
1864	51	23	45.1	1890	1,271	631	49.6
1865	73	42	57.5	1891	1,293	543	42.0
1866	83	35	42.2	1892	1,434	567	39.5
1867	102	43	42.2	1893	1,290	535	41.5
1868	137	55	40.1	1894	1,255	496	39.5
1869	202	83	41.1	1895	1,171	466	39.8
1870	245	87	35.5	1896	1,195	517	43.3
1871	276	122	44.2	1897	1,122	484	43.1
1872	383	203	53.0	1898	1,140	482	42.3
1873	425	196	46.1	1899	1,235	559	45.3
1874	519	204	39.3	1900	1,159	443	38.2
1875	485	181	37.3	1901	1,136	511	45.0
1876	482	208	43.2	1902	1,047	490	46.8
1877	544	208	38.2	1903	1,199	478	39.9
1878	588	262	44.6	1904	1,162	490	42.2
1879	628	311	49.5	1905	1,238	493	39.8
1880	776	334	43.0	1906	484	224	46.3

VICTORIA—PUBLIC EXAMINATIONS (a)—*continued*

Year	Junior Commercial (c)			Junior Public (b) (c)			Senior Public (b) (c)		
	Attempted to pass fully	Passed fully	Percentage who passed	Attempted to pass fully	Passed fully	Percentage who passed	Attempted to pass fully	Passed fully	Percentage who passed
1906	(d)	(d)	(d)	(e) 914	(e) 356	(e) 38.9	66	33	50.0
1907	79	26	32.9	1,028	400	38.9	148	86	58.1
1908	88	22	25.0	1,365	539	39.5	175	102	58.3
1909	49	18	36.7	1,517	605	39.9	230	125	54.3
1910	47	12	25.5	1,483	593	40.0	232	117	50.4
1911	49	15	30.6	2,003	888	44.3	391	201	51.4
1912	51	21	41.2	2,174	1,045	48.1	462	249	53.9
1913	48	23	47.9	2,407	1,181	49.1	513	255	49.7
1914	71	28	39.4	2,497	1,166	46.7	731	288	39.4
1915	73	25	34.2	2,853	1,201	42.1	857	429	50.1
1916	74	22	29.7	3,249	1,369	42.1	900	411	45.7
1917	21	14	66.7	933	554	59.4	376	211	56.1
	Intermediate (f)			Leaving (b) (g)			Matriculation (b)		
	Attempted to pass fully	Passed fully	Percentage who passed	Attempted to pass fully	Passed fully	Percentage who passed	Attempted to pass fully	Passed fully	Percentage who passed
1917	2,352	986	41.9	736	353	48.0			
1918	3,532	1,551	43.9	1,328	597	45.0			
1919	4,006	1,937	48.4	1,652	796	48.2			
1920	4,176	1,667	39.9	2,047	955	46.7			
1921	3,831	1,346	35.1	2,238	827	37.0			
1922	4,431	1,725	38.9	2,587	1,004	38.8			
1923	4,275	1,974	46.2	2,422	1,016	41.9			
1924	4,148	1,858	44.8	2,418	1,053	43.5			
1925	4,165	1,919	46.1	2,335	1,098	47.0			
1926	4,421	1,909	43.2	2,434	1,226	50.4			
1927	4,998	2,284	45.7	2,568	1,360	53.0			
1928	5,371	2,457	45.7	2,640	1,317	49.9			
1929	7,282	3,071	42.2	3,467	1,538	44.4			
1930	6,255	3,337	53.3	3,322	1,657	49.9			
1931	7,805	3,412	43.7	4,699	1,877	39.9			
1932	6,103	3,302	54.1	3,492	1,779	50.9			
1933	5,392	2,900	53.8	2,969	1,609	54.2			
1934	6,144	2,781	45.3	3,260	1,396	42.8			
1935	5,095	2,886	56.6	2,595	1,288	49.6			
1936	5,658	3,284	58.0	2,726	1,607	59.0			
1937	6,133	3,749	61.1	2,949	1,806	61.2			
1938	6,582	3,907	59.4	3,263	1,882	57.7			
1939	7,135	4,502	63.1	3,589	2,109	58.8			
1940	7,464	4,489	60.1	4,841	2,227	46.0			
1941	7,378	4,488	60.8	4,959	2,247	45.3			
1942	6,965	4,395	63.1	4,799	2,243	46.7			
1943	7,703	4,616	59.9	5,718	2,492	43.6			
1944	8,245	4,663	56.6	4,970	2,768	55.7	969	619	63.9
1945	9,013	5,165	57.3	5,378	3,375	62.8	1,560	842	54.0
1946	8,538	4,891	57.3	5,331	3,414	64.0	1,992	1,189	59.7
1947	8,636	5,452	63.1	4,964	3,162	63.7	2,130	1,254	58.9
1948	8,320	5,166	62.1	5,015	3,237	64.5	2,043	1,249	61.1
1949	8,375	5,354	63.9	4,763	3,205	67.3	2,041	1,181	57.9
1950	8,608	5,572	64.7	4,999	3,353	67.1	2,278	1,346	59.1

VICTORIA—PUBLIC EXAMINATIONS (a)—continued

Year	Intermediate (f)			Leaving (b) (g)			Matriculation (b)		
	Attempted to pass fully	Passed fully	Percentage who passed	Attempted to pass fully	Passed fully	Percentage who passed	Attempted to pass fully	Passed fully	Percentage who passed
1951	8,573	5,662	66.0	5,211	3,543	68.0	2,449	1,422	58.1
1952	9,240	6,089	65.9	5,387	3,666	68.1	2,639	1,650	62.5
1953	10,895	7,288	66.9	5,983	4,030	67.4	2,556	1,659	64.9
1954	10,720	7,310	68.2	6,882	4,552	66.1	2,700	1,700	63.0
1955	11,742	7,915	67.4	7,079	4,858	68.6	3,045	2,069	67.9
1956	13,162	8,738	66.4	7,564	5,275	69.7	3,328	2,180	65.5
1957	14,812	9,404	63.5	8,615	5,442	63.2	3,760	2,442	64.9
1958	17,228	11,293	65.6	10,393	6,288	60.5	4,257	2,808	66.0
1959	19,323	12,501	64.7	12,192	7,328	60.1	4,723	3,127	66.2
1960	21,230	14,023	66.1	13,733	8,528	62.1	5,466	3,537	64.7
1961	23,621	15,589	66.0	15,636	9,493	60.7	6,651	4,280	64.4
1962	25,718	18,821	73.2	17,704	11,176	63.1	7,951	5,090	64.0
1963				20,852	13,176	63.2	9,072	5,948	65.6
1964							10,801	7,054	65.3
1965							11,474	7,435	64.8
1966							12,296	8,096	65.8
1967							12,898	8,628	66.9
1968	See footnote (f)			See footnote (f)			14,617	9,701	66.4
1969							16,932	10,987	64.9
1970							18,756	12,467	66.5
1971							19,351	13,274	68.6

- (a) Where supplementary examinations have been held in the following February, the results have been included in the previous year's figures.
  - (b) Matriculation was first held in 1855 primarily as a qualification for university entrance. 1855 to 1905 usually held twice a year in February or May and October. 1906 held in May only and then discontinued. 1906 to 1917 matriculation gained by a pass in the Senior Public or a pass with at least three distinctions in the Junior Public Examinations. 1917 to 1926 matriculation gained by passing the Leaving Examination and a foreign language at Intermediate level. 1927 to 1943 matriculation gained by passing English, a branch of mathematics or science, a foreign language, and at least two other subjects at Leaving level and a foreign language at Intermediate level. Resumed in 1944. 1970 title changed from Matriculation Examination to Higher School Certificate of Victoria Examination.
  - (c) 1906 held in December only. 1907 to 1916 held in May and December. 1917 held in May only. A Senior Commercial Examination was also set but in no year did anyone attempt to pass fully.
  - (d) Included in Junior Public figures.
  - (e) Includes Junior Commercial figures.
  - (f) 1963 to 1967 Intermediate was a subject examination (one in which the candidate is presented with a certificate listing the subjects he or she passed, i.e., the candidate does not pass or fail the examination as a whole). The only available figures show the total number of entries (persons) regardless of the number of subjects each is sitting for and have been excluded. Includes candidates with Headmaster's Certificates which were accepted as satisfying the requirements of the examination. 1967 was the last year in which the examination was held.
  - (g) Since 1964 known as a subject examination (see footnote (f)). Figures 1964 to 1971 excluded. In 1971 the Leaving Certificate commenced to be phased out. A large number of schools conducted their own 5th year secondary examinations.
- n.a. : Not available.

## VICTORIA—UNIVERSITY EDUCATION (a)

Year	Enrolments (b)					Number of academic staff (d)	Degrees conferred (e)		
	Male	Female	Full-time	Part-time (c)	Total		Bachelor	Higher	Total
1855	17	..	17	..	17	4	..	..	..
1856	15	..	15	..	15	4	..	3	3
1857	54	..	54	..	54	5	..	..	..
1858	44	..	44	..	44	6	5	4	9
1859	60	..	60	..	60	6	1	1	2
1860	68	..	68	..	68	6	4	2	6
1861	100	..	100	..	100	7	4	1	5
1862	79	..	79	..	79	8	7	5	12
1863	68	..	68	..	68	10	4	4	8
1864	73	..	73	..	73	13	10	2	12
1865	94	..	94	..	94	15	5	3	8
1866	91	..	91	..	91	15	7	4	11
1867	89	..	89	..	89	15	9	7	16
1868	77	..	77	..	77	15	11	2	13
1869	98	..	98	..	98	14	6	7	13
1870	122	..	122	..	122	15	9	1	10
1871	122	..	122	..	122	14	15	4	19
1872	134	..	134	..	134	15	8	6	14
1873	133	..	133	..	133	20	18	3	21
1874	177	..	177	..	177	20	18	6	24
1875	199	..	199	..	199	20	22	7	29
1876	178	..	178	..	178	20	22	6	28
1877	213	..	213	..	213	20	22	4	26
1878	258	..	258	..	258	20	18	6	24
1879	273	..	273	..	273	20	47	9	56
1880	301	..	301	..	301	20	42	7	49
1881	368	2	370	..	370	20	44	11	55
1882	396	1	397	..	397	24	63	10	73
1883	387	2	389	..	389	22	46	18	64
1884	431	..	431	..	431	25	67	13	80
1885	443	1	444	..	444	22	63	14	77
1886	432	18	450	..	450	22	73	29	102
1887	471	21	492	..	492	29	96	19	115
1888	508	31	539	..	539	30	82	35	117
1889	497	40	537	..	537	32	102	27	129
1890	527	43	570	..	570	32	76	23	99
1891	582	70	652	..	652	33	94	25	119
1892	587	79	666	..	666	38	105	22	127
1893	560	79	639	..	639	38	93	22	115
1894	518	76	594	..	594	38	81	24	105
1895	496	199	695	..	695	37	120	21	141
1896	483	185	668	..	668	37	101	21	122
1897	490	196	686	..	686	38	117	28	145
1898	496	195	691	..	691	38	115	32	147
1899	489	238	727	..	727	39	105	26	131
1900	433	214	647	..	647	41	96	28	124
1901	425	159	584	..	584	43	145	55	200
1902	434	187	621	..	621	50	86	36	122
1903	434	194	628	..	628	55	96	39	135
1904	431	184	615	..	615	46	121	31	152
1905	586	216	695	107	802	44	87	25	112
1906	648	212	775	85	860	50	122	44	166
1907	749	231	862	118	980	63	122	24	146
1908	778	265	934	109	1,043	61	139	28	167
1909	845	276	1,014	107	1,121	69	165	34	199
1910	903	334	1,151	86	1,237	69	168	33	201
1911	944	276	1,139	81	1,220	68	197	46	243
1912	1,009	310	1,243	76	1,319	69	141	43	184
1913	1,015	315	1,261	69	1,330	72	216	44	260
1914	1,089	300	1,286	103	1,389	75	276	29	305
1915	955	396	1,269	82	1,351	77	315	32	347
1916	852	445	1,235	62	1,297	87	270	32	302
1917	842	490	1,139	193	1,332	68	204	37	241
1918	910	538	1,278	170	1,448	95	261	34	295
1919	1,415	572	1,859	128	1,987	101	165	39	204
1920	1,910	620	2,337	193	2,530	99	312	75	387
1921	2,003	651	2,423	231	2,654	99	313	68	381
1922	1,975	672	2,404	243	2,647	102	440	74	514
1923	1,848	636	2,187	297	2,484	167	502	71	573
1924	1,764	659	2,177	246	2,423	158	539	80	619
1925	1,952	660	2,071	541	2,612	169	565	79	64

VICTORIA—UNIVERSITY EDUCATION (a)—continued

Year	Enrolments (b)					Number of academic staff (d)	Degrees conferred (e)		
	Male	Female	Full-time	Part-time (c)	Total		Bachelor	Higher	Total
1926	2,153	701	2,182	672	2,854	162	463	88	551
1927	2,209	776	2,150	835	2,985	167	348	78	426
1928	2,164	827	2,245	746	2,991	174	417	62	479
1929	2,238	881	2,134	985	3,119	177	376	51	427
1930	2,345	911	2,205	1,051	3,256	195	392	64	456
1931	2,419	900	2,278	1,041	3,319	222	308	65	373
1932	2,455	969	2,323	1,101	3,424	167	358	73	431
1933	2,418	915	2,234	1,099	3,333	177	341	69	410
1934	2,457	887	2,327	1,017	3,344	238	342	62	404
1935	2,582	915	2,427	1,070	3,497	230	329	91	420
1936	2,770	982	2,501	1,251	3,752	257	344	81	425
1937	2,839	1,022	2,514	1,347	3,861	262	367	74	441
1938	3,117	1,164	2,773	1,508	4,281	295	377	89	466
1939	3,246	1,262	2,901	1,607	4,508	318	435	78	513
1940	3,373	1,246	2,715	1,904	4,619	272	417	65	482
1941	3,288	1,335	2,987	1,636	4,623	317	448	49	497
1942	2,119	1,081	1,834	1,366	3,200	355	450	38	488
1943	2,222	1,315	1,816	1,721	3,537	359	343	54	397
1944	2,463	1,520	2,122	1,861	3,983	373	408	56	464
1945	2,921	1,735	2,419	2,237	4,656	353	441	53	494
1946	5,343	1,940	4,348	2,935	7,283	447	498	61	559
1947	7,383	1,735	5,662	3,456	9,118	559	699	76	775
1948	7,498	2,038	5,677	3,859	9,536	628	824	80	904
1949	7,258	1,970	5,212	4,016	9,228	621	1,191	115	1,306
1950	7,032	1,971	5,212	3,791	9,003	580	1,238	103	1,341
1951	6,340	1,894	4,973	3,261	8,234	562	1,138	96	1,234
1952	5,784	1,536	4,217	3,103	7,320	581	1,044	105	1,149
1953	5,408	1,620	4,128	2,900	7,028	593	958	105	1,063
1954	5,319	1,569	4,258	2,630	6,888	585	951	84	1,035
1955	5,420	1,660	4,260	2,820	7,080	581	967	88	1,055
1956	5,738	1,850	4,574	3,014	7,588	578	1,006	95	1,101
1957	6,038	1,878	4,934	2,982	7,916	593	936	79	1,015
1958	6,833	2,187	5,553	3,467	9,020	653	983	88	1,071
1959	7,618	2,661	6,310	3,969	10,279	850	1,013	97	1,110
1960	8,237	2,920	6,894	4,263	11,157	872	1,181	103	1,284
1961	8,707	3,107	7,554	4,260	11,814	831	665	9	1,296
1962	9,378	3,475	8,193	4,660	12,853	1,018	727	10	1,455
1963	10,645	4,076	9,674	5,047	14,721	1,120	881	16	1,621
1964	11,986	4,829	11,416	5,399	16,815	1,308	1,107	16	1,683
1965	12,646	5,258	12,702	5,202	17,904	1,453	1,281	20	1,715
1966	13,841	5,996	14,236	5,601	19,837	1,646	1,447	38	2,151
1967	15,140	6,680	15,956	5,864	21,820	1,833	1,307	30	2,516
1968	16,334	7,287	17,533	6,088	23,621	2,007	1,320	25	2,880
1969	17,960	8,132	18,894	7,198	26,092	2,157	1,538	30	3,455
1970	18,734	8,895	20,098	7,531	27,629	2,258	1,596	30	3,701
1971	19,363	9,633	21,149	7,847	28,996	2,348	1,856	32	4,201
								433	4,634

Full-time teaching and research	Part-time	
	Teaching (f)	Research only (g)

- (a) The University of Melbourne was established in 1853 and opened in 1855. Monash University opened in 1961 and La Trobe University opened in 1967.
- (b) 1855 to 1956 gross enrolments in courses. 1957 to 1971 net enrolments (students in two courses counted once). Monash students included from 1961. La Trobe students included from 1967.
- (c) 1905 to 1924 students attending evening classes. 1925 to 1941 evening and correspondence students. 1942 to 1971 part-time and external students.
- (d) Academic staff (teaching and research). Includes full-time and part-time staff. Melbourne from 1855, Monash from 1961, and La Trobe from 1966.
- (e) Excludes degrees conferred *ad eundem* (discontinued 1917) and honorary degrees. 1856 to 1960 year ended 31 December. 1961 seven months ended 31 July. 1962 to 1967 year ended 31 July. 1968 eleven months ended 30 June. 1969 to 1971 year ended 30 June. Monash first degrees conferred 1963. La Trobe first degrees conferred 1969.
- (f) Expressed in units of 100 hours per annum.
- (g) Expressed in equivalent full-time units of 35 hours per week.

## VICTORIA—NON-UNIVERSITY TERTIARY EDUCATION

Year	Victoria Institute of Colleges		Colleges of advanced education		
	Colleges (a)	Enrolments (b)	Colleges (c)	Enrolments (d)	Staff (e)
1967	14	20,058			
1968	14	22,020	19	14,956	1,304
1969	15	23,916	21	16,980	1,154
1970	16	24,180	21	19,297	1,357
1971	16	26,451	21	21,725	1,458

- (a) Number of colleges of advanced education affiliated with the Victoria Institute of Colleges.  
 (b) Total enrolments of tertiary course students at colleges affiliated with the Victoria Institute of Colleges. Includes enrolments in non-approved parts of part-approved courses.  
 (c) Institutes of technology, schools of mines, technical colleges, agricultural colleges, and paramedical colleges.  
 (d) 1968 total enrolments in advanced level approved courses excluding approximately 350 correspondence enrolments.  
 1969 to 1971 total enrolments in advanced level approved courses.  
 (e) Advanced level work teaching staff (full-time and part-time) expressed in equivalent full-time units. 1968 figure includes supporting staff.

## VICTORIA—PUBLIC HOSPITALS

Year	Number (a)	Staff (b)		Patients treated		Number of beds	Expenditure \$'000
		Medical (c)	Nursing	Inpatients	Outpatients		
1856	9						
1857	8						
1858	12			4,054	7,435		
1859	17			5,579	11,704		
1860	18			(d) 7,119	13,749	(e) 947	141
1861	19			(f) 7,610	(g) 17,596	(h) 926	(i) 119
1862	19			(j) 7,222	22,878	(j) 1,037	139
1863	22			7,529	29,035	1,123	146
1864	24			8,892	33,208	1,347	179
1865	25			9,939	37,340	1,411	143
1866	25			10,183	49,291	1,414	179
1867	27			10,517	(k) 39,011	1,665	187
1868	27			10,822	(k) 44,029	1,599	159
1869	27			11,515	(k) 44,350	1,616	196
1870	27			11,915	(l) 65,077	1,588	198
1871	31			13,087	49,983	1,820	205
1872	32			13,316	47,112	1,842	198
1873	33			14,654	50,429	2,001	215
1874	35			15,268	(l) 76,944	2,074	223
1875	35			15,515		2,094	224
1876	35			15,827		2,186	217
1877	35			16,178		2,196	221
1878	36			16,713		2,269	209
1879	37			16,649		2,341	213
1880	37			16,801		2,339	209
1881	37			16,828		2,350	200
1881-82 (m)	38			9,391		2,229	114
1882-83	39			16,324		2,292	223
1883-84	41			16,390		2,372	239
1884-85	41			16,543		2,401	286
1885-86	41			17,993		2,483	262
1886-87	41			17,978		2,514	255
1887-88	41			18,567	(n) 54,892	2,563	274
1888-89	42		238	20,434	(n) 40,728	2,613	299
1889-90	42		265	20,855	(n) 38,498	2,604	299
1890-91	42		318	19,800	(o) 41,166	2,672	326
1891-92	46		326	21,056	(o) 42,577	2,726	315
1892-93	46		323	21,090	(o) 37,315	2,762	316
1893-94	46		358	19,838	(o) 41,105	2,800	263
1894-95	48		375	18,825	(o) 48,822	2,833	230
1895-96	48		389	19,969	(o) 50,817	2,900	259
1896-97	48		396	20,330	(o) 55,318	2,934	262
1897-98	48		428	22,997	(o) 58,172	2,976	264
1898-99	49		438	22,590	(o) 58,730	(p) 3,034	294
1899-1900	50		452	22,715	(o) 59,960	3,116	305

VICTORIA—PUBLIC HOSPITALS—*continued*

Year	Number (a)	Staff (b)		Patients treated		Number of beds	Expenditure  \$ '000
		Medical (c)	Nursing	Inpatients	Outpatients		
1900-01	50		471	23,442	(a) 68,579	3,231	294
1901-02	50			25,350	(a) 66,454	3,307	310
1902-03	50			25,944	(a) 64,004	3,335	330
1903-04	50		552	26,674	84,672	3,394	305
1904-05	51		570	27,461	82,527	3,457	329
1905-06	52		596	28,522	80,692	3,512	339
1906-07	52		619	29,573	85,420	3,694	375
1907-08	52		640	31,332	88,026	3,703	396
1908-09	53		662	31,680	90,539	3,724	434
1909-10	54		678	35,014	86,696	3,792	432
1910-11	55		737	36,292	76,328	3,897	431
1911-12	56	70	710	39,005	81,297	3,897	590
1912-13	56	85	769	38,433	80,889	3,923	642
1913-14	57	94	843	40,197	80,462	4,095	611
1914-15	57	91	854	40,618	84,871	4,040	619
1915-16	57	85	925	44,285	87,941	4,191	685
1916-17	58	86	934	41,685	89,639	4,607	(k) 733
1917-18	59	90	953	43,512	88,511	4,735	(k) 669
1918-19	59	97	980	49,715	85,908	4,800	(k) 820
1919-20	59	104	1,015	50,004	90,298	4,768	(k) 738
1920-21	60	110	1,076	50,517	93,661	4,845	(k) 976
1921-22	60	104	1,076	49,167	109,703	4,850	(k) 1,123
1922-23	60	113	1,132	50,061	106,217	4,965	(k) 1,065
1923-24	60	122	1,093	52,000	112,365	5,097	(k) 1,208
1924-25	60	135	1,226	54,477	166,123	5,083	(k) 1,305
1925-26	60	140	1,220	56,742	128,895	5,188	(k) 1,522
1926-27	63	148	1,360	63,782	142,301	5,473	(k) 1,653
1927-28	63	145	1,475	69,017	147,003	5,574	(k) 1,770
1928-29	63	157	1,578	70,529	156,986	(a) 4,638	(k) 1,834
1929-30	64	163	1,714	71,842	174,257	(a) 4,622	(k) 1,846
1930-31	65	168	1,690	73,028	171,465	(a) 4,597	(k) 1,774
1931-32	67	170	1,805	81,303	216,666	(a) 4,684	1,661
1932-33	68	167	1,862	81,790	244,653	(a) 4,832	1,751
1933-34	66	178	1,962	84,770	238,233	(a) 6,037	2,118
1934-35	66	189	2,147	85,613	235,140	6,828	2,010
1935-36	66	204	2,238	91,919	245,305	6,882	1,977
1936-37	67	207	2,295	92,472	255,482	7,270	2,406
1937-38	67	203	2,581	89,899	241,067	7,490	2,745
1938-39	67	215	3,070	96,173	261,209	7,642	2,983
1939-40	68	224	3,215	102,369	265,215	7,696	3,553
1940-41	67	229	3,410	109,716	281,278	7,827	3,984
1941-42	70	242	3,358	93,658	263,223	7,264	3,455
1942-43	70	234	3,512	93,157	252,323	7,379	3,768
1943-44	72	251	3,753	131,207	260,063	8,908	4,244
1944-45	72	271	3,761	130,859	271,754	9,092	4,605
1945-46	75	287	3,848	129,109	281,146	9,204	5,730
1946-47	86	275	4,247	147,031	327,910	9,435	7,010
1947-48	86	294	4,388	148,140	342,136	9,505	8,352
1948-49 (r)	88	335	4,550	118,913	288,263	9,576	7,909
1949-50 (s)	96	380	4,839	157,592	404,743	9,851	12,915
1950-51 (s)	98	397	4,965	170,554	415,495	10,128	16,856
1951-52 (s)	102	437	5,329	176,417	422,851	10,429	22,863
1952-53 (s)	110	475	5,782	187,930	431,981	10,894	26,827
1953-54 (s)	112	572	6,174	267,515	447,838	13,989	29,810
1954-55 (t)	117	612	6,876	259,834	598,647	11,810	42,088
1955-56	125	609	7,492	222,986	514,423	11,819	39,648
1956-57	132	692	8,312	(v) 234,720	526,085	(v) 12,274	(v) 44,540
1957-58 (u)	134	730	8,673	(v) 247,136	541,743	(v) 12,391	(v) 45,042
1958-59	140	805	9,075	262,762	568,194	13,210	(v) 46,770
1959-60	142	815	9,432	264,503	571,020	13,505	(v) 50,622
1960-61	144	886	9,811	(v) 273,988	589,947	(v) 13,108	(v) 56,352
1961-62	146	914	10,237	(w) 287,127	626,397	(w) 13,195	(w) 62,242
1962-63	149	1,054	11,152	(x) 294,137	666,589	(x) 13,395	(x) 65,908
1963-64	151	1,096	11,901	(y) 308,629	725,495	(y) 13,479	(y) 68,641
1964-65 (z)	154	1,158	12,194	(y) 314,783	776,169	(y) 13,529	(y) 74,155
1965-66	156	1,244	13,072	(aa) 323,631	819,116	(aa) 13,612	(aa) 81,189
1966-67	157	1,397	13,487	(bb) 338,236	815,817	(bb) 17,047	97,804
1967-68	157	1,482	14,089	350,822	836,699	17,301	107,146
1968-69	158	1,627	14,513	364,462	877,357	17,410	115,123
1969-70	156	1,651	15,529	375,995	919,515	17,564	130,534
1970-71	158	1,808	16,732	391,938	959,289	17,639	161,780



VICTORIA—PUBLIC HOSPITALS—*continued*

- (a) The first hospital was established in 1837. Statistics available from 1856. The table includes general hospitals, special hospitals (those that have accommodation for specific cases only or for women and/or children exclusively and the Cancer Institute which was established in 1949), sanatoria, auxiliary hospitals, convalescent hospitals, and hospitals for the aged. Excludes mental hospitals, psychiatric and informal hospitals, intellectual deficiency training centres and schools, founding homes and hospitals, bush nursing centres, and convalescent homes.
- (b) 1888-89 to 1921-22 figures relate to staff under the control of the Minister for Charities. 1922-23 to 1948-49 controlling authority was the Charities Board. 1949-50 to 1955-56 controlling authority was the Hospitals and Charities Commission, and staff figures include the Cancer Institute. From 1956-57 figures relate to public hospitals excluding mental hospitals but including maternity hospitals, convalescent hospitals, the Cancer Institute, sanatoria, and all hospitals under the control of the Hospitals and Charities Commission.
- (c) From 1962-63 figures include staff at hospitals for the aged.
- (d) Salaried medical staff only, excludes honoraries.
- (e) Excludes Belfast Hospital.
- (f) Excludes Melbourne Lying-in Hospital.
- (g) Excludes Daylesford, Lower Murray, and Sandhurst Hospitals.
- (h) In several of the hospitals no account of the relief afforded outdoors was kept.
- (i) Excludes Daylesford, Lower Murray, Melbourne, and Sandhurst Hospitals.
- (j) Excludes Sandhurst Hospital.
- (k) Excludes Creswick Hospital.
- (l) Excludes Eye and Ear Hospital.
- (m) Represents total relief afforded, not individual cases treated.
- (n) Figures for 6 months ended 30 June 1882.
- (o) General hospitals only.
- (p) Excludes Free Melbourne Hospital for Sick Children and Consumptive Sanatorium.
- (q) Excludes Queen Victoria Hospital for Women and Children.
- (r) Comprises hospitals under the control of the Charities Board.
- (s) Figures for 9 months ended 31 March 1949.
- (t) Figures for 12 months ended 31 March.
- (u) Figures for 15 months ended 30 June 1955.
- (v) From 1958 the Mount Royal Benevolent Home is classified as a hospital for the aged. Hospitals for the aged included in number from 1957-58.
- (w) Excludes Mount Royal Hospital for the Aged.
- (x) Excludes Mount Royal Hospital for the Aged and Queen Elizabeth Home for the Aged.
- (y) Excludes Bendigo Home and Hospital for the Aged, Greenvale Village for the Aged, Mount Royal Hospital for the Aged, and Queen Elizabeth Home for the Aged.
- (z) Excludes institutions listed in footnote (x) and the Cheltenham Home and Hospital for the Aged.
- (aa) Excludes institutions listed in footnotes (x) and (y) and the Alexander (Castlemaine) Home and Hospital for the Aged.
- (bb) Sudden increase partly due to inclusion of figures for hospitals for the aged.

## VICTORIA—MENTAL HEALTH

Year (a)	Number of institutions (b)	Patients admitted (c)	Total cases treated (under care) (d)	Patients			Staff		Expendi- ture
				Daily average (e)	At end of year (f)	Number of beds (g)	Medical	Nursing	
\$ '000									
1848	1	25	25	17	20		1	6	
1849	1	34	54	25	43		1	6	
1850	1	15	58	44	47		1	6	
1851	1	41	88	59	59		1		
1852	1	35	94	66	74		2		
1853	1	144	218	113	149		2		
1854	1	120	269	160	190		2		
1855	1	159	349	206	251		2		
1856	1	149	400	264	298		2		
1857	1	139	437	316	349		2		
1858	1	259	608	412	451		2		
1859	1	256	707	490	564		2		40
1860	1	185	749	592	596		2		40
1861	1	274	870	667	702		2		
1862	1	213	915	722	750	750	2		49
1863	1	280	1,030	825	856	856	3		61
1864	1	350	1,206	913	960	913	3		73
1865	2	310	1,844	1,027	1,003	1,003	4		85
1866	2	156	1,446	1,120	995	1,195	4		111
1867	4	164	1,640	1,234	1,280	1,680	6		124
1868	4	498	2,193	1,418	1,556	1,704			
1869	4	507	2,129	1,631	1,705	1,727			122
1870	4	518	2,367	1,777	1,849	1,860			126

VICTORIA—MENTAL HEALTH—*continued*

Year (a)	Number of institutions (b)	Patients admitted (c)	Total cases treated (under care) (d)	Patients		Number of beds (g)	Staff		Expendi- ture
				Daily average (e)	At end of year (f)		Medical	Nursing	
									\$'000
1871	4	523	2,334	1,903	2,037	1,978			128
1872	5	555	2,815	2,150	2,263	2,049			144
1873	5	566	3,229	2,303	2,346	2,497			166
1874	4	567	2,914	2,392	2,348	2,378			176
1875	4	651	3,089	2,487	2,357	2,642			178
1876	4	731	3,268	2,575	2,613	2,613			184
1877	5	647	3,260	2,666	2,719	2,732			197
1878	5	839	3,558	2,792	2,866	2,816			203
1879	5	724	3,590	2,934	3,002	3,009			178
1880	5	868	3,870	3,025	3,048	2,803			172
1881	5	603	3,651	3,105	3,163	3,163			164
1882	5	531	3,429	3,155	3,147	3,147			87
1883	5	747	3,894	3,170	3,193	2,966			182
1884	5	631	3,823	3,210	3,228	3,019			184
1885	5	603	3,831	3,229	3,230	3,139			199
1886	5	655	3,888	3,305	3,378	3,188			195
1887	6	870	4,248	3,447	3,516	3,288			192
1888	6	851	4,367	3,574	3,632	3,366			197
1889	6	768	4,400	3,629	3,627	3,494			217
1890	6	896	4,523	3,698	3,769	3,546			220
1891	6	1,008	4,777	3,818	3,868	3,667			216
1892	6	893	4,761	3,911	3,954	3,760			210
1893	7	934	4,888	3,996	4,038	3,850			212
1894	7	845	4,883	4,077	4,116	3,913			194
1895	7	772	4,888	4,132	4,148	3,958			187
1896	7	811	4,959	4,176	4,204	3,970			193
1897	7	938	5,142	4,272	4,341	4,121			207
1898	7	887	5,228	4,367	4,394	4,136			219
1899	7	975	5,369	4,396	4,398	4,250			216
1900	7	837	5,235	4,398	4,399	4,266			217
1901	7	1,023	5,422	4,450	4,501	4,306			245
1902	7	1,031	5,532	4,524	4,547	4,359			292
1903	7	984	5,531	4,458	4,570	4,352			284
1904	10	1,014	5,589	4,606	4,642	4,405			275
1905	9	954	5,600	4,704	4,768	4,472			277
1906	9	968	5,736	4,822	4,873	4,528			288
1907	10	1,023	5,985	4,938	4,961	4,678			431
1908	10	1,276	6,262	5,012	5,111	4,711	(h) 18	(h) 772	415
1909	11	1,585	6,624	5,088	5,200	4,745	(h) 18	(h) 828	402
1910	11	1,640	6,778	5,213	5,396	4,865	(h) 20	(h) 858	418
1911	11	1,691	6,979	5,322	5,485	5,011	(h) 19	(h) 890	486
1912	12	1,873	7,249	5,447	4,632	5,052	(h) 19	(h) 904	510
1913	13	2,224	7,647	5,607	5,797	5,089	(h) 20	(h) 952	503
1914	12	1,919	7,611	5,735	5,877	5,294	(h) 19	(h) 1,034	528
1915	12	1,836	7,615	5,802	5,947	5,268	(h) 21	(h) 1,049	563
1916	12	1,807	7,632	5,834	5,996	5,203	(h) 20	(h) 1,056	496
1917	12	762	7,518	5,865	6,089	5,209	(h) 21	(h) 1,064	514
1918	12	762	7,644	5,931	6,224	5,265	(h) 20	(h) 1,090	519
1919	13	745	7,644	5,931	6,184	5,355	(h) 23	(h) 1,092	556
1920	12	864	8,037	5,926	6,169	5,382	(h) 21	(h) 1,092	650
1921	12	802	7,904	5,926	6,188	5,398	(h) 21	(h) 1,126	831
1922	12	838	7,908	6,006	6,362	5,609	(h) 21	(h) 1,129	768
1923	12	827	8,164	6,092	6,394	5,576	(h) 23	(h) 1,131	732
1924	12	809	8,229	6,138	6,458	5,629	(h) 22	(h) 1,261	837
1925	12	746	8,368	6,226	6,597	6,020	(h) 26	(h) 1,270	1,062
1926	11	841	8,270	6,351	6,734	5,655	26	1,317	1,083
1927	11	825	8,393	6,433	6,761	5,996	24	1,330	976
1928	11	877	8,471	6,523	6,955	5,818	28	1,321	975
1929	11	868	8,601	6,603	6,978	5,932	28	1,345	995
1930	11	881	8,619	6,686	7,143	6,065	28	1,287	993
1931	11	835	8,710	6,770	7,203	6,089	26	1,284	877
1932	11	782	7,869	5,925	7,273	6,087	28	1,312	754
1933	11	848	7,995	5,888	7,359	6,248	29	1,368	761
1934	11	862	8,101	6,067	7,487	6,197	29	1,410	770
1935	11	895	8,229	6,107	7,548	6,298	26	1,397	793
1936	11	876	8,307	6,202	7,711	6,317	30	1,442	909
1937	12	835	8,446	6,282	7,840	6,321	29	1,366	966
1938	12	883	8,553	6,229	7,902	6,456	34	1,562	981
1939	12	1,006	8,735	6,261	7,846	6,538	30	1,557	988
1940	12	898	8,588	6,342	7,888	6,591	n.a.	n.a.	994

## VICTORIA—MENTAL HEALTH—continued

Year (a)	Number of institutions (b)	Patients admitted (c)	Total cases treated (under care) (d)	Patients		Number of beds (g)	Staff		Expendi- ture \$'000
				Daily average (e)	At end of year (f)		Medical	Nursing	
1941	12	890	8,690	6,469	7,941	6,587	31	1,084	1,019
1942	12	842	8,770	6,389	7,741	6,651	n.a.	n.a.	1,053
1943	12	867	8,646	6,319	7,751	6,671	32	991	1,173
1944	12	879	(i) 8,344	6,290	7,775	6,711	n.a.	n.a.	1,267
1945	9	918	8,367	6,280	7,863	6,710	35	949	1,291
1946	9	851	8,328	6,289	7,774	6,875	n.a.	n.a.	1,360
1947	9	856	8,152	6,420	7,808	6,875	40	934	1,520
1948	(j) 9	(j) 952	(k) 9,454	(k) 6,363	(j) 7,818	(k) 6,848	n.a.	n.a.	(j) 1,872
1949	(l) 12	(l) 1,013	(m) 8,804	(m) 6,433	(l) 7,925	(m) 6,762	(l) 56	(l) 1,148	(j) 2,511
1950	(l) 12	(l) 1,203	(l) 8,344	(l) 6,751	(l) 8,431	(n) 6,773	(l) 68	(l) 1,308	(l) 3,022
1951	11	2,399	11,509	6,909	(o) 7,568	(p) 6,660	75	1,418	3,749
1952	11	2,626	11,623	6,987	8,515	n.a.	53	1,571	5,409
1953	11	2,907	12,309	7,122	8,991	(q) 6,838	64	1,700	7,276
1954	13	3,609	12,918	7,380	8,929	(r) 7,287	63	1,810	8,538
1955 (s)	14	4,037	13,815	7,543	9,261	7,393	n.a.	n.a.	10,029
1956 (t)	14	n.a.	n.a.	7,718	9,349	7,706	77	2,070	12,098
1957	15	5,788	17,205	7,925	10,325	8,539	92	2,293	13,575
1958	15	6,752	19,855	8,718	10,727	8,897	103	2,475	14,098
1959	20	7,306	20,661	9,150	10,880	9,501	110	2,438	15,448
1960	20	7,459	20,397	9,279	10,804	9,326	116	2,402	15,712
1961	21	8,103	21,075	9,255	11,132	9,326	126	2,607	16,594
1962	22	9,547	22,998	9,342	11,110	9,303	125	2,599	17,310
1963	23	8,647	23,215	9,461	11,347	9,420	134	2,760	17,682
1964	26	8,651	22,945	9,484	11,510	9,586	143	2,700	19,446
1965	27	9,160	23,394	9,440	11,247	9,695	136	2,788	20,428
1966	29	9,947	24,011	9,387	10,764	9,470	145	2,866	22,624
1967	29	9,527	24,169	9,404	10,497	9,434	145	2,903	24,162
1968 (u)	29	10,106	23,183	9,247	10,326	9,249	150	3,016	25,523
1969 (v)	28	10,063	23,163	9,080	10,358	9,102	156	2,969	27,062
1970	30	9,922	23,107	8,986	10,374	9,127	164	3,021	29,236
1971	32	9,947	23,004	8,819	10,169	8,858	166	3,061	32,254

(a) 1848 to 1881 year ended 31 December.

1882 six months ended 30 June.

1883 to 1892 year ended 30 June.

1893 to 1928 year ended 31 December.

1929 to 1954 year ended 30 June. For exceptions see footnotes (i), (k) to (n), and (p) to (r).

1955 fifteen months ended 30 June.

1956 to 1969 expenditure for year ended 30 June, all other items for year ended 31 December.

1970 and 1971 expenditure for year ended 30 June, all other items for year ended 30 November.

(b) The first lunatic asylum was opened at Yarra Bend in 1848. The table includes public lunatic asylums (later mental hospitals), receiving houses (called psychiatric hospitals and informal hospitals from 1962), intellectual deficiency training centres and schools, and repatriation mental hospitals, but excludes private hospitals. The 1971 figures are for State mental hospitals, repatriation mental hospital, psychiatric hospitals, informal hospitals and intellectual deficiency training centres.

(c) 1848 to 1916 comprises patients remaining in institutions on 1 January, re-admissions, new patients, and transfers.

1917 to 1950 comprises first admissions and re-admissions to mental hospitals only.

1951 to 1971 comprises direct admissions only to Mental Health Authority hospitals (mental, psychiatric, and informal) and intellectual deficiency training centres (from 1958). Excludes transfers between Mental Health Authority institutions.

(d) 1848 to 1950 mental hospitals only.

1951 to 1957 mental hospitals and receiving houses.

1958 to 1971 all Mental Health Authority hospitals and training centres.

(e) 1848 to 1960 year ended 30 June.

1961 to 1969 year ended 31 December.

1970 and 1971 year ended 30 November.

1848 to 1955 mental hospitals only.

1956 and 1957 mental hospitals and receiving houses.

1958 to 1971 all Mental Health Authority hospitals and training centres.

(f) Comprises total patients on the books of the institutions at 31 December of each year (30 November in 1970 and 1971) and includes voluntary boarders and cases of mental disorder in returned soldiers from 1915.

(g) 1862 to 1969 at 31 December.

1970 and 1971 at 30 November.

1862 to 1962 number of beds in mental hospitals and receiving houses.

1963 to 1969 number of beds occupied at end of year in all Mental Health Authority hospitals and training centres.

1970 and 1971 number occupied at 30 November.

(h) Excludes receiving house at Royal Park and receiving wards at Bendigo and Geelong Hospitals.

(i) For year ended 31 December 1944.

(j) Year ended 30 June.

(k) For year ended 31 December 1947.

(l) Year ended 31 March.

(m) For year ended 31 December 1948.

(n) For year ended 31 December 1949.

(o) Mental hospitals only.

(p) For year ended 31 December 1950.

(q) For year ended 31 December 1952.

VICTORIA—MENTAL HEALTH—*continued*

- (p) For year ended 31 December 1953.
  - (q) 15 months ended 30 June 1955.
  - (r) Change of annual reporting from financial years to calendar years (except expenditure).
  - (s) In 1968 various institutions previously designated as training schools were gazetted as training centres.
  - (t) The remaining training schools gazetted as training centres and informal hospitals.
- n.a.: Not available.

VICTORIA—MATERNITY ALLOWANCES, CHILD ENDOWMENT,  
AND AGE, INVALID, AND WIDOWS' PENSIONS

Year	Maternity allowance		Child endowment		Age and invalid pensions			Widows' pensions	
	Number of allowances (a)	Amount paid (a)	Number of endowed children (b)	Amount paid (a)	Number of age pensions (b) (c) (d)	Number of invalid pensions (b) (d)	Amount paid (a) (e)	Number (b)	Amount paid (a)
		\$'000		\$'000			\$'000		\$'000
1900-01	..	..	..	..	16,275	..	258	..	..
1901-02	..	..	..	..	14,570	..	584	..	..
1902-03	..	..	..	..	12,417	..	432	..	..
1903-04	..	..	..	..	11,609	..	410	..	..
1904-05	..	..	..	..	11,209	..	400	..	..
1905-06	..	..	..	..	10,990	..	378	..	..
1906-07	..	..	..	..	10,732	..	376	..	..
1907-08	..	..	..	..	11,288	..	468	..	..
1908-09	..	..	..	..	12,368	..	542	..	..
1909-10	..	..	..	..	20,218	..	942	..	..
1910-11	..	..	..	..	23,722	2,272	1,148	..	..
1911-12	..	..	..	..	24,449	3,162	1,346	..	..
1912-13	24,880	248	..	..	25,434	3,918	1,432	..	..
1913-14	33,976	340	..	..	27,150	4,844	1,590	..	..
1914-15	36,583	366	..	..	28,365	6,054	1,680	..	..
1915-16	34,114	342	..	..	28,446	6,869	1,816	..	..
1916-17	34,678	346	..	..	29,064	7,921	2,140	..	..
1917-18	32,195	322	..	..	29,154	8,901	2,336	..	..
1918-19	31,797	318	..	..	29,179	9,337	2,400	..	..
1919-20	32,903	330	..	..	29,565	10,277	2,696	..	..
1920-21	36,778	368	..	..	30,385	11,174	3,066	..	..
1921-22	36,257	362	..	..	30,958	11,444	3,164	..	..
1922-23	36,260	362	..	..	31,248	11,707	3,178	..	..
1923-24	35,721	358	..	..	32,603	12,220	3,978	..	..
1924-25	36,971	370	..	..	33,845	12,950	4,102	..	..
1925-26	36,025	360	..	..	36,800	14,062	4,766	..	..
1926-27	35,202	352	..	..	38,702	15,327	5,376	..	..
1927-28	35,656	357	..	..	40,642	16,398	5,834	..	..
1928-29	34,132	342	..	..	42,795	17,557	6,010	..	..
1929-30	33,381	334	..	..	45,495	18,641	6,364	..	..
1930-31	32,241	322	..	..	49,999	19,925	6,892	..	..
1931-32	23,988	198	..	..	52,795	20,785	6,512	..	..
1932-33	20,100	160	..	..	49,449	20,191	6,120	..	..
1933-34	19,499	156	..	..	57,253	15,193	6,106	..	..
1934-35	19,940	172	..	..	58,059	17,253	6,428	..	..
1935-36	19,672	172	..	..	60,548	17,741	6,928	..	..
1936-37	20,350	190	..	..	62,755	18,282	7,500	..	..
1937-38	20,160	204	..	..	65,203	18,817	8,438	..	..
1938-39	20,819	220	..	..	67,896	19,471	8,614	..	..
1939-40	19,660	210	..	..	76,081	12,739	8,828	..	..
1940-41	19,150	204	..	..	76,371	12,447	9,176	..	..
1941-42	16,120	172	224,155	5,620	75,240	12,550	10,074	..	..
1942-43	11,874	128	223,426	5,806	72,102	11,938	11,430	10,710	1,206
1943-44	(f) 38,653	(f) 1,182	226,012	(g) 6,028	69,156	12,446	11,574	11,967	1,574
1944-45	40,582	1,296	229,141	5,970	67,240	12,598	11,210	12,614	1,600
1945-46	40,991	1,300	234,766	8,930	69,308	13,599	13,646	12,748	1,800
1946-47	50,730	1,576	245,480	(g) 9,818	74,770	14,673	14,700	12,311	1,884
1947-48	46,027	1,488	255,859	9,684	78,057	15,165	18,290	11,259	2,044
1948-49	46,309	1,466	270,189	12,308	81,753	15,575	20,488	11,164	2,242
1949-50	49,035	1,556	(h) 456,755 (g,h) 15,326		84,831	14,328	21,568	11,067	2,198
1950-51	50,210	1,614	610,699	21,896	86,210	13,977	23,918	10,638	2,292
1951-52	52,144	1,672	647,488	24,030	87,845	13,973	28,898	10,229	2,780
1952-53	55,297	1,744	677,235	(g) 27,892	93,353	15,019	34,952	10,185	3,070
1953-54	54,219	1,748	703,954	26,330	98,210	15,882	39,956	9,838	3,134
1954-55	55,720	1,784	734,108	27,470	106,406	17,074	43,054	9,801	3,244
1955-56	58,385	1,870	765,507	(g) 32,330	112,649	18,113	49,672	10,253	3,598
1956-57	59,648	1,898	795,878	30,238	118,788	19,207	53,546	10,879	4,072
1957-58	60,666	1,938	823,290	31,438	123,536	20,019	59,592	11,252	4,662
1958-59	63,428	2,040	856,530	(g) 36,738	128,152	21,132	63,290	12,141	5,092
1959-60	62,853	2,016	879,379	33,926	(i) 136,098	(i) 17,546	71,870	12,547	5,832

VICTORIA—MATERNITY ALLOWANCES, CHILD ENDOWMENT,  
AND AGE, INVALID, AND WIDOWS' PENSIONS—*continued*

Year	Maternity allowance		Child endowment		Age and invalid pensions			Widows' pensions	
	Number of allowances (a)	Amount paid (a)	Number of endowed children (b)	Amount paid (a)	Number of age pensions (b) (c) (d)	Number of invalid pensions (b) (d)	Amount paid (a) (e)	Number (b)	Amount paid (a)
		\$'000		\$'000			\$'000		\$'000
1960-61	66,511	2,138	905,914	(x) 40,688	143,636	19,434	77,468	13,311	6,658
1961-62	65,847	2,114	926,209	36,042	152,533	21,519	89,365	14,251	7,362
1962-63	66,021	2,118	938,222	36,860	156,578	22,982	93,728	14,549	7,758
1963-64	64,438	2,065	(j) 999,895	(g) 46,866	159,658	24,962	100,236	15,581	10,316
1964-65	64,424	2,058	1,023,594	48,018	162,108	26,794	107,408	16,426	11,764
1965-66	63,934	2,040	1,039,044	49,235	(i) 163,156	(i) 25,187	111,019	17,251	12,692
1966-67	66,098	2,104	1,060,152	(g) 56,232	166,138	26,779	120,930	18,481	14,387
1967-68	66,083	2,102	1,075,471	52,675	174,777	26,718	129,334	19,372	15,807
1968-69	72,304	2,281	1,116,738	54,132	183,776	26,625	140,538	20,349	18,090
1969-70	72,259	2,297	1,147,822	(g) 62,419	206,608	29,753	163,349	23,318	21,671
1970-71	75,824	2,407	1,170,383	55,924	213,852	31,342	179,578	24,509	24,366

(a) During year.

(b) At end of year.

(c) 1900-01 to 1908-09 provided by Victorian Government.

1909-10 to 1970-71 provided by Commonwealth Government.

(d) Up to and including 1955-56 excludes pensions to persons in benevolent homes

(e) Includes payments to benevolent homes and hospitals for maintenance of pensioners at these institutions. From 8 July 1943 provision was made for payments to wives and children of invalid pensioners and these are included from 1943-44.

(f) Maternity allowance means test abolished on 1 July 1943.

(g) Five twelve-weekly payments made during the year instead of the normal four.

(h) Endowment payable for first child from 20 June 1950.

(i) In 1960 and 1966 statistical adjustments were made to correct invalid pensions to age pensions where applicable.

(j) Endowment payable for student children of 16 years but less than 21 years of age from 14 January 1964.

VICTORIA—WAR AND SERVICE PENSIONS

Year	War pensions (a)			Service pensions (b)		
	To incapacitated ex-servicemen (c) (d)	To dependants of incapacitated and deceased ex-servicemen (c)	Amount paid during year	To ex-servicemen (c)	To dependants of living and deceased ex-servicemen (c)	Amount paid during year
			\$'000			\$'000
1916-17	5,233	9,952	1,306	..	..	..
1917-18	11,965	22,376	2,256	..	..	..
1918-19	22,836	36,650	3,440	..	..	..
1919-20	29,949	44,277	3,864	..	..	..
1920-21	26,053	48,748	4,334	..	..	..
1921-22	25,141	50,523	4,128	..	..	..
1922-23	24,686	53,396	4,164	..	..	..
1923-24	24,214	55,344	4,096	..	..	..
1924-25	23,834	57,919	4,122	..	..	..
1925-26	23,569	60,684	4,210	..	..	..
1926-27	23,514	62,966	4,280	..	..	..
1927-28	23,523	64,931	4,340	..	..	..
1928-29	23,837	66,801	4,448	..	..	..
1929-30	24,536	69,348	4,592	..	..	..
1930-31	25,066	71,136	4,676	..	..	..
1931-32	25,591	66,896	4,506	..	..	..
1932-33	25,573	65,793	4,172	..	..	..
1933-34	25,517	65,128	4,268	..	..	..
1934-35	25,455	64,112	4,478	..	..	..
1935-36	25,665	61,919	4,552	604	282	32
1936-37	25,750	58,554	4,652	1,203	854	108
1937-38	25,721	59,293	4,668	1,542	1,127	168
1938-39	25,569	56,676	4,706	1,876	1,330	206
1939-40	25,334	52,778	4,634	2,080	1,389	238

VICTORIA—WAR AND SERVICE PENSIONS—*continued*

Year	War pensions (a)			Service pensions (b)		
	To incapacitated ex-servicemen (c) (d)	To dependants of incapacitated and deceased ex-servicemen (c)	Amount paid during year	To ex-servicemen (c)	To dependants of living and deceased ex-servicemen (c)	Amount paid during year
			\$'000			\$'000
1940-41	25,107	49,013	4,504	2,092	1,353	254
1941-42	25,375	46,928	4,510	2,093	1,462	282
1942-43	25,921	45,834	4,994	2,105	1,204	326
1943-44	27,552	45,916	6,046	2,071	1,193	326
1944-45	30,138	48,089	6,490	2,145	1,148	327
1945-46	36,020	57,006	7,280	2,296	1,106	412
1946-47	39,711	61,268	8,162	2,589	1,134	480
1947-48	41,931	64,933	8,872	2,793	1,192	576
1948-49	44,025	69,223	10,500	2,736	1,154	646
1949-50	46,553	75,040	11,716	2,784	1,099	694
1950-51	49,115	82,784	14,606	2,696	1,071	666
1951-52	51,045	89,221	18,368	2,661	1,125	765
1952-53	52,785	95,281	19,838	3,029	1,244	1,008
1953-54	54,213	100,397	21,202	3,308	1,318	1,203
1954-55	56,011	106,342	23,950	3,614	1,351	1,369
1955-56	57,452	111,376	25,436	5,279	2,909	1,918
1956-57	58,204	115,450	26,744	6,058	3,209	2,179
1957-58	59,430	120,407	29,742	6,688	3,370	2,639
1958-59	60,389	124,586	30,402	7,230	3,462	2,774
1959-60	61,057	127,451	32,202	7,636	3,422	3,036
1960-61	61,452	128,659	36,644	8,514	3,388	3,462
1961-62	62,285	130,155	36,840	10,379	3,638	4,244
1962-63	63,005	127,944	41,816	11,616	3,778	4,950
1963-64	63,300	126,283	45,526	12,160	3,714	5,654
1964-65	63,084	123,479	45,064	12,412	3,599	5,974
1965-66	62,786	118,843	49,602	12,568	3,627	6,626
1966-67	62,103	114,001	46,953	12,740	3,683	6,720
1967-68	61,474	109,046	47,216	12,972	3,970	7,420
1968-69	60,399	104,446	51,654	12,891	3,670	8,070
1969-70	59,546	99,722	51,297	14,158	4,149	9,767
1970-71	58,343	94,926	52,636	14,549	4,298	10,696

- (a) Payments, under the *War Pensions Act* 1914, were first made in 1917.
- (b) Legislation passed in December 1935 and payments made from 1 January 1936.
- (c) In force at end of financial year.
- (d) Includes Seamen's War Pensions.

VICTORIA—COURT BUSINESS

Year	Magistrates' Courts (a)		Children's Courts (b)		Higher courts (c)			Total offenders convicted
	Convictions	Dismissals, etc. (d)	Convictions	Dismissals, etc. (d)	Number of persons convicted for—			
					Offences against the person	Offences against property	Other offences	
1854			..	..	85	223	62	370
1855			..	..	71	178	60	309
1856			..	..	70	167	35	272
1857			..	..	120	254	51	425
1858			..	..	107	323	105	535
1859	20,218	8,711	..	..	131	329	122	582
1860	19,394	8,307	..	..	84	219	113	416
1861	16,464	8,019	..	..	111	247	104	462
1862	15,116	7,746	..	..	113	512	63	688
1863	14,302	6,872	..	..	101	505	47	653
1864	14,890	7,572	..	..	105	453	62	620
1865	16,519	7,813	..	..	93	518	86	697

VICTORIA—COURT BUSINESS—*continued*

Year	Magistrates' Courts (a)		Children's Courts (b)		Higher courts (c)			Total offenders convicted
	Convictions	Dismissals, etc. (d)	Convictions	Dismissals, etc. (d)	Number of persons convicted for—			
					Offences against the person	Offences against property	Other offences	
1866	15,654	8,117	..	..	74	476	85	635
1867	14,573	8,191	..	..	79	394	80	553
1868	15,329	8,154	..	..	82	403	52	537
1869	16,198	7,730	..	..	93	353	61	507
1870	15,678	7,204	..	..	114	385	69	568
1871	15,069	6,950	..	..	103	307	68	478
1872	15,544	7,473	..	..	100	272	35	407
1873	16,968	7,262	..	..	94	300	82	476
1874	16,233	6,929	..	..	93	276	67	436
1875	16,829	7,674	..	..	61	281	85	427
1876	16,851	7,750	..	..	73	251	60	384
1877	17,832	8,106	..	..	73	201	66	340
1878	17,438	7,448	..	..	80	287	91	458
1879	16,770	7,227	..	..	57	271	69	397
1880	15,871	7,432	..	..	70	279	49	398
1881	16,448	8,307	..	..	73	222	37	332
1882	17,061	8,746	..	..	89	249	64	402
1883	17,755	8,713	..	..	55	248	47	350
1884	17,908	8,900	..	..	87	259	61	407
1885	18,413	9,674	..	..	76	301	67	444
1886	20,202	11,053	..	..	83	329	80	492
1887	21,622	12,031	..	..	73	361	72	506
1888	23,307	13,129	..	..	92	373	92	557
1889	23,298	13,000	..	..	102	454	124	680
1890	24,494	12,971	..	..	105	480	77	662
1891	22,280	12,007	..	..	87	532	110	729
1892	21,624	10,517	..	..	100	538	121	759
1893	19,303	9,453	..	..	99	386	52	537
1894	17,358	8,276	..	..	98	393	44	535
1895	16,464	7,789	..	..	74	291	38	403
1896	16,091	7,852	..	..	90	277	57	424
1897	14,220	6,982	..	..	72	232	28	332
1898	18,407	9,464	..	..	91	280	31	402
1899	16,634	8,061	..	..	86	240	41	367
1900	19,769	8,953	..	..	112	240	22	374
1901	20,912	9,293	..	..	106	249	38	393
1902	34,607	11,521	..	..	81	263	37	381
1903	37,246	10,459	..	..	55	277	39	371
1904	37,145	11,798	..	..	78	225	35	338
1905	35,505	12,039	..	..	72	274	36	382
1906	39,065	11,084	n.a.	n.a.	80	220	39	339
1907	47,884	13,752	n.a.	n.a.	91	238	39	368
1908	45,056	14,857	2,492	1,146	92	237	36	365
1909	39,971	13,671	2,526	1,167	82	234	36	352
1910	39,598	13,244	2,508	1,058	76	237	41	354
1911	32,494	12,664	2,275	991	78	224	32	334
1912	39,688	14,181	3,714	1,459	85	227	40	352
1913	40,840	16,057	3,974	1,332	77	236	39	352
1914	42,182	16,673	3,512	1,465	83	236	23	342
1915	45,948	17,852	4,490	1,672	71	280	40	391
1916	40,246	18,517	3,829	1,907	71	230	42	343
1917	38,757	12,923	4,864	1,396	74	178	24	276
1918	44,900	13,659	5,347	1,311	47	138	24	209
1919	44,623	13,272	3,943	2,628	60	225	22	307
1920	43,088	12,815	3,688	758	66	349	27	442
1921	46,924	14,902	3,244	716	82	367	34	483
1922	49,464	13,516	3,396	571	78	327	29	434
1923	53,183	13,295	2,780	691	77	257	27	361
1924	54,376	13,516	2,659	759	51	271	25	347
1925	58,879	13,723	2,733	769	75	360	16	451
1926	60,728	14,067	3,141	883	93	318	25	436
1927	53,612	12,890	3,396	831	75	360	23	458
1928	47,865	11,966	2,853	904	89	382	27	498
1929	45,318	11,826	3,051	925	96	482	31	609
1930	45,537	10,264	2,748	906	105	550	28	683

VICTORIA—COURT BUSINESS—*continued*

Year	Magistrates' Courts (a)		Children's Courts (b)		Higher courts (c)			Total offenders convicted
	Convictions	Dismissals, etc. (d)	Convictions	Dismissals, etc. (d)	Number of persons convicted for—			
					Offences against the person	Offences against property	Other offences	
1931	42,977	10,763	2,321	974	75	573	30	678
1932	45,664	10,109	2,205	893	76	508	44	628
1933	44,923	9,318	2,156	605	104	459	31	594
1934	45,748	9,791	2,543	518	80	434	36	550
1935	54,666	9,720	3,541	708	80	484	32	596
1936	70,752	9,884	4,003	954	105	389	39	533
1937	64,772	7,905	4,212	966	88	436	41	565
1938	68,841	8,199	5,394	851	103	498	41	642
1939	72,186	8,895	4,585	905	72	577	41	690
1940	75,712	9,032	4,232	852	112	506	33	651
1941	62,963	7,125	4,557	958	146	518	41	705
1942	61,097	5,705	5,414	860	167	531	23	721
1943	57,205	6,210	5,156	878	180	597	49	826
1944	52,517	5,186	4,422	547	166	586	40	792
1945	49,270	5,322	3,831	726	156	492	44	692
1946	53,616	5,738	3,007	589	150	495	65	710
1947	63,488	5,694	2,598	427	172	566	47	785
1948	65,906	5,852	2,337	425	185	572	49	806
1949	70,034	5,841	2,382	503	132	494	43	669
1950	85,568	6,966	2,305	724	190	495	37	722
1951	95,294	8,269	3,075	778	212	515	34	761
1952	112,077	11,166	3,457	720	202	631	50	883
1953	117,901	10,699	3,596	646	185	670	63	918
1954	117,458	10,544	4,461	864	266	594	52	912
1955	129,141	12,697	4,434	826	288	672	83	1,043
1956	153,393	13,370	5,476	1,036	247	901	101	1,249
1957	201,539	11,750	6,586	1,433	376	1,098	169	1,643
1958	242,897	13,237	8,168	1,488	481	1,143	155	1,779
1959	258,078	16,590	8,235	1,521	449	1,187	163	1,799
1960	237,338	15,530	9,688	1,787	549	1,250	197	1,996
1961	199,880	17,224	10,036	1,885	569	1,512	226	2,307
1962	207,405	17,196	12,082	2,008	636	1,420	331	2,387
1963	227,211	16,926	7,855	545	565	689	525	1,779
1964	244,045	18,731	9,787	664	629	589	575	1,793
1965	262,249	21,289	9,555	533	539	561	518	1,618
1966	246,539	21,537	8,786	490	454	714	557	1,725
1967	253,191	25,162	9,270	552	430	818	538	1,786
1968	258,370	27,398	9,113	537	477	793	520	1,790
1969	261,019	37,252	10,973	684	445	797	447	1,689
1970	256,556	36,819	12,944	947	499	839	414	1,752

- (a) Known as Courts of Petty Sessions prior to 1970.  
Offences dealt with : 1859 to 1901 arrest cases only.  
1902 to 1970 arrest and summons cases.  
1908 to 1940 includes Children's Courts summons cases (also included in Children's Courts figures).  
1859 to 1935 first offence cases of drunkenness were not included as convictions and are excluded.  
1961 to 1970 excludes drunkenness cases.
- (b) Children's Courts were inaugurated in 1906 but earliest statistics available are for 1908.  
The principal reason for the decline in 1920 is that from that year children boarded out with their own mothers by the Neglected Children's Department were not arrested by police.  
1908 to 1962 includes prosecutions by police and by other authorities, e.g., Victorian Railways.  
1963 to 1970 police prosecutions only and excludes children brought before the Courts as being in need of care and protection.  
1965 to 1970 excludes drunkenness cases.
- (c) 1854 to 1892 number of offences.  
1893 to 1970 number of persons convicted.  
1854 to 1937 arrest cases only.  
1938 to 1970 arrest and summons cases.  
In February 1963 amendment to the Justices Act empowered Courts of Petty Sessions (Magistrates' Courts) to deal summarily with certain offences previously dealt with by higher courts.
- (d) Dismissed, withdrawn, struck out.  
n.a.: Not available.

NOTE. An amendment to the Justices Act, operative since February 1963, enables Magistrates' Courts to deal summarily with certain offences previously dealt with by higher courts. Also, improved methods of statistical collection were commenced in 1963. Accordingly, figures since 1963 are not comparable with those of previous years.



VICTORIA—POLICE FORCE, PENAL ESTABLISHMENTS, PROBATION AND PAROLE, AND BANKRUPTCIES

Year	Numerical strength of Police Force (a)	Penal establishments (b)			Number of bankruptcies (c)	Year	Numerical strength of Police Force (a)	Penal establishments (b)			Number of bankruptcies (c)		
		Number of prisons	Number of persons in confinement					Number of prisons	Number of persons in confinement				
			Males	Females					Persons	Males		Females	Persons
1856	1,159	15	1,785	125	1,910	..	1896	n.a.	10	1,052	172	1,224	741
1857	1,156	16	1,726	236	1,962	210	1897	n.a.	10	1,040	198	1,238	673
1858	1,244	15	1,673	198	1,871	646	1898	1,415	10	1,000	202	1,202	588
1859	1,502	15	1,678	191	1,869	956	1899	1,415	10	938	188	1,126	360
1860	1,344	14	1,625	213	1,838	1,373	1900	1,465	10	949	208	1,157	346
1861	1,335	16	1,605	194	1,799	1,287	1901	1,466	10	958	175	1,133	327
1862	1,199	16	1,609	204	1,813	1,053	1902	1,515	9	896	172	1,068	406
1863	1,142	16	1,555	305	1,860	939	1903	1,495	9	840	129	969	505
1864	1,148	16	1,490	229	1,719	1,125	1904	1,495	9	901	142	1,045	462
1865	1,138	16	1,666	232	1,898	1,291	1905	1,495	9	879	97	976	570
1866	1,153	16	1,655	253	1,908	1,103	1906	1,518	9	827	86	913	517
1867	1,135	15	1,644	236	1,780	1,000	1907	1,546	9	807	97	904	448
1868	n.a.	14	1,451	274	1,725	863	1908	1,552	9	763	102	865	514
1869	n.a.	12	1,320	202	1,522	818	1909	1,598	9	720	112	832	370
1870	n.a.	13	1,430	296	1,726	996	1910	1,605	11	738	108	846	359
1871	n.a.	13	1,370	253	1,623	631	1911	1,640	11	683	105	788	306
1872	n.a.	13	1,341	215	1,556	804	1912	1,662	11	762	112	874	404
1873	n.a.	13	1,308	261	1,569	672	1913	1,753	11	743	109	852	455
1874	n.a.	12	1,345	269	1,614	776	1914	1,739	11	797	90	887	450
1875	n.a.	12	1,327	311	1,638	773	1915	1,737	11	760	98	858	436
1876	1,095	12	1,174	311	1,505	712	1916	1,638	12	716	73	789	337
1877	n.a.	12	1,246	281	1,527	715	1917	1,650	12	614	104	718	222
1878	n.a.	13	1,196	294	1,490	781	1918	1,558	11	536	77	613	243
1879	1,013	12	1,153	289	1,442	1,007	1919	1,719	11	640	55	695	207
1880	n.a.	11	1,300	299	1,599	768	1920	1,733	11	690	44	734	186
1881	n.a.	11	1,186	301	1,487	620	1921	1,736	11	717	48	765	300
1882	1,103	11	1,115	292	1,407	500	1922	1,741	11	693	60	753	322
1883	1,188	11	1,090	337	1,427	603	1923	1,251	11	766	48	814	414
1884	1,196	11	1,077	329	1,406	495	1924	1,810	12	757	38	795	520
1885	1,281	11	1,085	331	1,416	467	1925	1,875	12	907	44	951	563
1886	1,316	10	1,209	323	1,532	559	1926	1,963	13	919	43	962	683
1887	n.a.	10	1,263	334	1,597	619	1927	1,977	12	916	29	945	723
1888	1,361	10	1,256	328	1,684	479	1928	2,112	12	953	38	991	462
1889	1,452	10	1,460	341	1,801	697	1929	2,148	12	1,167	51	1,218	478
1890	1,454	10	1,546	316	1,862	795	1930	2,115	12	1,316	42	1,358	705
1891	1,528	10	1,458	334	1,792	807	1931	2,107	12	1,425	45	1,470	1,052
1892	1,535	10	1,402	323	1,725	1,125	1932	2,121	12	1,332	67	1,399	689
1893	1,483	10	1,323	256	1,579	1,109	1933	2,148	10	1,357	55	1,412	526
1894	1,458	9	1,244	203	1,447	1,017	1934	2,170	10	1,255	39	1,294	441
1895	n.a.	10	1,109	186	1,295	892							

Year	Numerical strength of Police Force (a)	Number of prisons	Penal establishments (b)			Probation and parole				Number of bankruptcies (c)
			Number of persons in confinement			Placed on probation		Released on parole		
			Males	Females	Persons	Adult courts (d)	Children's courts (e)	Adult Parole Board (f)	Youth Parole Board (g)	
1935	2,247	10	1,176	44	1,220	..	710	..	..	392
1936	2,289	10	1,090	42	1,132	..	603	..	..	343
1937	2,280	10	993	37	1,030	..	591	..	..	342
1938	2,271	10	1,112	45	1,157	..	648	..	..	385
1939	2,313	10	1,168	42	1,210	..	680	..	..	431
1940	2,335	10	1,041	50	1,091	..	836	..	..	432
1941	2,327	10	949	41	990	..	851	..	..	313
1942	2,304	10	1,112	46	1,158	..	1,044	..	..	214
1943	2,258	8	1,057	73	1,130	..	746	..	..	91
1944	2,201	8	1,086	48	1,134	..	675	..	..	61
1945	2,128	8	949	41	990	..	484	..	..	35
1946	2,188	8	978	29	1,007	..	422	..	..	32
1947	2,268	9	928	44	972	..	410	..	..	57
1948	2,385	9	904	49	953	..	464	..	..	70
1949	2,597	9	1,021	45	1,066	..	497	..	..	70
1950	2,751	9	986	55	1,041	..	486	..	..	96

VICTORIA—POLICE FORCE, PENAL ESTABLISHMENTS, PROBATION AND PAROLE,  
AND BANKRUPTCIES—*continued*

Year	Numerical strength of Police Force (a)	Number of prisons	Penal establishments (b)			Probation and parole				Number of bankruptcies (g)
			Number of persons in confinement			Placed on probation		Released on parole		
			Males	Females	Persons	Adult courts (d)	Children's courts (e)	Adult Parole Board (f)	Youth Parole Board (g)	
1951	2,879	9	1,089	38	1,127	..	654	..	..	72
1952	2,992	9	1,294	42	1,336	..	694	..	..	88
1953	3,047	9	1,176	44	1,220	..	704	..	..	184
1954	3,021	11	1,219	45	1,264	..	787	..	..	175
1955	3,109	10	1,264	31	1,295	..	1,486	..	..	200
1956	3,392	10	1,521	43	1,564	..	1,949	..	..	206
1957	3,709	10	1,529	43	1,572	n.a.	2,230	..	..	335
1958	3,754	11	1,466	30	1,496	n.a.	2,619	324	..	418
1959	3,753	10	1,636	42	1,678	1,161	2,266	660	..	394
1960	3,867	11	1,798	38	1,836	n.a.	2,927	686	..	494
1961	4,025	11	1,932	33	1,965	1,375	3,289	726	..	489
1962	4,127	12	1,961	33	1,994	1,440	1,519	785	141	583
1963	4,223	12	2,006	38	2,044	1,737	1,738	809	172	625
1964	4,330	13	2,078	50	2,128	1,676	1,787	805	200	626
1965	4,405	13	1,947	52	1,999	1,573	1,788	959	144	613
1966	4,402	12	1,952	42	1,994	1,642	1,598	615	249	594
1967	4,577	13	2,079	56	2,135	1,522	1,748	604	274	559
1968	4,687	13	2,225	57	2,282	1,533	2,047	619	341	583
1969	4,743	13	2,281	49	2,330	1,381	2,148	630	352	602
1970	4,739	13	2,272	55	2,327	1,514	2,375	704	365	605
1971	4,945	13	2,312	44	2,356	1,458	2,865	672	416	633

- (a) Includes policewomen, but excludes cadets and police reservists. The *Police Regulation Act* 1853 combined all police forces in Victoria under a Chief Commissioner. Earliest figures available are for 1856. The police strike occurred in 1923. The first policewomen were sworn in as constables in 1924.  
1856 to 1958 at 31 December.  
1959 to 1971 at 30 June.  
1939 to 1940 and 1942 to 1948 includes recalled police pensioners (where applicable) and excludes police members with the defence forces.  
1941 includes police members with the defence forces and excludes recalled police pensioners.
- (b) Excludes police gaols. The first gaol was established in 1837 and the original Melbourne Gaol was opened in 1845. Continuous statistics are available from 1856.  
1856 to 1959 at 31 December except "Number of persons in confinement" from 1857 to 1861 which are at 29 September for prisoners in gaols and at 31 December for prisoners in stockades and hulks.  
1960 to 1971 at 30 June.  
1938 to 1971 includes persons awaiting trial.
- (c) 1857 to 1928 year ended 31 December.  
1929 to 1953 year ended 31 July.  
1954 to 1971 year ended 30 June.  
1857 to 1928 refers to insolvencies.  
1929 to 1971 includes deeds of arrangement which are not included in earlier years.  
In 1841 the Colony of New South Wales passed bankruptcy legislation which enabled the Resident Judge in the Port Phillip District to appoint a Chief Commissioner of Insolvent Estates for the District. The first major bankruptcy legislation for the Colony of Victoria was passed in 1865. On 1 August 1928 the Commonwealth *Bankruptcy Act* 1924 superseded the Bankruptcy and Insolvency Acts of the States. On 4 March 1968 the *Bankruptcy Act* 1924-1965 was repealed and the *Bankruptcy Act* 1966 came into operation.
- (d) Number of persons placed on probation during year ended 30 June except 1959 which is for year ended 31 December. Adult probation has operated since July 1957, but figures are only available from 1959.
- (e) 1935 to 1954 and 1962 to 1971 number of persons placed on probation during year.  
1955 to 1961 number of cases resulting in probation during year.  
1935 to 1961 year ended 31 December.  
1962 to 1971 year ended 30 June.  
Children's court probation has operated since 1906, coming under the control of the Social Welfare Branch in 1960, but figures are only available from 1935.
- (f) Number of persons released on parole during year ended 30 June. The Adult Parole Board has governed the parole of prisoners since its inception in July 1957, but it should be noted that parole was available before that date under a different system and conditions for which statistics are not available.
- (g) Trainees paroled during year ended 30 June. Youth parole has operated since July 1961.  
n.a. : Not available.

**FINANCE**  
**VICTORIA—PRIVATE FINANCE**

Year	Savings banks (a)		Trading banks (b)	Permanent building societies (c)			Life insurance		Fire, marine, and general insurance (d)		Registrations of mortgages under the Transfer of Land Act and Property Law Act	
	Number of depositors' accounts	Amount on deposit	Amount on deposit	Number	Loans granted	Amount on deposit	Number of policies in existence	Sum insured	Revenue	Expenditure	Number	Value
	'000	\$m	\$m		\$m	\$m	'000	\$m	\$m	\$m		\$m
1854	3	0.4	10.1									
1855	3	0.3	9.7									
1856	4	0.5	11.9									
1857	6	0.7	12.2									
1858	7	0.9	11.8									
1859	9	0.9	13.2									
1860	10	1.0	14.5									
1861	12	1.2	14.0									
1862	13	1.3	16.2									
1863	15	1.4	14.7									
1864	17	1.6	16.0									
1865	20	1.5	16.8									
1866	24	1.4	16.6								2,793	5.5
1867	28	1.4	18.9								2,816	4.4
1868	33	1.6	20.4								2,885	4.1
1869	37	2.0	20.7								3,397	6.5
1870	42	2.1	21.8								3,756	6.2
1871	46	2.2	22.7								4,229	6.5
1872	53	2.8	24.6								4,525	6.5
1873	59	3.0	24.6								4,480	8.0
1874	64	3.2	24.9	60	1.30	n.a.					4,988	9.2
1875	66	2.9	27.5	79	n.a.	n.a.					4,619	7.4
1876	69	3.0	29.7	58	1.74	1.22					5,003	8.6
1877	73	3.1	33.0	61	1.64	1.50					5,489	8.0
1878	77	3.0	32.2	62	1.40	1.40					8,512	11.1
1879	83	3.0	32.8	56	0.98	1.48					8,651	12.3
1880	92	3.3	35.9	47	1.13	1.66					7,648	9.7
1881	107	5.1	42.3	49	1.61	1.68					8,116	11.9
1882	123	6.2	47.3	48	2.08	2.08					7,459	12.7
1883	136	5.6	48.1	48	2.18	2.68					6,979	10.5
1884	152	6.0	56.8	54	2.94	3.58					7,151	12.8
1885	170	6.7	61.2	62	4.15	4.94					8,324	17.9
1886	189	7.2	62.5	60	4.72	5.82					10,969	23.1
1887	207	7.4	70.4	66	5.09	8.44					10,474	21.5
1888	237	9.3	75.1	74	8.76	10.58					11,239	32.6
1889	261	10.0	77.5	72	6.53	10.12					12,925	36.6
1890	282	10.5	80.6	70	4.85	10.58					12,668	31.4
1891	301	11.4	80.8	60	4.12	8.88					12,303	31.0
1892	313	12.0	80.1	56	1.01	5.28					13,477	26.1
1893	323	13.4	64.1	51	0.19	2.38					12,073	22.5
1894	330	14.2	66.6	48	0.17	2.24					9,487	18.3
1895	338	14.6	63.6	46	0.25	1.94					7,862	14.1
1896	345	15.3	62.4	42	0.25	1.72					7,490	15.2
1897	354	15.9	60.4	39	0.13	1.44					7,350	13.5
1898	338	16.2	56.1	36	0.18	1.44					7,950	13.2
1899	356	17.0	60.1	35	0.19	1.40					7,460	12.6
1900	375	18.2	61.3	38	0.23	2.70	173	52.6			6,927	11.3
1901	393	19.3	61.2	32	0.30	0.94	196	57.1			7,688	11.5
1902	410	20.3	61.9	31	0.32	1.48	211	59.8			8,951	15.3
1903	419	20.7	60.9	32	0.30	1.48	215	60.5			9,199	12.9
1904	433	21.2	63.3	32	0.26	1.44	224	62.0	1.3	1.0	8,562	16.0
1905	447	21.8	70.2	28	0.30	1.44	227	63.2	1.3	1.1	8,665	11.9
1906	467	23.5	75.2	31	0.50	1.42	235	64.5	1.4	1.1	8,964	14.3
1907	491	25.6	76.5	30	0.64	1.38	242	66.2	1.5	1.3	10,523	17.9
1908	512	26.9	73.3	29	0.54	1.34	255	68.1	n.a.	n.a.	11,563	17.6
1909	532	28.2	79.3	27	0.48	1.42	271	70.2	1.7	1.4	11,759	19.7
1910	561	30.8	86.4	27	0.58	1.40	292	73.0	1.8	1.4	11,433	20.6
1911	595	34.5	95.0	36	0.92	1.40	312	76.4	1.9	1.5	12,312	23.3
1912	642	39.3	94.5	32	1.18	1.66	332	80.3	2.0	1.7	14,798	25.4
1913	703	44.4	97.4	32	0.74	1.58	351	83.1	2.2	1.7	14,901	21.3
1914	749	48.8	101.8	32	1.30	1.86	368	86.6	2.8	2.4	14,731	19.7
1915	781	53.7	108.1	32	0.64	1.78	381	88.8	3.0	2.2	13,934	18.1
1916	821	57.1	118.4	31	0.74	1.60	402	92.3	3.3	2.5	11,512	16.0
1917	869	62.5	103.4	31	0.68	1.50	425	96.8	3.4	2.2	10,016	11.5
1918	914	68.5	111.2	31	0.92	1.42	464	103.1	3.7	2.3	11,175	13.4
1919	967	76.7	129.0	31	1.48	1.70	485	111.3	4.1	3.1	14,216	16.6
1920	1,014	83.6	152.5	30	1.92	1.80	525	122.8	4.9	3.2	20,343	26.7

VICTORIA—PRIVATE FINANCE—continued

Year	Savings banks (a)		Trading banks (b)	Permanent building societies (c)			Life insurance	Fire, marine, and general insurance (d)		Registrations of mortgages under the Transfer of Land Act and Property Law Act		
	Number of depositors' accounts	Amount on deposit	Amount on deposit	Number	Loans granted	Amount on deposit	Number of policies in existence	Sum insured	Revenue	Expenditure	Number	Value
	'000	\$m	\$m		\$m	\$m	'000	\$m	\$m	\$m		\$m
1921	1,073	96.6	151.0	30	1.66	1.92	562	132.2	5.2	3.9	20,805	30.9
1922	1,128	102.8	153.1	29	1.68	2.00	608	144.7	5.3	3.8	21,654	31.9
1923	1,188	110.6	170.3	27	2.18	2.34	650	157.4	5.6	4.4	25,556	33.4
1924	1,269	114.4	168.6	27	2.04	2.58	690	168.5	6.3	5.4	28,341	44.2
1925	1,337	117.4	171.3	27	1.94	2.98	721	178.7	6.6	6.0	25,096	40.5
1926	1,396	126.5	180.1	26	2.06	3.30	747	187.5	6.7	6.4	25,568	42.6
1927	1,456	130.7	183.8	26	2.30	3.60	781	198.8	7.3	6.2	27,906	52.7
1928	1,515	137.7	183.8	26	1.70	3.64	812	208.8	7.3	6.1	28,157	41.9
1929	1,575	145.4	196.9	25	2.14	3.70	841	220.8	7.5	6.0	28,815	44.1
1930	1,620	138.7	177.9	22	1.52	3.62	842	226.6	7.5	6.9	23,502	34.9
1931	1,621	126.5	183.5	22	0.44	3.20	818	218.7	6.9	6.1	15,746	17.8
1932	1,558	131.4	226.2	22	0.36	2.96	841	222.9	6.5	5.4	12,491	14.4
1933	1,587	135.6	210.6	21	0.60	2.92	871	229.7	6.5	5.1	10,937	13.6
1934	1,623	139.9	228.2	21	0.90	2.94	917	239.9	6.6	5.1	12,057	16.8
1935	1,666	144.0	219.0	21	1.34	2.98	974	257.8	6.9	5.3	14,345	19.4
1936	1,714	147.8	219.4	21	2.00	3.28	1,044	278.8	7.5	5.9	15,876	22.4
1937	1,762	151.4	236.6	21	2.18	4.06	1,117	300.3	8.4	6.7	17,625	23.2
1938	1,809	157.8	240.6	21	2.48	4.58	1,151	312.8	9.3	7.0	20,065	27.9
1939	1,848	160.9	236.6	21	2.16	4.96	1,196	327.7	9.5	7.8	19,997	26.0
1940	1,892	158.3	262.8	21	2.18	5.56	1,244	340.1	9.9	8.1	16,141	20.2
1941	1,959	171.4	270.3	21	2.22	5.68	1,313	357.4	10.7	8.1	16,466	18.2
1942	2,032	188.5	280.4	21	1.52	5.70	1,359	370.9	12.3	8.6	10,825	11.5
1943	2,140	242.5	322.2	21	0.78	5.54	1,406	388.3	12.6	9.0	8,114	7.7
1944	2,267	307.8	361.0	21	0.68	5.20	1,460	412.2	12.3	9.4	8,814	8.7
1945	2,367	364.3	385.0	22	1.24	5.12	1,514	443.2	12.0	10.4	10,727	10.3
1946	2,444	422.7	418.5	22	2.96	5.20	1,601	496.5	12.3	9.3	18,856	15.0
1947	2,486	432.2	432.1	22	4.44	6.86	1,682	558.8	15.0	11.5	22,245	26.6
1948	2,550	452.8	458.5	22	4.44	6.86	1,763	628.8	19.7	15.4	22,775	35.6
1949	2,615	478.5	520.6	20	6.04	8.78	1,829	694.8	25.0	18.9	28,772	43.6
1950	2,707	514.2	618.9	20	9.10	8.10	1,891	775.6	30.5	22.4	37,124	55.5
1951	2,809	563.6	816.2	19	7.02	6.64	1,958	883.9	37.5	29.5	39,173	84.6
1952	2,897	601.7	847.1	19	5.70	6.02	2,010	990.0	50.3	40.4	36,790	132.0
1953	2,978	639.9	809.4	18	4.60	6.56	2,049	1,087.0	58.0	49.3	41,650	119.3
1954	3,045	679.6	889.1	20	4.93	7.15	2,062	1,193.9	63.5	53.8	40,498	107.8
1955	3,118	729.5	946.9	19	5.57	4.30	2,071	1,333.3	69.9	62.5	33,211	151.1
1956	2,234	772.4	949.4	18	4.78	4.73	2,073	1,486.8	80.5	70.3	32,718	159.8
1957	2,320	823.1	954.3	20	5.16	5.31	2,075	1,696.0	93.5	81.3	34,649	174.0
1958	2,438	867.3	1,009.0	21	6.78	5.62	2,079	1,915.9	104.3	88.0	40,007	198.3
1959	2,565	916.9	1,030.9	24	7.50	6.82	2,080	2,189.0	111.4	95.9	39,560	221.9
1960	2,692	999.2	1,095.1	23	9.04	9.58	2,142	2,586.3	121.1	105.0	47,421	320.8
1961	2,822	1,034.9	1,105.2	31	8.88	10.16	2,081	2,915.6	130.6	117.5	40,594	258.2
1962	2,984	1,141.7	1,160.7	33	7.30	12.16	2,048	3,189.9	137.4	120.2	44,699	281.0
1963	3,203	1,298.1	1,212.5	32	8.58	14.18	2,021	3,526.9	143.5	126.4	55,113	366.6
1964	3,418	1,479.0	1,309.6	33	9.37	15.99	2,015	3,962.8	154.6	135.4	64,912	490.6
1965	3,630	1,620.4	1,446.5	35	12.41	18.37	2,015	4,423.1	172.0	152.9	58,962	473.9
1966	3,815	1,746.0	1,507.6	39	12.89	20.98	1,998	4,853.5	195.9	173.1	59,501	461.1
1967	4,026	1,926.7	1,622.3	35	16.01	25.36	2,015	5,410.0	221.0	191.2	59,247	514.7
1968	4,234	2,085.5	1,708.7	35	18.85	28.71	2,044	6,082.8	240.5	213.3	65,096	593.7
1969	4,452	2,244.3	1,831.0	40	27.55	52.23	2,079	6,928.9	260.8	231.7	64,790	653.1
1970	4,694	2,386.8	1,941.3	46	33.02	65.19	2,118	8,045.6	290.6	271.7	64,978	685.1
1971	4,924	2,575.4	1,937.9	n.a.	n.a.	n.a.	n.a.	n.a.	337.3	282.2	70,416	809.0

(a) Includes Trustees Savings Banks established in 1842 (reorganised as Commissioners' Savings Banks in 1853) and the Post Office Savings Bank system opened in 1865, both of which merged in 1897, being designated the State Savings Bank of Victoria in 1912; the Commonwealth Savings Bank in Victoria (until 1928 a department of the Commonwealth Bank) which commenced business in 1912; and private savings banks, which commenced business from 1956. Details are at 30 June.

(b) 1854 to 1945 joint stock banks only; excludes the Commonwealth Bank. 1946 to 1971 all cheque-paying banks. 1854 to 1921 average for year ended 31 December. 1922 to 1971 average for year ended 30 June.

(c) 1874 to 1905 year ended 31 December. 1906 to 1935 year ended 30 June. 1936 to 1967 year ended 31 December. 1968 to 1971 year ended 30 June. 1911 to 1930 and 1954 to 1957 includes Starr-Bowkett societies.

(d) 1904 to 1925 year ended 31 December. 1926 to 1971 year ended 30 June.

n.a. : Not available.

**TRANSPORT AND COMMUNICATIONS**  
**VICTORIA—INTERSTATE AND OVERSEAS SHIPPING**

Year (a)	Shipping entered		Shipping cleared		Year (a)	Shipping entered		Shipping cleared	
	Vessels	Net tons	Vessels	Net tons		Vessels	Net tons	Vessels	Net tons
1837	140	12,754	140	13,424	1881	2,125	1,219,231	2,123	1,192,671
1838	137	11,717	136	11,679	1882	2,089	1,349,093	2,079	1,341,791
1839	n.a.	n.a.	189	20,352	1883	2,023	1,464,752	2,064	1,499,579
1840	262	43,416	232	34,334	1884	1,986	1,569,162	1,989	1,582,425
1841	272	52,500	228	34,156	1885	2,154	1,631,266	2,119	1,628,892
1842	237	43,760	225	34,265	1886	2,307	1,848,058	2,324	1,887,239
1843	288	43,605	230	27,602	1887	2,435	1,920,180	2,418	1,938,063
1844	229	29,966	247	34,596	1888	2,724	2,182,071	2,630	2,125,812
1845	273	31,337	291	31,114	1889	2,855	2,270,827	2,886	2,328,351
1846	349	40,569	340	35,717	1890	2,474	2,178,551	2,459	2,184,790
1847	423	47,885	425	48,634	1891	2,531	2,338,864	2,560	2,376,245
1848	469	67,618	446	55,094	1892	2,255	2,224,652	2,266	2,231,602
1849	484	97,003	460	82,909	1893	1,889	2,009,187	1,887	2,020,551
1850	555	108,030	508	87,087	1894	2,083	2,163,716	2,045	2,127,743
1851	712	129,426	658	111,005	1895	1,948	2,181,539	1,889	2,167,147
1852	1,657	408,216	1,475	350,296	1896	1,882	2,276,478	1,900	2,289,752
1853	2,594	721,473	2,268	664,867	1897	1,888	2,437,190	1,882	2,428,182
1854	2,596	794,604	2,607	798,837	1898	2,008	2,472,745	2,043	2,483,992
1855	1,907	551,726	1,995	581,557	1899	2,024	2,662,792	2,031	2,678,663
1856	1,920	538,609	1,959	538,362	1900	1,928	2,901,619	1,935	2,912,696
1857	2,190	694,564	2,207	684,526	1901	2,418	3,392,226	2,347	3,323,265
1858	2,034	648,103	2,015	641,254	1902	2,278	3,366,485	2,286	3,372,555
1859	2,026	634,131	2,056	661,518	1903	2,204	3,409,288	2,263	3,448,566
1860	1,614	581,642	1,841	599,137	1904	2,495	3,928,849	2,503	3,906,692
1861	1,778	549,195	1,820	540,807	1905	2,376	3,989,903	2,274	3,859,098
1862	1,715	556,188	1,766	581,892	1906	2,163	4,037,349	2,160	4,041,400
1863	1,739	624,061	1,782	618,052	1907	2,219	4,203,614	2,216	4,192,360
1864	1,816	620,200	1,896	641,614	1908	2,293	4,488,768	2,290	4,472,302
1865	1,743	580,973	1,823	599,351	1909	2,174	4,506,973	2,157	4,514,298
1866	2,078	649,979	2,203	675,741	1910	2,308	4,952,273	2,310	4,954,773
1867	1,847	593,235	1,955	617,026	1911	2,335	5,140,184	2,347	5,156,952
1868	2,067	653,362	2,172	685,207	1912	2,399	5,426,146	2,385	5,410,801
1869	2,320	721,274	2,334	730,961	1913	2,481	5,950,035	2,469	5,902,277
1870	2,039	663,764	2,187	681,098	1914	1,281	3,150,689	1,297	3,208,400
1871	2,137	663,002	2,257	692,023	1914-15	1,324	5,290,063	1,329	5,308,817
1872	2,104	666,336	2,234	694,426	1915-16	2,392	4,935,129	2,385	4,902,245
1873	2,187	756,103	2,226	762,912	1916-17	1,962	4,042,819	1,967	4,050,095
1874	2,100	777,110	2,122	792,509	1917-18	1,721	2,871,343	1,724	2,873,770
1875	2,171	840,386	2,223	833,499	1918-19	1,730	2,870,974	1,709	2,815,938
1876	2,086	810,062	2,150	847,026	1919-20	1,792	3,987,262	1,809	4,021,188
1877	2,192	939,661	2,219	935,324	1920-21	2,246	4,663,126	2,248	4,651,818
1878	2,119	951,750	2,173	961,677	1921-22	2,442	5,506,127	2,436	5,518,393
1879	2,084	963,087	2,083	977,135	1922-23	2,634	6,611,352	2,634	6,618,968
1880	2,076	1,078,885	2,115	1,101,014	1923-24	2,666	6,782,495	2,676	6,749,873

VICTORIA—INTERSTATE AND OVERSEAS SHIPPING—*continued*

Year (a)	Shipping entered		Shipping cleared		Cargo			
	Vessels	Net tons	Vessels	Net tons	Shipped		Discharged	
					Tons weight	Tons measurement	Tons weight	Tons measurement
1924-25	2,577	6,807,357	2,605	6,876,355	2,015,319		3,720,924	
1925-26	2,470	6,485,561	2,447	6,994,779	1,367,319		3,563,620	
1926-27	2,667	7,187,147	2,666	7,180,748	1,871,502		4,067,300	
1927-28	2,589	6,844,809	2,608	6,869,313	1,321,478		3,748,746	
1928-29	2,474	6,798,092	2,466	6,815,305	1,903,008		3,532,319	
1929-30	2,499	6,911,048	2,488	6,877,418	1,305,653		3,503,796	
1930-31	2,166	6,161,699	2,181	6,238,325	1,588,677	244,480	2,082,259	311,375
1931-32	2,097	5,996,094	2,101	6,018,664	1,530,102	352,595	1,804,441	430,181
1932-33	2,343	6,688,911	2,296	6,674,138	1,611,062	429,347	2,354,153	543,845
1933-34	2,393	6,791,063	2,359	6,775,019	1,354,383	384,431	2,475,237	593,734
1934-35	2,603	7,435,416	2,585	7,407,121	1,533,762	404,628	2,965,427	666,245
1935-36	2,719	7,939,719	2,711	7,907,632	1,724,861	424,596	3,322,181	724,985
1936-37	2,848	8,098,613	2,849	8,070,031	2,000,163	457,202	3,552,723	781,918
1937-38	3,019	8,537,857	2,991	8,520,864	2,103,425	628,213	3,859,861	965,648
1938-39	2,979	8,537,085	2,989	8,479,995	1,456,340	525,877	3,748,375	860,147
1939-40	2,658	7,024,938	2,672	7,092,540	1,307,715	745,028	3,073,288	1,485,353
1940-41	2,465	5,590,010	2,473	5,568,256	1,257,633	915,312	3,327,150	1,336,987
1941-42	2,154	4,451,343	2,139	4,459,084	1,155,539	876,298	3,706,953	1,206,782
1942-43	1,681	3,281,980	1,678	3,260,936	1,027,774	830,271	3,244,476	891,261
1943-44	1,494	3,000,917	1,499	2,986,356	1,081,611	771,087	2,965,475	880,935
1944-45	1,412	2,998,775	1,444	3,096,963	1,034,279	987,555	3,420,562	720,964
1945-46	1,442	3,485,783	1,434	3,482,275	884,625	723,955	3,338,302	632,229
1946-47	1,679	4,844,421	1,659	4,804,031	1,159,061	743,897	3,394,373	694,253
1947-48	1,846	5,679,722	1,825	5,608,437	1,519,431	630,398	3,845,047	767,677
1948-49	2,068	7,054,653	2,709	7,091,571	1,366,396	751,492	4,018,854	1,118,739
1949-50	2,315	8,305,761	2,314	8,301,760	1,508,317	703,977	4,467,240	1,547,065
1950-51	2,287	8,528,946	2,316	8,599,072	1,698,825	656,906	4,970,300	1,698,763
1951-52	2,316	8,748,426	2,328	8,840,096	1,484,302	669,339	5,221,206	1,967,504
1952-53	2,448	8,626,000	2,437	8,589,000	1,420,531	767,693	4,748,629	818,478
1953-54	2,546	9,013,000	2,541	9,010,000	1,318,326	915,556	5,087,460	1,286,710
1954-55	2,718	9,951,531	2,719	9,949,000	2,146,656	978,488	6,160,373	1,639,595
1955-56	2,757	10,537,426	2,755	10,473,000	2,552,084	922,118	7,248,716	1,675,012
1956-57	2,698	9,876,003	2,699	9,834,800	2,631,244	902,298	7,076,979	1,256,130
1957-58	2,830	10,375,032	2,801	10,274,800	2,463,816	906,270	7,314,676	1,371,372
1958-59	2,899	10,979,594	2,899	10,962,523	2,730,005	909,385	7,664,141	1,323,530
1959-60	2,983	11,693,831	2,987	11,700,746	2,874,203	1,069,401	7,911,440	1,718,885
1960-61	3,054	12,788,091	3,060	12,863,651	3,603,886	1,043,121	8,001,088	2,211,724
1961-62	3,210	13,525,464	3,198	13,409,264	4,271,535	1,028,010	8,062,391	1,493,204
1962-63	3,177	13,588,245	3,189	13,585,864	4,785,826	967,354	9,450,873	1,681,330
1963-64	3,360	14,615,659	n.a.	n.a.	5,025,911	1,254,354	9,310,820	1,899,618
1964-65	3,316	15,099,408	n.a.	n.a.	4,067,078	1,363,687	9,736,015	2,204,293
1965-66	3,418	15,118,465	n.a.	n.a.	3,743,000	1,380,000	9,463,000	2,205,000
1966-67	3,332	15,721,325	3,331	15,677,811	4,251,431	1,390,815	11,002,222	2,232,931
1967-68	3,226	15,563,017	3,225	15,562,302	3,453,558	1,500,238	10,938,543	2,482,808
1968-69	3,317	16,324,875	3,295	16,188,634	3,387,345	1,530,532	11,284,764	2,762,667
1969-70	3,364	18,374,232	3,352	18,320,748	5,539,536	1,858,383	11,178,017	3,014,457
1970-71	3,323	18,958,487	3,334	19,057,661	11,480,563	2,078,346	7,655,223	3,032,968

(a) 1837 to 1913 figures are for the year ended 31 December.  
 1914 figures are for the six months ended 30 June.  
 1914-15 to 1970-71 figures are for the year ended 30 June.  
 n.a. : Not available.

## VICTORIA—RAILWAYS, TRAMWAYS, AND OMNIBUS SERVICES

Year (a)	Victorian Railways					Melbourne and Metropolitan Tramways Board (b)			
	Lines open for traffic	Mileage run	Passenger journeys	Goods and livestock carried	Net ton miles	Tramways		Omnibuses	
						Mileage run	Passenger journeys	Mileage run	Pass- enger journeys
miles			tons	million	'000	'000	'000	'000	
1862	214	936,404							
1863	214	1,198,524							
1864	272	1,587,842							
1865	271	1,477,323							
1866	271	1,543,762							
1867	271	1,488,737							
1868	271	1,538,964							
1869	271	1,563,274							
1870	274	1,495,719							
1871	276	917,960							
1872	329	1,571,682							
1873	377	1,766,717	4,724,047	802,933					
1874	458	2,109,227	5,374,841	904,670					
1875	603	2,502,838	6,165,076	939,446					
1876	719	4,015,197	6,647,867	1,153,018					
1877	950	3,271,007	7,337,926	1,252,811					
1878	1,052	3,633,190	8,004,646	1,188,835					
1879	1,125	4,002,624	14,584,341	1,114,190					
1880	1,199	4,380,802	15,999,459	1,258,254					
1881	1,247	4,633,267	18,973,070	1,421,530					
1882	1,355	5,069,389	22,646,489	1,684,213					
1883	1,562	5,701,513	26,485,304	1,881,760					
1884	1,663	6,947,876	31,936,453	2,383,889					
1885	1,676	6,849,818	34,814,002	2,272,361					
1886	1,743	7,256,703	42,511,014	2,724,095	(c) 498	(c) 16,353			
1887	1,880	7,991,378	49,219,857	2,972,761	(d) 1,509	(d) 17,992			
1888	2,018	9,082,312	55,911,394	3,564,043	4,036	31,133			
1889	2,199	10,680,743	68,904,427	4,160,126	6,397	45,000			
1890	2,471	11,773,152	58,951,796	4,170,436	7,454	45,274			
1891	2,764	12,249,747	57,996,039	4,425,609	9,170	48,045			
1892	2,904	11,807,677	55,148,122	2,720,886	8,593	43,825			
1893	2,959	10,775,134	46,520,784	2,558,378	8,594	36,405			
1894	2,988	10,145,307	40,880,378	2,455,811	8,260	34,788			
1895	3,082	9,567,453	40,210,733	2,435,857	8,046	33,591			
1896	3,080	8,989,391	40,993,798	2,163,722	7,726	32,874			
1897	3,065	9,228,687	42,263,638	2,383,445	7,839	34,775			
1898	3,065	9,239,657	43,090,749	2,408,665	7,984	36,245			
1899	3,088	9,714,298	45,805,043	2,779,748	8,365	38,875			
1900	3,194	10,107,549	49,332,899	2,998,303	8,411	41,662			
1901	3,213	11,066,016	54,704,062	3,381,860	8,965	47,196			
1902	3,278	11,284,944	57,465,077	3,433,627	9,227	47,262			
1903	3,376	10,286,272	54,798,073	3,093,997	9,044	46,833			
1904	3,381	9,172,644	54,282,003	3,439,203	8,969	49,184			
1905	3,394	9,023,365	59,702,050	3,628,237	8,932	50,297			
1906	3,398	9,392,069	65,244,392	3,676,017	9,033	52,926			
1907	3,401	10,339,691	71,200,331	3,965,792	9,536	59,069			
1908	3,401	10,718,415	76,053,909	3,754,861	9,811	63,955			
1909	3,415	11,628,792	82,286,112	4,166,786	10,716	71,277			
1910	3,496	12,045,866	86,642,160	4,468,440	11,115	75,410			
1911	3,528	13,319,572	95,206,713	4,967,627	11,943	84,294			
1912	3,627	14,203,681	105,909,650	5,297,685	12,868	95,602			
1913	3,652	14,648,489	113,430,526	5,150,404	13,678	103,703			
1914	3,840	15,570,098	119,002,367	5,816,088	14,701	113,280			
1915	3,880	15,880,677	119,978,898	5,410,045	14,917	112,216			
1916	4,106	14,424,357	118,898,222	5,829,835	15,546	126,893			
1917	4,128	14,594,775	111,791,982	5,962,602	16,316	147,969			
1918	4,157	14,147,896	109,607,750	6,231,093	18,114	163,993			
1919	4,197	13,587,968	117,467,159	6,515,470	18,777	173,081			
1920	4,222	15,687,177	143,251,216	7,770,694	19,254	197,709			
1921	4,274	16,583,638	140,850,933	7,572,993	20,333	213,872			
1922	4,324	15,830,605	149,223,529	7,491,031	21,209	218,451			
1923	4,341	16,323,481	163,120,037	7,517,216	673.9	21,585	226,632		
1924	4,440	17,245,219	175,030,787	8,309,543	745.3	21,985	221,892		
1925	4,489	18,172,188	173,656,504	8,959,556	847.2	23,712	228,752	(e) 288	(e) 1,418
1926	4,633	18,267,000	175,354,111	8,728,496	776.3	23,052	226,900	1,450	7,164
1927	4,644	18,781,264	177,102,686	9,234,923	882.9	23,205	218,837	1,030	5,374
1928	4,707	19,302,971	172,350,327	8,117,961	737.9	23,626	215,810	637	4,543
1929	4,709	19,022,771	168,440,449	8,187,088	834.6	23,791	211,762	251	1,086
1930	4,723	18,708,773	164,471,582	7,513,606	737.6	22,889	197,979	509	3,743

VICTORIA—RAILWAYS, TRAMWAYS, AND OMNIBUS SERVICES—*continued*

Year (a)	Victorian Railways					Melbourne and Metropolitan Tramways Board (b)			
	Lines open for traffic	Mileage run	Passenger journeys	Goods and livestock carried	Net ton miles	Tramways		Omnibuses	
						Mileage run	Passenger journeys	Mileage run	Pass- enger journeys
	miles		tons	million	'000	'000	'000	'000	
1931	4,727	16,957,378	141,212,373	6,099,310	n.a.	22,181	173,854	226	1,225
1932	4,728	16,269,092	131,921,679	6,197,393	769.2	21,918	161,918	8	5
1933	4,728	16,235,292	136,078,269	6,259,427	735.0	21,921	163,688	9	7
1934	4,728	16,222,395	137,316,780	5,872,806	693.7	21,992	166,447	10	7
1935	4,728	16,456,104	145,938,129	6,023,724	693.8	22,286	172,847	10	8
1936	4,728	17,345,725	145,817,559	6,438,635	759.0	22,235	172,992	662	4,315
1937	4,728	18,171,670	147,744,433	6,837,872	838.0	22,836	178,506	1,286	6,232
1938	4,728	18,889,686	144,051,267	7,273,422	927.4	22,995	175,564	1,821	9,212
1939	4,767	18,875,525	148,543,244	5,989,557	760.5	22,981	182,094	2,165	11,911
1940	4,766	18,032,670	151,279,927	6,202,458	818.6	22,761	185,282	2,971	17,874
1941	4,766	18,837,283	166,650,465	6,641,249	811.9	21,575	193,386	5,265	39,694
1942	4,773	19,170,009	189,775,439	7,526,012	n.a.	22,064	233,136	7,625	61,893
1943	4,766	19,240,328	205,533,158	8,777,932	n.a.	22,926	265,928	8,613	70,877
1944	4,766	17,210,382	204,083,197	8,294,226	n.a.	23,000	278,451	8,524	71,632
1945	4,756	17,141,093	205,783,287	8,063,591	n.a.	22,731	284,139	8,146	70,664
1946	4,756	17,169,873	205,936,888	7,229,025	n.a.	22,674	281,198	7,865	70,196
1947	4,750	16,399,399	178,639,440	7,561,773	981.9	22,495	262,406	6,929	57,947
1948	4,733	17,758,784	191,105,459	8,439,760	1,154.6	22,554	255,804	7,875	67,154
1949	4,706	18,314,638	185,005,089	8,859,016	1,167.6	23,120	266,440	8,096	72,333
1950	4,700	18,518,802	190,472,649	9,125,140	1,206.8	18,330	203,697	6,823	59,765
1951	4,699	14,873,139	147,176,623	7,539,166	1,057.1	21,309	238,709	7,626	67,442
1952	4,706	17,909,810	171,830,096	9,204,410	1,280.2	21,648	217,685	7,598	62,619
1953	4,672	18,673,655	169,371,880	9,191,615	1,262.5	22,215	207,398	8,076	61,045
1954	4,490	19,299,251	172,497,575	9,200,573	1,269.8	22,000	204,747	7,892	59,111
1955	4,451	19,717,693	170,480,237	10,082,214	1,426.4	21,046	202,437	7,241	56,511
1956	4,445	19,594,920	167,901,387	9,606,783	1,324.9	22,253	207,914	5,859	37,209
1957	4,407	19,380,000	169,137,324	9,380,699	1,249.5	22,240	203,323	5,907	34,640
1958	4,401	18,767,386	169,577,732	8,891,859	1,260.1	20,802	195,350	5,940	34,577
1959	4,333	18,834,179	165,261,609	9,295,015	1,352.5	20,312	183,835	5,920	32,242
1960	4,290	18,653,621	159,865,445	9,687,445	1,384.8	19,736	177,868	5,836	31,286
1961	4,291	18,584,661	151,301,891	10,976,508	1,612.4	19,296	172,055	5,926	30,282
1962	4,291	19,228,094	154,076,416	10,350,291	1,581.0	18,814	167,250	6,993	31,313
1963	4,265	19,798,680	153,979,167	10,840,888	1,693.2	17,708	162,692	7,341	32,634
1964	4,210	20,454,304	154,639,820	12,132,015	1,905.6	17,575	160,479	7,283	32,426
1965	4,211	20,817,635	150,907,000	12,595,661	2,028.2	16,920	147,891	7,267	29,812
1966	4,189	20,458,932	150,184,992	12,156,405	1,989.5	16,609	140,556	6,763	25,120
1967	4,218	20,318,340	147,300,774	12,074,550	1,937.4	16,571	131,876	6,931	25,107
1968	4,210	20,126,564	147,156,834	11,115,953	1,776.2	16,480	127,575	7,335	25,576
1969	4,190	19,947,718	145,768,967	11,315,916	1,903.0	16,069	119,009	7,099	24,271
1970	4,170	20,814,068	144,571,400	11,835,141	2,037.2	15,273	110,692	6,923	22,353
1971	4,166	21,094,731	142,485,605	12,490,335	2,118.7	14,899	109,779	7,018	22,753

(a) 1862 to 1870 and 1877 to 1884 year ended 31 December.  
 1871 six months ended 30 June.  
 1872 to 1875 and 1885 to 1971 year ended 30 June.  
 1876 eighteen months ended 31 December.  
 (b) 1886 to 1915 Melbourne Tramway and Omnibus Company.  
 1916 to 1971 Melbourne and Metropolitan Tramways Board.  
 (c) Ten months only.  
 (d) Nine months only.  
 (e) Six months only.  
 n.a. : Not available.



## VICTORIA—MOTOR VEHICLES

Year	New motor vehicles registered during period (a)				Motor vehicles on register at 30 June (a)				Drivers' licences in force at 30 June	Revenue collected by Motor Registration Branch
	Cars and station wagons (b)	Other (c)	Total (d)	Motor cycles	Cars and station wagons (b)	Other (c)	Total (d)	Motor cycles		
1924-25							70,191	19,212	100,021	\$'000 828
1925-26							83,622	19,929	126,369	1,287
1926-27							111,124	23,011	164,380	1,647
1927-28							126,328	24,015	188,057	1,892
1928-29							143,844	24,554	212,228	2,185
1929-30					125,315	29,167	154,482	25,405	230,853	2,371
1930-31					116,568	28,028	144,596	23,635	228,051	2,212
1931-32					117,160	28,224	145,384	22,568	226,712	2,196
1932-33					124,609	31,554	156,163	23,439	235,613	2,371
1933-34					130,495	33,513	164,008	24,248	245,847	2,522
1934-35					140,483	37,487	177,970	24,968	260,288	2,738
1935-36					143,330	50,500	193,830	26,095	289,486	3,110
1936-37	13,292	7,948	21,240	2,923	137,885	69,025	206,910	26,663	315,826	3,394
1937-38	14,954	8,604	23,558	2,946	145,179	77,943	223,122	27,333	340,438	3,589
1938-39	15,090	6,831	21,921	2,349	153,391	81,766	235,157	26,698	358,417	3,774
1939-40	11,613	5,773	17,386	1,370	156,337	84,575	240,912	25,765	370,838	3,879
1940-41	5,529	3,304	8,833	735	148,437	84,725	233,162	23,572	365,205	3,785
1941-42	1,244	1,590	2,834	270	123,649	84,589	208,238	16,692	339,334	3,305
1942-43	852	1,153	2,005	83	131,417	85,937	217,354	16,275	329,595	2,912
1943-44	527	3,306	3,833	70	136,842	89,354	226,196	17,965	337,171	3,057
1944-45	496	2,351	2,847	86	141,249	94,110	235,359	19,820	353,584	3,214
1945-46	1,208	2,329	3,537	378	146,605	102,196	248,801	23,249	401,610	3,566
1946-47	6,136	4,643	10,779	1,683	157,461	111,263	268,724	26,203	437,924	4,056
1947-48	12,170	9,354	21,524	3,480	171,203	121,097	292,300	29,143	470,971	4,491
1948-49	18,333	11,551	29,884	5,048	189,445	130,277	319,722	31,706	487,407	4,856
1949-50	32,321	17,240	49,561	6,440	227,055	142,592	369,647	34,318	525,709	5,821
1950-51	36,692	19,432	56,124	5,442	263,714	147,049	410,763	33,637	575,753	7,024
1951-52	42,319	22,498	64,817	5,439	347,873	148,050	495,923	37,303	639,910	9,114
1952-53	26,594	11,458	38,052	2,523	376,123	130,172	506,295	33,533	645,962	9,571
1953-54	34,379	11,799	46,178	2,358	397,658	130,707	528,365	30,881	708,307	10,020
1954-55	47,528	15,907	63,435	2,363	456,024	143,930	599,954	29,193	725,826	11,280
1955-56	49,658	17,568	67,226	2,244	447,370	173,987	621,357	25,854	801,852	12,054
1956-57	43,862	14,701	58,563	1,963	473,748	177,690	651,438	24,048	831,847	14,802
1957-58	49,845	15,508	65,353	2,142	504,837	184,165	689,002	22,676	879,779	18,451
1958-59	52,926	16,736	69,662	2,280	538,113	190,036	728,149	21,816	908,343	19,333
1959-60	70,197	17,252	87,449	2,220	585,867	196,445	782,312	20,644	967,952	22,098
1960-61	67,001	14,803	81,804	1,356	625,183	201,132	826,315	18,422	1,032,431	22,538
1961-62	59,664	12,317	71,981	738	655,961	203,902	859,863	16,770	1,079,751	23,334
1962-63	77,892	14,206	92,098	656	704,906	211,558	916,464	15,079	1,112,750	25,176
1963-64	90,506	16,386	106,892	715	761,111	215,358	976,469	13,516	1,162,448	27,433
1964-65	96,268	17,486	113,754	1,000	818,331	218,957	1,037,288	12,526	1,215,435	31,928
1965-66	86,240	17,750	103,990	1,214	860,451	220,649	1,081,100	11,800	1,259,477	44,233
1966-67	87,152	17,048	104,200	1,788	901,121	222,996	1,124,117	12,431	1,313,291	46,357
1967-68	99,136	16,673	115,809	3,019	954,461	223,689	1,178,150	15,386	1,371,673	50,402
1968-69	101,677	18,634	120,311	3,457	1,008,506	227,605	1,236,111	18,527	1,435,797	57,782
1969-70	110,797	20,058	130,855	4,689	1,067,919	232,255	1,300,174	21,342	1,502,074	61,356
1970-71	109,829	18,703	128,532	8,218	1,122,460	235,739	1,358,199	28,912	1,566,396	66,480

(a) Excludes defence service vehicles.

(b) Includes ambulances and hearses.

(c) Utilities, panel vans, trucks and truck-type vehicles, and omnibuses.

(d) Excludes motor cycles, tractors, trailers, and plant and equipment.

VICTORIA—ROAD TRAFFIC ACCIDENTS INVOLVING CASUALTIES

Year (a)	Accidents involving casualties	Persons killed	Persons injured	Rate per—					
				10,000 vehicles registered			100,000 mean population		
				Accidents involving casualties	Persons killed	Persons injured	Accidents involving casualties	Persons killed	Persons injured
1924		224	3,534					13.6	215.2
1925		301	2,688		31.2	278.6		18.0	160.8
1926		351	3,513		29.5	295.6		20.7	207.0
1927		331	3,658		23.3	257.2		19.2	211.7
1928		349	3,714		21.9	233.0		19.9	212.0
1929		344	4,221		19.8	242.4		19.4	238.5
1930		350	4,085		20.1	234.7		19.6	228.7
1931		333	4,042		19.8	240.5		18.5	224.7
1932		311	4,090		17.9	235.4		17.2	226.1
1933		316	5,082		17.2	276.3		17.4	279.2
1934		349	6,812		17.8	348.3		19.1	372.2
1935		382	6,765		18.1	320.0		20.8	368.0
1936		404	7,375		17.8	325.3		21.9	399.5
1937	6,400	427	7,278	264.5	17.6	300.7	345.2	23.0	392.6
1938	6,638	433	7,523	259.1	16.9	293.7	355.9	23.2	403.3
1939	7,098	480	8,074	268.6	18.2	305.5	377.8	25.6	429.7
1940	7,561	515	8,723	283.5	19.3	327.1	400.7	27.3	462.3
1941	6,548	412	7,610	255.0	16.0	296.4	341.6	21.5	397.0
1942	5,240	396	5,836	233.0	17.6	259.5	268.9	20.3	299.5
1943	4,166	347	4,749	178.3	14.9	203.3	212.0	17.7	241.6
1944	3,764	266	4,219	154.2	10.9	172.8	189.9	13.4	212.9
1945	3,827	260	4,368	150.0	10.2	171.2	191.5	13.0	218.6
1946	5,285	336	6,202	194.3	12.4	228.0	262.3	16.7	307.8
1947	6,522	386	7,810	221.1	13.1	264.8	319.8	18.9	383.0
1948	6,252	362	7,210	194.5	11.3	224.3	302.0	17.5	348.3
1949	6,940	426	8,225	197.5	12.1	234.0	328.0	20.1	388.7
1950	8,618	501	10,538	213.3	12.4	260.9	396.3	23.0	484.5
1951	9,274	581	11,364	208.7	13.1	255.7	413.5	25.9	506.7
1952	10,111	603	12,531	189.6	11.3	235.0	437.8	26.1	542.5
1953	10,098	515	12,564	187.1	9.5	232.7	425.7	21.7	529.6
1954	10,537	569	13,351	188.4	10.2	238.7	434.9	23.5	551.1
1955	10,217	528	12,833	162.4	8.4	204.0	411.1	21.3	516.4
1956	10,606	582	13,483	163.9	9.0	208.3	414.9	22.8	527.5
1957	10,804	589	14,120	159.9	8.7	209.0	411.5	22.4	537.8
1958	11,233	571	15,015	157.8	8.0	211.0	418.0	21.3	558.8
1959	12,462	661	16,784	166.2	8.8	223.8	453.2	24.0	610.3
1960	12,267	698	16,595	152.8	8.7	206.7	435.1	24.8	588.6
1961	12,140	773	16,757	143.7	9.2	198.4	419.6	26.7	579.1
1962	11,639	818	16,074	132.8	9.3	183.4	393.6	27.7	543.6
1963	12,330	803	17,149	132.4	8.6	184.1	409.4	26.7	569.4
1964	13,067	838	18,401	132.0	8.5	185.9	425.2	27.3	598.7
1965	14,432	907	20,482	137.5	8.6	195.1	460.2	28.9	653.1
1966	14,110	933	20,277	129.1	8.5	185.5	441.8	29.2	634.8
1967	14,077	963	19,994	123.9	8.5	175.9	433.2	29.6	615.3
1968	15,113	868	21,932	126.6	7.3	183.8	457.9	26.3	664.5
1969	15,622	964	22,498	124.5	7.7	179.3	465.8	28.7	670.9
1970	17,030	1,065	24,502	128.9	8.1	185.4	498.5	31.2	717.2
1971	15,327	996	22,067	110.5	7.2	159.1	441.0	28.7	634.9

(a) 1924 to 1939 year ended 31 December.  
1940 to 1971 year ended 30 June.

## VICTORIA—ESSENDON AND MELBOURNE AIRPORTS : MOVEMENTS, ETC.

Year	Domestic aircraft (a)				International aircraft (b)			
	Number of movements	Passengers		Freight handled (short tons)	Number of movements	Passengers		Freight handled (short tons)
		Embarked	Disembarked			Embarked	Disembarked	
1960	37,436	579,985	590,623	32,309	931	9,294	11,514	401
1961	37,599	571,063	574,661	26,094	896	10,589	11,072	310
1962	36,354	584,471	589,395	24,766	834	10,607	12,438	312
1963	39,928	632,768	644,669	24,966	844	13,059	15,772	396
1964	46,418	743,352	753,155	28,372	1,085	17,768	20,161	493
1965	47,938	856,536	849,203	38,542	1,201	19,866	23,440	551
1966	48,243	890,043	896,483	40,620	1,120	20,425	22,359	481
1967	50,312	981,729	990,201	43,496	1,036	22,353	26,092	635
1968	50,066	1,075,898	1,069,415	44,489	1,018	23,643	25,634	758
1969	54,192	1,201,469	1,229,748	51,963	1,021	27,252	28,812	757
1970	59,050	1,343,510	1,358,451	54,313	2,165	51,035	49,438	2,053
1971	58,064	1,401,134	1,410,682	53,261	4,309	89,962	95,132	4,479

(a) Domestic aircraft movements commenced at Melbourne Airport on 26 June 1971.

(b) International aircraft movements commenced at Melbourne Airport on 1 July 1970.

## VICTORIAN POST OFFICE

Year	Postage		Year	Postage		Year	Postage		Number of telephone subscribers (b)
	Number of letters	Number of newspapers		Number of letters (a)	Number of newspapers		Number of letters (a)	Number of newspapers	
1837	1	1	1858	5,026	4,265	1879	23,216	10,075	
1838	7	3	1859	6,649	5,051	1880	24,195	10,641	
1839	16	23	1860	8,116	5,683				
1840	32	70				1881	26,308	11,441	
1841	57	120	1861	6,110	4,277	1882	28,878	12,384	
1842	97	147	1862	6,277	4,909	1883	30,962	13,982	
1843	129	155	1863	6,636	4,931	1884	33,404	15,143	
1844	117	134	1864	6,790	5,672	1885	36,062	16,277	
1845	127	151	1865	7,486	6,038	1886	38,392	17,482	
1846	139	205	1866	8,631	5,438	1887	41,288	18,869	1,121
1847	178	250	1867	9,568	4,908	1888	47,701	21,703	1,637
1848	210	310	1868	9,750	4,974	1889	48,097	20,663	1,988
1849	262	323	1869	10,583	5,251	1890	62,526	22,729	2,307
1850	382	381	1870	11,133	5,287				
			1871	11,716	5,173	1891			2,439
1851	504	457	1872	12,941	5,491	1892			2,414
1852	972	710	1873	14,475	6,080	1893			2,308
1853	2,039	1,619	1874	15,739	6,867	1894			2,398
1854	2,674	2,395	1875	17,134	7,553	1895			2,609
1855	2,991	2,350	1876	18,964	9,010	1896			2,754
1856	3,221	2,906	1877	20,911	9,809	1897			3,088
1857	3,900	2,982	1878	22,325	10,697	1898			3,630
						1899			4,407
						1900	74,291	25,466	5,136

(a) Postcards were first issued in April 1876 and are included with letters.

(b) Previously worked as a private undertaking, the telephone system was taken over by the Post Office on 22 September 1887.

VICTORIA—POSTMASTER-GENERAL'S DEPARTMENT

Year	Telephone services in operation (lines connected) (a)	Letters, etc., posted in Victoria and received from overseas (b)	Year	Telephone services in operation (lines connected) (a)	Letters, etc., posted in Victoria and received from overseas (b)
		'000			'000
1901	6,049	123,807	1913	30,640	224,748
1902	6,847	137,711	1914	34,071	221,732
1903	7,610	143,412	1915-16	36,372	219,296
1904	8,429	149,746	1916-17	38,025	230,950
1905	9,269	155,708	1917-18	40,754	219,847
1906	10,423	162,337	1918-19	44,035	211,097
1907	12,885	170,351	1919-20	49,017	213,121
1908	14,993	178,421	1920-21	52,791	197,137
1909	17,108	168,830	1921-22	55,986	211,279
1910	20,343	181,145	1922-23	61,412	227,012
1911	23,504	195,747	1923-24	71,352	247,457
1912	27,652	211,021			

Year	Telephone services in operation (lines connected) (a)	Letters, etc., posted in Victoria and received from overseas (b)	Licences in force at 30 June (c)—		
			Broadcast receiver	Television receiver	Combined broadcast and television receiver (d)
		'000			
1924-25	83,640	265,567	19,243		
1925-26	93,215	277,449	63,494		
1926-27	101,891	293,123	113,612		
1927-28	108,678	n.a.	137,503		
1928-29	114,603	n.a.	142,534		
1929-30	118,074	n.a.	139,887		
1930-31	113,282	n.a.	n.a.		
1931-32	110,213	253,746	139,323		
1932-33	110,386	252,462	170,995		
1933-34	113,983	275,765	206,995		
1934-35	121,631	281,946	236,886		
1935-36	128,313	275,835	263,414		
1936-37	135,751	271,983	288,717		
1937-38	143,657	289,748	315,406		
1938-39	150,570	295,450	327,579		
1939-40	157,081	291,328	348,158		
1940-41	164,051	291,252	362,790		
1941-42	167,909	306,212	371,502		
1942-43	170,780	304,406	390,950		
1943-44	175,526	307,350	419,325		
1944-45	181,685	319,549	412,317		
1945-46	190,507	321,213	415,785		
1946-47	202,769	331,509	499,944		
1947-48	214,997	327,250	505,106		
1948-49	228,586	369,762	531,722		
1949-50	245,000	393,965	557,556		
1950-51	273,000	426,612	586,393		
1951-52	297,000	412,639	520,364		
1952-53	319,000	414,823	533,329		
1953-54	341,000	451,742	545,148		
1954-55	367,000	456,607	549,690		
1955-56	395,307	475,881	554,339		
1956-57	416,881	495,133	554,909	44,986	
1957-58	442,767	535,803	557,960	147,721	
1958-59	468,827	563,115	605,340	270,073	
1959-60	487,853	561,516	606,587	353,091	

VICTORIA—POSTMASTER-GENERAL'S DEPARTMENT—*continued*

Year	Telephone services in operation (lines connected) (a)	Letters, etc., posted in Victoria and received from overseas (b)	Licences in force at 30 June (c)—		
			Broadcast receiver	Television receiver	Combined broadcast and television receiver (d)
1960-61	508,567	600,305	589,437	401,395	
1961-62	536,229	617,073	585,752	460,558	
1962-63	568,946	667,752	607,036	530,256	
1963-64	601,714	717,367	622,663	581,286	
1964-65	631,950	719,702	512,205	488,583	132,413
1965-66	660,974	769,487	141,530	87,649	574,955
1966-67	693,134	807,927	114,778	92,822	598,035
1967-68	727,575	780,508	94,982	96,789	629,729
1968-69	770,162	782,747	80,833	99,266	647,814
1969-70	824,227	744,328	72,051	107,362	675,457
1970-71	864,044	827,714	64,298	115,613	690,464

(a) 1901 to 1914 at 31 December.

1914-15 to 1970-71 at 30 June.

(b) Includes postcards, newspapers, and packets, but excludes registered articles and parcels.

1901 to 1908 includes mail received from other States.

(c) Includes hirers licences, which may be granted for any period not exceeding twelve months. In the majority of instances they are taken out for short terms, usually on a monthly basis. At 30 June 1971 there were 261,150 short-term television and 8,292 short-term broadcast licences on issue.

(d) Introduced on 1 April 1965.

n.a. : Not available.

# *Appendices*

## Appendix A

---

### BRIEF CHRONOLOGY OF IMPORTANT EVENTS, 1770 TO 1970

- 1770 First recorded sighting by Europeans of Victorian land, at Point Hicks, by Captain James Cook, R.N.
- 1788 Colony of New South Wales founded by Captain Arthur Phillip, R.N. at Sydney Cove.
- 1797 First recorded landing on Victorian coast, near Point Hicks ; this was by a shipwrecked crew.
- 1798 Western Port first entered by George Bass, Surgeon, R.N., who landed on Phillip Island, named Cape Woolamai, and discovered the western passage. Existence of Bass Strait established by Bass and Lieutenant Matthew Flinders, R.N. later in the year.
- 1800 Lieutenant James Grant, R.N., the first to sail through Bass Strait from the west, discovered and named several capes and islands, including Capes Bridgewater, Nelson, Otway, Patton, and Liptrap, and Lawrence Rocks and Lady Julia Percy Island.
- 1801 Grant entered Western Port through the western passage ; his party sowed wheat and other seeds on Churchill Island.
- 1802 Port Phillip Bay discovered and entered by Acting Lieutenant John Murray, R.N. Victorian coast explored by French expedition under Nicholas Baudin, making an eight day survey of Western Port and naming various bays and capes. Port Phillip Bay entered, examined, and charted by Commander Matthew Flinders, R.N.
- 1803 A party under Charles Grimes, Acting Surveyor-General of New South Wales, made a land survey of the shores of Port Phillip Bay and rowed up the Yarra to the approximate site of the original settlement at Melbourne. Grimes' map showed, for the first time, the whole coast of Port Phillip Bay. Lieutenant-Colonel David Collins, with a party of convicts and a few free settlers, attempted a settlement at Sullivan Bay, about one mile from the present site of Sorrento. The settlement was abandoned after three months.

- 1824 Hamilton Hume and William Hilton Hovell, having travelled overland from Lake George in southern New South Wales, reached a river which they named the Hume, and later arrived at Corio Bay.
- 1826 A settlement was attempted at Western Port, near the site of Corinella, by Captain S. Wright with a party of convicts, but was abandoned about fourteen months later.
- 1830 Captain Charles Sturt, on an expedition to trace the course of the Murrumbidgee River, entered and named the Murray River, a part of which had previously been known as the Hume River.
- 1834 Edward Henty established the first permanent settlement in Victoria, at Portland Bay.
- 1835 John Batman, as agent for the Port Phillip Association, arrived at Port Phillip from Van Diemen's Land. He made a treaty with the Aborigines for 600,000 acres of land and chose the site of the future Melbourne. The British Government later refused to validate the treaty. Proclamation by Governor Sir Richard Bourke, claiming the Port Phillip District as part of the Colony of New South Wales. Later in the year John Pascoe Fawkner's associates settled on the site of Melbourne, followed by Fawkner and his family.
- 1836 First Population Census of Port Phillip District taken in May : 142 males, 35 females. Major Thomas Mitchell journeyed through the western portion (*Australia Felix*) of the Port Phillip District. Proclamation of Port Phillip District as open for settlement. Captain William Lonsdale appointed magistrate to superintend the settlement.
- 1837 Death of King William IV ; accession of Queen Victoria. First post office established at Melbourne. Inspection of site and naming of future township "Melbourne" (after the British Prime Minister, Viscount Melbourne) by Sir Richard Bourke. Robert Hoddle surveyed and planned the township (now the inner city area of Melbourne), based on an earlier design of Robert Russell. Bourke approved the plan and named the main streets.
- 1838 The *Melbourne Advertiser*, written by hand, first issued by Fawkner. First overland mail from Melbourne to Sydney. Publication of first number of *Port Phillip Gazette*, Melbourne's first licensed newspaper. First banks opened in Melbourne for general banking business.
- 1839 Presbyterian Church services transferred to site of present Scots Church. Charles Joseph La Trobe appointed Superintendent of Port Phillip District. First Wesleyan chapel opened. Foundation stone of St James' Anglican Church (now St James' Old Cathedral) laid. First general insurance company opened in Melbourne. Angus McMillan explored Gippsland, continuing until 1841. First mail dispatched direct from Port Phillip District to England.



- 1840 The *Port Phillip Herald* newspaper (later the *Herald*) first published. Count Paul Strzelecki reached Melbourne after exploration in Gippsland.
- 1841 Independent Chapel, Russell Street, opened (replaced by present Independent Church in 1866). First resident judge appointed for Port Phillip District. First mail direct from England. First issue of a Government Gazette for the District. Foundation stone of St Francis' Church, Lonsdale Street, laid. First Melbourne market opened. Boundaries of town of Geelong defined. First official post office for Port Phillip District opened on site of Elizabeth Street G.P.O. Melbourne's first theatre—the Pavilion (later the Theatre Royal)—built in Bourke Street.
- 1842 Royal assent given to an Act for the Government of New South Wales and Van Diemen's Land by which Port Phillip District was entitled to be represented by six of the 24 elected members of the Legislative Council of New South Wales. Melbourne incorporated as a town. First Town Council elected, with Henry Condell as Mayor.
- 1843 Port Phillip District divided into four squatting districts: Gipps' Land, Murray, Western Port, and Portland Bay.
- 1844 Petition for separation from New South Wales sent from Port Phillip to England.
- 1846 Foundation stone of first Melbourne Hospital laid. The first masonry bridge (Princes Bridge) was commenced ; it was to replace the then existing wooden structure. *Argus* newspaper founded. Melbourne Botanic Gardens founded.
- 1847 Royal Letters Patent signed proclaiming Melbourne a city. Mail service between Melbourne and Adelaide inaugurated.
- 1848 Two bishops installed in Melbourne—Dr Perry in St James' Anglican Cathedral, and Dr Goold in St Francis' Roman Catholic Pro-Cathedral. National and Denominational Schools Boards established. Melbourne Hospital opened.
- 1849 Successful culmination of campaign against attempts by British Government to use the District as a convict settlement when La Trobe prevented a landing of convicts from the transport ship *Randolph*. Experimental use of gas for illumination in Melbourne. Geelong incorporated as a town.
- 1850 An Act for the better government of the Australian Colonies given Royal assent ; this Act separated the Port Phillip District from the Colony of New South Wales, created it the Colony of Victoria, and granted it representative government. The first trade union in Victoria, the Operative Stonemasons Society, established. Victoria's own postage introduced.

- 1851 Separation Act proclaimed and La Trobe became Lieutenant-Governor of Victoria. First meeting of Legislative Council held. "Black Thursday": 117°F. heat and destructive bushfires. Gold discovered at Andersons Creek (Warrandyte), Clunes, Ballarat, Castlemaine, and Bendigo.
- 1852 Beginning of the overseas gold rush immigration to Victoria. Supreme Court and other courts of law established. The first enterprise to supply gas (the City of Melbourne Gas and Coke Co.) formed, and the first gas works erected.
- 1853 Bank of Victoria opened. Dr F.J.H. (later Baron Sir Ferdinand von) Mueller appointed Government Botanist. Road districts (the origin of the present shires) established. A permanent quarantine station established at Point Nepean. Work commenced on Yan Yean Reservoir. Legal registration of births, marriages, and deaths provided for by the Registration Act. Coaching firm of Cobb & Co. founded.
- 1854 Telegraphic communication established between Melbourne and Williamstown. Foundation stones of the University of Melbourne and of the Melbourne Public Library laid. Opening of first Australian railway by Melbourne and Hobson's Bay Railway Company—Melbourne to Sandridge (Port Melbourne). *Age* newspaper founded. Riots on Ballarat goldfields, culminating in the Eureka Stockade. Municipal institutions established. First Health Act. National Museum opened in La Trobe Street.
- 1855 University of Melbourne opened with Redmond (later Sir Redmond) Barry as first Chancellor. Victorian Constitution Act proclaimed. Eastern Market established.
- 1856 Lying-in-Hospital (now Royal Women's Hospital) established. Melbourne Public Library opened. Eight hours of work per day agreed upon by employers and unions in the building trades—later extended to most other trades. First Parliament in Victoria under responsible government. Beginning of public ownership of railways by acquisition of the Melbourne, Mount Alexander and Murray River Railway Company by the Government.
- 1857 Melbourne's streets first lit by gas. Universal adult male suffrage adopted for Legislative Assembly. Zoological Society of Victoria founded. Victoria's first rural railway commenced operating between Melbourne and Geelong. National Herbarium established. Brown coal discovered at Lal Lal.
- 1858 Telegraphic communication established between Sydney, Melbourne, and Adelaide.
- 1860 Burke and Wills expedition left Melbourne for the Gulf of Carpentaria; the leaders later perished at Coopers Creek on the return journey. Building of St Patrick's Roman Catholic Cathedral begun.

- 1861 The first Melbourne Cup run. The first Conference of Australian Statisticians held in Melbourne.
- 1862 Bendigo and Ballarat railways opened. Common schools brought under control of Board of Education. Torrens transfer of land system adopted in Victoria. The first medical school in Australia established at the University of Melbourne.
- 1865 The Melbourne Stock Exchange established. Victoria's first woollen mill established at Geelong.
- 1866 First stages of the tariff protection policy adopted by Victoria.
- 1869 First life assurance company established in Victoria. The Homoeopathic (later Prince Henry's) Hospital and the Melbourne Institution for Diseases of the Eye and Ear (later the Royal Victorian Eye and Ear Hospital) opened. The Industrial and Technological Museum (now the Science Museum of Victoria) established.
- 1870 Ballarat School of Mines and Industries opened. Children's Hospital opened.
- 1871 Alfred Hospital opened.
- 1872 Branch of Royal Mint opened in Melbourne. The Education Act created the Department of Public Instruction to administer the system of free, secular, and compulsory education. Department of Agriculture established.
- 1873 Education Act came into operation. Bendigo School of Mines and Industries established. Horse trams commenced operation in Melbourne.
- 1874 First Victorian Factories Act and Local Government Act passed. Government Statist's Office established. First *Victorian Year Book* published.
- 1877 Melbourne Harbor Trust established. First Test Cricket match (England v Australia) held in Melbourne.
- 1878 Metropolitan Gas Company established. Government ownership of railway extended by purchase of Melbourne and Hobson's Bay Railway Company.
- 1879 First intercolonial trade union congress held in Melbourne.
- 1880 A mail service between Victoria and England, running at fortnightly intervals, commenced. Women admitted to University of Melbourne under an 1879 Act. Foundation stone of St Paul's Anglican

- Cathedral, Melbourne laid. First electric lighting company in Victoria formed. Ned Kelly, a bushranger, captured. First Australian telephone exchange opened in Melbourne ; it was privately owned and operated by the Melbourne Telephone Exchange Co. Ltd. First International Exhibition to be held in Melbourne opened.
- 1882 Austin Hospital opened.
- 1883 Victorian Railways Commissioners constituted. Victorian and New South Wales railway systems (Melbourne to Sydney) linked at Albury, but with change of gauge.
- 1884 First Public Service Board for Victoria established. Construction of Coode Canal to facilitate shipping on the Yarra River commenced.
- 1885 First cable tramway in Victoria began operating from Melbourne to Richmond. Victoria accepted the Federal Council of Australasia Act of 1885.
- 1887 The Working Men's College, later renamed the Royal Melbourne Institute of Technology, opened with an enrolment of 300. Government acquired the private telephone company. Melbourne and Adelaide linked by rail. Chaffey brothers began to establish the Mildura irrigation settlement. Coode Canal completed, and work commenced on construction of Victoria Dock.
- 1888 Weekly mail contract between Australia and England commenced. Centennial International Exhibition in Melbourne.
- 1890 Melbourne and Metropolitan Board of Works (M.M.B.W.) created by statute. Great maritime strike commenced in Melbourne.
- 1892 Rich gold finds at Coolgardie in Western Australia attracted large numbers of people from Victoria.
- 1893 Widespread unemployment. Bank failures and moratorium. Victoria Dock opened. St Vincent's Hospital opened.
- 1895 Income tax first imposed in Victoria. Serious drought commenced ; it continued until 1902.
- 1896 Wages boards established under Factories and Shops Act. Metropolitan sewerage system inaugurated by the Melbourne and Metropolitan Board of Works. Queen Victoria Memorial Hospital opened.
- 1898 The final sitting of the Federal Convention to determine the various requirements for Federation held in Melbourne. A draft Bill to constitute the Commonwealth of Australia was framed and adopted for submission to a popular referendum of the various Colonies represented.

- 1899 Referendum on amended Federal Constitution Bill accepted by Victoria. Plural voting abolished for Victorian Parliament. First Victorian troops left for the South African War.
- 1900 Royal assent to the Commonwealth of Australia Constitution Act of 1900. First Federal Ministry formed with Edmund Barton as Prime Minister. Old age pension scheme adopted under Victorian Government statute ; replaced by Commonwealth scheme in 1909.
- 1901 Death of Queen Victoria. Accession of King Edward VII. First Commonwealth Parliament opened in Exhibition Building, Melbourne, by the Duke of Cornwall and York. Commonwealth Parliament was to meet in Melbourne, using the Victorian parliamentary chambers, until Commonwealth chambers could be provided at a site to be chosen. Interstate free trade established. Recommendations of a commission of inquiry led to reorganisation of Victorian education system.
- 1902 End of the South African War. Completion of Pacific cable.
- 1903 The High Court of Australia and the Victorian Industrial Appeals Court established.
- 1904 Royal assent to Commonwealth *Conciliation and Arbitration Act* 1904.
- 1905 The Pure Food Act passed. The Geelong Harbor Trust and the State Rivers and Water Supply Commission established. The first State secondary school, Melbourne High School, founded.
- 1906 Wireless telegraphy in operation between Queenscliff and Devonport, Tasmania. The first electric tramway, running from Flemington Bridge to Essendon, opened.
- 1907 The first interstate telephone service, from Sydney to Melbourne, commenced. The "Harvester" award, which became the basis of the basic wage, handed down. Revival of assisted immigration.
- 1908 The Yass-Canberra district selected as the site of the Federal capital. The State Coal Mine established at Wonthaggi.
- 1909 Commonwealth age pensions scheme established. Victorian quarantine powers transferred to the Commonwealth. First Commonwealth-States Financial Agreement.
- 1910 Houdini made the first aeroplane flight in Victoria. Death of King Edward VII ; accession of King George V. Printing of Australian banknotes commenced in Melbourne. Geelong proclaimed a city. Victorian Electoral Act granted full adult suffrage for the Legislative Assembly.

- 1911 Commonwealth introduced compulsory military training for males aged between 14 and 18 years.
- 1912 The Royal Australian Navy established a naval base at Crib Point. The first automatic telephone exchange in Australia opened at Geelong. First shore to ship radio communication station for Victorian waters opened in Melbourne. Royal assent to Commonwealth *Maternity Allowance Act* 1912.
- 1913 Establishment of Country Roads Board. First Commonwealth Savings Bank and General Banking Department established in Victoria. Commonwealth postage stamps issued.
- 1914 Commencement of First World War; first detachment of the Australian Imperial Force (A.I.F.) left for overseas service.
- 1915 Landing of the Australian and New Zealand forces (ANZAC) at Gallipoli.
- 1916 The ANZACs evacuated from Gallipoli. Commonwealth Serum Laboratories established. First referendum on conscription rejected. Six p.m. closing of hotels. Advisory Council of Science and Industry established. Open cut operations on Morwell brown coal deposits commenced.
- 1917 Closer settlement scheme for ex-servicemen initiated in Victoria. First aeroplane flight from Sydney to Melbourne. Dr Daniel Mannix installed as Roman Catholic Archbishop of Melbourne. Second referendum on conscription rejected.
- 1918 End of First World War. Establishment of Forests Commission.
- 1919 The State Electricity Commission and the Melbourne and Metropolitan Tramways Board established. Completion of first section of electrification of Victorian metropolitan railways.
- 1920 Walter and Eliza Hall Institute inaugurated.
- 1921 First direct wireless press message from England to Australia.
- 1923 Police strike in Melbourne.
- 1924 First transmission to Melbourne of power generated from Yallourn brown coal; production of brown coal briquettes began. Victoria's first broadcasting station, 3AR Melbourne, licensed; it was privately operated until 1929. Australian Loan Council formed.
- 1926 Baker Medical Research Institute established. Establishment of Council for Scientific and Industrial Research (later Commonwealth Scientific and Industrial Research Organization), succeeding

- Advisory Council of Science and Industry and the Institute of Science and Industry (1916 to 1926).
- 1927 Seat of Commonwealth Government transferred from Melbourne to Canberra ; first meeting of Commonwealth Parliament at Canberra opened by the Duke of York (later King George VI).
- 1928 Revised Commonwealth–States Financial Agreement, 1927, accepted by referendum.
- 1929 Loan Council takes over States' debts.
- 1930 Effects of world-wide economic depression included growing unemployment. Sir Isaac Isaacs of Melbourne appointed as first Australian-born Governor-General.
- 1931 Death of world famous soprano, Dame Nellie Melba, who was born at Richmond in 1861. Commonwealth *Financial Emergency Act* 1931 ("Premiers' Plan ") proclaimed. Death of General Sir John Monash, Australian military leader in First World War and first chairman of the State Electricity Commission.
- 1933 The Australian Broadcasting Commission and the Transport Regulation Board established.
- 1934 The Victorian Centenary celebrations opened, and the Shrine of Remembrance dedicated, by the Duke of Gloucester. Scott and Black won the London to Melbourne Centenary Air Race.
- 1936 Death of King George V ; King Edward VIII proclaimed ; abdication of King Edward VIII and accession of King George VI. Telephone service between Tasmania and Victoria opened. Commonwealth Aircraft Corporation established.
- 1937 Mining disaster at Wonthaggi Coal Mine : 13 persons killed. Outbreak of poliomyelitis caused 113 deaths.
- 1938 Severe Australia-wide coal strike. Housing Commission of Victoria established. Commonwealth *National Health and Pensions Insurance Act* 1938 ; operation of Act postponed indefinitely in 1939.
- 1939 Disastrous bushfires ("Black Friday ") followed a long period of drought and very high temperatures in Victoria. The first locally-built service aircraft, Wirraway No. 1, made its first test flight. Outbreak of Second World War ; Australia's first air force contingent left for overseas.
- 1940 Australia-wide coal strike severely affected transport services. Petrol rationing introduced due to the need to conserve supplies of fuel.

- Cable trams ceased operating, having been superseded by electric services and buses.
- 1941 Child endowment payments commenced. Curtin Federal (A.L.P.) Ministry succeeded the Menzies and Fadden (U.A.P.—Country Party coalition) Ministries. Outbreak of war with Japan. Inauguration of new beam radio service between Australia and the United States of America.
- 1942 Fall of Singapore to Japanese forces, and capture of greater part of the 8th Division, Second A.I.F. Restrictions on non-essential manufactures, rationing of commodities, and price control introduced. Uniform taxation introduced for Australia. Japanese attacks on east coast shipping. Premiers' Conference in Melbourne for discussions on war-time policy with Prime Minister. Limited hotel trading hours (10 a.m. to 6 p.m.) introduced in metropolitan area.
- 1943 Ministry of Health Act brought all matters of public health under jurisdiction of Minister of Health. Price stabilisation scheme for Australia introduced.
- 1944 "Pay as you earn" income taxation plan adopted. The Town and Country Planning Board and the Country Fire Authority established.
- 1945 Cessation of Second World War. First group of returned prisoners of war of the Japanese reached Victoria.
- 1946 Commonwealth—States Housing Agreement.
- 1947 Australian National Antarctic Research Expedition (A.N.A.R.E.) established a scientific research station on Heard Island. Arrival of first "displaced persons" from Europe under the post-war planned migration scheme.
- 1948 Introduction of the 40 hour week. The Hospitals and Charities Commission and the Cancer Institute established.
- 1949 A state of emergency proclaimed throughout Victoria during the seven week general coal strike which severely affected transport, fuel, light, and power. Chifley Federal (A.L.P.) Ministry succeeded by Menzies (Liberal—Country Party) Ministry. Introduction of metropolitan planning scheme under the control of the Melbourne and Metropolitan Board of Works. Commonwealth Scientific and Industrial Research Organization (C.S.I.R.O.) established to take over functions of the Council for Scientific and Industrial Research.
- 1950 Mental Hygiene Authority established within the Health Department. Melbourne tramway strike of 59 days. Adult suffrage adopted for



- Legislative Council. The Portland Harbor Trust and the Gas and Fuel Corporation of Victoria established.
- 1951 Commonwealth National Service Act passed. Inauguration of first regular air service between Melbourne and New Zealand. Field-Marshal Sir Thomas Blamey, the only Australian to have achieved such military rank, died.
- 1952 Death of King George VI and accession of Queen Elizabeth II. St Vincent's School of Medical Research established.
- 1954 Establishment of Mawson research station—first Australian permanent base on Antarctic continent. First visit to Australia by a reigning monarch : Queen Elizabeth II accompanied by the Duke of Edinburgh. "Tattersall" sweep consultations transferred to Victoria from Hobart.
- 1955 Power generated by first completed section of Snowy Mountains Hydro-electric Scheme.
- 1956 Olympic Games opened in Melbourne by the Duke of Edinburgh. First Australian television station, HSV7, commenced transmission. The Duke of Edinburgh made the first Freeman of the City of Melbourne. Traffic Commission established. Opening of Lurgi brown coal gasification plant at Morwell.
- 1958 Victorian Government signed Snowy Mountains Hydro-electric Scheme Agreement. Regular global air service inaugurated from Melbourne Airport, Essendon. Integration of Commonwealth and State statistical services.
- 1959 Opening of Sidney Myer Music Bowl, Melbourne. Inauguration of the Melbourne to Devonport (Tasmania) ferry service by the *Princess of Tasmania*. Petroliferous gas flow discovered near Port Campbell. Electricity from the Snowy Mountains Hydro-electric Scheme became available to Victoria.
- 1960 Opening of the all-weather deep-sea harbour at Portland. Subscriber trunk dialling telephone system introduced in Victoria.
- 1961 Monash University opened. National Heart Foundation established.
- 1962 Opening of the standard gauge railway system between Melbourne and Albury. Coaxial cable system between Canberra, Sydney, and Melbourne opened. First stage of South Eastern Freeway opened. Royal Commission investigated failure of section of new King Street bridge. British Commonwealth trans-Pacific cable opened.
- 1963 Queen Elizabeth II and the Duke of Edinburgh visited Melbourne. Death of Dr Mannix, Roman Catholic Archbishop of Melbourne

- since 1917. Commencement of inquiries of Royal Commission on Victorian liquor laws.
- 1965 Victoria Institute of Colleges established. The La Trobe Library (part of the State Library of Victoria) opened. Tests showed good natural gas flow off the Gippsland coast.
- 1966 Women became eligible for jury service in Victoria. Sir Robert Menzies, Prime Minister since 1949, retired and was succeeded by Mr H. E. Holt. Liquor law reforms, including extension of hotel trading hours to 10 p.m., came into operation in Victoria. Introduction of decimal currency. Australia's first offshore oil discovered in Bass Strait. Broadband microwave trunkline telephone service inaugurated between Melbourne and other cities. Automatic telex system introduced.
- 1967 Increasingly severe drought. La Trobe University opened. Postcode system introduced for mail. Death of the Prime Minister, Mr H. E. Holt.
- 1968 Senator J. G. Gorton became Prime Minister. Severe drought ended. New National Gallery of Victoria, the first stage of the Victorian Arts Centre, opened. State Coal Mine at Wonthaggi closed. Uniform Commonwealth-State censorship laws became operative.
- 1969 Connection of natural gas to consumers commenced, and the Lurgi brown coal gasification plant at Morwell closed. Equal pay without regard to sex began to be implemented. First section of Tullamarine Freeway opened.
- 1970 Dartmouth Dam Agreement signed by the Commonwealth, Victorian, New South Wales, and South Australian Governments. The Queen, Prince Philip, Prince Charles, and Princess Anne visited Melbourne and parts of Victoria. Whole of Tullamarine Freeway, second stage of the South Eastern Freeway, and the new Melbourne Airport, Tullamarine, opened. The \$33m natural gas fractionation plant opened at Long Island, Western Port. Collapse of section of West Gate Bridge resulted in 35 deaths ; it was followed by a Royal Commission to inquire into the disaster. Opening of the Victorian Railways new Melbourne yard with first automated hump shunting system in Australia. Legislation concerning the wearing of seat belts in certain motor vehicles introduced in Victoria. Completion of Melbourne's conversion to natural gas at a cost of \$30m.

## LIST OF IMPORTANT EVENTS, 1971 AND 1972

1971

*January*

21 The Western Port Regional Planning Authority refused Ampol Petroleum Ltd and H. C. Sleigh Ltd a permit to build a \$60m oil refinery at Western Port. The refinery was planned for a 750 acre site at Bittern near Hastings. The scheme would have involved taking over farm land.

24 A severe thunderstorm lashed Melbourne for more than an hour, causing widespread flooding, blackouts, and damage. Road traffic was brought to a standstill and train and tram services were disrupted. Eighty-eight points of rain fell on Melbourne between 3 p.m. and 4 p.m.

*February*

4 The South Eastern Purification Plant at Carrum was officially commissioned.

7 The worst flood in the history of east Gippsland caused havoc. Orbost, Genoa, and Cann River were isolated. Three hundred persons sheltered in Orbost where the Snowy River reached a height of 35 ft (8 inches higher than in the 1934 flood).

9 The State Government appointed the chairman of its Traffic Commission to head the new Road Safety and Traffic Authority. The new statutory authority was established to advise the Government on road safety measures.

10 The Premier, the Hon. Sir Henry Bolte, opened the new Mercy Maternity Hospital in East Melbourne. This is the first major teaching hospital devoted to maternal and infant care built during this century and will cater for 6,000 births per year.

11 East Gippsland faced an economic crisis in the wake of the Snowy River floods. Damage was estimated to be at least \$2m and lost primary production over the following year could cost business and farming communities at least as much again.

15 State Cabinet agreed to the R certificate system of film censorship. It was decided to place legislation adopting the system before the autumn session of Parliament.

23 The South Australian Premier, the Hon. D. A. Dunstan, announced that South Australia would agree to the construction of the Dartmouth Dam on the Mitta Mitta River in Victoria, provided that a possible future storage at Chowilla is not specifically precluded.

*March*

2 The Colonel Sir Eric St Johnston report on the Victoria Police was tabled in Parliament. The report recommended proposals estimated to cost \$45m in the following five years.

10 The Rt Hon. W. McMahon was elected leader of the Parliamentary Liberal Party and replaced the Rt Hon. J. G. Gorton as Prime Minister of Australia.

11 The Victorian Minister for Health officially opened the radio doctor centre for emergency medical treatment in the metropolitan area. This service will alleviate the problem of finding a doctor after normal working hours.

*April*

- 5 The Prime Minister, the Rt Hon. W. McMahon, granted Victoria \$12m to assist the State's finances.
- 19 The Premier, the Hon. Sir Henry Bolte, opened a \$26m extension to the Petroleum Refineries (Australia) Pty Ltd plant at Altona.
- 20 The Hon. R. J. Hamer became Victoria's Deputy Premier.
- 28 The Premier, the Hon. Sir Henry Bolte, announced that \$3.1m would be granted to hospitals to offset deficits.

*May*

- 4 The State Government set out a new urban renewal policy for the Housing Commission aimed at the renovation of existing houses rather than the demolition of old buildings. The Government appointed an Urban Renewal Advisory Committee and increased the size of the Housing Commission by two members.

*June*

- 7 The Victorian Minister for Transport announced that final details were being decided by the Victorian Railways and private developers on a \$100m development for Flinders Street Station.
- 9 A planned \$90m multi-level city project featuring twin towers of more than 37 storeys for the east end of Collins Street, Melbourne will include the first attempt at multi-level street planning in the city.
- 15 The State Electricity Commission announced that it would build a \$145m smogless tandem-turbine power station at Newport which will use natural gas.
- 16 The Commonwealth Government offered the States the right to levy pay-roll tax in the coming financial year.
- 20 Domestic airline operations transferred from Essendon Airport to the new Melbourne Airport at Tullamarine.
- 22 Construction work officially began on the Melbourne underground rail loop estimated to cost \$80m.
- 25 The State Government decided to test daylight saving during the following summer. Victorian clocks were to be put ahead by one hour from 31 October 1971 until 27 February 1972.

*July*

- 5 The Victorian Cabinet approved plans for a new \$13m road bridge across the Yarra, west of Spencer Street. The low level eight lane bridge will link Johnson Street, South Melbourne, with Blyth Street, Melbourne, as part of a road to bypass the central city area.
- 6 Plans were announced for a twin-tower building to be erected over the railway at Jolimont. The \$8.5m project, Jolimont Towers, will consist of an 18 storey office tower and a 13 floor motel, set 75 ft apart and built on a three storey podium.

7 A severe earth tremor lasting up to 30 seconds occurred in Melbourne and the Mornington Peninsula shortly before 8 a.m. It was Australia's most severe tremor since that at Meckering, Western Australia, in October 1968.

13 The Health Commission was told in a report by the senior scientific officer of the Health Department's clean air section that air pollution levels measured throughout Victoria during 1970 remained low.

23 "Project N" (the Nomad aircraft) made its first test flight at Avalon. It was designed and built by the Government Aircraft Factory at Fishermens Bend.

27 The \$14m Greenvale Reservoir opened. Situated 13 miles north of Melbourne on a branch of Moonee Ponds Creek, it has a capacity of about 6,000 million gallons.

#### *August*

8 The Minister for Social Welfare announced that the Victorian Government was considering a minimum security weekend gaol for petty offenders.

17 Sites for the Museum and Flagstaff stations in the Melbourne underground rail loop were approved by the Melbourne and Metropolitan Board of Works. The Board also accepted a tender of \$11.3m for construction of the Eastern Freeway roadworks.

#### *September*

14 The Minister for Transport introduced a Bill in Parliament to redevelop the Flinders Street Railway Station area.

16 The State Government's acceptance of the Commonwealth dollar for dollar subsidy for geriatric nursing will result in a grant of nearly \$4m for Victoria's welfare services.

28 The Chief Secretary announced a plan whereby Victorian police would no longer be required to collect civil debts.

#### *October*

4 State Cabinet decided to investigate proposals favouring public rather than private transport. The Metropolitan Transportation Committee was directed to investigate ways of improving public transport.

20 The State Government abandoned the plan for the concert hall in the second stage of the Arts Centre. The Premier, the Hon. Sir Henry Bolte, announced the decision which will save more than \$13m, leaving the estimated cost of the second stage at \$22.5m.

21 The State Government's extended shopping hours legislation was passed. The legislation allows shops to open any time between midnight on Sunday and 1 p.m. on Saturday.

*November*

28 The Melbourne City Council approved an increase of 14 per cent in rates to take effect immediately for both the central business district and the residential areas. The Melbourne City Council agreed to buy the Theosophical Society's Collins Street building for \$1.9m as part of the City Square development site.

29 The Melbourne and Metropolitan Board of Works announced a major plan for Melbourne which will provide for development into the twenty-first century. It is the first major plan for an Australian city to be based on comprehensive studies of the environment. The plan envisages the growth of Melbourne along seven major corridors, each four to six miles wide, and separated by permanent non-urban wedges.

*December*

9 The Western Port Regional Planning Authority proposed that 17,000 acres on the western shore of Western Port be protected for specialised heavy industry and port purposes. The Authority sought public comment on these proposals.

20 It was announced that speeds on Victorian country roads will be limited to 70 mph during a trial period of twelve months.

21 Eleven areas in Victoria have been declared anti-pollution priority areas under measures announced by the Environment Protection Authority. The measures deal with air and water pollution and are the first steps towards licensing and controlling all waste discharge in the areas.

31 The British based firm Star (Great Britain) Holdings Ltd was granted a 99 year lease to develop Melbourne's City Square. The State Government will use a \$5.1m special Commonwealth grant to hasten 13 major school building projects.

1972

*February*

10 The Victorian Government and two municipal councils agreed to reduce quarrying in the Dandenong Ranges.

15 School buildings are to receive immediate financial assistance of \$2.5m from money granted by the Commonwealth to Victoria at the Premiers' Conference. The Alfred Hospital, Melbourne, is to receive \$600,000 for its rebuilding programme.

17 Cars floated down streets and people were swept off their feet by floodwaters when the heaviest city downpour ever recorded struck Melbourne. Three inches of rain deluged the city between 4 p.m. and 5 p.m. The storm caused one of the worst traffic jams in Melbourne's history. In Elizabeth Street water was 4 ft deep, and much damage was done to shops and stock.

*March*

22 The Victorian Universities and Schools Examinations Board announced that the external Leaving Certificate examinations would be discontinued in 1973.

23 The successful tenderer for the Melbourne City Square project, Star (Great Britain) Holdings Ltd, took out a Supreme Court writ seeking

the return of its \$3m deposit on the project. The Minister of Health announced that a 200 bed hospital will be built at Moorabbin.

28 The Victorian Government announced that from 1 January 1973 cigarette packets must carry a warning on the dangers of smoking cigarettes.

#### *April*

18 Work was resumed after an 18 month delay on Melbourne's \$75m West Gate Bridge. Work on the bridge began on 22 April 1968 and stopped on 15 October 1970, when part of the bridge collapsed, killing 35 men.

#### *May*

4 State Parliament will set up a permanent committee of Members of Parliament to probe future takeovers of companies. This decision follows Government action on the recent attempts to take over various companies. The all-party committee will investigate takeover proposals referred to it by the Government which will have power to "freeze" takeovers.

15 The Chief Secretary announced that an inquiry will be held into allegations concerning conditions at Pentridge Gaol.

#### *June*

2 The latest estimate for Melbourne's underground rail loop was \$117.3m, a rise of \$37.3m on the original estimate made 4 years previously. The Town Clerk said Melbourne's rates would be forced up 25 per cent as a result.

20 The Victorian Parliamentary Public Works Committee recommended building a \$4.8m dam on the Mitchell River 15 miles from Bairnsdale at Billy Goat Bend.

21 The Minister of Education announced that the Government would grant autonomy to teachers colleges.

22 The States were given an increase of \$267.2m in Commonwealth grants and loans at the Premiers' Conference. Victoria received a special grant of \$5.4m.

#### *July*

24 The State Government announced the purchase of the Corpus Christi College property at Glen Waverley for use as a new police training academy. \$1.9m was paid for the buildings and 40 acres of land ; an additional \$4m will be spent converting the college.

#### *August*

7 The State Savings Bank of Victoria announced that there will no longer be a ceiling (at present \$12,000) on housing loans.

8 The oldest footprints known to man have been found 25 miles north-west of Mallacoota, in Gippsland. Geologists estimated that the rocks bearing the footprints are 355 million years old.

10 The Melbourne Harbor Trust tug *Melbourne* sank off Williamstown at 6.50 a.m. The tug collided with the *Nieuw Holland*, a cargo passenger ship of 13,568 tons.

14 The State Government banned the sale of much of the shark meat usually sold as flake. The ban follows the discovery that some shark from Victorian waters contained a mercury level more than four times the legal limit of 0.5 parts per million.

15 Changes in the give-way-to-the-right road rule came into force, the main change being the establishment of priority roads.

23 The Hon. Sir Henry Bolte resigned from the Legislative Assembly and the Hon. R. J. Hamer became Victoria's Premier. The Hon. L. H. S. Thompson became the Deputy Premier.

25 Williamstown Naval Dockyard will spend \$24m to renovate the yard during the next ten years.

30 The State Electricity Commission of Victoria will build a \$200m power station at Yallourn in the La Trobe valley. The new station is due to be finished by 1980.

### *September*

3 The Hon. Sir Henry Winneke succeeded the Hon. Sir Edmund Herring as Lieutenant-Governor of Victoria.

12 The State Budget was brought down, providing for expenditure during 1972-73 of \$1,362m, \$498m more than 1971-72. The largest item was education, \$402m, an increase of \$73m. The budgeted cash deficit of \$17m will be met by loan money.

13 The Voumard report on local government finance was tabled in State Parliament. A \$70m boost to end the financial crises of municipalities was recommended.

28 The State Government will spend \$1,250m over the next eight years to sewer the whole Melbourne metropolitan area.

### *October*

10 The State Government will set up Victoria's first College of Arts next year at the old Police Training Depot in St Kilda Road, Melbourne.

19 Bakeries, chemists, petrol stations, and pet shops will be able to trade seven days a week, public holidays included, under legislation introduced into State Parliament.

### *November*

15 Victorians will have to pass a road law test and obtain a permit before they can start learning to drive a car under legislation introduced in State Parliament.

### *December*

2 A general election for the House of Representatives of the Commonwealth Parliament was held. The Australian Labor Party gained office.

5 The Hon. E.G. Whitlam, Q.C. was sworn in as Prime Minister of Australia.



12 The Nissan Motor Company of Japan announced it would invest \$35m to build its Datsun cars in Victoria and has purchased a half share in Motor Producers Ltd, a Volkswagen subsidiary.

13 The Commonwealth Government agreed to pay Victoria \$13.5m to increase employment in the following six months, including \$9m for city unemployment relief.

18 Cabinet decided to legislate in the autumn 1973 session of State Parliament to lower the voting age to eighteen.

19 The State Government decided to abandon freeway building in Melbourne's inner suburbs. No new freeways will be commenced within five miles of Melbourne.

21 Toyota and Australian Motor Industries Ltd are to establish an engine plant at Altona at a cost of \$25m. An additional \$3m will be spent on expanding A.M.I.'s existing Port Melbourne plant.

24 The first of Melbourne's new stainless steel suburban electric trains came into service on the St Kilda line.

VICTORIA—REPRESENTATIVES OF THE SOVEREIGN

Name	Office	Date of assumption of office
BEFORE RESPONSIBLE GOVERNMENT		
Charles Joseph La Trobe	Superintendent of the District of Port Phillip	30 September 1839
	Lieutenant-Governor of the Colony of Victoria	15 July 1851
John Vesey Fitzgerald Leslie Foster (acting)	Officer administering the Government of the Colony of Victoria	8 May 1854
Captain Sir Charles Hotham, R.N., K.C.B.	Lieutenant-Governor of the Colony of Victoria	22 June 1854
SINCE RESPONSIBLE GOVERNMENT		
Captain Sir Charles Hotham, R.N., K.C.B.	Captain-General and Governor-in-Chief of the Colony of Victoria, also Vice-Admiral, Commissary, and Deputy in the office of Vice-Admiralty in the said Colony	22 May 1855
Sir Henry Barkly, K.C.B.	Captain-General and Governor-in-Chief of the Colony of Victoria, and Vice-Admiral of the same	26 December 1856
Sir Charles Henry Darling, K.C.B.	Governor and Commander-in-Chief	11 September 1863
The Hon. Sir John Henry Thomas Manners-Sutton, K.C.B.	Governor and Commander-in-Chief	15 August 1866
Sir George Ferguson Bowen, G.C.M.G.	Administrator of the Government Governor and Commander-in-Chief of the Colony of Victoria and its Dependencies, and Vice-Admiral of the same	31 March 1873 30 July 1873
The Most Hon. George Augustus Constantine Phipps, Marquis of Normanby, G.C.M.G., P.C.	Administrator of the Government Governor and Commander-in-Chief	27 February 1879 29 April 1879
Sir Henry Brougham Loch, G.C.M.G., K.C.B.	Governor and Commander-in-Chief	15 July 1884
The Rt Hon. John Adrian Louis Hope, Earl of Hopetoun, G.C.M.G.	Governor and Commander-in-Chief	28 November 1889

VICTORIA—REPRESENTATIVES OF THE SOVEREIGN—*continued*

Name	Office	Date of assumption of office
The Rt Hon. Baron Brassey, K.C.B.	Governor and Commander-in-Chief	25 October 1895
Sir George Sydenham Clarke, K.C.M.G., F.R.S.	Governor of the State of Victoria	10 December 1901
Major-General the Hon. Sir Reginald Arthur James Talbot, K.C.B.	Governor	25 April 1904
Sir Thomas David Gibson Carmichael, Bart, K.C.M.G.	Governor	27 July 1908
Sir John Michael Fleetwood Fuller, Bart, K.C.M.G.	Governor	24 May 1911
The Hon. Sir Arthur Lyulph Stanley, K.C.M.G.	Governor	23 February 1914
Colonel the Rt Hon. George Edward John Mowbray, Earl of Stradbroke, K.C.M.G., C.B., C.V.O., C.B.E., Aide-de-Camp to His Majesty the King	Governor	24 February 1921
Lieutenant-Colonel the Rt Hon. Arthur Herbert Tennyson, Baron Somers, K.C.M.G., D.S.O., M.C.	Governor	28 June 1926
Captain the Rt Hon. William Charles Arcedeckne, Baron Huntingfield, K.C.M.G.	Governor	14 May 1934
Major-General Sir Winston Joseph Dugan, G.C.M.G., C.B., D.S.O.	Governor	17 July 1939
General Sir Reginald Alexander Dallas Brooks, K.C.B., K.C.M.G., K.C.V.O., D.S.O., K.StJ.	Governor	18 October 1949
Major-General Sir Rohan Delacombe, K.C.M.G., K.C.V.O., K.B.E., C.B., D.S.O., K.StJ.	Governor	8 May 1963

## VICTORIA—MINISTRIES SINCE RESPONSIBLE GOVERNMENT

Number of Ministry and name of Premier	Date of assumption of office	Date of retirement from office	Duration of office
			days
1 William Clark Haines	30 November 1855	11 March 1857	468
2 John O'Shanassy	11 March 1857	29 April 1857	50
3 William Clark Haines	29 April 1857	10 March 1858	316
4 John O'Shanassy	10 March 1858	27 October 1859	597
5 William Nicholson	27 October 1859	26 November 1860	397
6 Richard Heales	26 November 1860	14 November 1861	354
7 John O'Shanassy	14 November 1861	27 June 1863	591
8 James McCulloch	27 June 1863	6 May 1868	1,776
9 Charles Sladen	6 May 1868	11 July 1868	67
10 James McCulloch	11 July 1868	20 September 1869	437
11 John Alexander MacPherson	20 September 1869	9 April 1870	202
12 Sir James McCulloch	9 April 1870	19 June 1871	437
13 Charles Gavan Duffy	19 June 1871	10 June 1872	358
14 James Goodall Francis	10 June 1872	31 July 1874	782
15 George Briscoe Kerferd	31 July 1874	7 August 1875	373

VICTORIA—MINISTRIES SINCE RESPONSIBLE GOVERNMENT—*continued*

Number of Ministry and name of Premier	Date of assumption of office	Date of retirement from office	Duration of office days
16 Graham Berry	7 August 1875	20 October 1875	75
17 Sir James McCulloch, K.C.M.G.	20 October 1875	21 May 1877	580
18 Graham Berry	21 May 1877	5 March 1880	1,020
19 James Service	5 March 1880	3 August 1880	152
20 Graham Berry	3 August 1880	9 July 1881	341
21 Sir Bryan O'Loughlen, Bart	9 July 1881	8 March 1883	608
22 James Service	8 March 1883	18 February 1886	1,079
23 Duncan Gillies	18 February 1886	5 November 1890	1,722
24 James Munro	5 November 1890	16 February 1892	469
25 William Shiels	16 February 1892	23 January 1893	343
26 Sir James Brown Patterson, K.C.M.G.	23 January 1893	27 September 1894	613
27 Sir George Turner, P.C., K.C.M.G.	27 September 1894	5 December 1899	1,896
28 Allan McLean	5 December 1899	19 November 1900	350
29 Sir George Turner, P.C., K.C.M.G.	19 November 1900	12 February 1901	86
30 Alexander James Peacock	12 February 1901	10 June 1902	484
31 William Hill Irvine	10 June 1902	16 February 1904	617
32 Sir Thomas Bent, K.C.M.G.	16 February 1904	8 January 1909	1,789
33 John Murray	8 January 1909	18 May 1912	1,227
34 William Alexander Watt	18 May 1912	9 December 1913	571
35 George Alexander Elmslie	9 December 1913	22 December 1913	14
36 William Alexander Watt	22 December 1913	18 June 1914	179
37 Sir Alexander James Peacock, K.C.M.G.	18 June 1914	29 November 1917	1,261
38 John Bowser	29 November 1917	21 March 1918	113
39 Harry Sutherland Wightman Lawson	21 March 1918	7 September 1923	1,997
40 Harry Sutherland Wightman Lawson	7 September 1923	19 March 1924	195
41 Harry Sutherland Wightman Lawson	19 March 1924	28 April 1924	41
42 Sir Alexander James Peacock, K.C.M.G.	28 April 1924	18 July 1924	82
43 George Michael Prendergast	18 July 1924	18 November 1924	124
44 John Allan	18 November 1924	20 May 1927	914
45 Edmond John Hogan	20 May 1927	22 November 1928	553
46 Sir William Murray McPherson, K.B.E.	22 November 1928	12 December 1929	386
47 Edmond John Hogan	12 December 1929	19 May 1932	890
48 Sir Stanley Seymour Argyle, K.B.E., M.R.C.S.	19 May 1932	2 April 1935	1,049
49 Albert Arthur Dunstan	2 April 1935	14 September 1943	3,088
50 John Cain	14 September 1943	18 September 1943	5
51 Albert Arthur Dunstan	18 September 1943	2 October 1945	746
52 Ian Macfarlan, K.C.	2 October 1945	21 November 1945	51
53 John Cain	21 November 1945	20 November 1947	730
54 Thomas Tuke Hollway	20 November 1947	3 December 1948	380
55 Thomas Tuke Hollway	3 December 1948	27 June 1950	572
56 John Gladstone Black McDonald	27 June 1950	28 October 1952	855
57 Thomas Tuke Hollway	28 October 1952	31 October 1952	4
58 John Gladstone Black McDonald	31 October 1952	17 December 1952	48
59 John Cain	17 December 1952	31 March 1955	835
60 John Cain	31 March 1955	7 June 1955	69
61 Sir Henry Edward Bolte, G.C.M.G.	7 June 1955	23 August 1972	6,288
62 Rupert James Hamer, E.D.	23 August 1972	Still in office	

## THE MELBOURNE CUP

Year	Winner	Weight	Time	Year	Winner	Weight	Time
1861	Archer	9.7	3.52	1918	Night Watch	6.9	3.25 $\frac{3}{4}$
1862	Archer	10.2	3.47	1919	Artilleryman	7.6	3.24 $\frac{1}{2}$
1863	Banker	5.4	3.44	1920	Poitrel	10.0	3.25 $\frac{3}{4}$
1864	Lantern	6.3	3.52	1921	Sister Olive	6.9	3.27 $\frac{3}{4}$
1865	Toryboy	7.0	3.44	1922	King Ingoda	7.1	3.28 $\frac{1}{2}$
1866	The Barb	6.11	3.43	1923	Bitalli	7.0	3.24 $\frac{1}{2}$
1867	Tim Whiffler	8.11	3.39	1924	Backwood	8.2	3.26 $\frac{1}{2}$
1868	Glencoe	9.1	3.42	1925	Windbag	9.2	3.22 $\frac{3}{4}$
1869	Warrior	8.10	3.40	1926	Spearfelt	9.3	3.22 $\frac{3}{4}$
1870	Nimblefoot	6.3	3.37	1927	Trivalve	7.6	3.24
1871	The Pearl	7.3	3.39	1928	Statesman	8.0	3.23 $\frac{1}{2}$
1872	The Quack	7.10	3.39	1929	Nightmarch	9.2	3.26 $\frac{1}{2}$
1873	Don Juan	6.12	3.36	1930	Phar Lap	9.12	3.27 $\frac{3}{4}$
1874	Haricot	6.7	3.37 $\frac{1}{2}$	1931	White Nose	6.12	3.26
1875	Wollomai	7.8	3.38	1932	Peter Pan	7.6	3.23 $\frac{1}{2}$
1876	Briseis	6.4	3.36 $\frac{1}{2}$	1933	Hall Mark	7.8	3.27 $\frac{1}{2}$
1877	Chester	6.12	3.33 $\frac{1}{2}$	1934	Peter Pan	9.10	3.40 $\frac{1}{2}$
1878	Calamia	8.2	3.35 $\frac{3}{4}$	1935	Marabou	7.11	3.23 $\frac{3}{4}$
1879	Darriwell	7.4	3.30 $\frac{3}{4}$	1936	Wotan	7.11	3.21 $\frac{1}{2}$
1880	Grand Flaneur	6.10	3.34 $\frac{3}{4}$	1937	The Trump	8.5	3.21 $\frac{1}{2}$
1881	Zulu	5.10	3.32 $\frac{1}{2}$	1938	Catalogue	8.4	3.26 $\frac{1}{2}$
1882	The Assyrian	7.13	3.40	1939	Rivette	7.9	3.27
1883	Martini-Henri	7.5	3.30 $\frac{1}{2}$	1940	Old Rowley	7.12	3.26
1884	Malua	9.9	3.31 $\frac{3}{4}$	1941	Skipton	7.7	3.23 $\frac{3}{4}$
1885	Sheet Anchor	7.11	3.29 $\frac{1}{2}$	1942	Colonus	7.2	3.33 $\frac{1}{2}$
1886	Arsenal	7.5	3.31	1943	Dark Felt	8.4	3.23 $\frac{1}{2}$
1887	Dunlop	8.3	3.28 $\frac{1}{2}$	1944	Sirius	8.5	3.24 $\frac{1}{2}$
1888	Mentor	8.3	3.30 $\frac{3}{4}$	1945	Rainbird	7.7	3.24 $\frac{1}{2}$
1889	Bravo	8.7	3.32 $\frac{1}{2}$	1946	Russia	9.0	3.21 $\frac{1}{2}$
1890	Carbine	10.5	3.28 $\frac{1}{2}$	1947	Hiraji	7.11	3.28
1891	Malvolio	8.4	3.29 $\frac{1}{2}$	1948	Rimfire	7.2	3.21
1892	Glenloth	7.13	3.36 $\frac{1}{2}$	1949	Foxzami	8.8	3.28 $\frac{1}{2}$
1893	Tarcoola	8.4	3.30 $\frac{1}{2}$	1950	Comic Court	9.5	3.19 $\frac{1}{2}$
1894	Patron	9.3	3.31	1951	Delta	9.5	3.24 $\frac{1}{2}$
1895	Auraria	7.4	3.29	1952	Dalray	9.8	3.23 $\frac{3}{4}$
1896	Newhaven	7.13	3.28 $\frac{1}{2}$	1953	Wodalla	8.4	3.23 $\frac{3}{4}$
1897	Gaulus	7.8	3.31	1954	Rising Fast	9.5	3.23
1898	The Grafter	9.2	3.29 $\frac{3}{4}$	1955	Toparoa	7.8	3.28 $\frac{1}{2}$
1899	Merriwee	7.6	3.36 $\frac{1}{2}$	1956	Evening Peal	8.0	3.19 $\frac{1}{2}$
1900	Clean Sweep	7.0	3.29	1957	Straight Draw	8.5	3.24 $\frac{1}{2}$
1901	Revenue	7.10	3.30 $\frac{1}{2}$	1958	Baystone	8.9	3.21 $\frac{1}{2}$
1902	The Victory	8.12	3.29	1959	Macdougal	8.11	3.23
1903	Lord Cardigan	6.8	3.29 $\frac{1}{2}$	1960	Hi Jinx	7.10	3.23 $\frac{3}{4}$
1904	Acrasia	7.6	3.28 $\frac{1}{2}$	1961	Lord Fury	7.8	3.19 $\frac{1}{2}$
1905	Blue Spec	8.0	3.27 $\frac{1}{2}$	1962	Even Stevens	8.5	3.21.4
1906	Poseidon	7.6	3.31 $\frac{1}{2}$	1963	Gatum Gatum	7.12	3.21.1
1907	Apologue	7.9	3.27 $\frac{1}{2}$	1964	Polo Prince	8.3	3.19.6
1908	Lord Nolan	6.10	3.28 $\frac{3}{4}$	1965	Light Fingers	8.4	3.21.1
1909	Prince Foote	7.8	3.27 $\frac{1}{2}$	1966	Galilee	8.13	3.21.9
1910	Comedy King	7.11	3.27 $\frac{3}{4}$	1967	Red Handed	8.9	3.20.4
1911	The Parisian	8.9	3.27 $\frac{3}{4}$	1968	Rain Lover	8.2	3.19.1
1912	Piastre	7.9	3.27 $\frac{1}{2}$	1969	Rain Lover	9.7	3.21.5
1913	Posinatus	7.10	3.31	1970	Baghdad Note	8.7	3.19.7
1914	Kingsburgh	6.12	3.26	1971	Silver Knight	8.9	3.19.5
1915	Patrobas	7.6	3.28 $\frac{1}{2}$				
1916	Sasanof	6.12	3.27 $\frac{3}{4}$	1972	Piping Lane	48	3.19.9
1917	Westcourt	8.5	3.26 $\frac{3}{4}$				

NOTE. From 1861 to 1971 the Melbourne Cup was run over a distance of two miles and the weights carried by the winning horses are shown in stones and pounds. In 1972, following the conversion to metric measurement, the race was run over 3,200 metres (about 20 yards less than two miles) and the weight carried is expressed in kilograms. Times are shown as minutes and seconds.

## Appendix B

### SELECT BIBLIOGRAPHY OF VICTORIA

#### *General reference works*

- Australian encyclopaedia*. 10 volumes. Sydney, Grolier Society of Australia, 1965.
- Sands and McDougall's directory of Victoria*. Melbourne, Sands and McDougall, 1972.
- Victorian municipal directory; State guide and water supply record for 1972*. Melbourne, Arnall and Jackson, 1972.
- Victorian Year Book*. Melbourne, Commonwealth Bureau of Census and Statistics: Victorian Office, 1873 to date.

#### *Biography*

##### *Collective*

- Australian dictionary of biography*. General editor: Douglas Pike. Vols 1-4 issued to date. Melbourne University Press, 1966-
- HENDERSON, A. *Henderson's Australian families: a genealogical and biographical record*. Melbourne, Henderson, 1941. 408 pages.
- HUMPHREYS, H. M. *Men of the time in Australia: Victorian series*. Melbourne, McCarron, Bird, 1878 and 1882.
- MOWLE, P. C. *A genealogical history of pioneer families of Australia*. Sydney, Angus and Robertson, 1969. 190 pages.
- SERLE, Percival. *Dictionary of Australian biography*. 2 vols. Sydney, Angus and Robertson, 1949.
- Who's who in Australia*. 20th edition. Melbourne, Herald and Weekly Times Ltd, 1971.

##### *Individual*

- BADGER, C. R. *The Reverend Charles Strong and the Australian Church*. Melbourne, Abacada Press, 1971. 335 pages.
- BLAZEY, Peter. *Bolte; a political biography*. Milton, Qld, The Jacaranda Press, 1972. 251 pages.
- BRENNAN, Niall. *Dr Mannix*. Adelaide, Rigby, 1964. 336 pages.
- BROWN, M. M. *Australian son: the story of Ned Kelly*. Melbourne, Georgian House, 1948. 282 pages.
- CARTER, Isabel. *Woman in a wig; Joan Rosanove, Q.C.* Melbourne, Lansdowne, 1970. 167 pages.
- COWEN, Zelman. *Isaac Isaacs*. Melbourne, Oxford University Press, 1967. 272 pages.

- GROSS, Alan. *Charles Joseph La Trobe: Superintendent of the Port Phillip District 1839–1851, Lieutenant-Governor of Victoria 1851–1854*. Melbourne University Press, 1956. 157 pages.
- LA NAUZE, J. A. *Alfred Deakin: a biography*. 2 vols. Melbourne University Press, 1962.
- MURPHY, Frank. *Daniel Mannix, Archbishop of Melbourne*. Melbourne, Advocate Press, 1948. 258 pages.
- ROBIN, A. de Q. *Charles Perry, Bishop of Melbourne: the challenges of a colonial episcopate, 1847–76*. Nedlands, University of Western Australia Press, 1967. 229 pages.
- ROSENTHAL, Newman. *Sir Charles Lowe: a biographical memoir*. Melbourne, Robertson and Mullens, 1968. 215 pages.
- SAYERS, C. E. *David Syme: a life*. Melbourne, Cheshire, 1965. 312 pages.
- SINGLETON, John. *A narrative of incidents in the life of a physician*. Melbourne, Hutchinson, 1891. 414 pages.
- TREGENZA, John. *Professor of democracy: the life of Charles Henry Pearson, 1830–1894, Oxford don and Australian radical*. Melbourne University Press, 1968. 279 pages.
- WALKER, M. H. *Come wind, come weather: a biography of Alfred Howitt*. Melbourne University Press, 1971. 348 pages.

#### *History and description*

- The Australasian sketcher with pen and pencil, 1880*. Melbourne, Heritage Publications, 1970. Facsimile edition of all fortnightly issues of this journal for 1880. 214 pages.
- BASSETT, M. *The Hentys: an Australian colonial tapestry*. London, Oxford University Press, 1954. 550 pages.
- BILLIS, R. V. and KENYON, A. S., *Pastoral pioneers of Port Phillip*. Melbourne, Macmillan, 1932. 278 pages.
- BILLIS, R. V. and KENYON, A. S., *Pastures new: an account of the pastoral occupation of Port Phillip*. Melbourne, Macmillan, 1930. 272 pages.
- BONWICK, J. *Port Phillip settlement*. London, Sampson, Low, Marston, 1883. 538 pages.
- BONWICK, J. *Western Victoria, its geography, geology and social condition: the narrative of an educational tour in 1857*. Introduction and editorial commentary by C. E. Sayers. Melbourne, Heinemann, 1970. First published by Thomas Brown, Geelong, 1858. 196 pages.
- BOWDEN, K. M. *The Great Southern Railway: an illustrated history of the building of the line in south Gippsland*. Melbourne, the author in association with the Australian Railway Historical Society (Victorian Division), 1970. 130 pages.
- BRIDE, T. F., editor. *Letters from Victorian pioneers*. Melbourne, Public Library of Victoria, 1898. 325 pages. New edition with introduction and notes by C. E. Sayers, Melbourne, Heinemann, 1969. 455 pages.
- BROWNHILL, W. R. *The history of Geelong and Corio Bay*. Melbourne, 1955. 674 pages.
- BOYS, R. D. *First years at Port Phillip*. Melbourne, Robertson and Mullens, 1935. 158 pages.

- CANTLON, M. *Homesteads of Victoria 1836–1910*. Melbourne, Georgian House, 1967. 108 pages.
- CURR, E. M. *Recollections of squatting in Victoria: then called the Port Phillip District (from 1841 to 1851)*. New edition. Melbourne University Press, 1965. 194 pages.
- DALEY, C. *The story of Gippsland*. Melbourne, Whitcombe and Tombs, 1962. 220 pages.
- DEAKIN, A. *The crisis in Victorian politics, 1879–1881: a personal retrospect*. Melbourne University Press, 1957. 94 pages.
- DEAKIN, A. *The federal story: the inner history of the federal cause*. Melbourne, Robertson and Mullens, 1944. 170 pages.
- FINN, E. (Garryowen) *The chronicles of early Melbourne, 1835–52: historical, anecdotal and personal*. 2 vols. Melbourne, Fergusson and Mitchell, 1888.
- FINN, W. M. *Glimpses of north-eastern Victoria, and Albury, New South Wales*. Melbourne, Catholic Bookselling and Printing Depot, 1870. Reprinted Kilmore, Lowden, 1971.
- GRANT, J. and SERLE, G. *The Melbourne scene 1803–1956*. Melbourne University Press, 1956. 308 pages.
- GUNSON, N. *The good country: Cranbourne Shire*. Melbourne, Cheshire, 1968. 308 pages.
- HARRIGAN, L. *Victorian Railways to '62*. Melbourne, Victorian Railways Public Relations and Betterment Board, 1962. 300 pages.
- HILL, E. *Water into gold*. Melbourne, Robertson and Mullens, 1949. 328 pages.
- KELLY, W. *Life in Victoria: or, Victoria in 1853, and Victoria in 1858*. London, Chapman and Hall, 1860. 360 pages.
- KIDDLE, M. *Men of yesterday: social history of the Western District of Victoria, 1834–1890*. Melbourne University Press, 1962. 574 pages.
- KIMBERLY, W. B., *Ballarat and vicinity*. Ballarat, Niven, 1894. 232 pages.
- KIMBERLY, W. B., *Bendigo and vicinity*. Ballarat, Niven, 1895. 273 pages.
- MCCRAE, H. *Georgiana's journal: Melbourne a hundred years ago*. Sydney, Angus and Robertson, 1934. 2nd edition, 1966. 314 pages.
- MACKAY, G. *The history of Bendigo*. Bendigo, Mackay and Co., 1891. 195 pages.
- MARTIN, D. *On the road to Sydney*. Melbourne, Nelson, 1970. 183 pages.
- The Melbourne Walker*. Melbourne Amateur Walking and Touring Club, annual, 1929 to date.
- MORRIS, A. *Rich river*. 2nd impression. Colac Herald, 1970. 182 pages.
- O'CALLAGHAN, T. *Names of Victorian railway stations*. Melbourne, Government Printer, 1918. 100 pages.
- PAYNTING, H. H., editor. *The James Flood book of early Australian photographs*. Melbourne, James Flood Charity Trust, 1970. 157 pages.
- PECK, H. H. *Memoirs of a stockman*. Melbourne, Stockland Press, 1942. 336 pages.
- PRATT, Ambrose. *The centenary history of Victoria*. Melbourne, Robertson and Mullens, 1934. 243 pages.

- ROE, M. *Quest for authority in eastern Australia, 1835–1851*. Melbourne University Press, 1965. 258 pages.
- SERLE, G. *The rush to be rich: a history of the Colony of Victoria 1883–1889*. Melbourne University Press, 1971. 392 pages.
- SHILLINGLAW, J. J. *Historical records of Port Phillip: the first annals of the Colony of Victoria*. Melbourne, Government Printer, 1879. 142 pages.
- SMITH, J., editor. *Cyclopedia of Victoria*. 3 vols. Melbourne, The Cyclopedia Co., 1903–05.
- SUTHERLAND, A. *Victoria and its metropolis, past and present*. 2 vols. Melbourne, McCarron, Bird, 1888.
- TROLLOPE, A. *Australia and New Zealand*. London, Chapman and Hall, and Melbourne, George Robertson, 1873.
- TURNER, H. G. *A history of the Colony of Victoria from its discovery to its absorption into the Commonwealth of Australia*. 2 vols. London, Longmans, 1904.
- TURTON, K. W. *The Portland railway*. Melbourne, Australian Railway Historical Society, 1968. 179 pages.
- Victoria illustrated, 1857 and 1862*. Melbourne, Lansdowne, 1971. Engravings from the original editions by S. T. Gill and N. Chevalier. Introduction and notes by W. H. Newnham.
- VICTORIA. PARLIAMENT. *One hundred years of responsible government in Victoria, 1856–1956*. Melbourne, Government Printer, 1957. 266 pages.
- Victoria, the first century: an historical survey*. Compiled by the Historical Sub-Committee of the Centenary Celebrations Council. Melbourne, Robertson and Mullens, 1934. 462 pages.
- Victorian State parliamentary and civic guide*. 9th edition. Melbourne, Eric White Associates, 1971. 154 pages.
- Walkabout: Australian way of life magazine*. Melbourne, National Travel Association, monthly, 1934 to date.
- WESTGARTH, W. *Personal recollections of early Melbourne and Victoria*. Melbourne, George Robertson, 1888. Facsimile edition published Geelong, Rippleside Press, 1970. 178 pages.
- WITHERS, W. B. *The history of Ballarat from the first pastoral settlement to the present time*. 2nd edition. Ballarat, Niven, 1887. 362 pages.
- WORTHINGTON, J. M. *Index to parliamentary papers, reports of select committees, and returns to orders, bills, etc., 1851–1909*. Melbourne, Government Printer, 1909. 324 pages.

#### *Victorian gold rushes*

- ANDERSON, H. M., comp. *Eureka: Victorian parliamentary papers, votes and proceedings 1854–1867*. Melbourne, Hill of Content, 1968.
- BLAINEY, G., *The rush that never ended: a history of Australian mining*. Melbourne University Press, 1963. 369 pages.
- BLAKE, L. J. *Gold escort*. Melbourne, Hawthorn Press, 1971. 288 pages.
- BONWICK, J. *Notes of a gold digger and gold digger's guide*. First published 1852. Re-issued with introduction by E. E. Pescott. Melbourne, Hawthorn Press, 1942. 47 pages.



- CARBONI, R. *The Eureka Stockade*. Melbourne University Press, 1963. 182 pages.
- CLACY, Mrs Charles. *A lady's visit to the gold diggings of Australia in 1852-53*. Melbourne, Lansdowne, 1963. 160 pages.
- DARBYSHIRE, J. and SAYERS, C. E. *Old gold towns of Victoria*. Adelaide, Rigby, 1970.
- FAUCHERY, A. *Letters from a miner in Australia*. Translated from the French by A. R. Chisholm. Melbourne, Georgian House, 1965. 105 pages.
- FLETT, J. *The history of gold discovery in Victoria*. Melbourne, Hawthorn Press, 1970. 495 pages.
- GREGORY, J. S. "A contribution to the bibliography of the economic geology of Victoria, to the end of 1903." In *Records of the Geological Survey of Victoria*. Melbourne, Department of Mines, 1904. 132 pages.
- MACKAY, R. *Recollections of early Gippsland goldfields*. Traralgon, 1916. New edition, edited and with introduction by C. Bridges-Webb, 1971.
- PATTERSON, J. A. *The goldfields of Victoria in 1862*. Melbourne, Wilson and Mackinnon, 1863. 331 pages.
- SERLE, G. *The golden age: a history of the Colony of Victoria, 1851-1861*. Melbourne University Press, 1963. 456 pages.
- TURNBULL, C. *Eureka: the story of Peter Lalor*. Melbourne, Hawthorn Press, 1946. 50 pages.

*Aboriginals*

- HERCUS, L. A. *The languages of Victoria: a late survey*. Parts I and II. Canberra, Australian Institute of Aboriginal Studies, 1969.
- HOWITT, A. W. *The native tribes of south-east Australia*, London, Macmillan, 1904. 819 pages.
- MASSOLA, A. *The aboriginal people*. Melbourne, Cypress Books, 1969. 69 pages.
- MASSOLA, A. *The aborigines of south-eastern Australia as they were*. Melbourne, Heinemann, 1971. 166 pages.
- MASSOLA, A. *Bibliography of the Victorian aborigines from the earliest manuscripts to 31 December 1970*. Melbourne, Hawthorn Press, 1971. 95 pages.
- MASSOLA, A. *Bunjil's cave: myths, legends and superstitions of the aborigines of south-east Australia*. Melbourne, Lansdowne, 1968. 208 pages.
- SMYTH, R. B. *The aborigines of Victoria*. 2 vols. Melbourne, Government Printer, 1878. Facsimile edition published Melbourne, John Currey, O'Neil, 1972.

*Economic history, social conditions, etc.*

- BARRETT, Bernard. *The inner suburbs: the evolution of an industrial area*. Melbourne University Press, 1971. 180 pages.
- CANNON, Michael. *The land boomers*. Melbourne University Press, 1966. 248 pages.
- CANNON, Michael. *Who's master? Who's man? Australia in the Victorian age*. Melbourne, Nelson, 1971. 304 pages.
- DEAN, Arthur. *A multitude of counsellors: history of the Bar of Victoria*. Melbourne, Cheshire, 1968. 332 pages.

- FITZGERALD, R. T. *The printers of Melbourne: the history of a union*. Melbourne, Pitman, 1967. 173 pages.
- FLOWER, Cedric. *Duck and cabbage tree: a pictorial history of clothes in Australia 1788-1914*. Sydney, Angus and Robertson, 1968. 157 pages.
- FORDE, J. L. *The story of the Bar of Victoria*. Melbourne, Whitcombe and Tombs, 1913. 309 pages.
- GIFFORD, K. H. *The Victorian local government handbook*. 7th edition. Melbourne, Law Book Co., 1970. 262 pages.
- GARDINER, Lyndsay. "The Eye and Ear": *the Royal Victorian Eye and Ear Hospital centenary history*. Melbourne, Robertson and Mullens, 1968. 114 pages.
- HALL, A. R. *The Stock Exchange of Melbourne and the Victorian economy, 1852-1900*. Canberra, Australian National University Press, 1968. 267 pages.
- HENDERSON, R. F. and others. *People in poverty: a Melbourne survey*. Cheshire, Institute of Applied Economic Research, University of Melbourne, 1970. 226 pages.
- HUCK, A. *The Chinese in Australia*. Melbourne, Longmans, 1968. 117 pages.
- HUNTER, A. *The economics of Australian industry: studies in environment and structure*. Melbourne University Press, 1963. 543 pages.
- INGLIS, K. S. *Hospital and community: a history of the Royal Melbourne Hospital*. Melbourne University Press, 1958. 226 pages.
- JACOBS, James W. "Let them be admitted": *being a history of the Royal Freemasons' Homes of Victoria... until the completion of one hundred years of service to the aged in June 1967*. Melbourne, Royal Freemasons' Homes of Victoria, 1967. 232 pages.
- KUNZ, E. F. *Blood and gold: Hungarians in Australia*. Melbourne, Cheshire, 1969. 301 pages.
- MEDDING, P. Y. *From assimilation to group survival: a political and sociological study of an Australian Jewish community*. Melbourne, Cheshire, 1968. 309 pages.
- MURPHY, W. E. *History of the eight hours movement*. 2 vols. Melbourne, 1896-1900.
- POWELL, J. M. *The public lands of Australia Felix: settlement and land appraisal in Victoria 1834-91 with special reference to the western plains*. Melbourne, Oxford University Press, 1970. 328 pages.
- SHANN, E. O. G. *An economic history of Australia*. Australian edition. Cambridge University Press, 1948. 456 pages.
- SINCLAIR, W. A. *Economic recovery in Victoria, 1894-1899*. Canberra, Australian National University Press, 1956. 128 pages.
- TEMPLETON, Jacqueline. *Prince Henry's: the evolution of a Melbourne hospital 1869-1969*. Melbourne, Robertson and Mullens, 1969. 206 pages.
- VICTORIA. Central Planning Authority. *Resources surveys*, Nos. 1-10. Melbourne, 1948-1961.
- Victoria's resources*. Natural Resources Conservation League of Victoria, quarterly, 1959 to date.

ZUBRZYCKI, J. *Settlers of the Latrobe valley*. Canberra, Australian National University Press, 1964. 306 pages.

*Natural history*

- COCHRANE, G. R. *Flowers and plants of Victoria*. Sydney, Reed, 1968. 216 pages.
- GALBRAITH, Jean. *Wildflowers of Victoria*. 3rd edition. Melbourne, Longmans, 1967. 163 pages.
- GARNET, J. R. *The vegetation of Wyperfeld National Park*. Melbourne, Field Naturalists' Club of Victoria in conjunction with members of the Committee of Management of Wyperfeld National Park, 1965. 95 pages.
- GARNET, J. R. *The wildflowers of Wilson's Promontory National Park*. Melbourne, Lothian Publishing Co. in conjunction with the Field Naturalists' Club of Victoria, 1971. 192 pages.
- GRAY, C. E. *Victorian native orchids, volume one: aids to field identification*. Melbourne, Longmans, 1966. 85 pages.
- GOULD LEAGUE OF VICTORIA. *Birds of Victoria*. No. 1, *Urban areas*, 1969; No. 2, *The ranges*, 1970; No. 3, *Oceans, bays, beaches*, 1971.
- HILL, Robin. *The corner: a naturalist's journeys in south-eastern Australia*. Melbourne, Lansdowne, 1970. 181 pages.
- Victorian naturalist*. Field Naturalists' Club of Victoria, monthly, 1884 to date.

*Art, architecture, and theatre*

- BAGOT, Alec. *Coppin the great: father of the Australian theatre*. Melbourne University Press, 1965. 356 pages.
- BOWDEN, K. M. *Samuel Thomas Gill, artist*. Published by the author, 1971. 148 pages.
- CASEY, M. and others. *Early Melbourne architecture 1840-1888*. 2nd edition. Melbourne, Oxford University Press, 1966. 184 pages.
- COX, Leonard B. *The National Gallery of Victoria 1861 to 1968: a search for a collection*. Melbourne, National Gallery of Victoria, 1971. 486 pages.
- HETHERINGTON, John. *Melba: a biography*. New York, Farrar, Straus and Giroux, 1968. 310 pages.
- KINGSTON, Claude. *It don't seem a day too much*. Adelaide, Rigby, 1971. 208 pages.
- MCCULLOCH, Alan. *Encyclopaedia of Australian art*. Melbourne, Hutchinson, 1968. 668 pages.
- MCCULLOCH, Alan. *The golden age of Australian painting: Impressionism and the Heidelberg School*. Melbourne, Lansdowne, 1969. 196 pages.
- ROBERTSON, E. G. *Ornamental cast iron in Melbourne*. Melbourne, Georgian House, 1967. 229 pages.
- SAUNDERS, David, editor. *Historic buildings in Victoria*. Melbourne, Jacaranda for the National Trust of Australia (Victoria), 1966. 278 pages.
- TAIT, Viola. *A family of brothers: the Tait and J. C. Williamson: a theatre history*. Melbourne, Heinemann, 1971. 303 pages.

TENNISON, P. and GRAY, L. *Meet the gallery: a literary and visual introduction to Victoria's new National Gallery.* Melbourne, Sun Books, 1968. 68 pages.

*Sport*

BERNSTEIN, D. L. *First Tuesday in November: the story of the Melbourne Cup.* Melbourne, Heinemann, 1969. 327 pages.

CAVANOUGH, M. and DAVIES, M. *The Melbourne Cup.* Wollstonecraft, N.S.W., Pollard Publishing Co., 1971. 448 pages.

DUNSTAN, K. *The paddock that grew: the story of the Melbourne Cricket Club.* Melbourne, Cassell, 1962. 304 pages.

MULVANEY, D. J. *Cricket walkabout: the Australian Aboriginal cricketers on tour 1867-8.* Melbourne University Press, 1967. 112 pages.

## Appendix C

### PUBLICATIONS ISSUED BY THE VICTORIAN OFFICE, COMMONWEALTH BUREAU OF CENSUS AND STATISTICS

#### *General*

Victorian Year Book  
Victorian Pocket Year Book  
Victorian monthly statistical review  
General statistics of local government areas (irregular)

#### *Demography and social*

Causes of death  
Demography: preliminary statement  
Demography  
Divorce  
Estimated age distribution of the population  
Estimated population and dwellings by local government areas  
Hospital morbidity  
Industrial accidents and workers compensation: preliminary statement  
Industrial accidents and workers compensation  
Marriages, births, and deaths: preliminary statement  
Population in local government areas (revised intercensal estimates)  
Primary and secondary education: preliminary statement  
Primary and secondary education  
Tertiary education

#### *Primary production*

Agriculture: preliminary statement  
Apiculture  
Apples and pears in cool stores (monthly: March to November)  
Chicken hatchings and poultry slaughtering (monthly)  
Fisheries (quarterly and annual)  
Fruit and vineyards  
Grain and seed harvesters on rural holdings (triennial)  
Grasses and clovers harvested for seed  
Land utilisation and crops

Livestock: preliminary numbers  
Livestock  
Machinery on rural holdings  
Mining and quarrying operations  
Oats and barley: acreage and varieties  
Potatoes: estimated acreage  
Rural industries  
Tractors on rural holdings (triennial)  
Value of primary production  
Vegetables: acreage and production  
Viticulture  
Wheat: acreage survey  
Wheat for grain: production survey

#### *Building*

Building approvals (monthly)  
Building approvals by local government areas (quarterly and annual)  
Building operations (quarterly)  
Building operations: number of new houses and flats: preliminary estimates (quarterly)

#### *Secondary production*

Manufacturing establishments and electricity and gas establishments: summary of operations by industry class  
Manufacturing establishments: details of operations  
Manufacturing establishments: small area statistics  
Secondary production (monthly)

#### *Finance, local government, and transport*

Fire, marine, and general insurance  
Housing finance (quarterly)  
Local government finance  
Mortgages of real estate lodged for registration (quarterly)  
Motor vehicle registrations (monthly)  
Road traffic accidents involving casualties (quarterly and annual)

NOTE. The above publications are issued annually except where otherwise indicated, and may be obtained on application to the Deputy Commonwealth Statistician, Melbourne:

Commonwealth Banks Building,  
Cnr Elizabeth and Flinders Streets,  
MELBOURNE.

Box 2796Y, G.P.O.,  
MELBOURNE, VIC. 3001.  
Telephone 63 0181

## Appendix D

### INDEX OF SPECIAL ARTICLES IN THE VICTORIAN YEAR BOOK, 1961-1972

The following is a list of special articles which appear in the new series of the *Victorian Year Book* commencing with Volume 75, 1961, up to and including the 1972 edition. Many articles have been omitted in editions since 1961 to provide space for new material. Where an article has appeared more than once, reference is given only to its most recent appearance. The figures below indicate the year and page of the *Year Book* to which reference is made.

- Aboriginals, 1965, 141
- Administrative
  - law, 1972, 561
  - Staff College, Australian, 1961, 213
- Aeronautical meteorology, 1967, 53
- Agent-General for Victoria, 1964, 74
- Agricultural *see also* Farm, Farming
  - Economics, Bureau of, 1972, 303
  - education, tertiary, 1966, 480
  - extension services, 1968, 303
  - machinery industry, 1966, 587
  - meteorology, 1964, 33
- Agriculture *see also* Farm, Farming
  - aerial operations, 1964, 553
  - Department of, history, 1971, 105
  - historical development, 1961, 447
  - research
    - scientific, application, 1970, 305
    - stations, 1971, 293
- Airlines, country, 1969, 790
- Alfred Hospital, 1963, 265
  - research, 1963, 272
- Algae, marine, of the coast, 1970, 39
- Aluminium industry, 1967, 415
- Amphibians and reptiles, 1971, 1
- Animal
  - husbandry, 1963, 539
  - marine, ecology of the coast, 1969, 36
  - protection in national parks, 1963, 190
  - sanctuary, Sir Colin MacKenzie, Healesville, 1965, 198
- Apprenticeship Commission, 1968, 193
- Architecture *see also* Building
  - development, 1962, 343
  - hospital, 1966, 241
- Art
  - education in galleries, 1971, 434
  - galleries, Victorian, 1970, 457
- Arthur Rylah Institute for Environmental Research, 1972, 360
- Assurance, life, 1962, 666
- Asthma Foundation of Victoria, 1969, 550
- Audio-visual education, 1964, 211
- Austin Hospital, 1966, 250
- Australian
  - Administrative Staff College, 1961, 213
  - College of Education, 1961, 214
  - Dairy Produce Board, 1970, 436
  - Meat Board, 1971, 340
  - Resources Development Bank Limited, 1970, 688
  - Road Safety Council, 1966, 761
  - Wheat Board, history and functions, 1969, 331
  - Wool Board, 1972, 348
- Automation and technical development in industry, 1967, 376
- Aviation, civil
  - aerial agricultural operations, 1964, 553
  - classification of flying activities, 1964, 843
  - commuter services, 1969, 790
  - flying training, 1967, 783
  - history, 1962, 742
  - radio aids to air navigation, 1965, 773
  - regular public transport, 1968, 779
- Ballarat, 1963, 389
  - Historical Park, Sovereign Hill, 1972, 409
- Ballet, drama, and opera, 1968, 443
- Bank, State Savings, of Victoria, history, 1961, 630

- Banking in Victoria, history, 1961, 625  
 Bendigo, 1964, 413  
 Birds, 1966, 1  
 Book publishing, 1965, 181  
 Botanic gardens, 1969, 474  
 Boy Scout movement, 1964, 190  
 Broadcasting  
     and television programme standards, 1965, 196  
     educational, 1968, 449  
     history, 1961, 164  
 Brown coal, 1962, 606 and 1971, 359  
 Building *see also* Architecture  
     early Victorian, 1968, 598  
     materials, 1966, 324  
     methods, developments since 1945, 1964, 365  
     regulations, uniform, 1961, 328  
     Research, Division of, Commonwealth Scientific and Industrial Research Organization, 1972, 585  
     residential areas, inner redevelopment, 1967, 599  
     trends since 1945, 1963, 345  
 Bureau of Agricultural Economics, 1972, 303  
  
 "C" Series Retail Price Index, 1961, 440  
 Canning of food, 1969, 432  
 Car industry, 1962, 591  
 Catholic education, history, 1961, 188  
 Cattle, tuberculosis eradication, 1962, 525  
 Censuses, Integrated Economic, 1968-69, 1971, 368  
 Charitable trusts, 1972, 555  
 Charities, 1968, 514  
 Chemical industry, 1963, 615  
 Chest X-rays, compulsory, 1965, 244  
 Chief Secretary's Department, 1963, 100  
 Child welfare, voluntary, 1967, 557  
 Children's Welfare Department, history, 1961, 266  
 Civil aviation *see* Aviation, civil  
 Civil defence and the State Disaster Plan, 1966, 404  
 Clays, 1970, 376  
 Clearways, 1969, 785  
 Coal, brown, 1962, 606 and 1971, 359  
 Coastline  
     algae, marine, 1970, 39  
     conservation, 1972, 37  
     description, 1966, 33  
     hydrography, 1966, 36  
     marine animal ecology, 1969, 36  
     physiography, 1967, 32  
     plant ecology, 1968, 31  
 Commonwealth  
     Scholarships, 1964, 245  
     Scientific and Industrial Research Organization, Division of Building Research, 1972, 585  
     Serum Laboratories, 1971, 519  
 Company law, 1967, 571  
 Computers in  
     industry, 1967, 376  
     meteorology, 1971, 65  
 Conservation of the coastline, 1972, 37  
 Consolidation of Statutes, 1961, 296  
  
 Consumer protection, 1972, 197  
 Country Roads Board  
     freeways, 1972, 247  
     history, 1961, 375  
 Criminal law, administration, 1963, 322  
 Crown  
     Lands and Survey, Department of, 1968, 100  
     survey and mapping, 1972, 48  
     Law Department, 1965, 100  
 Currency, history, 1961, 627  
 Curricula for schools, development, 1969, 479  
  
 Dairy Produce Board, Australian, 1970, 436  
 Dairying industry, economic problems, 1964, 581  
 Deaf Children, Victorian School for, 1971, 557  
 Dental Hospital, history, 1965, 267  
 Diseases, epidemic, 1964, 258  
 Drama  
     commercial and non-commercial, 1963, 180  
     opera, and ballet, 1968, 443  
 Dried fruits industry, 1967, 335  
 Drought 1967-68, 1970, 309  
 Drug and poison control, 1970, 529  
  
 Economic Censuses, Integrated, 1968-69, 1971, 368  
 Education  
     administration, 1964, 208  
     agricultural, tertiary, 1966, 480  
     art galleries, 1971, 434  
     audio-visual, 1964, 211  
     Australian College of, 1961, 214  
     broadcasts to schools, 1968, 449  
     Catholic, history, 1961, 188  
     Commonwealth aid, 1972, 435  
     curricular development, 1969, 479  
     Department, history, 1969, 107  
     development of curricula, 1961, 176, and 1969, 479  
     legal, 1971, 571  
     management, 1970, 515  
     medical  
         Monash University, 1970, 505  
         second medical school, 1972, 494  
         University of Melbourne, 1963, 216 and 1970, 498  
     of handicapped children, 1968, 464  
     postgraduate, 1964, 234  
     pre-school, 1971, 455  
     primary, history, 1963, 191  
     scholarships, Commonwealth, 1964, 245  
     school broadcasts, 1968, 449  
     Science and Technology Careers Bureau, 1965, 241  
     secondary, 1945-1960, 1962, 206  
     State, history, 1961, 176  
     teacher training, 1967, 480  
     technical, 1965, 207  
     university development, 1966, 203  
 Egg marketing, 1970, 358  
 Elderly persons, care, 1969, 582

- Electricity Commission, State, history, 1961, 580  
 Electronic data processing *see* Computers  
 Employers' associations, 1972, 193  
 Engineering  
   heavy, 1971, 419  
   light, 1972, 392  
 Environment protection, 1972, 477  
 Environmental Research, Arthur Rylah Institute for, 1972, 360  
 Epidemics, 1967, 501  
 Epidemiological Research Unit, Fairfield Hospital, 1969, 549  
 Erosion and sedimentation, 1971, 44  
 Export Payments Insurance Corporation, 1970, 702  
 Export trade, law, 1968, 572  
 Fairfield Hospital, 1961, 241  
   Epidemiological Research Unit, 1969, 549  
 Family Welfare Advisory Council, 1969, 575  
 Farm management, 1967, 302  
 Farming *see also* Agricultural, Agriculture  
   industry, government assistance, 1964, 525  
   mechanisation, 1962, 493  
 Fauna *see* Animal, Mammals  
 Film, State Centre, 1969, 517  
 Fire  
   Brigades Board, Metropolitan, 1961, 397  
   prevention, meteorology, 1968, 55  
 Fish, 1967, 1  
 Fisheries  
   and Wildlife Department, research  
     freshwater, 1965, 557  
     marine, 1966, 539  
   commercial, 1964, 601  
 Flora, 1962, 1  
 Food canning, 1969, 432  
 Forestry laboratory and field research, 1965, 555  
 Forests, 1972, 1  
   Commonwealth-State Reforestation Agreement, 1969, 372  
   economic aspects, 1967, 361  
 Fossils, 1965, 1  
 Free Library Service Board, 1963, 174  
 Freeways in Melbourne, 1969, 272  
 Friendly societies, historical development, 1961, 277  
 Fuel and Power, Ministry of, 1959, 444  
 Gardens, provincial, 1967, 455  
 Gas industry, 1970, 449  
 Geelong, 1962, 379  
   Hospital, 1962, 273  
 Geology, 1961, 42  
 Glass industry, 1965, 606  
 Gordon Institute of Technology, 1962, 236  
 Government *see also* Local government assistance to farming industry, 1964, 525  
   instrumentalities, 1969, 102  
 Governors, list, 1961, 68  
 Grapes, growing for wine, 1964, 573  
 Groundwater, 1964, 544 and 1969, 384  
 Hamilton, 1971, 761  
 Handicapped persons, employment, 1970, 578  
 Hansard, parliamentary debates, 1969, 77  
 Hazelwood Power Station, 1972, 400  
 Health  
   history, 1961, 215  
   of the community, 1962, 243  
 High Court, 1971, 566  
 Hire purchase and retail sales, law, 1966, 298  
 Horsham, 1970, 797  
 Hospital architecture, 1966, 241  
 Hospitals, 1964, 267  
   Alfred, 1963, 265  
     research, 1963, 272  
   Austin, 1966, 250  
   Dental, 1965, 267  
   Fairfield, 1961, 241  
   Epidemiological Research Unit, 1969, 241  
   Geelong, 1962, 273  
   Prince Henry's, 1964, 286  
   Queen Victoria Memorial, 1967, 529  
   Royal Children's, 1964, 284  
     Research Foundation, 1968, 532  
   Royal Melbourne, 1962, 271  
   Royal Victorian Eye and Ear, 1968, 525  
   Royal Women's, medical research, 1965, 273  
   St Vincent's, 1965, 266  
     School of Medical Research, 1965, 274  
 Housing  
   Commission of Victoria, 1965, 358  
   of aged persons, 1969, 636  
   redevelopment of the inner residential areas, 1967, 599  
 Hydrography of the coastline, 1966, 36  
 Hydrometeorology, 1972, 62  
 Industrial  
   development since 1945, 1962, 553  
   law, 1971, 568  
 Industry, use of computers, 1967, 376  
 Insects, 1969, 1  
 Instrumentalities, government, 1969, 102  
 Integrated Economic Censuses 1968-69, 1971, 368  
 Irrigation, 1962, 479  
 Kindergarten Training College, 1971, 494  
 La Trobe Library, 1966, 167  
   manuscript collection, 1967, 441  
 Lake William Hovell, 1972, 294  
 Lakes, 1965, 33  
 Land  
   Conservation Council, 1972, 280  
   in strata, subdivision, 1968, 695  
   settlement, history, 1961, 447  
 Lands and Survey, Crown, Department of, 1968, 100  
 Latrobe Valley, 1965, 791



## Law

- administrative, 1972, 561
  - company, 1967, 571
  - contract, 1965, 318
  - criminal, administration, 1963, 322
  - Department, Crown, 1965, 100
  - export trade, 1968, 572
  - function, 1961, 289
  - industrial, 1971, 568
  - retail sales and hire purchase, 1966, 298
  - Statutes, consolidation, 1961, 296
  - taxation, Commonwealth and State
    - part I, 1969, 590
    - part II, 1970, 588
  - torts, 1964, 339
- Legal education, 1971, 571
- Legislation, private, 1962, 86
- Libraries, special and research, 1964, 163
- Library
  - Council of Victoria, Library Services Division, 1969, 457
  - La Trobe, 1966, 167
  - regional services, 1965, 184
  - Services, Board of Inquiry, 1966, 168
- Life assurance, 1962, 666
- Lighthouses, 1964, 816
- Local government
  - administration, history, 1961, 347
  - Department, history, 1972, 103

## Mammals, 1963, 1

## Management

- education, 1970, 515
- techniques in manufacturing industry, 1963, 579

## Manufacturing

- development, 1965, 569
- educational requirements, 1964, 614
- history, 1961, 531
- management techniques, 1963, 579

## Mapping and survey, 1969, 46

## Marine

- algae of the coast, 1970, 39
- animal ecology of the coast, 1969, 36

## Maritime meteorology, 1966, 53

## Marketing tobacco, 1969, 343

## Meat Board, Australian, 1971, 340

Medical *see also* Medicine

- education
  - Monash University, 1970, 505
  - second medical school, 1972, 494
  - University of Melbourne, 1963, 216 and 1970, 498
- Postgraduate Committee, Melbourne, 1967, 527
- research
  - Alfred Hospital, 1963, 272
  - Fairfield Hospital, Epidemiological Research Unit, 1969, 241
  - Monash University, 1966, 257
  - Royal Children's Hospital, 1968, 532
  - Royal Women's Hospital, 1965, 273
  - St Vincent's Hospital, 1965, 274
  - University of Melbourne, 1964, 292
  - Walter and Eliza Hall Institute, 1970, 541

Medical—*continued*

- school
    - Monash University, 1970, 505
    - second medical school, 1972, 494
    - University of Melbourne, 1963, 216 and 1970, 498
  - service to schools, 1964, 250
- Medicine *see also* Medical
- developments in, 1910-1960, 1963, 230
  - University of Melbourne, School of, 1963, 216
- Melbourne
  - Airport (Tullamarine), 1970, 783
  - City Council, 1969, 243
  - Harbor Trust, port facilities, 1969, 755
  - Medical Postgraduate Committee, 1967, 527
  - tramways, history, 1961, 690
  - Transportation Committee, 1968, 776
  - Zoological Gardens, 1971, 447
- Mental
  - Health Research Institute, 1969, 532
  - Hygiene Authority, 1963, 248
- Mentally handicapped persons, voluntary services, 1972, 546
- Meteorological observations, 1970, 62
- Meteorology
  - aeronautical, 1967, 53
  - agricultural, 1964, 33
  - computers, 1971, 65
  - developments, 1962, 72
  - fire prevention, 1968, 55
  - hydrometeorology, 1972, 62
  - maritime, 1966, 53
  - services for commerce and industry, 1969, 61
- Mildura, 1969, 807
- Milk Board, 1971, 331
- Mineral exploration in areas held under exploration licences, 1972, 363
- Minerals, 1970, 1
- Mines Department, history, 1970, 105
- Mining, 1964, 604
- Ministers of the Crown, 1851-1855, 1961, 72
- Ministries and Premiers, 1855-1955, 1961, 73
- Ministry of Fuel and Power, 1969, 444
- Mint, Royal, history, 1961, 635
- Molluscs, 1968, 1
- Monash University
  - Centre of South East Asian Studies, 1971, 483
  - medical
    - research, 1966, 257
    - school, 1970, 505 and 1972, 494
- Money
  - Bills in Parliament, 1963, 73
  - market, short-term, 1967, 708
- Morwell National Park, 1967, 473
- Motor vehicle industry, 1962, 591
- Mt Buffalo National Park, 1970, 474
- Mountain regions, 1962, 43
- Museum
  - National, of Victoria, 1969, 463 and 1972, 415
  - Science, of Victoria, 1972, 414
  - Swan Hill Folk, 1971, 435
- Music, 1965, 187
  - in radio and television, 1971, 445

## National

- Heart Foundation of Australia (Victorian Division), 1964, 297
- Museum of Victoria, 1969, 463
- parks
  - Morwell, 1969, 473
  - Mt Buffalo, 1970, 474
  - Wilson's Promontory, 1971, 449
  - Wyperfeld, 1972, 426
- Natural gas, 1968, 364
  - and crude oil, 1960-1971, 1972, 368
- Newspapers
  - country, 1967, 447
  - history, 1961, 167
  - suburban, 1969, 465
- Nursing
  - graduate education, 1962, 270
  - history, 1961, 240
- Oil
  - and natural gas, 1969, 378
    - 1960-1971, 1972, 368
  - exploration, 1924 to 1963, 1965, 561
  - refining industry, 1961, 566
- Old People's Welfare Council, 1966, 286
- Opera, drama, and ballet, 1968, 443
- Painting to 1945, 1964, 166
- Palaeontology, 1965, 1
- Paramedical services, 1969, 548
- Parliament
  - administrative machinery, 1968, 71
  - Hansard, 1969, 77
  - Houses of, 1970, 77
  - money bills, 1963, 73
  - presiding officers, 1967, 73
  - private legislation, 1962, 86
  - resolving deadlocks between the two Houses, 1965, 79
- Parliamentary
  - committees, 1964, 52
  - debates
    - conduct, 1972, 77
    - Hansard, 1969, 77
  - Papers, 1971, 79
  - privilege, 1966, 72
- Pastoral industry, history, 1963, 549
- Pastures, development, 1962, 467
- Pesticides, Inter-departmental Committee on, 1965, 245
- Petrochemical industry, 1964, 650
- Physically handicapped persons, voluntary social welfare work, 1968, 558
- Pilots, Port Phillip, 1963, 762
- Plant ecology of the coast, 1968, 31
- Poisons
  - and drug control, 1970, 529
  - Information Centre, 1969, 542
- Police, history, 1961, 318
- Poliomyelitis and allied diseases, 1964, 255
- Pollution control, 1972, 477
- Port
  - development, changing trends, 1968, 745
  - facilities, Melbourne Harbor Trust, 1969, 755

## Port Phillip

- Authority, 1969, 282
- Pilots, 1963, 762
- Post Office, history, 1961, 702
- Postgraduate education, 1964, 234
- Premier's Department, history, 1964, 81
- Press
  - country, 1967, 447
  - history, 1961, 167
  - suburban, 1969, 465
- Primary production *see* Agricultural, Agriculture, Farm, Farming
- Prince Henry's Hospital, 1964, 286
- Private legislation in Parliament, 1962, 86
- Property distribution, 1969, 314
- Public
  - health engineering, 1969, 520
  - records, 1968, 439
  - Works Department, history, 1967, 98
- Publishing, book, 1965, 181
- Quarrying, 1966, 546
- Queen Victoria
  - Market, site redevelopment, 1972, 233
  - Memorial Hospital, 1967, 529
- Radio
  - Australia, 1966, 174
  - music, Australian Broadcasting Commission, 1971, 445
  - programmes, Australian Broadcasting Commission, development, 1969, 467
- Railways, history, 1962, 722
- Regional
  - libraries, 1965, 184
  - planning and State development, 1969, 284
- Rehabilitation, disabled persons, 1970, 577
- Reptiles, 1971, 11
- Research
  - medical *see* Medical research
  - stations, Department of Agriculture, 1971, 293
  - university, 1968, 492
- Resources Development Bank Limited, Australian, 1970, 688
- Retail
  - Price Index "C" Series, 1961, 440
  - sales and hire purchase, law, 1966, 298
- Retailing, 1962, 700
  - since 1957, 1969, 735
- River
  - improvement and drainage trusts, 1968, 299
  - Murray,
    - Agreement, 1972, 296
    - Commission, 1972, 296
- Rivers
  - and streams, metropolitan, 1969, 267
  - and water resources, 1963, 30
- Road Safety Council, Australian, 1966, 761

- Royal  
 Botanic Gardens of Melbourne, 1969, 474  
 Children's Hospital, 1964, 284  
   Research Foundation, 1968, 532  
 Melbourne Hospital, 1962, 271  
 Mint, history, 1961, 635  
 Society of Victoria, 1963, 171  
 Victorian  
   Eye and Ear Hospital, 1968, 525  
   Institute for the Blind, 1970, 579  
   Women's Hospital, medical research, 1965, 273
- Rural  
 finance, 1965, 487  
 holdings in Victoria, size distribution, 1969, 314
- St Vincent's Hospital, 1965, 266  
 School of Medical Research, 1965, 274
- Sale, 1972, 752
- Sanctuary, Sir Colin MacKenzie, 1965, 198
- Scallop fishery, 1968, 362
- Scholarships, Commonwealth, 1964, 245
- School Medical Service, 1964, 250
- Schools, registered, girls, 1961, 187
- Science  
 and Technology Careers Bureau, 1965, 241  
 Museum of Victoria, 1972, 414
- Scouting, 1964, 190
- Sculpture, 1964, 171
- Secondary industry *see* Manufacturing
- Serum Laboratories, Commonwealth, 1971, 519
- Sewerage  
 and water supply in country towns, 1968, 270  
 Metropolitan Board of Works Farm, Werribee, 1965, 413
- Sheep, 1963, 549
- Sheltered Employment (Assistance) Act, 1969, 561
- Shepparton, 1967, 797
- Short-term money market, 1967, 708
- Sidney Myer Music Bowl, 1970, 465
- Sir Colin MacKenzie Sanctuary, Healesville, 1965, 198
- Social  
 services  
   Commonwealth, history, 1962, 281  
   voluntary, 1965, 304  
   welfare work, voluntary, for physically handicapped persons, 1968, 558
- Soil Conservation Authority, 1971, 275
- Soils, 1964, 1
- Sovereign Hill, Ballarat Historical Park, 1972, 409
- Sport, 1964, 191
- State  
 development and regional planning, 1969, 284  
 Electricity Commission of Victoria, capital financing since 1945, 1970, 445  
 history, 1961, 580
- State—*continued*  
 Film Centre, 1969, 517  
 Savings Bank, history, 1961, 630  
 wildlife reserves system, 1966, 540
- Statistician's Office, history  
 part I, 1963, 801  
 part II, 1964, 861
- Statutes, consolidation, 1961, 296
- Subdivision of land in strata, 1968, 695
- Suburban newspapers, 1969, 465
- Survey and mapping, 1972, 48
- Swan Hill Folk Museum, 1971, 435
- Swinburne Technical College, 1963, 224
- Taxation law Commonwealth-State  
 part I, 1969, 590  
 part II, 1970, 588
- Teacher training, 1967, 480
- Technical education, 1965, 207
- Telecommunications, overseas, history, 1962, 752
- Telegraph services (Tress), 1963, 791
- Television  
 and broadcasting programme standards, 1965, 196  
 music, Australian Broadcasting Commission, 1971, 445  
 programme research, 1966, 178  
 programmes, A.B.C., development, 1970, 470  
 technical planning, 1967, 453
- Textile industry, 1968, 416
- Tobacco marketing, 1969, 343
- Torts, law, 1964, 339
- Tourist  
 attractions, 1966, 182  
 Development Authority, 1962, 182
- Tower Hill State Game Reserve, 1969, 374
- Trade  
 pattern, 1964, 781  
 unions, 1971, 192
- Traffic control, 1969, 614
- Tramways  
 history, 1961, 690  
 1930–1961, 1963, 771
- Transportation, Melbourne Committee, 1968, 776
- Treasury, 1966, 97
- Tress, telegraph services, 1963, 791
- Trusts, charitable, 1972, 555
- Tuberculosis in cattle, eradication of, 1962, 525
- Tullamarine (Melbourne Airport), 1970, 783
- Underground water, 1969, 384
- Uniform Building Regulations, 1961, 328
- Unions, trade, 1971, 192
- Universities  
 graduates, employment, 1967, 448  
 research, 1968, 492
- University *see also* Monash University  
 development, 1966, 203

- University of Melbourne  
   Baillieu Library, 1961, 201  
   building development since 1945, 1961, 201  
   master plan, 1972, 457  
   medical  
     research, 1964, 292  
     school, 1963, 216 and 1970, 498  
   research, 1968, 492  
   Summer School of Business Administration, 1961, 204  
   Veterinary School, 1971, 477
- Victoria  
   history, 1961, 1  
   Police, history, 1961, 318
- Victorian  
   Railways, history, 1962, 722  
   School for Deaf Children, 1971, 557
- Walter and Eliza Hall Institute of Medical Research, 1970, 541
- Wangaratta, 1968, 795
- Warrnambool, 1966, 777
- Water  
   conservation, 1969, 309  
   Research Foundation, 1966, 479  
   resources and rivers, 1963, 30  
   supply and sewerage in country towns, 1968, 270  
   underground, 1969, 384  
   use, 1963, 41
- Wheat Board, Australian, history and functions, 1969, 331
- Wildlife  
   in relation to natural resources, 1962, 544  
   State Reserves System, 1966, 540
- Wilsons Promontory National Park, 1971, 449
- Wine, 1968, 336  
   grape growing for, 1964, 573
- Wool Board, Australian, 1972, 348
- Works Department, Public history, 1967, 98
- Wyperfeld National Park, 1972, 426
- Zoological Gardens, Melbourne, 1971, 447

## Appendix E

### INDEX OF MAPS IN THE VICTORIAN YEAR BOOK, 1961-1972

The figures below indicate the year and page of the *Year Book* to which reference is made. Where a map has been reproduced more than once, only the latest edition in which it appears is shown.

- Air services, regular, 1964, 845  
Alpine regions, 1962, facing 44  
Amphibians and reptiles : environmental factors and zoogeographic regions, 1971, facing 14  
Anglesea, vegetation, 1968, 34  
Average annual rainfall, 1972, 53
- Beef cattle, distribution, 31 March 1962, 1964, 579  
Bird regions, 1966, facing 2  
Brown coal deposits, 1971, 361
- Cattle distribution, 31 March 1962  
beef, 1964, 579  
dairy, 1964, 578
- Coal  
brown, deposits, 1971, 361  
deposits, 1963, 639
- Coastline  
geology and details of typical features, 1967, facing 32  
outline, 1966, facing 32
- Counties and statistical districts, 1972, 307
- Dairy cattle, distribution, 31 March 1962, 1964, 578  
Dandenong Valley Authority, 1968, 301
- Electoral Districts, Legislative Assembly 1971, facing 94  
(prior to 1965 redistribution), 1965, 94  
Electoral Provinces, Legislative Council 1971, facing 96  
(prior to 1965 redistribution), 1965, 93  
Electricity transmission system, 1972, 399
- Exploration licences, mineral, areas held, 1972, 365
- Fishing grounds, 1967, facing 2  
Forest types, zones of natural occurrence, 1962, 55  
Forests, 1972, facing 16
- Gas *see* Natural gas  
Geology, 1961, facing 42  
Gippsland  
lakes, 1965, 37  
natural gas and crude oil fields development and distribution, 1966-1970, 1971, facing 354  
Groundwater provinces, 1969, facing 384
- Irrigation, private diversions, distribution, 1966, 478
- Lake systems, position, 1965, 36  
Lakes  
Gippsland, 1965, 37  
Mallee-Wimmera, 1965, 37  
Western District, 1965, 36  
Latrobe Valley, 1965, 792  
location in Victoria, 1965, 791
- Macalister Irrigation District, 1972, 761  
Mallee-Wimmera  
lakes, 1965, 37  
water supply, 1970, 803
- Marine zones and provinces, 1969, facing 38
- Melbourne  
and Metropolitan Board of Works, water supply system, 1964, 440  
metropolitan area, as defined by Greater Melbourne Plan, 1962, 408  
port, 1971, 717  
Statistical Division, 1972, inside back cover

- Mildura Irrigation Trust and Urban Water Trust, area covered, 1969, 815
- Mineral deposits, 1970, facing 10  
 exploration licences, areas held in December 1970, 1972, 365
- Mt Buffalo National Park, 1970, 473
- Mountain regions, 1962, facing 354
- Natural gas and oil  
 development and distribution, 1971, facing 354  
 exploration, May 1967, 1968, facing 364  
 wells and associated pipelines, 30 September 1968, 1969, facing 454  
 pipeline, Dutton to Dandenong, 1969, facing 382
- Oil and natural gas  
 development and distribution, 1971, facing 354  
 exploration, May 1967, 1968, facing 364  
 wells and associated pipelines, 30 September 1968, 1969, facing 454
- Ornithological regions, 1966, facing 2
- Physiographic divisions, 1972, 31
- Pigs, distribution, 31 March 1962, 1964, 580
- Planning, at 30 June 1967, Town and Country Planning Board, 1968, facing 602
- Population distribution, 1971, inside back cover
- Port of Melbourne, 1971, 717
- Power transmission system, 1972, 399
- Radio navigation, 1965, 776
- Railways, 1970, facing 758
- Rainfall  
 annual  
 1960, 1962, 70  
 1961, 1963, 51  
 1962, 1964, 28  
 1963, 1965, 55  
 average annual, 1972, 53  
 variability by districts, 1972, 55
- Regional planning boundaries, 1969, 287
- Reptiles and amphibians : environmental factors and zoogeographic regions, 1971, facing 14
- River basins, water resources, 1972, 45
- Rivers, lakes, water conservation works and distributory systems, 1965, facing 34
- Road system, by type of construction, C.R.B., 1966, facing 380
- Sheep distribution, 31 March 1962, 1964, 577
- Shepparton irrigation area, 1967, 801
- Soil regions, 1964, facing 6
- South-eastern Freeway, 1964, 448
- Statistical  
 districts and counties, 1972, 307  
 Division, Melbourne, 1972, inside back cover  
 divisions, 1972, inside back cover
- Sunday Island, land and vegetation features, 1968, 35
- Telephones, extended local service area, 1962, 746
- Television, national, estimated service areas, 1965, 782
- Town and country planning, 30 June 1967, 1968, facing 602
- Vegetation, 1962, facing 6  
 and land features, Sunday Island, 1968, 35  
 Anglesea area, 1968, 34  
 coastal, Western Port, 1968, 35
- Wangaratta and surrounding shires, 1968, 798
- Warrnambool and district, 1966, 778
- Water  
 conservation works and distributory systems, rivers, and lakes, 1964, facing 34  
 resources and river basins, 1972, 45  
 supply system  
 Mallee-Wimmera, 1970, 803  
 Melbourne and Metropolitan Board of Works, 1964, 440  
 Western Port, 1971, 290
- Western Port, 1967, 754  
 coastal vegetation, 1968, 35  
 water supply, 1971, 290
- Wildlife reserves and co-operative projects, 1966, 541
- Wilsons Promontory National Park, 1971, 450
- Wimmera-Mallee  
 lakes, 1965, 37  
 water supply, 1970, 803

# INDEX

- Al Consolidated Gold, closure and re-opening, 154  
A.A.O., oil well drilling, 164  
A.B.C. *see* Australian Broadcasting Commission  
A.B.V., television station, 590  
A.C.T. *see* Australian Capital Territory  
A.C.T.U. *see* Australian Council of Trade Unions  
A.I.F. *see* Australian Imperial Forces  
A.N.A. *see* Australian National Airways  
A.N.A.R.E. *see* Australian National Antarctic  
Research Expedition  
A.N.Z.A.A.S. *see* Australian and New Zealand  
Association for the Advancement of Science  
A.N.Z.A.C. *see* Australian and New Zealand Army  
Corps  
A.P.M. *see* Australian Paper Manufacturers Ltd  
A.P.M. Forests Pty Ltd, Traralgon Research Station,  
682  
Abalone, catch, 1966-67 to 1970-71, 905  
Abattoirs, local government authorities, revenue and  
expenditure, 1970, 855  
à Beckett, William (later Sir William), first Chief  
Justice, 473  
Aboriginal *see also* Aboriginals, Aborigines  
advancement, Commonwealth payments, 1968-69  
to 1970-71, 989  
cricketers, 1866-1868, 28, 608  
population, 1835, 25  
prehistory, 23-4  
research, Professor (later Sir) Baldwin Spencer, 700  
*Aboriginal Affairs Act* 1967, 30  
*Aboriginal Lands Act* 1970, 30  
Aboriginals, 23-30 *see also* Aboriginal, Aborigines  
antiquities, 24-5  
Batman, John, treaty with, 1835, 25-6  
bibliography about, 30  
Board  
for the Protection of Aborigines, Central,  
1861-1885, 27-8  
of Inquiry into Coranderk Station, 28  
Central Board for the Protection of Aborigines,  
1861-1885, 27-8  
Commonwealth payments for advancement, 989  
Coranderk Station, Board of Inquiry into, 28  
cricket tours, 1866-1868, 28, 608  
culture, prehistoric, 24-5  
extinction and self-help, 1885-1901, 29  
fossils, discovered, 23-4  
Guardian Thomas, 1850-1861, 27  
implements, 24  
Lake Tyers reserve, 29  
McLean Report, 1957, 29  
police, 470  
population, 1835, 25  
Port Phillip, 1835-1838, 26  
prehistory, 23-4  
present position, 30  
Protectorate, 1838-1850, 26  
research by National Museum of Victoria, 701  
reserve, Lake Tyers, 29  
Robinson, George A., Chief Protector, 1838-1850,  
26-7  
self-help and extinction, 1885-1901, 29  
Thomas, William, guardian, 1850-1861, 27  
tribal society, 25  
1910-1957, 29  
Aborigines *see also* Aboriginal, Aboriginals  
Central Board for the Protection of, 1861-1885,  
27-8  
Welfare Board, 29-30  
*Aborigines Act* 1910, 29  
*Aborigines Act* 1957, 29  
*Aborigines (Houses) Act* 1959, 30  
*Aborigines of Victoria, The* (1878), Smyth, R. Brough,  
28  
*Aborigines Protection Act* 1869, 28  
*Aborigines Protection Act* 1886, 29  
Abortion, cause of death, 1971, 818  
*Abstainer*, newspaper, 601  
Accident Underwriters  
Association, formed, 346  
Assurance Association, amalgamated with Fire  
Underwriters Association, 347  
Accidents  
cause of death, 818  
in age groups, 1971, 819  
industrial *see* Industrial accidents  
mining, 162  
road *see* Road traffic accidents  
Acclimatization Society of Victoria  
becomes Zoological and Acclimatization Society,  
630  
founded, 80  
Acrasia, Melbourne Cup winner, 1152  
Acreage cultivated annually, 1856-1865 to 1971, 884  
Acts of Parliament (State) passed, 1971, 774-9  
Adam, Sir Alexander Duncan Grant, judge, 769  
Adams Arthur Charles, Judge, 769  
Adamsons Pty Ltd, Arthur, 369  
Adelaide, census populations, 1947-1971, 786  
*Adelaide Register*, overseas news, 602  
Administration, government *see* Government adminis-  
tration  
Administrative development *see* Constitutional and  
administrative development  
*Adoption Act* 1928, 569  
*Adoption of Children Act* 1964, 566  
Adoptions and legitimations, 1967-1971, 817  
Adult  
Education *see* Education, adult  
Parole Board, Social Welfare Department, 571  
parolees, 1958-1971, 1117  
Advances, bank *see* Banks, trading, advances  
Advertisements, early newspapers, 365  
Advertising, retail trade, 369  
Advisory  
Committee on Children's Television Programmes,  
592  
Council of Science and Industry  
development, 629 *see also* Commonwealth  
Scientific and Industrial Research Organization  
established, 657, 1138-9  
grant for gold research, 730  
*Advocate*, newspaper, 601  
Aeradio, aircraft communications, 234  
Aerated  
and carbonated waters manufactured, 1970-71  
and 1971-72, 912  
waters, Cohn Bros, 324  
Aerial  
agriculture, 258  
area treated, materials used,  
etc., 1967-1971, 883  
League of Australia, formation, 253  
photography for mapping, 91  
Aeronautical Research Laboratories  
computer, use, 713  
research, 678-9  
Aeroplane, first Australian made, motor driven, 330  
Aeroplanes, research, 732-3  
Africa, Australian Imperial Forces, 459

- Agar, Wilfred Eade, F.R.S., 633
- Age
- and invalid pensions
    - expenditure, National Welfare Fund, 1967-68 to 1971-72, 948
    - pensioners and payments, 1967-68 to 1971-72, 949
  - distribution
    - masculinity, and conjugal condition of the population, 39-41
    - of the population, censuses 1966 and 1971, 790
  - groups
    - death rates from malignant neoplasms, 1920-1922 to 1965-1967, 820
    - deaths, main causes of, 1971, 819-20
    - masculinity of the population, censuses 1947-1971, 789
    - proportions of the population, censuses 1947-1971, 789
  - pension scheme established, 1137
  - pensioners, 1967-68 to 1971-72, 949
  - pensions
    - number and amount paid, 1900-01 to 1970-71, 1111-2
    - pensioners and payments, 1967-68 to 1971-72, 949
    - specific death rates, 1856-1858 to 1965-1967, 51
- Age, newspaper
- circulation, 601-3
  - criticism of Railway Commissioners, 249
  - David Syme, 599
  - founded, 599, 1134
  - political leadership, 433
  - published by John and Henry Cooke, 599
  - tariff protection, 323, 428
  - working conditions, 1882, 323
- Aged
- pensioners, housing, Commonwealth payments, 1969-70 and 1970-71, 989
  - persons
    - homes, Commonwealth subsidies, 576
    - hospitals
      - accommodation and inmates, 1970-71, 943
      - number, 1967-1971, 942
    - hostels, number, 1967-1971, 942
- Ages
- of the population, percentage intercensal increases, 1954-1971, 788
  - relative, bridegrooms and brides, 1971, 809
- Agricultural *see also* Agriculture
- colleges *see also* education *below*
    - Department of Agriculture, 146-7, 148
  - crops *see* Crops, agricultural
  - education, 145-9
    - Burnley Horticultural College, 148
    - Consolidated Fund payments, 1966-67 to 1970-71, 991
    - Council of, abolished, 147
    - Department of Agriculture colleges, 146-7, 148
    - expenditure by Education Department, 1968-69 to 1971-72, 924
    - Gilbert Chandler Institute of Dairy Technology, 148
    - La Trobe University School of Agriculture, 146
    - Marcus Oldham Farm Agricultural College, 147
    - Royal Agricultural Society, 148-9
    - schools, State, courses, 148
    - University of Melbourne School of Agriculture, 145-6
    - Victorian
      - Agricultural Societies Association, 149
      - Young Farmers Movement, 149
  - engineering research, 639
  - extension and advisory services, 143-5
    - Commonwealth payments, 1966-67 to 1970-71, 989
  - implement manufacture, numbers, etc., 140
  - machinery
    - research, 738
    - and development, 734-5
  - research
    - Consolidated Fund payments, 1966-67 to 1970-71, 991
    - Department of Agriculture, 688-90
    - La Trobe University, 649
    - stations, agricultural extension services, 144
    - University of Melbourne, 636
    - Societies' Association, Victorian, education, etc., 149
    - Society, Royal, education, 148-9
- Agricultural Colleges Act* 1884, 146
- Agricultural Education Act* 1920, 146
- Agriculture *see also* Agricultural
- aerial, 258
  - area treated, materials used, etc., 1967-1971, 883
  - Consolidated
    - Fund payments, 1966-67 to 1970-71, 991
    - Revenue Fund, expenditure, 1901-02 to 1969-70, 290
  - Department of *see* Department of Agriculture
  - early development, 425
  - production
    - by States, 1970-71, 879
    - value
      - gross, 1966-67 to 1970-71, 908
      - local, 1966-67 to 1970-71, 908
      - net
        - 1928-29 to 1970-71, 1092
        - 1966-67 to 1970-71, 909
- Agriculture, Journal of*, 143, 145
- Air
- Force *see* Royal Australian Air Force
  - services
    - passenger movements from airports, 1971, 1063
    - regular interstate and intrastate terminating in Victoria, miles, passengers, etc., 1971, 1063
    - transport development, 377-8
  - Air Navigation Act* 1920, challenged, 257
  - Aircraft
    - communications, Amalgamated Wireless (Australasia) Ltd, 254
    - engines, Kelly and Lewis, 330
    - owners registered, licences, etc., 1967-1971, 1063
    - production, 330-1
      - Department of Supply, 678
      - registered, 1967-1971, 1063
    - research, 732-3 *see also* Aeronautical Research Laboratories
      - tyres, research and development, 749
  - Airline operations, transferred from Essendon to Melbourne Airport, 1144
  - Airlines, 256-7 *see also* Aviation
  - Airmail, 260-1
  - Airports *see* Essendon Airport, Melbourne Airport
  - Aitken, John, sheep breeding, 123
  - Akuna*, pilot ship, 240
  - Akuna II*, pilot ship, 240
  - "Alabama claims", 456
  - Albanians naturalised, 1967-71, 807
  - Albert, J., and Sons, Australian Broadcasting Company, 586
  - Albert, gunboat, 457
  - Albert Park, Melbourne
    - boat racing, 616
    - golf course, 612
    - indoor sports complex, 618
  - Alberton Shire
    - area, 30 June 1971, 804
    - population, censuses 1966 and 1971, 804
  - Albion, explosives factory, 681
  - Albion*, newspaper
    - circulation, 598
    - published, 597
  - Albright and Wilson (Australia) Ltd, research and development, 719-20
  - Albury
    - television stations, 918
    - Wodonga, population, censuses 1966 and 1971, 798
  - Alcoa of Australia Ltd
    - aluminium smelter, Point Henry, 333-4, 731
    - electricity generation, 224
    - research and development, 731
  - Alcock, Henry Upton, billiard table maker, 619
  - Alcorso-Sekers Award, sculpture competition, 514
  - Alden, John, Shakespearean Company visit, 529
  - Aldridge, James, novelist, 521
  - Alert*, steamship, 232
  - Alexandra
    - climatic elements, means, 765
    - newspaper, 601
    - Parade Clinic, established, 550
    - population, censuses 1966 and 1971, 798
    - Shire
      - area, 30 June 1971, 801
      - population, censuses 1966 and 1971, 801
      - television translator stations, 917
  - Alfred
    - Graving Dock, 334
    - Hospital
      - clinical teaching, 561
      - dietetic training school, founded, 557
      - medical undergraduate education, 562
      - opened, 558, 1135



- Alfred—*continued*  
 Hospital—*continued*  
   Thomas Baker, Alice Baker and Eleanor Shaw  
   Medical Research Institute, 647, 1138  
   Webb, Charles, architect, 197  
   National Park, 108  
*Alien son*, Judah Waten, 522  
 Alienation of land *see* Land, alienation ; Land  
 settlement  
 All Schools Championships, athletics, 613  
 Allan, John, Premier, 1151  
 Allan and Co. Pty Ltd, hire purchase begun, 356  
 Allansford, water supply, 217  
 Allen, Professor (later Sir) Harry  
   foundation of Walter and Eliza Hall Institute  
   of Medical Research, 640  
   Melbourne Hospital, laboratory science, 628  
 Allen, George, sculptor, exhibition, 513  
 Alliance, oil well drilling, 164  
 Allitt, William, Curator, Botanic Gardens, 110  
 Almond trees  
   Statistical Districts, season 1970–71, 892  
   1967–68 and 1970–71, 891  
 Almonds, production, 1966–67 to 1970–71, 891  
 Altona  
   area, 30 June 1971, 800  
   oil refineries, 333  
   petrochemical industry, 333  
   population, censuses 1966 and 1971, 797, 800  
 Alumina, assayed content of minerals, 1968–69 to  
 1970–71, 906  
 Aluminium  
   Alcoa of Australia Ltd, 333–4  
   products, wholesale price index, 1967–68 to  
   1970–71, 849  
   refining, 731  
 Alumni Society of the Australian College of Dentistry,  
 544  
*Alvina*, ship, 234, 240  
 Amalgamated  
   Miners' Association of Victoria, 432  
   formed, 405  
   Mining Managers' Association, Australasian  
   Institute of Mining Engineers, formed, 730  
   Shearers Union, formed, 406  
   Wireless (Australasia) Ltd  
   aircraft communications, 254  
   experimental broadcasts, 585  
   Zinc (De Bavay's) Ltd, zinc refining, 730  
 Ambulance services, Hospitals and Charities  
 Commission, 1967–68 to 1970–71, 942  
*Amendments Incorporation Act* 1958, 462  
*America*, yacht, 239  
 American  
   persons (United States), censuses 1966 and 1971, 791  
   Society for Testing and Materials, standards met  
   by Australian Wool Testing Authority, 671  
 Americans (United States) naturalised, 1967–1971,  
 807  
 Amherst, hospital built, 557  
 Amies, Professor (later Sir) Arthur, dental research,  
 637  
 Ammunition production *see* Armaments manufacture  
 Amos, Derek Godfrey Ian, M.L.A., 771  
 Ampol Petroleum Ltd, refinery not allowed at  
 Western Port, 1143  
 Amusement *see also* Recreation  
 and services, work force (percentage), Australia,  
 census 1966, 266  
 Anaemias, cause of death, 1971, 818  
 Anaesthesia, 536  
 Anchovy, catch, 1966–67 to 1970–71, 905  
 Anderson, John Stuart, F.R.S., 634  
 Anderson, Kevin Victor, judge, 769  
 Anderson, Wallace  
   Prime Ministers' busts, Ballarat, 513  
   sculpture exhibition, 513  
 Andersons Creek, gold discovery, 155, 1134  
 Andrews, Dr R. S., gas manufacture research, 696  
 Anglesea  
   Alcoa of Australia Ltd, 334  
   brown coal reserves, 731  
   population, censuses 1966 and 1971, 798  
 Anglicans, censuses 1966 and 1971, 793  
 Angus and Robertson publishers, 604  
   taken over, 605  
 Animal  
   and vegetable materials, crude, imports and exports,  
   1969–70 and 1970–71, 1039  
   diseases, control and eradication, 136–7  
   feed, imports and exports, 1969–70 and 1970–71,  
   1039  
 Animal—*continued*  
 Health  
   Division, Department of Agriculture, disease  
   control, 137  
   research, C.S.I.R.O., 667–8  
   oils and fats, imports and exports, 1969–70 and  
   1970–71, 1039  
   power, rural use, 138  
   Research Laboratory, Parkville, C.S.I.R.O., 667  
 Animals, 79–81  
   live, imports and exports, value, 1969–70 and  
   1970–71, 1039  
 Anne, Princess, arrival in Melbourne, 1142  
 Annear, Harold Desbrowe, architect, 195  
*Annie Get Your Gun*, musical, 529  
 Annual rainfall *see* Rainfall, annual  
 Annuities paid, 1966–1970, 1016  
*Anonyma*, pilot ship, 239  
 Ansett  
   Airlines of Australia, 257  
   Airways, 256  
   Pty Ltd, 257  
   Transport Industries Ltd, purchase of A.N.A., 257  
*Ant*, newspaper, 601  
 Antarctic  
   Division, Department of Supply, 680  
   exploration  
   Department of Supply, 680  
   Professor (later Sir) David Orme Masson, 642  
*Anti-Cancer Council Act* 1936, 553  
 Anti-Cancer Council of Victoria *see also* Cancer  
 established, 553  
 expenditure, 1966–67 to 1970–71, 947  
 medical research grants, 640  
 Antibiotics, use, 558–9  
 Antill, John, composer, 530  
 Antimony  
   assayed content of minerals, 1968–69 to 1970–71,  
   906  
   production, quantity and value, 1968–69 to 1970–71,  
   907  
 Anzac  
   Hostel, 579  
   name earned, 459  
*Aphrasia*, steamship, 232  
 Apollo  
   Bay  
   coastal shipping, 233  
   population, censuses 1966 and 1971, 798  
   Theatre, 528  
 Apologue, Melbourne Cup winner, 1152  
 Appeal Costs Board, created, 469  
 Appendicitis, cause of death, 1971, 818  
 Appendix  
 A  
   important events  
   1770–1970, 1131–42  
   1971–1972, 1143–9  
   Melbourne Cup winners, 1152  
   Ministries since responsible government, 1150–1  
   representatives of the Sovereign, 1149–50  
 B, select bibliography about Victoria, 1153–60  
 C, publications issued by the Victorian Office,  
 Commonwealth Bureau of Census and  
 Statistics, 1161  
 D, index of special articles in *Victorian Year Book*  
 1961–1972, 1162–8  
 E, index of maps in *Victorian Year Book*  
 1961–1972, 1169–70  
 Apple  
   production, Australia, season 1969–70, 268  
   trees  
   Statistical Districts, 1970–71, 892  
   1967–68 and 1970–71, 891  
 Apples, 135  
   produced  
   1900–01 to 1970–71, 1088–9  
   1966–67 to 1970–71, 891  
 Applied geomechanics, C.S.I.R.O., 666  
 Apprenticeship Commission, probationers and  
 apprentices employed, 1968–1972, 842  
 Apricot trees  
   Statistical Districts, season 1970–71, 892  
   1967–68 and 1970–71, 891  
 Apricots  
   dried, seasons 1966–67 to 1970–71, 892  
   production, 1966–67 to 1970–71, 891  
 Aquaplaning, 615  
*Aquila*, ship, 233  
 Arabs naturalised, 1967–1971, 807  
 Arapiles Shire  
   area, 30 June 1971, 802  
   population, censuses 1966 and 1971, 802

- Ararat  
 City  
   area, 30 June 1971, 801  
   population, censuses 1966 and 1971, 798, 801  
   gaol, transferred to Lunacy Department, 572  
   gold discovered, 157  
   goldfields, geological survey, 152  
   Grammar School, 486  
   hospital built, 557  
   mental institution, opened, 549  
   meteorological station, 673  
   newspaper, 600  
 Shire  
   area, 30 June 1971, 801  
   population, censuses 1966 and 1971, 801  
   siting, 174  
   water supply authority, 864  
 Arbitration, industrial *see* Industrial arbitration and conciliation  
 Arbour, The, E. Phillips Fox, 511  
 Arcedeckne, William Charles, Governor, 1150  
 Archer, William Henry, 3  
   Statistical Register, 4  
 Archer, Melbourne Cup winner, 611, 1152  
 Archery, 617  
   Society of Victoria, 617  
 Architects, Royal Victorian Institute of *see* Royal Victorian Institute of Architects  
 Architecture, 192-7 *see also* Building  
 Archives, State Library of Victoria, 503  
 Arco, oil well drilling, 164  
 Arden, George  
   Articles and rules for the regulation of the Melbourne Union Benefit Society, 604  
   fined and imprisoned for libel, 596  
   Latest information with regard to Australia Felix, published, 603  
   Port Phillip Gazette, editor, 595  
 Ardmona Fruit Products Co-operative Co. Ltd, 327  
 Area *see also* individual headings  
   cropped, by States, season 1969-70, 267  
   cultivated, Statistical Districts, season 1970-71, 886  
   fertilised, by States, season 1969-70, 267  
   grasses and clover, sown, by States, season 1969-70, 267  
   irrigated, by States, season 1969-70, 267  
   local government areas, 30 June 1971, 800-5  
   municipalities, 30 June 1971, 800-5  
   percentage, and population density, by States, census 1966, 265  
   rural holdings, by States, season 1969-70, 267  
   States, 267  
   and Territories, 799  
 Argus, newspaper  
   circulation, 598, 601-3  
   first share and stock list, 347  
   founded, 1133  
   free trade, 428  
   growth, 599  
   Kerr, William, 596-7  
   Melbourne's building, comment, 178  
   Murdoch, Walter, essays, 523  
   overseas, news, 602  
   Port Phillip Patriot and Melbourne Advertiser, absorbed, 345  
 Argyle, Sir Stanley Seymour, Premier, 1151  
 Armadale, Mercer House, 492  
 Armaments manufacture  
   Charles Ruwolt Pty Ltd, 740  
   Department of Supply, 681-2  
 Armed Forces, 455-60 *see also* War  
   after Federation, 458-60  
   armaments manufacture, 681-2, 740  
   before Federation, 455-8  
 Army Staff College, Queenscliff, 460  
 Arnall and Jackson, Victorian Municipal Directory, 604  
 Arnold, Thomas, ideas formed outlook of T.H. Braim, 485  
 Arnold, V. H.  
   Deputy Commonwealth Statistician, 8-10  
   Government  
   Statist, appointment, 8  
   Statist's Office, development since 1958, 8-10  
 Arrau, Claudio, pianist, 526  
 Arrivals, overseas, by States, 1967-1971, 806  
 Arsenal, Melbourne Cup winner, 1152  
 Art *see also* Arts  
   education, 516-9  
   galleries, libraries, etc., Consolidated Fund payments, 1966-67 to 1970-71, 991  
   Gallery, National Museum, and, founded, 627  
   Arteriosclerosis, cause of death in age groups, 1971, 820  
   Arthur, Governor, government school established (Tasmania), 485  
   Arthur Rylah Institute for Environmental Research, opened, 694  
 Articles and rules for the regulation of the Melbourne Union Benefit Society, Arden and Strode, 604  
 Artificial  
   fertilisers, used, holdings and area, etc., 1966-67 to 1970-71, 883  
   limb factory, established, 579  
 Artilleryman, Melbourne Cup winner, 1152  
 Artisans' School of Design, 509  
 Arts, 508-31 *see also* Art  
   art education, 516-9  
   ballet, 530-1  
   Centre  
     development, 515-6  
     foundation, research, 638  
     Council of Australia, adult education, 507  
     literature, 519-24  
     music, 524-7  
     National Gallery and Arts Centre, 515-6  
     opera, 531  
     painting, 508-12  
     sculpture, 512-5  
     theatre, 527-30  
   Asche, Oscar, actor, 528  
   Ashburton, oil well drilling, 164  
   Ashton, Frederick, choreographer, 530  
   Asia, south-east, Australian Imperial Forces, 460  
   Aspirin, experiments by Nicholas Pty Ltd, 727, 1138  
 Assault  
   and grievous bodily harm, Children's Court cases, 1970, 970  
   higher court cases, 1969-70, 974  
   persons convicted  
     ages, 1970, 975  
     and result of hearing, 1970, 975  
   police warnings  
     offenders' age, 1970, 971  
     1967-1970, 971  
 Assisted land settlement to 1938, 102  
 Associated  
   Pulp and Paper Mills Ltd, 335, 746  
   Radio Company, first broadcasting station, 260, 585  
   Steamships Pty Ltd, interstate shipping, 381  
   Teachers Training Institution, opened, 492  
 Association of Superannuation and Provident Funds of Australia, 417  
 Assurance, life *see* Insurance, life  
 Assyrian, The, Melbourne Cup winner, 1152  
 Astley, William, (Price Warung), novelist, 522  
 Astley's Amphitheatre, 528  
 Astra Chamber  
   Choir, 524  
   Music Society, aims, etc., 525  
 Astronomical  
   observatory, Williamstown, 629  
   Society of Victoria, supersedes British Astronomical Society, 631  
 Asylum and School for the Blind, 565  
 Athenaeum  
   Club, established, 620  
   Theatre, 528  
 Athletics, history, 613-4  
 Atmospheric  
   physics research, C.S.I.R.O., 666  
   pressure, Melbourne, 767  
 Attorney-General, Law Department, 468  
 Auction Mart, newspaper, 600  
 Auraria, Melbourne Cup winner, 1152  
 Austin, Thomas Leslie, M.L.A., 772  
 Austin Hospital  
   clinical school, 562  
   opened, 558, 1136  
   tuberculosis treatment, 551  
 Austral, Florence, opera singer, 531  
 Australasian  
   Association for the Advancement of Science, 631  
   formed, 642  
   College of  
     Obstetricians, 542  
     Physicians, 542  
     Surgeons, 542  
   Institute of Mining and Metallurgy, mineral development, 730  
   Temperance and General, established, 343

- Australasian**  
*fossils*, National Museum of Victoria, 701  
 Murdoch, Walter, essays, 523  
 newspaper, 601  
*Post*, newspaper, 601
- Australia**  
 and New Zealand  
 Army Corps, (A.N.Z.A.C.) forces landed at Gallipoli, 1138  
 Bank, merger with English, Scottish and Australian Bank Ltd, 339  
 Banking Group Ltd, branches and agencies, number, 30 June 1970 and 1971, 1010  
 Savings Bank Ltd, deposits, 1967-1971, 1015  
 area, percentage and population density, census 1966, 265  
 birth rates, 1967-1971, 814  
 births  
 ex-nuptial  
   by States, 1967-1971, 816  
   percentage of total births, by States, 1967-1971, 816  
 1967-1971, 813  
 census populations of  
   capital cities, 1947-1971, 786  
   States and Territories, 1947-1971, 784  
 customs and excise revenue collected by States, 1970-71, 1043  
 deaths, by States, 1967-1971, 817  
 employment, manufacturing industries, 1966, 269  
 farm activity, principal items, 1970-1971, 879  
 Felix  
   Fire and Marine Assurance Company, 346  
   Major Mitchell's discoveries in, 88  
 infant  
   death rates, by States, 1967-1971, 823  
   deaths, by States, 1967-1971, 823  
 manufactured articles, 1970-71 to 1971-72, 912-3  
 manufacturing establishments, 1968-1969, 911  
 marriage rates, 1967-1971, 808  
 marriages, 1967-1971, 808  
 migration  
   overseas, 1967-1971, 807  
   schemes, assisted, persons arrived, 1947-1971, 806  
 natural increase  
   annual averages and totals, 785  
   per 1,000 of the mean population, annual averages and totals, 785  
 overseas  
   arrivals and departures, by States, 806  
   migration, 1967-1971, 807  
 population  
   by States, censuses 1947-1971, 784  
   increase, average annual rate during intercensal periods, 1947-1954 to 1966-1971, 785  
 production summaries, 914  
 Reserve Bank of, statistics, 1009-10  
 rural  
   holdings, land utilisation, season 1969-70, 267  
   industries, production, season 1969-70, 268  
 tax, income  
   companies, rates, 1971-72, 1001  
   individuals  
     general rates, 1971-72 income year, 999  
     paid, taxpayers, etc., 1970-71, 1000  
 trade, overseas, value of and customs and excise duty collected, 1970-71, 1043  
 urban and rural populations, census 1966, 266  
 work force in industry groups, census 1966, 266
- Australia**  
*felix*, Henry Handel Richardson (Ethel Florence Lindesay Richardson), 520  
 Hancock, W.K., 523  
 naval vessel, 459
- Australian**  
 Aeronautical Research Committee, 678  
 and New Zealand Association for the Advancement of Science, development, 631-2  
 Associated Stock Exchanges, incorporated, 350  
 Association for Pre-School Child Development, 480  
 Atomic Energy Commission, isotopes purchased from for medical use, 676  
 Ballet Foundation, 530  
 Banks Export Re-Finance Corporation Ltd, 340  
 Barley Board, established, 320  
 Book Publishers' Association, aims, 605  
 born persons, censuses 1966 and 1971, 791  
 Broadcasting  
   Commission  
     artists, visiting, 526  
     Australian Youth Orchestra, 527  
 Australian—*continued*  
 Broadcasting—*continued*  
   Commission—*continued*  
     concerts, 526  
     constitution, 260  
     Dance Band, formed, 587  
     established, 586, 1139  
     Melbourne Symphony Orchestra, takeover, 525  
     orchestras, formed, 587  
     programme content, 592-3  
     transmission, 587  
   Company, 260  
     programmes supplied to government stations, 586  
     Control Board, powers, 589-90  
 Building, 194  
 Capital Territory  
   area, 762, 799  
   birth rate, 1967-1971, 814  
   births  
     ex-nuptial and percentage of total births, 1967-1971, 816  
     1967-1971, 813  
   census populations, 1947-1971, 784  
   customs and excise revenue collected, 1970-71, 1043  
   death rate, 1967-1971, 817  
   deaths, 1967-1971, 817  
   farm activity, principal items, 1970-71, 879  
   infant  
     death rates, 1967-1971, 823  
     deaths, 1967-1971, 823  
   marriage rates, 1967-1971, 808  
   marriages, 1967-1971, 808  
   natural increase  
     annual averages, 1931-1940 to 1961-1970, 785  
     annual totals, 1967-1971, 785  
   overseas arrivals and departures, 1966-1971, 806  
   population  
     density, 31 December 1971, estimated, 799  
     increase, intercensal periods 1947-1954 to 1966-1971, 785  
     percentage, 31 December 1971, estimated, 799  
     31 December 1971, estimated, 799  
   trade overseas, value, and duty collected, 1970-71, 1043  
 Clay Target Association, 618  
 College of  
   Dentistry, 544, 637  
   Organists, founded, 526  
 Consolidated Industries Ltd, 324, 332  
   research and development, 714-5  
 Council  
   for the Arts, formed, 530  
   of Social Service, 567  
   of Trade Unions  
     adult education, 507  
     established, 407  
   of Wool Buyers, Australian Wool Testing Authority, 670  
 Croquet Council, formed, 617  
 Dairy  
   Industry Council, butter and cheese, wholesale prices, 318  
   Produce Board, 317  
 Dental Association, 544  
   co-operation with Commonwealth Bureau of Dental Standards, 673  
 Elizabethan Theatre Trust  
   Australian Ballet Foundation, 530  
   Opera Company, formed, 531  
   repertory groups, support of, 529  
 Estates  
   and Mortgages Co. Ltd, Union Mortgage and Agency Co. of Australia Ltd, acquired, 355  
   Co. Ltd, 356  
 Federation of Commercial Broadcasting Stations, formed, 586  
 Fluorine Chemicals Pty Ltd, 726  
 Flying Corps, 459  
 Forestry School, established, 682  
 Gas Association, 696  
 Glass Manufacturers, 714  
 Grand Prix, Phillip Island, 617  
 Gypsum Ltd, research and development, 715-6  
 Imperial Forces  
   places served in  
     First World War, 459  
     Second World War, 460  
   raised, 459  
   Victorian infantry battalion numbers, 459

## Australian—continued

- Industrial Research and Development Grants Board, grant to Cyclone group of companies, 734
- Labor Party  
Chifley Ministry succeeded by Menzies (Liberal-Country Party) Ministry, 1140  
conscription in First World War, 435  
Curtin Ministry succeeded Menzies and Fadden Ministries, 1140  
gained office after general election, 1148  
unionism, 407-8
- Loan Council, formed, 1138
- Meteorological Conference, Sydney 1879, Melbourne 1881, 674
- Moulding Corporation, 728
- Music Examinations Board, 525
- Mutual Provident Society  
before 1869, 342  
superannuation, 411
- National  
Airlines, takeover, 257  
Airways, 256  
development, 377-8  
Antarctic Research Expeditions, 680  
station at Heard Island established, 1140  
Line, interstate shipping, 381  
Theatre Ballet, 530
- Natives Association  
annual dinner broadcast, 586  
Federation, 432
- Newsprint Mills Pty Ltd, established, 746
- Open Exchange Company, 348
- Opera, 531
- Oxygen Company, union with similar companies to form the Commonwealth Industrial Gases Ltd, 720
- Paper  
Manufacturers Ltd, 326  
Fairfield mill, 333  
research and development, 746-7  
Mills, founded, 326  
Portland Cement Ltd, 328  
Pre-School Association, 480  
Committee of Inquiry recommended, 481  
Regular Army expanded, 460  
Research Grants Committee, grants  
dental research, 637-8  
medical research, 640  
St Vincent's School of Medical Research, 654-5  
Resources Development Bank, established, 340-1  
Road Research Board, research, 669-70  
Rules Football, history, 609-10  
Sculptors Society, formed, 513  
Shearers' Union, 432  
Surf Riders' Association, Victorian Branch founded, 616
- Survey Corps, photogrammetric mapping techniques introduced, 692
- Swimming Championships, Melbourne, 1900-01, 614
- Tractor Testing Station, University of Melbourne, 639
- trade, value and proportion handled at Victorian ports, 1966-67 to 1970-71, 1038
- Universities Commission, 496  
constituted, 642
- Widows' Fund, established, 343
- Wool  
Board  
Australian Wool Testing Authority, 670  
Experimental Unit, 654  
research grant donated to Textile College, Gordon Institute of Technology, 654  
Commission, wool prices, 310  
Industry Conference, 310  
Testing Authority, research, 670-1  
Youth Orchestra, 527
- Australian*  
*Dental Journal*, 544, 637  
—Greek, newspaper, 603  
*Insurance and Banking Record*, The, life assurance statistics, 343
- Journal*  
*His natural life* serialised, 519-20  
Massina, A. H., 605  
*of Dentistry*, 544  
published, 637  
*literature: a conspectus*, G. H. Wilkes, 519  
*literature from its beginnings to 1935*, E. Morris Miller, 519

## Australian—continued

- newspaper  
composers strike, 1829, 403  
Melbourne edition, 603  
*Notes Act* 1910, 341  
*Police News and Music and Drama*, newspaper, 601  
*Road Research*, Australian Road Research Board, 670  
*Society News*, newspaper, 601  
*Trader*, passengers, vehicles, etc., 1970-71, 1043  
*Woman's Sphere*, newspaper, 601  
*writers*, L. J. Blake, 519
- Austrians naturalised, 1967-1971, 807
- Automatic  
data processing see Computer, Computers  
Teleprinter Reperforator Switching System (Tress), introduction, 261  
Telex, introduction, 262
- Automotive products, research, 739
- Avalon  
aerodrome, Government Aircraft Factory, 331  
aircraft factory, 681
- Average  
rainfall see Rainfall, average  
retail prices, selected commodities, 1949-1971, 848  
weekly earnings see Weekly earnings
- Aviation 253-8 see also Aircraft  
airlines, 256-7  
airmail, 260-1  
airports see Essendon Airport, Melbourne Airport  
Civil Aviation Board, established, 255  
development, 253-4  
general, 257-8  
operations, 254-6, 1063  
transport development, 377-8
- Avitaminoses and other nutritional deficiency, cause of death, 1971, 818
- Avoca  
newspaper, 601  
River, flow, annual, 763  
Shire  
area, 30 June 1971, 802  
population, censuses 1966 and 1971, 802
- Avon Shire  
area, 30 June 1971, 804  
population, censuses 1966 and 1971, 804
- B.H.P. see Broken Hill Proprietary Co. Ltd, The  
B.O.C. Australia Ltd, oil discovery, 165  
B.P. see British Petroleum Co. of Australia Ltd, The  
Babcock test, cream payment, 317
- Babylon*, newspaper, 601
- Bacchus Marsh  
ligno-cellulose board plant, 333  
newspaper, 601  
population, censuses 1966 and 1971, 798  
Shire  
area, 30 June 1971, 801  
population, censuses 1966 and 1971, 801  
water supply authority, 864  
water supply, 219, 864, 877
- Bachelors, marriages, 1967-1971 and 1940-1949 to 1971, 810
- Bacillary dysentery and amoebiasis, cause of death, 1971, 818
- Backhaus, Wilhelm, pianist, 526
- Backwood, Melbourne Cup winner, 1152
- Bacon  
and ham, manufactured, 1970-71 and 1971-72, 912  
rashers, prices, average retail, 1949-1971, 848
- Badminton, 619
- Baghdad Note, Melbourne Cup winner, 1152
- Bailliere, F. F., printer, Publisher in Ordinary to the Victorian Government, 604
- Bairnsdale  
climatic elements, means, 765  
College, 486  
Gas Company Ltd, 226  
growth, 428  
newspaper, 601  
population, censuses 1966 and 1971, 798  
Shire  
area, 30 June 1971, 804  
population, censuses 1966 and 1971, 804  
siting, 174  
Town  
area, 30 June 1971, 804  
population, censuses 1966 and 1971, 804
- Baker, Thomas, photographic industry pioneer, 724-5
- Baker and Rouse Pty Ltd, amalgamation with Eastman Kodak Company (Rochester, U.S.A.), 724

- Baker Medical Research Institute, established, 647, 1138
- Bakeries, factory legislation, 398
- Balance of payments, 277-8 *see also* Trade, overseas
- Balanchine, choreographer, 530
- Baldessin, George, State Savings Bank sculpture, 514-5
- Baldwin, Dr J., Toolangi Geophysical Observatory, 684
- Bale, W. M., hydrozoa presented to National Museum of Victoria, 505
- Balfour, James Charles Murray, M.L.A., 768, 771
- Ball and Welch, retailers, 367
- Ballaarat City *see also* Ballarat  
area, 30 June 1971, 801  
population, censuses 1966 and 1971, 796, 801
- Ballan Shire  
area, 30 June 1971, 801  
population, censuses 1966 and 1971, 801
- Ballarat  
area, 30 June 1971, 801  
Banking Company  
absorbed by National Bank, 339  
establishment, 338  
Begonia Festival, 110  
Boat Manufacturing Industry Society Ltd, 361  
Botanic Gardens, 109-10  
Begonia Festival, 110  
City *see* Ballaarat City  
Clarendon College, 486  
climatic elements, means, 764  
College, English taught in matriculation, 487  
Continuation School, 486  
development, 184  
East Water Commissioners, 216  
Eureka Stockade, 157, 455-6, 1134  
gold  
diggings, opening, 156  
discovered, 1134  
goldfields,  
Eureka Stockade, 1134  
geological survey, 152  
gun-cotton factory, 331  
hospital built, 557  
Industrial School, 568  
industry, 1886, 324  
Institute of Advanced Education, 502  
enrolments, 1970-71, 934  
McKay, H. V., agricultural machinery, 325, 738  
Mary's Mount school, 486  
meteorological station, 673  
Myer, Sidney, retailer, 368  
newspaper, 600  
population, censuses 1966 and 1971, 796, 798, 801  
Prime Ministers, busts, 513  
Queen's College, 486  
radio station, call sign, 917  
St Patrick's College, 486  
School of Mines and Industries  
opened, 489, 501, 1135  
research, scientific, 652  
settlement, 173  
sewerage, statistics, 1970, 869  
Shire  
area, 30 June 1971, 801  
population, censuses 1966 and 1971, 796, 801  
siting, 174  
Teachers College  
opened, 492  
sculpture, 514  
television stations, 918  
theatre, 527  
visit by J. C. Williamson and Maggie Moore, 528  
Tramways, 253  
urban area, population summary, censuses 1966 and 1971, 796  
Water Commissioners, 216, 864  
water supply, 215-6, 864  
woollen mills, 324
- Ballaarat Miner and Weekly Star*, newspaper, 600
- Ballaarat Star*, newspaper, 600
- Ballet  
development, 530-1  
Rambert, visit to Victoria, 530  
Victoria, 530
- Ballooning, Brown and Dean, 253
- Balmoral, Glenelg River flow, 763
- Bank *see also* Banking, Banks  
lending, before 1900, 338
- Bank—*continued*  
notes, duties, Consolidated Revenue Fund, revenue 1852 to 1899-1900, 285  
1901-02 to 1969-70, 289  
of Adelaide, The,  
branches and agencies, number, 30 June 1970 and 1971, 1010  
establishment, 339  
Savings Bank Ltd, deposits, 1967-1971, 1015  
of Australasia Ltd  
merger with Union Bank, 339  
opened, 337  
superannuation, 411  
of New South Wales  
branches and agencies, number, 30 June 1970 and 1971, 1010  
opened, 338  
Savings Bank Ltd, deposits, 1967-1971, 1015  
superannuation, 411  
of New Zealand  
branches and agencies, number, 30 June 1970 and 1971, 1010  
establishment, 339  
of Queensland, absorbed by National Bank of Australasia, 339  
of Victoria  
opened, 338, 1134  
takeover by Commercial Banking Company of Sydney, 339
- Banker, Melbourne Cup winner, 1152
- Banking, 337-42 *see also* Bank, Banks  
central banking, 341-2  
savings banks, private, deposits, 1967-1971, 1015  
statistics, 1008-15  
Commonwealth Banking Corporation, 1012-3  
Reserve Bank of Australia, 1009-10  
savings banks, deposits, 1015  
State Savings Bank of Victoria, 1014  
Trading banks, 1010-2  
trading and savings banks, 337-41
- Banking Act* 1947, 340
- Banking Act* 1959-1967, 342
- Banknotes printed in Melbourne, 1137
- Bankruptcies, number  
liabilities and assets, 1966-67 to 1970-71, 968  
1856-1971, 1116-7
- Bankruptcy Act* 1924, 1117
- Bankruptcy Act* 1924-1965, 1117
- Bankruptcy Act* 1966, 1117
- Banks *see also* Bank, Banking  
mortgages of real estate lodged for registration, 1968-69 to 1970-71, 1029  
opened in Melbourne, 1132-1  
savings *see also* Commonwealth Savings Bank, State Savings Bank of Victoria  
accounts, deposits, 1854-1971, 1118-9  
and co-operative housing societies, housing loan payments, 1967-68 to 1971-72, 986  
deposits  
accounts, 1854-1971, 1118-9  
classified by bank, 1967-1971, 1015  
development, 337-41  
entry into, 340  
private, deposits, 1967-1971, 1015  
short-term money market, 1967-1971, 1032  
trading *see also* Commonwealth Banking Corporation, Reserve Bank of Australia  
advances  
and deposits, averages, June 1971 and 1967-1971, 1011  
classification, 1967-1971, 1011  
ouststanding to rural industry borrowers, 1967-1971, 877  
branches and agencies, number, 30 June 1970 and 1971, 1010  
debts to customers' accounts, average weekly, 1961-62 to 1970-71, 1012  
deposits  
and advances, averages, June 1971 and 1967-1971, 1011  
1854-1971, 1118-9  
development, 337-41  
Farm Development Loan Fund account with Reserve Bank of Australia, 340  
Liquid Government Securities ratio, 1969-1971, 1008  
rural industry borrowers, advances  
ouststanding, 1967-1971, 877  
services, 341  
short-term money market, 1967-1971, 1032  
Term Loan Fund account with Reserve Bank of Australia, 340

- Banner*, newspaper, 600
- Bannockburn Shire**  
area, 30 June 1971, 801  
population, censuses 1966 and 1971, 801
- Banque Nationale de Paris**  
branches and agencies, number, 30 June 1970 and 1971, 1010  
establishment, 339
- Banting, F. G., and Best, C. H., insulin discovered,** 535, 677
- Baptists, censuses 1966 and 1971, 793**
- Bar**  
Association, 474  
legal profession, 474-5  
Roll, established, 474
- Barb, The, Melbourne Cup winner, 1152**
- Barber, Edward Hamilton Esler, judge, 769**
- Barbivrolli, Sir John, conductor, 526**
- Barbizon school, artists, 509-10**
- Barcoo, H.M.A.S., survey ship, 232**
- Barham-Koondrook, population, censuses 1966 and 1971, 798**
- Bark for tanning, production, value, 1966-67 to 1970-71, 909**
- Barkly, Sir Henry**  
Captain-General and Governor-in-Chief of the Colony of Victoria, 1149  
Governor, Executive Council, 443  
Museum of Art, opened, 515  
President, Royal Society of Victoria, 630
- Barley, 131-2**  
and rye, area, yield, and gross value, 1970-71, 884  
area  
by States, 1970-71, 879  
sown, seasons 1966-67 to 1970-71, 888  
yield, and gross value, 1966-67 to 1970-71, 888  
1839 to 1970-71, 1084-5  
cultivated area, Statistical Districts, season 1970-71, 886  
growers, Statistical Districts, season 1970-71, 885  
Improvement Research Scheme, participation of Carlton and United Breweries Ltd, 743  
Mallee District, area and yield, season 1970-71, 873  
marketing, 320  
Northern District, area and yield, season 1970-71, 873  
production  
by States, 1970-71, 879  
seasons 1966-67 to 1970-71, 888  
value  
local, 1966-67 to 1970-71, 908  
gross, seasons 1966-67 to 1970-71, 888  
1840 to 1970-71, 1084-5  
railway traffic, 1966-67 to 1970-71, 1052  
Wimmera District, area and yield, season 1970-71, 873  
yield  
average, per acre, seasons 1840 to 1970-71, 1084-5  
1966-67 to 1970-71, 888  
Statistical Districts, season 1970-71, 886
- Barr, Jehn, St Paul's Anglican Cathedral spires designed, 194**
- Barrabool Shire**  
area, 30 June 1971, 801  
population, censuses 1966 and 1971, 801
- Barracouta see Snock**
- Barracouta natural gas and oil field**  
development  
gas, 167  
oil, 164, 168  
natural gas and crude oil reserves, 21 May 1971, 165
- Barrett, Sir James, bush nursing, 555**
- Barristers see Legal**
- Barry, Sir Redmond**  
barrister, 473  
books dispensed, 502  
Chancellor, University of Melbourne, 425, 493, 1134  
Solicitor-General, 468
- Barry Beach marine terminal**  
established, 167  
expansion, 168
- Barton, Edmund, first Prime Minister, 1137**
- Barwon**  
Heads-Ocean Grove, population, censuses 1966 and 1971, 798  
River  
flow, annual, Winchelsea, 763  
Head of the River, rowing contests, Geelong, 616
- Baseball, 616**
- Basic wage see also Wage, basic**  
statistics, 833
- Baskerville, Margaret, sculptor, 513**
- Basketball, men's, 618-9**
- Bass, George, R.N.**  
Bass Strait discovered, 1131  
coastal exploration, 85  
Phillip Island lighthouse, 1131  
route of exploration, facing 86  
Van Diemen's Land, circumnavigation, 86
- Bass, Tom, Judgement of Socrates, 515**
- Bass Shire**  
area, 30 June 1971, 804  
population, censuses 1966 and 1971, 804
- Bass Strait**  
coastal lights, 1892, 231  
discovered, 86, 1131  
explored from west, 1131  
named, 86  
navigational features, 229  
surveying, 229-30
- Bass, H.M.A.S., survey ship, 232**
- Bass Trader, passengers, vehicles, etc., 1970-71, 1043**
- Bassett, Lady Marnie, The Hentys, 524**
- Batesford, Moorabool River flow, 763**
- Batman, Henry**  
disputes with John Pascoe Fawkner, 468  
District Constable, 470
- Batman, John**  
arrival at Melbourne, 232  
exploration, 172  
house used as hospital, 557  
mail deliveries, 258  
Melbourne  
founded, 175  
settled, 383  
Port Phillip settlement, aims, 309  
store leased for prison, 571  
treaty with Aboriginals, 1835, 25-6, 172, 1132
- Batman, Harbor Trust steamer, 457**
- Batman Hill (Spencer Street), railway workshops, 325**
- Baudin, Nicholas, coastal exploration, 86, 1131**
- Bauxite production, quantity and value, 1968-69 to 1970-71, 907**
- Bawra Shares and Priority Certificates, traded on Stock Exchange, 350**
- Bayliss, Edward, explorer, 88**
- Baystone, Melbourne Cup winner, 1152**
- Beaches, surf, use by sportsmen, 615**
- Beacon, wheat, acreage sown, etc., 1968-69 to 1969-70, 888**
- Beagle, H.M.S., Bass Strait survey, 229**
- Beans, french, area sown, production, value, gross, 1970-71, 893**
- Bear Hunter, The, play, 527**
- Beaufort**  
gold discovered, 157  
golf club, 612  
newspaper, 601  
population, censuses 1966 and 1971, 798
- Beaurepaire, Sir Frank**  
gift to University of Melbourne, 500  
school swimming programme, 500  
swimmer, 614  
tyre retreading and selling, 748-9
- Beaurepaire Tyre Service Pty Ltd, opened, 748**
- Beaver, William, Corio Chronicle and Western District Advertiser, newspaper, founded, 596**
- Bee**  
farming, net value of production, 1966-67 to 1970-71, 909  
hives, 1967-1971, 902  
keepers, 1967-1971, 902
- Beecham, Sir Thomas, conductor, 526**
- Beechworth**  
hospital built, 557  
mental institution opened, 549  
newspaper, 600  
population, censuses 1966 and 1971, 798  
Shire  
area, 30 June 1971, 803  
population, censuses 1966 and 1971, 803  
tannery, 324  
water supply authority, 864
- Beef**  
cattle see Cattle  
prices, average retail, 1949-1971, 848
- Beekeepers' Supply Co., The, formed, 733**
- Beer**  
railway traffic, 1966-67 to 1970-71, 1052  
research, 742-3  
wine, and spirits, retail sales, value, 1966-67 to 1970-71, 1037

- Beeswax**  
and honey, local value of production, 1966-67 to 1970-71, 909  
production, 1967-1971, 902  
value, gross, 1967-1971, 902
- Beetroot**, area sown, production, value, gross, 1970-71, 893
- Begonia Festival**, Ballarat Botanic Gardens, 110
- Belfast**  
(Port Fairy)  
rifle company, 456  
school opened by T. H. Braim, 485  
Road District, proclaimed, 452  
Shire  
area, 30 June 1971, 801  
population, censuses 1966 and 1971, 801
- Belgians naturalised**, 1967-1971, 807
- Belgium**, Australian Imperial Forces, 459
- Bell**, George, artist, 511
- Bellarine**  
Peninsula, water supply, 217  
Shire  
area, 30 June 1971, 801  
population, censuses 1966 and 1971, 796, 801
- Bellfield Reservoir**, 118, 218
- Bell's Life in Victoria*, newspaper, 600
- Benalla**  
adult education, 507  
area, 30 June 1971, 803  
gardens, 110  
immigrant holding centre, 581  
Mounted Police, 470  
newspaper, 601  
population, censuses 1966 and 1971, 798, 803  
Shire  
area, 30 June 1971, 803  
population, censuses 1966 and 1971, 803
- Bendigo**  
area, 30 June 1971, 803  
Botanic Gardens, 109  
City, population summary, censuses 1966 and 1971, 796  
climatic elements, means, 764  
continuation school, 486  
Creek, gold discovered, 156  
development, 185  
Foy and Gibson, 367  
gaol, used by Defence Department, 573  
Girton College, 486  
gold  
discovered, 1134  
rush population, 157  
goldfields, geological survey, 152-4  
hospital built, 557  
Institute of Technology, 502  
enrolments, 1970 and 1971, 934  
research, scientific, 652-3  
Laboratory, Department of Health, 560  
ligno-cellulose board mills, 333  
Marist Brothers school, founded, 486  
meteorological station, 673  
Myer, Sydney, retailer, 368  
newspapers, 600  
ordnance factories, 331, 681  
population, censuses 1966 and 1971, 798, 803  
radio station, call sign, 917  
railway opened, 1135  
Sandhurst Corporate High School, established, 486  
School of Mines and Industries, 652  
opened, 489, 501, 1135  
secondary industry, development, 324  
siting, 174  
Teachers College, opened, 492  
television stations, 918  
Theatre Royal, 527  
Tramways, 253  
urban area, population summary, censuses 1966 and 1971, 796  
water supply, 215, 218  
*Bendigo Advertiser*, newspaper, 600  
*Bendigo Waterworks Act* 1871, 215  
*Bendigo Weekly Advertiser*, newspaper, 600  
Benevolent homes, number, 1967-1971, 942
- Benign and unspecified neoplasms**, cause of death, 1971, 818
- Bent, Sir Thomas**  
Ministry, money given to University of Melbourne, 496  
Premier, 1151  
statue by Margaret Baskerville, 513
- Berger Paints** Victoria Pty Ltd, research and development, 720
- Bernhardt, Sarah**, actress, 528
- Berry, Graham**, 433  
Premier, 1151
- Berwick**  
population, censuses 1966 and 1971, 797-8  
Shire  
area, 30 June 1971, 800, 804  
population, censuses 1966 and 1971, 800, 804
- Bessemer steel making process**, 308
- Best, C. H.**, and Banting, F. G., insulin discovered 535, 677
- Bet Bet**  
Shire  
area, 30 June 1971, 803  
population, censuses 1966 and 1971, 803  
water supply authority, 864
- Bethanga area**, geological survey, 153
- Better Farming Train**, 143
- Beverages**, imports and exports, value, 1969-70 and 1970-71, 1039
- Bibliography about Victoria**, 1153-60
- Bibliography of Australasian poetry and verse*, Percival Serle, 524
- Bigamy**  
higher court cases, 1969-70, 974  
persons convicted  
ages, 1970, 976  
and result of hearing, 1970, 975
- Bijou Theatre**, 528
- Billiards**, 619-20
- Billing**, Norman Alexander, M.L.A., 771
- Bills**  
commercial, 340  
of  
exchange, stamp duty rates at 1 January 1972, 997  
sale, number and amount, 1967-1971, 1030
- Biochemistry**  
development, 533-4  
research, Faculty of Science, University of Melbourne, 643
- Birchip**  
population, censuses 1966 and 1971, 798  
Shire  
area, 30 June 1971, 802  
population, censuses 1966 and 1971, 802  
water supply, 218
- Birth** *see also* Adoptions, Births, Death, Deaths  
injury, etc., cause of death  
in age groups, 1971, 819  
1971, 818  
rate  
rise and decline, 1860-1880, 33-4  
1837-1971, 1071-3  
rates  
by States, 1967-1971, 814  
crude, and fertility rates  
1860-1862 to 1910-1912, 46  
1920-1922 to 1965-1967, 47
- Birthplaces of the population**, censuses 1947 and 1966, 41  
1966 and 1971, 791
- Births**, 45-7 *see also* Adoptions, Birth, Death, Deaths  
by States, 1967-1971, 813  
ex-nuptial  
by States, 1967-1971, 816  
mothers' ages, 1967-1971, 816  
percentage of total births, by States, 1967-1971, 816  
live, rate, 1967-1971, 808  
masculinity, 1967-1971, 814  
multiple confinements, 1967-1971, 816  
nuptial first, mothers age group and duration of marriage, 1971, 815  
parents, average age, 1967-1971, 814  
registration commenced, 1134  
sex, masculinity, average age of father and mother, 1967-1971, 814  
statistics, 813-7  
1836-1971, 1071-3  
1967-1971, 808
- Births, Deaths and Marriages Transfer Act* 1893, 7
- Biscuits** manufactured, 1970-71 and 1971-72, 912
- Bishop, John**, National Music Camp, 526
- Bisley**, England, King's Cup won by Perc Pavey, 618
- Bitalli**, Melbourne Cup winner, 1152
- Bitumen and Oil Refineries (Australia) Ltd**, 226
- Bizet's opera**, *The Pearl Fishers*, 531
- Black**, and Scott, London to Melbourne Centenary Air Race, 1139
- Black, John**, Theatre Royal, 528
- Black, Niel**, diaries, basis for *Men of yesterday*, 524

- Black coal *see* Coal, black  
*Black Eyed Susan*, play, 527  
 "Black Friday", bushfires, 1139  
*Black Swan, The*, ballet, 530  
 "Black Thursday", bushfires, 81, 1134  
 Blackburn, open air school, established, 500  
 Blacket, Edmund, architect of Christ Church, Geelong, 192  
 Blackwood, gold discovered, 157  
*Blade*, newspaper, 601  
 Blainey, Geoffrey, historian, 524  
 Blake, L. J., *Australian writers*, 519  
 Blamey, General Sir Thomas, Commander-in-Chief, Australian Military Forces, 460  
 death, 1141  
 Blandowski, William, zoologist, National Museum, 504, 630  
 Blankets manufactured, 1970-71 and 1971-72, 912  
 Blood  
 donations, etc., Red Cross Society, 1966-67 to 1970-71, 963  
 transfusion services, Commonwealth payments, 1966-67 to 1970-71, 989  
 transfusions, 533  
 "Blue Books", 4 *see also* Statistical Registers  
 Blue Spec, Melbourne Cup winner, 1152  
 Blundell, James J., publisher, 604  
 Board of  
 Agriculture  
 created, 446  
 replaced by Department of Agriculture, 688  
 Education  
 common schools controlled, 1135  
 formed, 447  
 Examiners, 473  
 Health *see* Health Department  
 Land and Works  
 abolished, 450  
 created, 446, 454  
 Public Examinations, 497  
 Science, conflict with Commissioner of Lands, 152  
 Social Studies, social work education, 574  
 Boards of Health, 546  
 Boat racing, 616  
 Boer (South African) War, Victorian troops sent, 458  
 Bogey exchange, railways, 379  
*Bohemian*, newspaper, 601  
*Bohemians of the Bulletin*, Norman Lindsay, 521  
 Boiler inspection  
 Department of Labour and Industry, 161  
 Mines Department, 161  
 Boldrewood, Rolf *see* Browne, T. A.  
 Bolte, Sir Henry Edward  
 hospitals grant announced, 1144  
 M.L.A., 771  
 Mercy Maternity Hospital opened, 1143  
 Petroleum Refineries (Australia) Pty Ltd, refinery extension opened, 1144  
 Premier, 436, 1151  
 term of office, 768  
 resigned, 772, 1148  
 Bonds, stamp duty rates at 1 January 1972, 997  
 Bonegilla  
 army training camp, 460  
 Immigrant holding centre, 581  
 run, established, 103  
 Bonwick, James  
 comment on political aspects of newspapers, 596  
 comments on *Melbourne Advertiser*, 595  
 work published by George Robertson, 604  
 Book  
 publishing, development, 603-6  
 trade, decline 1890s, 621  
*Book of Fossils, The*, National Museum of Victoria, 701  
 Bookmakers, licensed, turnover, investments with, 1966-67 to 1970-71, 995  
 Books *see also* Literature about Victoria, 1153-60  
 educational, publishers, 605  
 newspapers, and stationery, retail sales, value, 1966-67 to 1970-71, 1037  
 Boom, 1880s, 430  
*Boomerang*, newspaper, 601  
*Boomerang*, pilot ship, 239  
 Boots, etc., manufactured, 1970-71 and 1971-72, 913  
 Border  
 Leicester sheep  
 distribution in Statistical Districts, 31 March 1971, 896-7  
 numbers, etc., 1968, 1970-71, 898  
 Border Police, 470  
 Borneo, Australian Regular Army, 460  
 Bornstein, David Leon Frank, M.L.A., 771  
 Borough of Flemington and Kensington, absorbed into City of Melbourne, 454  
 Boroughs *see also under name of borough* incorporation, 453-4  
 numbers, 850  
 Borovansky, Edouard, ballet dancer, 530  
 Borrowing, government, co-ordination, 291-5  
 Borthwick, William Archibald, M.L.A., 769, 771  
 Borumba Dam, Queensland, research by State Rivers and Water Supply Commission, 709  
 Bosisto, Joseph  
 editor of *Transactions*, 564  
 eucalyptus oil, 721, 1134  
 President, Pharmacy Board, 564  
 Botanic Gardens, 109-10, 629-30, 701-2  
 founded, 1133  
 geomagnetic observations, 684  
 Botanical specimens, National Herbarium of Victoria, 702-3  
 Botany, research  
 La Trobe University, 650  
 University of Melbourne, Faculty of Science, 643  
 Bottles, production, 714-5  
 Boucicault, Dion, actor-manager, 598  
 Bourchier, J. W., M.H.R., 783  
 Bourcicault, Dion, actor and playwright, 528, 598  
 Bourke, Sir Richard, Governor of New South Wales  
 arrives in Melbourne, 175  
 census 1836, 3, 11  
 comment on Geelong's location, 173  
 informed by Captain William Lonsdale of location of Melbourne, 173  
 Melbourne  
 named, 88, 173, 175  
 plan approved, 175  
 Melbourne's streets named, 1132  
 Port Phillip District  
 claimed as part of New South Wales, 1132  
 opened for settlement, 383  
 proclaimed, 461  
 Williamstown, named, 88, 175  
 Bourke County, 452  
 Boursiquot, George D'Arley  
*Melbourne Daily News*, 598  
 founded, 599  
*Port Phillip Patriot*, purchased, 596, 599  
 reporter, *Port Phillip Herald*, 598  
*Standard and Port Phillip Gazette*, founded, 598-9  
 Bovine brucellosis and tuberculosis eradication, Commonwealth payments, 1969-70 and 1970-71, 989  
 Bowden, Dr K. M.  
*Captain James Kelly of Hobart Town*, 524  
*Western Port and its early settlers*, 524  
 Bowen, Sir George Ferguson, Administrator of the Government, Governor and Commander-in-Chief, 1149  
 Bowles, Leslie, sculpture exhibition, 513  
 Bowls, history, 612-3  
 Bowser, John, Premier, 1151  
 Box Hill  
 area, 30 June 1971, 800  
 painting camp set up by Tom Roberts, 510  
 population, censuses 1966 and 1971, 797, 800  
 Boxer Rebellion, naval unit sent, 458  
 Boxing, 619  
 Boyd, Arthur, artist, 512  
 Boyd, Martin, author, 519-20, 524  
 Boyd Neel String Orchestra, 526  
 Brack, John, artist, 511-2  
 Braddury, Archibald Keith, M.L.C., 771  
 Braddon, Sir Edward, Commonwealth Constitution, section 87, 289-90  
 Bradman, Sir Donald, cricketer, 609  
 Brady, Joseph, Victoria Dock construction, 235  
 Braim, Thomas Henry, first secondary school headmaster, 484-5  
 Bran, pollard, etc., railway traffic, 1966-67 to 1970-71, 1052  
 Brassey, Baron, Governor and Commander-in-Chief, 1150  
 Bravo, Melbourne Cup winner, 1152  
 Braybrook  
 immigrant hostel, 581  
 Implement Works, purchased by H. V. McKay, 738  
 Bread  
 prices, average retail, 1949-1971, 848  
 research, 744-5



- Breaking and entering**  
 Children's Court cases, 1970, 970  
 higher court cases, 1969 and 1970, 974  
 persons convicted  
 ages, 1970, 976  
 and result of hearing, 1970, 975  
 larceny, police warnings  
 offenders' age, 1970, 971  
 1967-1970, 971
- Bream, black, catch, 1966-67 to 1970-71, 905**
- Breeding, sheep, before 1875, 123-4**
- Brethren, censuses 1966 and 1971, 793**
- Brewer liquor licences, 1967-1971, 978**
- Brewing, research, 742-3**
- Brewster, E. J., first barrister, 473**
- Brick see also Bricks**  
 Development Research Institute, established, 719  
 manufacture, research and development, 718-9
- Brickhill, Paul, novelist, 521**
- Bricks see also Brick**  
 etc., wholesale price index, 1967-68 to 1970-71, 849  
 manufactured, 1970-71 and 1971-72, 912
- Bridegrooms and brides see also Divorce, Marriage, Marriages**  
 age, mean at marriage, 1967-1971, 810  
 conjugal condition, 1967-1971, 810  
 percentage in age groups, 1971, 809  
 relative ages, 1971, 809
- Brides and bridegrooms see Bridegrooms and brides**
- Bridges, expenditure, 1966-67 to 1970-71, 1003**
- Bridgestone Maru I, ship, L.P.G. shipped to Japan, 170**
- Brigden Committee, tariff operation, 389**
- Bright**  
 gardens, 110  
 gold discovered, 156  
 newspaper, 601  
 population, censuses 1966 and 1971, 798  
 Shire  
 area, 30 June 1971, 803  
 population, censuses 1966 and 1971, 803
- Brighton**  
 area, 30 June 1971, 800  
 Dendy's Special Survey, 89  
 Gas Company Ltd, 225, 228  
 Grammar School, 486  
 municipality proclaimed, 179  
 Pier Hotel, archery club formed, 617  
 population, censuses 1966 and 1971, 797, 800
- Briques**  
 electricity production, 221-4  
 investigation into production, 221-2  
 manufactured, 1970-71 and 1971-72, 912  
 production, quantity and value, 1968-69 to 1970-71, 907  
 railway traffic, 1966-67 to 1970-71, 1052
- Brisbane, Sir Thomas, Governor of New South Wales, 87**
- Brisbane, census populations, 1947-1971, 786**
- Brisels, Melbourne Cup winner, 1152**
- British**  
 Association for the Advancement of Science, 631  
 meeting in Melbourne, 632  
 Astronomical Association, superseded by  
 Astronomical Society of Victoria, 631  
 Australian Wool Realisation Association Ltd,  
 Shares and Priority Certificates, traded on  
 Stock Exchange, 350  
 born persons, censuses 1966 and 1971, 791  
 Commonwealth trans-Pacific cable opened, 1141  
 Nylon spinners, 740  
 persons, censuses 1966 and 1971, 791  
 Petroleum Co. of Australia Ltd, The  
 B.P. Building, sculpture, 514  
 refinery, Crib Point, 168, 237-8, 333  
 crude oil delivery, 170  
 sculpture by Norma Redpath, 514  
 troops, 455-7  
 Wool Federation, standards met by Australian  
 Wool Testing Authority, 671
- Broad, Henry George, M.L.A., 771**
- Broadcast receiver licences in force, 1924-25 to 1970-71, 1127-8**
- Broadcasting see also Radio, Television and television**  
 development, 585-95  
 licences in force, 1967-1971, 1066  
 Company of Australia, licence granted for 3LO, 585  
 Control Board, *Helping children to use television wisely*, 592  
 effect of television, 592
- Broadcasting—continued**  
 Melbourne's first radio station, 260  
 research, Postmaster-General's Department, 682-4  
 stations  
 commercial, call sign and location, 30 June 1972, 917  
 number, 1971, 595
- Broadford**  
 paper manufacturing mill 326, 330  
 population, censuses 1966 and 1971, 798  
 Shire  
 area, 30 June 1971, 801  
 population, censuses 1966 and 1971, 801
- Broadmeadows**  
 area, 30 June 1971, 800  
 army training camp, established, 459  
 population, censuses 1966 and 1971, 797, 800
- Broken Hill**  
 Associated Smelters Pty Ltd, 335  
 research station, 730  
 superannuation, 413  
 Mine Employees Fund, superannuation, 413-4  
 Proprietary Co. Ltd, The  
 activities, 334-5  
 established, 729  
 I.C.I.A.N.Z. shareholding, 329  
 investment interstate, 278  
 natural gas and crude oil exploration, 164  
 research  
 and development, 731-2  
 Laboratory, sculpture, 514  
 superannuation, 413  
 females, 414  
 South Ltd, 335  
 leases at Broken Hill, 334  
 superannuation, 413
- Broken River**  
 flow, annual, 763  
 gold discovered, 156  
 irrigation storage, 877
- Bronchitis, emphysema, and asthma, cause of death in age groups, 1971, 819-20**  
 1971, 818
- Brooke, Gustavus Vaughan, actor, 527-8**
- Brookes, Norman (later Sir Norman), tennis player, 611**
- Brookes, William, papermaking, 326**
- Brooks, Sir Reginald Alexander Dallas, Governor, 1150**
- Broom millet, area, yield, and gross value, 1970-71, 884**
- Brown, Phillip, *The narrative of George Russell of Golfhill*, 523**
- Brown, William Walter Charles, Senator, 783**
- Brown and Dean, balloonists, 253**
- Brown brothers, settlers, Lismore, 103**
- Brown Coal Advisory Committee, 222 see also Coal, brown**
- Browne, T. A., (Rolf Boldrewood)  
*Old Melbourne memories*, 523  
*Robbery under arms*, 521  
 work published by George Robertson, 604**
- Brownlee, John, opera singer, 526, 531**
- Brownless, A. D., University of Melbourne,  
 Medical School founder, 561**
- Brownlow Medal, football award, 610**
- Brown's waterhole, settlement at, 103**
- Bruce of Melbourne, The Rt Hon. Viscount Stanley  
 Melbourne  
 F.R.S., 634  
 Prime Minister, Premiers' Conference 1923, 7  
 Sir Frank Heath invited to Australia, 657**
- Bruck (Australia) Ltd, Wangaratta factory, 331-2**
- Brunswick**  
 area, 30 June 1971, 800  
 municipality proclaimed, 179  
 population, censuses 1966 and 1971, 797, 800
- Brunton, Dorothy, singer, 529**
- Brussels sprouts, area sown, gross value of production, 1970-71, 893**
- Bruthen, Tambo River, flow, 763**
- Bryant, G. M., M.H.R., 783**
- Buchan Caves, geological survey, 153**
- Buckingham, George, Theatre Royal, 527**
- Buckland, gold discovered, 157**
- Buckley, Vincent, poet, 523**
- Buckley, William, convict, lived with Aborigines, 87**
- Buckley and Nunn Ltd, retailers, 367**
- Budapest String Quartet, 526**
- Budd, Richard Hale, teacher training, 491**
- Budget accounts see Instalment credit**

- Buffalo Ranges, Victoria, The*, Nicholas Chevalier, opinion of Marcus Clarke, 509  
 "Buffs, The", settlement at Western Port, 455  
 Building, 192-206 *see also* Construction, Housing and construction, 197-204  
   between the wars, 1919-1939, 201-2  
   depression and recovery, 1891-1918, 200-1  
   developments, 1952-1971, 203-4  
   early settlement, 1834-1851, 197-8  
   expansion, 1860-1890, 199-200  
   gold discovery, 1851-1860, 198-9  
   post war period, 1945-1951, 202-3  
   and public utilities, work force (percentage), Australia, census 1966, 266  
   approved, value, 1967-68 to 1971-72, 980  
   architecture and style, 192-7  
   building and construction, 197-204  
   construction, course in, University of Melbourne, 204  
   development, Melbourne's, 175-83  
   Housing Commission, 204-6  
   materials  
     production, quantity and value, 1968-69 to 1970-71, 907  
     research and development, 715-9  
     shortage after Second World War, 195  
     wholesale price indexes, 1967-68 to 1970-71, 849  
   research, C.S.I.R.O., 664  
   societies  
     formation before 1850, 198  
     housing  
       finance, 359-60  
       loan payments, 1967-68 to 1971-72, 986  
       mortgages of real estate lodged for registration, 1968-69 to 1970-71, 1029  
       permanent  
         number, loans, deposits, 1874-1971, 1118-9  
         numbers, transactions, assets, etc., 1968-69 to 1970-71, 1023  
     statistics, 980-3  
 Buildings  
   city, architecture, 196  
   completed  
     value, classified by type, 1967-68 to 1971-72, 981  
     1945-46 to 1971-72, 1095  
   etc., Consolidated Revenue Fund, expenditure, 1852 to 1899-1900, 286  
   height restrictions, 183  
   new  
     commenced, value when completed, classified by type, 1967-68 to 1971-72, 980  
     work done, value, classified by type, 1967-68 to 1971-72, 981  
   public  
     Consolidated Revenue Fund, expenditure, 1901-02 to 1969-70, 290  
     expenditure  
       State net loan, aggregate to 30 June 1969, 282  
       1966-67 to 1970-71, 1003  
 Bulga National Park, 108  
   expenditure, 1966-67 to 1970-71, 919  
 Bulgarians naturalised, 1967-1971, 807  
 Bull, L. B., director, Animal Health Laboratories, C.S.I.R., 628  
 Bulla Shire  
   area, 30 June 1971, 800  
   population, censuses 1966 and 1971, 800  
 Bulleen, Unwin's Special Survey, 89  
 Bullen, Keith Edward, F.R.S., 634  
*Bulletin*, magazine, 602  
 Bullock Island, Lakes Entrance, pet food cannery, 333  
 Bulls and bullocks, slaughtered, 1966-67 to 1970-71, 901 *see also* Cattle  
 Buln Buln Shire  
   area, 30 June 1971, 804  
   population, censuses 1966 and 1971, 804  
 Bulwer-Lytton, *Lady of Lyons*, 527  
 Bunce, Daniel, director, Geelong Botanic Gardens, 109  
 Bundoora, mental institution, 349  
*Bungana*, aircraft, 256  
 Bungaree Shire  
   area, 30 June 1971, 801  
   population, censuses 1966 and 1971, 796, 801  
 Buninyong  
   gold discovery, 156  
   newspaper, 601  
   Shire  
     area, 30 June 1971, 801  
     population, censuses 1966 and 1971, 796, 801  
 Bunny, Rupert, artist, 510-1  
 Bunton, Haydn, footballer, 610  
 Bunyip River, flow, annual, 763  
 Bureau of  
   Census and Statistics, Commonwealth *see* Commonwealth Bureau of Census and Statistics  
   Dental Standards *see* Commonwealth Bureau of Dental Standards  
   Meteorology *see* Commonwealth Bureau of Meteorology  
   Mineral Resources, Geology and Geophysics  
     oil exploration, 163  
     Toolangi Geophysical Observatory, 684-5  
 Burgin, Cecil William, M.L.A., 771  
 Burke and Wills expedition  
   deaths at Coopers Creek, 1134  
   left Melbourne, 1134  
   monument, Charles Summers, 512  
   Philosophical Institute of Victoria, 630  
 Burnet, Sir Frank Macfarlane  
   F.R.S., 633  
   Nobel Prize awarded, 640, 641  
   Walter and Eliza Hall Institute of Medical Research, 641  
 Burnley  
   Horticultural College, 148  
   kindergarten, 479  
 Bursaries, government, granted, 1967-1971, 923  
 Burwood East, immigrant hostels, 581  
 Buses *see* Motor omnibus services  
 Bush nursing services, development, 555-6 *see also* Nursing  
 Bushfires *see also* Fire  
   areas burnt, 1966-67 to 1970-71, 903  
   before discovery, 77, 81  
   causes, 1966-67 to 1970-71, 903  
   control by Forests Commission, 112, 695  
   major, 81-2  
   of 1939 and aftermath, 83-4  
   1943-44, 83-4  
 Butchers' meat, retail sales, value, 1966-67 to 1970-71, 1037  
 Butt, Clara, singer, 526  
 Butter  
   first shipment to England, 106  
   marketing, etc., 316-9  
   prices, average retail, 1949-1971, 848  
   production  
     value, local, 1966-67 to 1970-71, 908  
     1891-92 to 1970-71, 1090-1  
     1967-1971, 895  
     1970-71 and 1971-72, 912  
   railway traffic, 1966-67 to 1970-71, 1052  
 Butterfield, William, architect of St Paul's Anglican Cathedral, 194  
 Buvelot, Louis, artist, 509  
 Byelorussians naturalised, 1967-1971, 807  
 Byrne, Geoffrey Michael, judge, 769  
 Byrne, Murray, M.L.C., 769, 770  
 C.B.C. Savings Bank Ltd., deposits, 1967-1971, 1015  
   *see also* Commercial Banking Company of Sydney Ltd  
 C.I.G. *see* Commonwealth Industrial Gases Ltd. The  
 C.S.I.R. *see* Council for Scientific and Industrial Research  
 C.S.I.R.O. *see* Commonwealth Scientific and Industrial Research Organization *see also* Research, Commonwealth facilities  
 Cabaret liquor licences, 1967-1971, 978  
 Cabbages, area sown, production, value, gross, 1970-71, 893  
 Cabinet government, development, 441-4  
 Cable tramways, 181  
 Cain, John, Premier, 768, 1151  
 Cairn Curran Reservoir, 118  
   capacity, etc., 877  
 Cairns, Dr J. F., M.H.R., 783  
 Calamia, Melbourne Cup winner, 1152  
*Calcutta*, settlement at Port Phillip, 87  
 Caledonian goldfields, Warrandyte, discovery, 152  
 Calf vaccine, produced, 560  
*Call of the sword*, monument, 513  
 Calves  
   numbers, by States, 1970-71, 879  
   slaughtered, 1966-67 to 1970-71, 901  
 Camberwell  
   area, 30 June 1971, 800  
   Grammar School, 486  
   population, censuses 1966 and 1971, 797, 800  
 Cambridge, Ada, novels, 521  
 Camden flock, Merino sheep, 123, 124  
 Cameron, Sir Gordon Roy, F.R.S., 634

- Campaspe River**  
 flow, annual, 763  
 irrigation storage, 877  
 valley, geological survey, 152
- Campbell, Dame Kate**, 539
- Campbell, John Harold**, Clerk of the Legislative Assembly, 772
- Campbell, William**, sheep breeder, 124
- Campbell, William Montgomery, M.L.C.**, 771
- Campbell's Soups (Aust.) Pty Ltd**, Lemnos, 331
- Camperdown**  
 newspaper, 601  
 population, censuses 1966 and 1971, 798  
 siting, 174
- Town**  
 area, 30 June 1971, 801  
 population, censuses 1966 and 1971, 801  
 water supply, 217, 219  
 authority, 864
- Canada (now World) Cup (golf)**, held in Melbourne, 607-8
- Canberra**  
 census populations, 1947-1971, 786  
 selected as site of Federal capital, 1137
- Cancer** *see also* Anti-Cancer Council of Victoria  
 cause of death, 56-7  
 control, 553-4
- Institute**  
 Board, created, 553  
 established, 1140  
 medical finance, and personnel particulars, 1960  
 and 1970-71, 947  
 radiotherapy, 559  
 research, 686-7
- Cancer Institute Act 1948**, 553
- Cann River**, flooded, 1971, 1143
- Canned or bottled apricots, peaches, and pears**,  
 manufactured, 1970-71 and 1971-72, 912
- Canoeing**, 616
- Canteen liquor licences, 1967-1971**, 978
- Cape**  
 Bridgewater discovered, 1131  
 Everard, 230  
 Liptrap discovered, 1131  
 Nelson discovered, 1131
- Otway**  
 discovered, 1131  
 meteorological station, 673  
 shipping destroyed during Second World War, 460
- Patton discovered, 1131  
 Woolamai, Phillip Island, named, 1131
- Cape Otway**, ship, 233
- Capital cities, census populations, 1947-1971**, 786
- Capitol Theatre**, ceiling, 195
- Captain Cook : the seamen's seaman**, Alan Villiers, 524
- Captain James Kelly of Hobart Town**, Dr K. M. Bowden, 524
- Car see* Motor
- Carandini, Maria**, opera singer, 531
- Carbine, Melbourne Cup winner**, 611, 1152
- Cardboard crown**, *The*, Martin Boyd, 520
- Cardinia Creek Reservoir**, 212
- Cardiology** *see* Heart disease, 537
- Cargoes, discharged and shipped**  
 according to geographic trade areas, 1968-69 to 1970-71, 1045  
 at ports, 1969-70 and 1970-71, 1045  
 nationalities of vessels, 1968-69 to 1970-71, 1046
- Carlisle River**, flow, annual, 763
- Carlton**  
 and United Breweries Ltd, 335  
 research and development, 742-3  
 kindergarten, 479  
 St Nicholas' Hospital, 550
- Carmichael, Sir Thomas David Gibson**, Governor, 1150
- Carnal knowledge**  
 higher court cases, 1969-70, 974  
 persons convicted  
 ages, 1970, 976  
 and result of hearing, 1970, 975
- Carncross, Theatre Royal, Bendigo**, 527
- Caroline Chisholm**, Margaret Kiddle, 524
- Carroll, Garnet H.**, *Kismet* presented, 529
- Carrots, area sown, production, value, gross, 1970-71**, 893
- Carrum, South Eastern Purification Plant commissioned**, 1143
- Cars** *see* Motor
- C. 2784/69**.—39
- Carter, H. J.**, insect collection presented to National Museum of Victoria, 505
- Casein made, 1967-1971**, 895
- Casey, Antarctic station**, 680
- Casino, ship**, 233
- Cass, M. H., M.H.R.**, 783
- Cassell's process, gold recovery**, 159
- Casterton, population, censuses 1966 and 1971**, 798
- Castlemaine**  
 area, 30 June 1971, 801  
 Botanic Gardens, 109, 110  
 Dragoons, 456  
 geological survey, 154  
 gold  
 discovered, 156, 1134  
 rush population, 157  
 hospital built, 557  
 newspapers, 600  
 population, censuses 1966 and 1971, 798, 801  
 Prison, proclaimed a reformatory prison, 572  
 Reformatory Prison, replaced, 573  
 siting, 174  
 visited by J. C. Williamson and Maggie Moore, 528  
 water supply, 218
- Castles, Amy**, singer, 526
- Castleton** *see* Bendigo
- Catalogue, Melbourne Cup winner**, 1152
- Catalogue of Firearms**, Science Museum of Victoria, 704
- Catholic Church**  
 child care, 566  
*Melbourne Morning Herald*, 599  
 St Patrick's  
 Cathedral, 194  
 College, 485  
 schools  
 and teachers, number, 1967-1971, 925  
 founded, 485-6  
 pupils  
 ages, 1971, 926  
 1967-1971, 925  
 Ladies College, founded, 486  
 Teachers College, established, 493
- Catholics, Roman, censuses 1966 and 1971**, 793
- Cattle**  
 and sheep stealing higher courts  
 cases, 1969-70, 974  
 persons convicted  
 ages, 1970, 976  
 and result of hearing, 1970, 975  
 beef, marketing, development, 311-2  
 distribution, Statistical Districts, 31 March 1971, 894  
 holdings growing wheat, size of holding, 1968-69, 882  
 numbers  
 by States, 1970-71, 879  
 1837-1971, 1090-1  
 1861-1971, 893  
 sale, stamp duty rates at 1 January 1972, 998  
 slaughtered  
 local, value, 1966-67 to 1970-71, 908  
 1966-67 to 1970-71, 901
- Cattle Compensation Act 1924**, 137
- Caulfield**  
 area, 30 June 1971, 800  
 Cup, 611  
 Glenhuntly Rehabilitation Centre, 550  
 Grammar School, 486  
 Institute of Technology, 502  
 enrolments, 1970-71, 934  
 population, censuses 1966 and 1971, 797, 800  
 racecourse, 611  
 Repatriation General Hospital, 578  
 technical school, established, 501
- Cauliflowers, area sown, production, value, gross, 1970-71**, 893
- Causes of death** *see* Death, causes of
- Causes of Death**, Commonwealth Bureau of Census and Statistics, 45
- Cavanagh, George**  
*Gazette* (Sydney), published, 596  
*Port Phillip Herald*, 596
- Cavanagh and Esmond**, gold miners, 156
- Caveats**  
 lodged at the Titles Office under the Transfer of Land Act, 1966-67 to 1970-71, 1029  
 stamp duty rates at 1 January 1972, 998
- Celeste, Madame**, actress, 528

- Cement**  
 manufacture, 328  
 products, wholesale price index, 1967-68 to 1970-71, 849  
 railway traffic, 1966-67 to 1970-71, 1052
- Cemeteries**, health regulations, 545
- Censorship**, uniform laws became operative, 1142
- Census** *see also* Censuses, Commonwealth Bureau of Census and Statistics, Statistical recording and Statistics, Commonwealth Bureau of *see* Commonwealth Bureau of Census and Statistics populations  
 capital cities, 1947-1971, 786  
 States and Territories, 1947-1971, 784  
 Statistical divisions, 1947-1971, 787  
 1947-1971, 784-9  
 schedules, progression, 1854-1971, chart, facing 20  
 1836, 3  
 1841, 11  
 1846, 11  
 1851, 11  
 1854, 11-2  
 1857, 12  
 1861, 12-3  
 1871, 12-3  
 1881, 12-3  
 1891, 13-4, 181  
 1901, 14  
 1911, 15-6  
 1921, 16  
 1933, 16-7  
 1947, 17-8  
 1954, 18-9  
 1961, 19-20  
 1966, 20-1  
 1971, 21-2, 784-98  
*Census Act* 1861, 12  
*Census Act* 1900, 14  
*Census and Statistics Act* 1905, 6, 15  
*Census and Statistics Act* 1905-1920, 16  
*Census and Statistics Act* 1905-1930, 16-7  
 Censuses, 11-22 *see also* Census, Statistical recording before 1841, 11  
 Commonwealth, 15-22  
 State, 11-4  
 use, 11
- Centenary celebrations** started, 1139
- Centennial Exhibition**, 1888, 430, 1136  
 music, 525
- Central**  
 Board  
 banking, 341-2  
 Board  
 for the Protection of Aborigines, 1861-1885, 27-8  
 of Health, 445  
 development, 545-6  
 employment conditions, 447  
 infectious diseases, control, 552  
 replaced, 449  
 Brighton and Moorabbin Gas Company, 225  
 Council of Benevolent Societies, 573  
 Criminal Court, 465  
 District, rainfall, 1962-1971, 766  
 Flying School, Point Cook, 459  
 Planning Authority, 190  
 Research Laboratories, Department of Supply, 679  
 Road Board 141, 207, 374, 445, 451, 454  
 schools, number, pupils, sex, 1971, 921  
 Statistical District  
 crops, yield, season 1970-71, 886  
 ensilage  
 made, 1970-71, 889  
 stocks, 31 March 1971, 889  
 fruit trees, plants, etc., season 1970-71, 892  
 growers of certain crops, season 1970-71, 885  
 hay stocks, 31 March 1971, 889  
 lambing  
 forecast, etc., 1971, 899  
 season 1970-71, 898  
 land occupied, area, etc., season 1970-71, 881  
 livestock, distribution, 31 March 1971, 894  
 map, 880  
 pigs and pig keepers, 31 March 1971, 895  
 rams according to breed, 31 March 1971, 897  
 sheep  
 and lambs  
 shorn, etc., 1970-71, 899  
 31 March 1971, 898  
 breeds, 31 March 1971, 896
- Centre for Training Teachers of the Deaf**, established, 493
- Centre 5**, sculptors, 514
- Centreway**, completion, 182
- Cereal** *see also individual crops*  
 crops, Mallee, Northern, and Wimmera Districts, area and yield, season 1970-71, 873  
 grain, holdings, number, area, etc., 1968-69, 882  
 growing, 104-5
- Cereals** *see also individual crops*  
 etc., imports and exports, value, 1969-70 and 1970-71, 1039  
 export price index, 1961-62 to 1970-71, 849  
 exported, State of final shipment, 1969-70, 272  
 for grain, area, yield, gross value, 1970-71, 884
- Cerberus**, H.M.A.S., Royal Australian Navy base, 237
- Cerberus**, H.M.V.S., naval ship  
 acquired, 456-7  
 breakwater at Half Moon Bay, 459-60  
 naval unit sent to Boxer Rebellion, 458  
 transferred to Commonwealth, 459
- Cerebrovascular disease**  
 cause of death  
 in age groups, 1971, 819-20  
 1971, 818  
 deaths, by age group and sex, 1971, 821
- Certificates of title**, land, issued, 1967-1971, 1028
- Cessna** aircraft, distribution, 733
- Cezanne**, Paul, artist, 511
- Chadstone sculpture**, Stanley Hammond, 515
- Chadstone Shopping Centre**, 370  
 sculptures, 514
- Chaffey brothers** (George and William Benjamin)  
 irrigation engineers, 117  
 Mildura irrigation district established, 1136  
 siting of Mildura, 174
- Chaffey settlement**, Mildura, 433
- Chain stores**, 369
- Chaliapin**, Feodor, singer, 526
- Chandler**, Sir Gilbert Lawrence, M.L.C., 769, 771
- Char**, manufacture, La Trobe valley, 333
- Charitable institutions and public hospitals**  
 income, sources, and expenditure, 1966-67 to 1970-71, 943  
 number, 1967-71, 942  
 receipts and expenditure, 1966-67 to 1970-71, 944
- Charities Board**, replaced by Hospitals and Charities Commission, 565
- Charity Organization Society**, 573
- Charles**, Prince, arrives in Melbourne, 1142
- Charles Ruwolt Pty Ltd**, formed, 739
- Charlton**  
 population, censuses 1966 and 1971, 798  
 Shire  
 area, 30 June 1971, 803  
 population, censuses 1966 and 1971, 803  
 water supply, 218
- Charter flying**, 258
- Cheese**  
 making, research, 745-6  
 production  
 value, local, 1966-67 to 1970-71, 908  
 1891-92 to 1970-71, 1090-1  
 1966-67 to 1970-71, 895  
 1970-71 and 1971-72, 912
- Chelsea**  
 area, 30 June 1971, 800  
 population, censuses 1966 and 1971, 797, 800
- Chemical**  
 elements and compounds  
 imported, importing State, 1969-70, 273  
 imports and exports, 1969-70 and 1970-71, 1039  
 engineering, research, 639  
 materials, etc., imports and exports, 1969-70 and 1970-71, 1039  
 products, research and development, 719-29
- Chemistry**, research  
 C.S.I.R.O., 660-2  
 La Trobe University, 650-1  
 Monash University, 648  
 University of Melbourne, Faculty of Science, 643
- Chemists** *see also Pharmacy*  
 goods, retail sales, value, 1966-67 to 1970-71, 1037
- Chenery and Co.**, Messrs, acquired by Younghusband and Co. Ltd, 355
- Cherries**, production, 1966-67 to 1970-71, 891
- Cherry**, R.O., snake venom antivenene, 628
- Cherry**, Sir Thomas Macfarland, F.R.S., 634
- Cherry trees**  
 Statistical Districts, season 1970-71, 892  
 1967-68 and 1970-71, 891
- Cheshire**, F. W., publisher and bookseller, 605
- Chester**, Melbourne Cup winner, 1152

- Chestnut trees  
 Statistical Districts, season 1970-71, 892  
 1967-68 and 1970-71, 891
- Chestnuts, production, 1970-71, 891
- Chevalier, Nicholas, artist, 509
- Cheviot sheep  
 distribution in Statistical Districts, 31 March 1971, 896-7  
 numbers, etc., 1968, 1970, and 1971, 898
- Chickens *see also* Poultry  
 hatched, 1966-67 to 1970-71, 900  
 slaughtered, 1966-67 to 1970-71, 901
- Chief  
 Justice's Law Reform Committee, 463, 473  
 Secretary's Department  
 Factories Office, 398  
 Penal Department, 572  
 regulatory functions, 469-70
- Child *see also* Children, Children's  
 endowment  
 children  
 endowed, amount paid, 1941-42 to 1970-71, 1111-2  
 families, payments, etc., 1967-68 to 1971-72, 950  
 Commonwealth, 575  
 expenditure, National Welfare Fund, 1967-68 and 1971-72, 948  
 extended to first child, 576  
 payments commenced, 1140  
 welfare, 547-8, 568-70  
 Advisory Council, formed, 570  
 Consolidated Fund payments, 1966-67 to 1970-71, 991  
 expenditure, Health Department, 1966-67 to 1970-71, 939
- Childbirth, pregnancy, etc., cause of death, 1971, 818  
*see also* Birth, Births
- Childers, Hugh  
 teacher training, 491  
 Vice-Chancellor, University of Melbourne, 493
- Childers, torpedo boat, 457  
 transferred to Commonwealth, 459
- Children *see also* Birth, Births, Child, Children's,  
 Population  
 athletics, 613  
 birthplaces of the population, 41  
 Census of  
 1901, 14  
 1933, 1947, 17  
 1954, 18  
 concerts, 526  
 death *see also* Infant deaths  
 causes of, 53-7  
 rates, 50-1  
 ex-nuptial, mothers' ages, 1967-1971, 816  
 handicapped, benefits, expenditure, National Welfare Fund, 1967-68 to 1971-72, 948  
 nutrition, expenditure, National Welfare Fund, 1967-68 to 1971-72, 948
- Children's *see also* Birth, Births, Child, Children  
 Courts  
 cases summarily disposed of : charges  
 and nature of offence, 1969-70, 969  
 and result of hearing, 1969-70, 969  
 nature of offence and result of hearing, 1970, 970  
 convictions, dismissals, etc., 1908-1970, 1114-5  
 created, 449, 468  
 probation orders, persons, 1970-71 and 1971-72, 960  
 probationers, 1967-68 to 1971-72, 959  
 ages, 1970-71 and 1971-72, 959  
 wards of State admitted, reasons, 1970-71 and 1971-72, 954, 956  
 homes, number, 1967-1971, 942
- Hospital  
 established, 558  
 opened, 1135  
 speech therapy, 556
- Welfare  
 Act, children under Infant Life Protection Provisions, 1967-68 to 1971-72, 955  
 Association, established, 584  
 Department, absorbed by Social Welfare Department, 570  
 voluntary agencies, 566
- Children's Court Act 1906, 468  
 Children's Maintenance Act 1919, 569  
 Children's Welfare Act 1954, 570
- Chiltern  
 goldfields, geological survey, 153  
 newspaper, 600
- Chiltern Shire  
 area, 30 June 1971, 803  
 population, censuses 1966 and 1971, 803
- Chilwell, rope works, 326
- Chinese  
 immigration, 33  
 naturalised, 1967-1971, 807  
*Chinese Times*, newspaper, 601  
 Chipp, D. L., M.H.R., 783  
 Chisholm, A. R., editor of poetry by Shaw Neilson, 522  
 Chisholm, Caroline, "the immigrants' friend", 580  
 Family Colonisation Loan Society, 33
- Choirs, 621
- Christ Church, Geelong, architecture, 192
- Christ College, Chadstone, 493
- Christesen, C. B., *Meanin Quarterly*, 523
- Christian Brothers, schools opened, 486
- Christian Brothers' Teachers College, 493
- Christian Times and Australian Weekly News*, newspaper, 600
- Christians and non-Christians, numbers, censuses 1966 and 1971, 793
- Christie, Sir Vernon  
 M.L.A., 771  
 Speaker, Legislative Assembly, 772
- Chronicles of early Melbourne, The*, Edmund Finn (Garryowen), 523  
 published by Fergusson and Mitchell, 605
- Church  
 of England  
 numbers, censuses 1966 and 1971, 793
- St  
 James'  
 and St Paul's Training Institution, 491
- Cathedral  
 building, 192  
 voluntary welfare, 566  
 Paul's Cathedral, William Butterfield, architect, 194  
 Peter's Church, architecture, 192
- schools  
 and teachers, number, 1967-1971, 925  
 pupils, 1967-1971, 925  
 ages, 1971, 926  
 schools, government grants for founding, 485
- Churches  
 adult education, 507  
 architecture, 192, 194  
 Melbourne's, 177  
 of Christ, numbers, censuses 1966 and 1971, 793  
 recreational activities, 622
- Churchill  
 Island, wheat and seeds sown, 1131  
 National Park, 108  
 expenditure, 1966-67 to 1970-71, 919  
 population, censuses 1966 and 1971, 798
- Chusan*, ship, visits Victoria, 384
- Cigarettes and cigars, excise duty collected, 1968-69 to 1970-71, 1042
- Cinemas, cultural and recreational influence, 622
- Circulatory system diseases, cause of death, 57-9
- Circumferenters, use in surveying, 691
- Cirrhosis of liver, cause of death  
 in age groups, 1971, 819  
 1971, 818
- Cities *see also under name of city*  
 and towns, siting of *see also* Urban areas, provincial  
 incorporation, 453-4  
 numbers, 850  
 siting, 172-4
- Citrus crops, 134
- City *see name of individual cities*
- Civil  
 Aviation  
 Board, established, 255 *see also* Aviation, civil  
 marriages, 1967-1971, 811
- Civilian employment, wage and salary earners,  
 1966-1972, 846-7
- Cizek, Franz, children's art, 517
- Clarendon College, 486
- Clarey, Reynold Arthur, M.L.A., 771  
 death, 772
- Clark, Donald, Chief Inspector of Technical  
 Education, 490
- Clark, Manning, historian, 524
- Clark, Thomas, artist, 509
- Clarke, Captain Andrew  
 National Museum established, 630  
 Philosophical Society of Victoria, 630
- Clarke, Sir George Sydenham  
 F.R.S., 632  
 Governor, 1150

- Clarke, Marcus  
*For the term of his natural life*, 519-20  
*His natural life*, 519-20  
 published by George Robertson, 604  
 opinion of Nicholas Chevalier's *The Buffalo Ranges*, Victoria, 509
- Clarke, Michael Alastair, M.L.C., 770
- Clarke, Ron, athlete, 613
- Clarke, William Henry, founder of Wangaratta, 186
- Clarke's Special Survey, Sunbury, 89
- Classical Association, 622
- Clays, production, quantity and value, 1968-69 to 1970-71, 907
- Clean Air Act* 1957, 547
- Clean Sweep, Melbourne Cup winner, 1152
- Clearway, Road Safety and Traffic Authority, 244
- Cleckheaton Ltd, Shepparton, 331
- Clendinnen Haze Meter, Carlton and United Breweries Ltd, 743
- Climate, 70-3 *see also* Commonwealth Bureau of Meteorology  
 description, 70-2  
 droughts, 73 *see also* Rainfall  
 Melbourne, 767  
 rainfall  
   average annual, map, 71  
   variability, 72-3  
   Victoria, 763-6
- Climatic elements  
   means  
     Melbourne, 767  
     selected towns, 764-5  
     yearly means and extremes, Melbourne, 767
- Clock, General Post Office, 260
- Closer Settlement, 101-2  
   Commission, 449-50
- Closer Settlement Act* 1906, 101
- Closer Settlement Act* 1928, 101
- Cloth piece goods woven, 1970-71 and 1971-72, 912
- Clothing  
   and drapery, retail sales, value, 1966-67 to 1970-71, 1037  
   Consumer Price Index, Melbourne, 1962-63 to 1971-72, 848  
   Factory, Department of Supply, 682  
   imports and exports, 1969-70 and 1970-71, 1040
- Cloudiness, Melbourne, 767
- Clover  
   and grass seed  
     area, yield, and gross value, 1970-71, 884  
     growers, Statistical Districts, season 1970-71, 885  
   subterranean  
     effects on pastures, 106-7  
     pasture improvement, 125-6  
     research, etc., 125-6
- Clow, J. M., pastoralist and explorer, 88
- Club certificates, liquor tax payments, 1966-67 to 1970-71, 995
- Clubs  
   registered, liquor licences, 1967-1971, 978  
   social, formation, 620
- Clunes  
   district, geological survey, 153  
   gold discovered, 1134  
   McKay, H. V., combine harvester developed, 325
- Clunies-Ross, Professor (later Sir) Ian, chairman, C.S.I.R.O., 658
- Coal  
   black  
     gas made, 1968-69 to 1971-72, 916  
     geological survey, 153  
     production  
       quantity and value  
        1851 to 1970-71, 1093-4  
        1968-69 to 1970-71, 907  
        1926-1930 to 1970-71, 906  
       value, 1926-30 to 1970-71, 906  
   brown  
     Advisory Committee, 222  
     Anglesea reserves, 731  
     briquette making investigation, 221-2  
     development, 434  
     discovered at Lal Lal, 1134  
     electricity generation, 221-4  
     gas made, 1968-69 to 1971-72, 916  
     mining, Mines Department, 730  
     Morwell open cut commenced, 1138  
     production  
       quantity and value  
        1890, 1910, 1915 to 1970-71, 1093-4  
        1968-69 to 1970-71, 907  
        1926-1930 to 1970-71, 906
- Coal—*continued*  
   brown—*continued*  
     reserves, development recommended, 706-7  
     testing by Science Museum of Victoria, 704  
     value, 1926-30 to 1970-71, 906  
   deposits, effects on siting of cities and towns, 328  
   etc., imports and exports, 1969-70 and 1970-71, 1039  
   export price index, 1961-62 to 1970-71, 849  
   geological survey, 155  
   Mine  
     State, Consolidated Fund  
       payments, 1966-67 to 1970-71, 991  
       receipts, 1966-67 to 1970-71, 990  
     Workers Pensions Fund, expenditure,  
       government, 1966-67 to 1970-71, 1002  
   mining, development, 328  
   railway traffic, 1966-67 to 1970-71, 1052  
   resources, geological survey, 153  
   strike, 1949, 1140
- Coast near St Kilda, The*, painting, Thomas Clark, 509
- Coastal  
   exploration, 85-7  
   navigation, 229-32  
   shipping, 232-4
- Coaxial cable system opened, 1141
- Cobb and Co.,  
   coaching firm founded, 1134  
   first coaches to gold diggings, 374
- Cobden  
   population, censuses 1966 and 1971, 798  
   water supply, 217
- Cobram  
   population, censuses 1966 and 1971, 798
- Shire  
   area, 30 June 1971, 803  
   population, censuses 1966 and 1971, 803
- Coburg  
   area, 30 June 1971, 800  
   population, censuses 1966 and 1971, 797, 800  
   Teachers College, established, 493
- Cock, John, mine manager, 159
- Code of law, introduced in Parliament, 461
- Coffee, tea, etc., imports and exports, value, 1969-70 and 1970-71, 1039
- Cohn, Ola, sculpture exhibition, 513
- Cohn Bros, aerated waters, 324
- Cohuna  
   cranium, fossil, 23  
   population, censuses 1966 and 1971, 798
- Shire  
   area, 30 June 1971, 803  
   population, censuses 1966 and 1971, 803  
   water supply, 219
- Colac  
   area, 30 June 1971, 801  
   Botanic Gardens, 109, 110  
   Lake, settlement, 103  
   newspaper, 601  
   population, censuses 1966 and 1971, 798, 801  
   radio station, call sign, 917  
   settlement, 103
- Shire  
   area, 30 June 1971, 801  
   population, censuses 1966 and 1971, 801  
   siting, 174
- Cole, E. W.  
   book arcade, 369  
   bookseller and publisher, 605
- Coleraine  
   newspaper, 601  
   population, censuses 1966 and 1971, 798
- Coles and Co. Ltd, G. J.  
   retail store opened, 369  
   warehouse, 370
- Cole's Book Arcade, 369
- Colesberg, South Africa, 458
- Coliban  
   Reservoir, 218  
   Water Supply System, 218
- Collected essays*, Walter Murdoch, 523
- College of Nursing, Australia, 502, 555  
   enrolments, 1970 and 1971, 934
- Colleges of advanced education *see also* individual  
   headings, Victoria Institute of Colleges  
   colleges, enrolments, staff, 1967-1971, 1106
- Commonwealth  
   grants, Consolidated Fund receipts, 1966-67 to 1970-71, 990  
   payments, 1966-67 to 1970-71, 989  
   specific purpose, 1959-60 to 1969-70, 306  
   expenditure, 1968-69 to 1971-72, 924

- Collier, Marie, opera singer, 531
- Collingwood  
 area, 30 June 1971, 800  
 Fitzroy and District Gas and Coke Company, 225  
 kindergarten, 479  
 library service, 503  
 municipality proclaimed, 179  
 newspaper, 601  
 population, censuses 1966 and 1971, 797, 800  
 stockade erected, 572
- Collins, Lieutenant-Colonel David  
 convict settlement near Sorrento, 455  
 orders printed by convicts, 604  
 Port Phillip District, first official settlement, 93  
 settlement  
 Port Phillip, 87  
 Sullivan Bay, 1131
- Collins, Tom (Joseph Furphy), novelist, 430, 519, 520  
 "Collins House" group of companies, 335  
 I.C.I.A.N.Z. Ltd shareholding, 329  
 interstate investment, 278
- Collins Street, 5 p.m., painting, John Brack, 512
- Colonial  
 Ammunition Company, small arms ammunition  
 manufacture, 327, 681
- Bank  
 merger with National Bank of Australasia, 339  
 of Australasia, opened, 338
- Engineer's Department, 445
- Gas Association Ltd, The, 226-7  
 changeover to natural gas, 169  
 mains, consumers, and sales, 1971-72, 916  
 natural gas, purchase and distribution, 169
- Mutual Life  
 Assurance Society Ltd  
 building at Albert Road, South Melbourne  
 1145  
 superannuation, 413  
 Marcus Clark Ltd, 412  
 established, 343
- Colonial Mining Journal, newspaper, 600
- Colonies, differences, 1880, 429-30
- Colonus, Melbourne Cup winner, 1152
- Colquhoun No. 1 oil well, 163
- Comcalco Aluminium Award, sculpture competition,  
 514
- Comedy King, Melbourne Cup winner, 1152
- Comic Court, Melbourne Cup Winner, 1152
- Commerce and finance, work force, percentage,  
 census 1966, Australia, 266
- Commercial  
 Bank of Australia Ltd  
 branches and agencies, 30 June 1970 and 1971,  
 1010  
 establishment, 338  
 superannuation, 411
- Banking Company of Sydney Ltd *see also* C.B.C.  
 Savings Bank Ltd  
 branches and agencies, 30 June 1970 and 1971,  
 1010  
 merger with National Bank of Australasia  
 discussed, 339  
 opened, 337  
 takeover, Bank of Victoria, 339
- bills, 340
- Fisheries Council, creation, 694
- radio *see* Broadcasting
- Savings Bank of Australia Ltd, deposits,  
 1967-1971, 1015
- television *see* Television
- Travellers' Club, completion, 182
- Commission of Public Health established, 449, 546
- Commissioner, torpedo launch, 457
- Commissioner of Public Works  
 powers vested in Board of Land and Works, 454  
 responsibilities, 454
- Commissioners  
 for Water Supply, appointed, 447  
 of National Education, teacher training, 491
- Committals by coroners, murder, manslaughter, and  
 culpable driving, 1967-1971, 973
- Committee  
 of Economic Enquiry, Report of the, tariffs, 390  
 on Social Training, appointed, 573
- Common Fees, Medical Benefits Plan, 561
- Commonwealth  
 Advisory Committee on Advanced Education, 502  
 grant to Royal Melbourne Institute of  
 Technology, 653
- Aircraft Corporation Pty Ltd  
 established, 1139  
 founding companies, 335
- Commonwealth—*continued*  
 Aircraft Corporation Pty. Ltd.—*continued*  
 production, 330-1, 681  
 research and development, 732-3
- Bank of Australia  
 central banking  
 development, 341-2  
 powers  
 inadequate, 339  
 transferred to Reserve Bank of Australia, 340  
 establishment, 339  
 superannuation, 412
- Banking Corporation  
 established, 342  
 statistics, 1012-3
- Bureau of  
 Census and Statistics *see also* Government  
 Statist's Office  
 censuses *see* Census, Censuses  
 computers, use, 671-2  
 formation, 6  
 history of statistical recording, 3-10  
 industrial disputes information, 404  
 psychiatric morbidity statistics, 697  
 Victorian Office, publications issued, 1161
- Dental Standards, 559, 561  
 formed, 637  
 research, 672-3
- Meteorology *see also* Climate  
 research, 673-5  
 weather forecasts, 674
- Censuses *see* Census, Censuses
- Conciliation and Arbitration Commission, 463  
 awards, 400  
 basic weekly wage rates fixed, 1923-1967, 833  
 established, 401  
 minimum weekly wage rates fixed, 1966-1972, 833  
 wage rates  
 adult males, minimum weekly, Melbourne,  
 1966-1972, 1076  
 basic, 1907-1967, 1076
- Departments *see individual titles*
- Development Bank of Australia  
 equipment finance under hire purchase  
 arrangements, 14 January 1960 to 30 June  
 1972, 1013
- loans  
 approved, number and amount, 14 January  
 1960 to 30 June 1972, 1013  
 to rural and other industries outstanding at  
 30 June 1971, 1013  
 rural loans approved, 1970-71, 876
- Employment Service, statistics, 1967-68 to 1971-72,  
 843
- Experimental Building Station, 664
- Fertilizers and Chemicals Ltd, 329
- Forestry Bureau, established, 682
- Government  
 authorities' advances, Public Authorities' Capital  
 Account, 1966-67 to 1970-71, 988
- Engine Works, 334
- loan flotations, 1966-67 to 1970-71, 1004
- transferred from Melbourne to Canberra, 1139
- grants  
 Consolidated Fund receipts, 1966-67 to 1970-71,  
 990  
 Public Authorities' Current Account, 1966-67  
 to 1970-71, 987
- Health  
 Laboratories, 559  
 Services, 559-61
- Hostels Ltd, formed, 581
- Immigration  
 Advisory  
 Committee, 580  
 Council, established, 581  
 Planning Council, 580-1
- Industrial  
 Court, established, 401
- Gases Ltd, The, research and development, 720-1
- Institute of Science and Industry, 629 *see also*  
 Commonwealth Scientific and Industrial Research  
 Organization
- loans, Stock Exchange of Melbourne, 1031-2
- Medical Equipment Control Committee, war drug  
 production, 722
- Meteorology Research Centre, 666
- Military Forces, headquarters, 458
- National Welfare Fund  
 expenditure, 1967-68 to 1971-72, 948  
 receipts, 1966-67 to 1970-71, 990

- Commonwealth—*continued*  
of Australia  
  legal power, 464  
  superannuation, 413  
Oil Refineries Ltd, 332  
  Laverton, 170  
payments to Victoria  
  1901–02 to 1969–70, 289  
  1966–67 to 1970–71, 989  
postage stamps, first issue, 260  
Radiation Laboratory, 559, 560  
  research, 675–6  
Radium Laboratory, set up, 560  
Re-establishment and Employment Act, advances  
  to assist ex-servicemen in farming industry,  
  1945–1971, 876  
rehabilitation service, expenditure, National Welfare  
  Fund, 1967–68 to 1971–72, 948  
research facilities *see* Research, Commonwealth  
  facilities  
Savings Bank of Australia  
  accounts, number, 1967–1971, 1012  
  advances outstanding, 1967–1971, 1012  
  deposits, 1967–1971, 1012, 1015  
  first established, 1138  
  securities held, 1967–1971, 1012  
Scientific and Industrial Research Organization  
  *see also* Council for Scientific and Industrial  
  Research  
  animal health research, 667–8  
  laboratory, 667  
  applied geomechanics research, 666  
  atmospheric physics research, 666–7  
  Australian Wool Testing Authority, 670  
  building research, 664  
  chemistry research, 660–2  
  dairy research, 663–4  
  detergent research with Gardinol Chemical  
  Company, 719–20  
  development, 629, 657–68  
  Division of  
  Animal Health, 667  
  and Production, 667  
  Applied  
  Chemistry, 660–2  
  Mineralogy, 660–1  
  Atmospheric Physics, 675  
  Building Research, 660  
  Chemical  
  Engineering, 660, 662  
  Physics, 660–1  
  Coal Research, 660  
  Dairy Research, 663  
  Environmental Mechanics, 666  
  Food Research, 663  
  Forest Products, 665–6  
  Horticultural Research, 668  
  Industrial Chemistry, 660–1  
  leather research, 742  
  Mechanical Engineering, 665  
  Meteorological Physics, 666, 675  
  Mineral Chemistry, 660–1  
  Organic Chemistry, 660  
  Physical Chemistry, 660  
  Protein Chemistry  
  Leather Research Section, 742  
  research, 659  
  Soil Mechanics, 666  
  Soils, 666  
  Textile Industry, research, 659–60  
  Tribophysics, 660, 662–3  
  Environmental Physics Research Laboratories,  
  666  
  forest products research, 665–6  
  formed, 658  
  history, 657–8  
  horticultural research, 668  
  leather research, 742  
  Masson, Professor (later Sir) David Orme, 642  
  mechanical engineering research, 664–5  
  Microanalytical Laboratory, 662  
  Mineragraphic Investigations Section, 660  
  mineral research, 660–2  
  Minerals Research Laboratories, 660  
  physical metallurgy research, 663  
  protein chemistry research, 659  
  research activities, 658–68  
  supersedes Council for Scientific and Industrial  
  Research, 1140  
  textile  
  industry research, 659–60  
  Research Laboratory, 659
- Commonwealth—*continued*  
Scientific and Industrial Research Organization—  
*continued*  
  tribophysics research, 662–3  
  Veterinary Parasitology Laboratory, 667  
  viticultural research, 668  
  wool research laboratories, 659  
Serum Laboratories, 559  
  Commission, 560  
  research, 676–8  
  established, 560, 628, 1138  
  social services, development, 575–7  
  specific purpose payments, 1959–60 and 1969–70,  
  306  
Standard of Exposure to X-rays, maintenance, 676  
–State  
  financial relations, 284–306 *see also* Financial  
  relations with the Commonwealth  
  after Federation, 288–306  
  Separation to Federation, 284–8  
  Housing Agreements, 205  
  Trading Bank of Australia  
  accounts, number, 1967–1971, 1012  
  advances, 1967–1971, 1012  
  and private trading banks, advances  
  outstanding to rural industry borrowers,  
  1967–1971, 877  
  branches and agencies, number, 30 June 1970  
  and 1971, 1010  
  deposits, 1967–1971, 1012  
  Treasury, first note issue, 339  
  wage awards “total wages”, general weekly  
  increase, 1967–1972, 1077  
  X-ray and Radium Laboratory, 675  
*Commonwealth Aid Roads Act* 1969, 214  
*Commonwealth Bank Act* 1929, 341  
Commonwealth of Australia Constitution Act, The,  
  1900  
  censuses, 15  
  given Royal Assent, 1137  
  section 51, 15  
Communications, 260–2 *see also* Transport  
  aeronautical, 254–6  
  and postal services, 258–62  
  historical statistics, 1126–8  
Companies  
  pastoral finance, 353–6  
  registered, capital, etc., 1967–1971, 1030  
  short-term money market, 1967–1971, 1032  
  tax, income, payable, 1971–72, 1001  
  trustee, 352–3  
*Companies Act* 1896, 351  
*Companies Act* 1958, 352, 462  
Company  
  debentures, Stock Exchange of Melbourne, 1031–2  
  Law Advisory Committee, investor protection, 352  
  legislation, development, 351–2  
Comptoir National *see also* Banque Nationale de Paris  
  establishment, 339  
*Compulsory Voting Act* 1926, 441  
Computation, research, Faculty of Science, University  
  of Melbourne, 643  
Computers  
  development and use, 712–4  
  Monash University, 649  
  use by Commonwealth Bureau of  
  Census and Statistics, 671–2  
  Meteorology, 675  
Conciliation  
  Boards of Employers and Employees, 401  
  industrial *see* Industrial arbitration and conciliation,  
  399–403  
*Conciliation and Arbitration Act* 1904–1972, 400  
  given Royal assent, 1137  
Concrete  
  mix, etc., wholesale price index, 1967–68 to  
  1970–71, 849  
  pipes, manufacture and research, 716–8  
Condell, Henry  
  first Mayor of Melbourne, 1133  
  parliamentarian, 437  
Condensed milk, produced, 1967–1971, 895  
Conder, Charles, artist, 510  
Confectionery manufactured, 1970–71 and 1971–72,  
  912  
Confinements  
  multiple, 1967–1971, 816  
  nuptial  
  mothers  
  age group and previous issue, 1971, 814  
  in age groups, total and average issue, 1971,  
  815  
  parents' relative age groups, 1971, 815



- Congenital anomalies, cause of death  
in age groups, 1971, 819  
1971, 818
- Congregationalists, censuses 1966 and 1971, 793
- Conjugal condition  
age distribution, masculinity of the population,  
39-41  
of persons marrying, 1967-1971, 810  
percentage of persons marrying in each, 1940-1971,  
810
- Connell, John H., bequest to National Gallery, 516
- Conscription, rejected at referendum, 1138
- Conservation *see also* Fisheries and Wildlife  
Department, Forests Commission,  
Natural resources, conservation  
National Museum of Victoria, 505  
need recognised by Professor (later Sir) Baldwin  
Spencer, 700
- Consolidated  
Fund *see also* Consolidated Revenue Fund  
drivers' licence fees received, 1966-67 to 1970-71,  
996  
motor vehicle insurance, third party surcharges,  
1966-67 to 1970-71, 997  
payments, 1966-67 to 1970-71, 991  
receipts, 1966-67 to 1970-71, 990  
stamp duty (vehicle registrations) received,  
1966-67 to 1970-71, 996  
taxation payments, 1966-67 to 1970-71, 992  
taxes, motor vehicle, received, 1966-67 to  
1970-71, 997
- Revenue  
deficits, funding, 1966-67 to 1970-71, 1003  
Fund *see also* Consolidated Fund  
expenditure  
1852 to 1899-1900, 286  
1901-02 to 1969-70, 290  
1949-50 to 1969-70, 301  
revenue  
1852 to 1899-1900, 285  
1901-02 to 1969-70, 289-90  
1949-50 to 1969-70, 301  
Tattersall lotteries, duty paid, 1966-67 to  
1970-71, 995
- Constitution Act, Victorian, proclaimed, 438, 1134
- Constitution Act, The*, 1855, 442, 465
- Constitution Act, The*, 1903, 440
- Constitution Act Amendment Act, The*, 1958, 439,  
441, 444  
section 15, 443
- Constitution Act Amendment (Responsible Ministers)  
Act, The*, 1970, 443
- Constitutional and administrative development,  
425-60  
Armed Forces, 455-60  
Executive Council and cabinet government, 441-4  
government administration, 444-50  
local government, 450-4  
parliamentary development and franchise, 437-41  
social and political development, 425-37
- Construction *see* Building
- Consul, The*, opera, 531
- Consumer  
goods (durable) manufacture, 332  
Price Index, Melbourne, 1962-63 to 1971-72, 848  
societies, transactions, liabilities, assets, etc.,  
1970-71, 1024
- Consumers Protection Council, 469
- Containers, railway transportation, 251
- Continuation Schools, 486-7
- Conveyances, Titles Office dealings under the  
Property Law Act, 1966-67 to 1970-71, 1029
- Convict Prevention Act* 1852, 33
- Convict transportation, campaign against, 425
- Conzinc Riotinto of Australia Ltd, 335
- Australian Fluorine Chemicals Pty Ltd, 726
- C.R.A. Building, sculpture, *Family group*, 514  
superannuation, 413
- Coode, Sir John, Melbourne harbour improvement,  
234-5
- Coode Canal, 235, 1136
- Coogee*, steamship, 232
- Cook, Captain James  
coastal exploration, 85  
route, map, facing 86  
Victoria first sighted, 1131
- Cooke, John and Henry, *Age* first published, 599
- Cool stores, government  
established, 688  
expenditure, 1966-67 to 1970-71, 1003
- Coolgardie, Western Australia, gold discovery, 1136
- Coonoor, Avoca River flow, 763
- Cooper, Ashley, tennis player, 611
- Cooper, Frederick, pharmacist, 564
- Co-operation Act* 1954, 362
- Co-operative  
companies, income tax payable, 1971-72, 1001  
housing societies  
and savings bank housing loan payments, 1967-68  
to 1971-72, 986  
mortgages of real estate lodged for registration,  
1968-69 to 1970-71, 1029  
number, members, shares, etc., 1967-1971, 986  
organisations, 361-2 *see also* Friendly societies  
credit societies, transactions, liabilities, assets,  
etc., 1966-67 to 1970-71, 1025  
producer and consumer societies, transactions,  
liabilities, assets, etc., 1970-71, 1024  
societies *see also* Friendly societies  
numbers, liabilities, assets, etc., by type of society,  
1970-71, 965  
registered, types, 1967-1971, 965
- Coorimungle Prison Farm, established, 573
- Copper  
assayed content of minerals, 1968-69 to 1970-71,  
906  
production, quantity and value, 1968-69 to 1970-71,  
907
- Coppin, George, "Iron Pot" (Olympic Theatre), 178,  
192  
Olympic Theatre company, 527  
plays introduced, 527-8
- Coppin in California*, play, 528
- Copyholds, law not adopted, 464
- Copyright, responsibility transferred to Common-  
wealth, 449
- Coranderk Station, Board of Inquiry into, 28
- Corangamite, Lake, discovery, 103
- Cordial manufacture, E. Rowlands and Co., 324
- Corio Bay  
settlement, etc. *see* Geelong  
Shire  
area, 30 June 1971, 801  
population, censuses 1966 and 1971, 796, 801
- Corio Chronicle and Western District Advertiser*  
circulation, 598  
founded, 596
- Corlett, Peter, Arts Centre *Playground sculpture*, 515
- Cormack, Sir Magnus Cameron, Senator, 783
- Corner Inlet, (Barry Beach), marine terminal  
established, 167
- Cornish miners, gold mining methods, 158
- Coroners committals, murder, manslaughter, and  
culpable driving, 1967-1971, 973
- Corowa-Wahgunyah, population, censuses 1966 and  
1971, 798
- Corporate government *see* Local government
- Corpus Christi College, bought by Victoria Police  
for use as training college, 1147
- Correspondence school, pupils' sex, 1971, 921
- Corriedale sheep  
distribution in Statistical Districts, 31 March  
1971, 896  
numbers, etc., 1968, 1970, and 1971, 898
- Corroboree*, ballet, 530
- Corryong, population, censuses 1966 and 1971, 798
- Corsair*, pilot ship, 239
- Corson, Dermot William, judge, 769
- Cotter, Dr Barry, pharmacist, 563
- Council  
for Mental  
Hospital Auxiliaries, 566  
Hygiene, 573  
for Scientific and Industrial Research *see also*  
Commonwealth Scientific and Industrial  
Research Organization  
aeronautical research, 678  
animal  
disease control, 136  
Health Laboratories built, Parkville, 628  
development, 629, 657-8  
established, 1138  
soil surveys with Department of Agriculture, 120  
succeeded by C.S.I.R.O., 1140  
of Adult Education, 623  
development, 507  
discussion groups, 1968-1972, 936  
income and expenditure, 1967-68 to 1971-72, 936  
lecture classes and enrolments, 1968-69 to  
1970-71, 935  
lectures on Stock Exchange, 350  
of Agricultural Education, abolished, 147  
of Egg Marketing Authorities, The, 320  
of Law Reporting in Victoria, 473

- Council—*continued*  
of Legal Education, 473, 476  
of Public Education, formed, 449  
on the Ageing, 584  
Councils *see* Local government authorities  
*Coutess of Hopetoun*, torpedo boat, 457  
transferred to Commonwealth, 459  
Counties, map, 880  
Country  
Fire Authority  
establishment, 84, 1140  
fire brigades, personnel, motor vehicles,  
1967–1971, 871  
revenue, expenditure, 1966–67 to 1970–71, 871  
life, development, 149–51  
Party, formed, 435  
Roads Board  
Account, local government authorities,  
1966–1970, 861  
1970, 860  
established, 241, 433, 449, 454, 1138  
expenditure on roads and bridges, 1966–67 to  
1970–71, 863  
Fund  
drivers' test and licence fees received,  
1966–67 to 1970–71, 996  
log books, sale, 1966–67 to 1970–71, 996  
motor vehicle registration fees received,  
1966–67 to 1970–71, 996  
road charges received under Commercial  
Goods Vehicles Act, 1966–67 to 1970–71,  
996  
taxes, motor vehicle, received, 1966–67 to  
1970–71, 997  
municipal roads, 207  
receipts and expenditure, 1966–67 to 1970–71,  
862  
research, 687–8  
television programmes, commercial, composition,  
1971–72, 918  
towns  
development, 183–6  
sewerage authorities, income, expenditure, etc.,  
1970, 869  
water supply authorities, income, expenditure,  
etc., 1970, 868  
*Country Roads (Tourists' Roads) Act* 1936, 242  
*Countryman*, newspaper, 601  
County Court  
appeals, Legal Aid Committee, applications, 1971,  
966  
development, 466–7  
established, 473  
judges, at 1 January 1973, 769  
pre-sentence reports, adults, 1967–68 to 1971–72,  
960  
*Courage Breweries Ltd*, 335  
*Courier*, steamship, 232  
*Courier of the Mines and Bendigo Daily*, newspaper,  
600  
Court  
business, convictions, etc., 1854–1970, 1113–5  
of Insolvency, 467  
of Mines, 467  
of Queen's Bench, 465  
Courts, 465–7 *see also* Children's Court, County  
Court, Law, Legal, Magistrates' Courts,  
Supreme Court  
etc., public debt at 30 June 1900, 288  
higher  
ages of persons convicted  
of specific offences, 1970, 976  
1969–1970, 977  
convictions, etc., 1854–1970, 1113–5  
persons convicted, 1969 and 1970  
of specific offences, 974–5  
result of hearing, 977  
miscellaneous, 467  
of  
General Sessions  
abolished, 466  
history, 467  
law established, 1134  
Petty Sessions, development, 467  
Quarter Sessions, 467  
Requests, abolished, 466, 467  
pre-sentence reports, adults, 1967–68 to 1971–72,  
960  
probation orders, persons, 1970–71 and 1971–72,  
960  
probationers *see* Probationers  
" Cousin Jack ", Cornish miner, 158  
Covenants, stamp duty rates at 1 January 1972, 997  
Covent Garden Company, ballet, 530  
Cow keepers, number, 1967–1971, 894  
Cowen, Frederick (later Sir Frederick), Victorian  
Orchestra, 525  
Coves, population, censuses 1966 and 1971, 798  
Cowie, James Anthony, settler, Geelong area, 173  
Cowper's 1884 Committee on Land Grievances, 95  
Cows *see* Cattle, Dairy, Dairying  
Covwarr, Thomson River flow, 763  
Cradle, gold washing, 158  
Craig, Alexander, poet, 523  
Craig Williamson store  
Bendigo, bought by Sidney Myer, 368  
Melbourne, burnt, 368  
Craigueburn, population, censuses 1966 and 1971, 798  
Cranbourne  
population, censuses 1966 and 1971, 797–8  
Shire  
area, 30 June 1971, 800, 804  
population, censuses 1966 and 1971, 800, 804  
Crawford, R. M., historian, 524  
Crayfish *see* Rock Lobster  
Cream *see also* Dairy, Dairying  
separator, first used, 139  
Crean, F., M.H.R., 783  
Crèche, subsidised, enrolments, 1968–1971, 938  
Crede, C. Z. F., treatment of ophthalmia, 539  
Credit  
business, stamp duty rates at 1 January 1972, 997  
foncier loans, State Savings Bank of Victoria, 359  
instalment, 356–9  
societies *see* Co-operative organisations  
Creeks *see* Rivers  
Crellin, Maxwell Leslie, M.L.A., 771  
Cremations and deaths, 1967–1971, 825  
Cremorne Gardens, Richmond, 528  
Creswick  
goldfields, geological survey, 152  
newspaper, 600  
population, censuses 1966 and 1971, 798  
Shire  
area, 30 June 1971, 801  
population, censuses 1966 and 1971, 801  
water supply authority, 864  
*Creswick Weekly Chronicle*, newspaper, 600  
Crete, Australian Imperial Forces, 460  
Crib Point  
B.P. refinery, 168, 333  
naval base established, 1138  
population, censuses 1966 and 1971, 798  
Cricket  
first test held in Melbourne, 1135  
history, 608–9  
radio broadcasts, 588  
test matches, 607  
Cricketers, Aboriginal, 1866–1868, 28  
Crime statistics, 972–7  
Crimean War, local volunteers, 456  
Crockett, William Charles, judge, 769  
Crooks, Richard, singer, 526  
Crops *see also* *specific crops*  
acreage cultivated *see* area below  
agricultural, 129–33  
area cultivated  
by States  
1969–70, 267  
1970–71, 879  
1836–37 to 1970–71, 1081–3  
1856–1865 to 1971, 884  
1970–71, 884–5  
fertiliser used, holdings, area, etc., 1966–67 to  
1970–71, 883  
growers, Statistical Districts, season 1970–71, 885  
horticultural, 134–5  
industrial, area, yield, gross value, 1970–71, 884  
liens, 1967–1971, 1030  
pest control, 135–6  
principal *see specific crops*  
value, gross, 1970–71, 884–5  
weed control, 135–6  
yield  
Statistical Districts, season 1970–71, 886  
1970–71, 884–5  
Croquet, 617  
Crossbreed sheep, distribution in Statistical Districts,  
31 March 1971, 896–7  
Crossley, Ada, singer, 526  
Crouch and Wilson, post office design, 259  
Crown  
grants, land, 1967–1971, 1028  
lands  
alienation, 1965–1970, 874

- Crown—*continued*  
lands—*continued*  
and survey  
Consolidated Revenue Fund, expenditure  
1852 to 1899–1900, 285  
1901–02 to 1969–70, 290  
Department of *see* Department of Crown  
Lands and Survey  
at 30 June 1971, 874  
Commissioners, 470  
leasehold, 464–5  
leases, land, 1967–1971, 1028
- Croydon  
area, 30 June 1971, 800  
population, censuses 1966 and 1971, 797, 800
- Crucible*, novel, J. P. McKinney, 521
- Crude  
birth rates and fertility rates  
1860–1862 to 1910–1912, 46  
1920–1922 to 1965–1967, 47  
oil *see also* Natural gas and crude oil
- Crustaceans, production and value, 1966–67 to  
1970–71, 904, 905, 909
- Crystal sets, 589
- Cudmore, F. A., fossils collection presented to  
National Museum of Victoria, 505
- Culpable driving  
commitments by coroners, 1971, 973  
higher court cases  
persons convicted  
ages, 1970, 976  
and result of hearing, 1970, 975  
1969 and 1970, 974
- Cultivation  
acreage, 1856–1865 to 1971, 884  
area, Statistical Districts, season 1970–71, 886  
machinery used, 137–40
- Cultural  
and recreational statistics, 917–9  
broadcasting, 917  
national parks, 919  
television, 917–9  
Centre *Playground sculpture*, Peter Corlett, 515  
entertainment, 620–4
- Cumberland*, schooner, coastal exploration, 86
- Cuming Smith and Co., 324, 329
- Cumpston, Dr J. H. L., Chief Quarantine Officer, 560
- Curator of Estates of Deceased Persons, 468
- Curie, Pierre and Marie, radium isolated, 533
- Curnow, Esmond Julian, M.L.A., 771
- Curr, Edward, *Recollections of squatting in Victoria*,  
523
- Currants production  
and gross value, 1970–71, 885  
by States, 1970–71, 879  
Statistical Districts, season 1970–71, 886  
1889–90 to 1970–71, 1088–9  
1966–67 to 1970–71, 892
- Curriculum Advisory Board, 488
- Currie, Archibald, paper milling, 326
- Curtin Federal Ministry replaces Menzies and  
Fadden Ministry, 1140
- Cussen, Sir Leo  
company law revised, 351  
*Imperial Acts Application Act* 1922, 461
- Customs  
and excise, Consolidated Revenue Fund, revenue,  
1852 to 1899–1900, 285  
duties, before Federation, 287  
duty collected, by States, 1970–71, 1043  
House, sculpture, 514  
revenue collected, Victorian ports, 1970–71, 1042  
transferred to Commonwealth, 449
- Customs*, torpedo launch, 457
- Cycling, history, 614
- Cyclone  
Fence Co., United States of America, 733  
group of companies, research and development,  
733–4  
Woven Wire Fence Co., formed, 733
- Czechoslovaksians naturalised, 1967–1971, 807
- D24, police communications centre, 472
- Daily Australasian Shipping News*, newspaper, 601
- Daily Telegraph*, newspaper, 601
- Dairy  
cattle, numbers  
1861–1971, 893  
1967–1971, 894  
Industry Investigation Committee, The, 318  
Produce  
Control Board, 317
- Dairy—*continued*  
produce—*continued*  
export price index, 1961–62 to 1970–71, 849  
prices, average retail, 1949–1971, 848  
products  
and eggs, imports and exports, value, 1969–70  
and 1970–71, 1039  
exported, State of final shipment, 1969–70, 272  
research, C.S.I.R.O., 663–4
- Dairying  
and pig keeping, number and scope of holdings,  
31 March 1969, 895  
cows and keepers, number, 1967–1971, 894  
development, 107  
industry, development, 316–9  
milk production, 1967–1971, 894  
production, value  
by States, 1970–71, 879  
gross, 1966–67 to 1970–71, 894, 908  
local, 1966–67 to 1970–71, 908  
net  
1928–29 to 1970–71, 1092  
1966–67 to 1970–71, 909  
statistics, 894–5
- Dalgety, F. G., wool consignment agent, 353
- Dalgety and Borrodale, wool brokers, 310
- Dalgety and Co. Ltd  
formation, 354  
merger with New Zealand Loan and Mercantile  
Agency Co. Ltd, 355
- Dalray, Melbourne Cup winner, 1152
- Damages cases, Magistrates' Courts, 1967–1971, 968
- Dams, research, State Rivers and Water Supply  
Commission, 709 *see also* Water supply
- Dandenong  
area, 30 June 1971, 800  
eucalyptus oil manufacture, 323  
population, censuses 1966 and 1971, 797, 800  
Psychiatric Centre, 550  
Shire Gas and Coke Co. Ltd, 226
- Dandenong*, S.S., steamship, 230
- Dandre-Levitoff Company, ballet, 530
- Danes naturalised, 1967–1971, 807
- Dangerous driving  
higher court cases, 1969–1970, 974  
persons convicted  
ages, 1970, 976  
and result of hearing, 1970, 975
- Dargo*, ship, 233
- Dark Felt, Melbourne Cup winner, 1152
- Darling, Sir Charles Henry, Governor  
New South Wales, 455  
Victoria, 1149
- Darlot, John Monckton, Horsham named, 186
- Darriwell, Melbourne Cup winner, 1152
- Dartmouth Dam  
Agreement, signed, 1142  
construction agreed to by South Australia, 1143
- Daughter of silence*, Morris West, 522
- Davey, Jack, quizmaster, 588
- Davies, Alan, novelist, 522
- Davies, John, *Mercury* (Hobart) founded, 597
- Davies, Judy Joy, swimmer, 614
- Davis, Antarctic station, 680
- Davis Cup, tennis, 611
- Davison, Frank Dalby, novelist, 521, 522
- Davitt, A., Mr and Mrs, Model and Normal School,  
491
- Dawe, Bruce, poet, 523
- Dawn*, ship, 233
- Dawson, Peter, singer, 526
- Day, Robert, District Constable, 470
- Day nurseries  
capital grants approved and amounts paid for  
building, 1968–1971, 938  
subsidised, number and enrolments, 1968–1971, 938
- Daylesford  
and Glenlyon Shire  
area, 30 June 1971, 801  
population, censuses 1966 and 1971, 801  
bare knuckle boxing bout, 619  
gold discovered, 156  
newspaper, 600  
population, censuses 1966 and 1971, 798  
Daylight saving introduced, 1144  
De Bavay's Treatment Company, zinc refining, 730
- De Havilland Aircraft Co., 330
- Deaf and Dumb Institution, 565
- Deakin, Alfred, 433  
autobiography, 524  
irrigation, 116–7  
Royal Commission on water supply, 116–7  
support to Chaffey brothers, 174

- Deakin Shire  
 area, 30 June 1971, 803  
 population, censuses 1966 and 1971, 803
- Dean and Brown, balloonists, 253
- Death *see also* Cremations, Deaths, Funerals  
 causes of  
 cancer, 56-7  
 circulatory system diseases, 57-9  
 classifications used since 1853, 52  
 diphtheria, 57  
 gastro-intestinal diseases, 53-4  
 heart disease, 57-9  
 in age groups, 1971, 819-20  
 International Classification numbers, 818-20  
 measles, 55  
 numbers and rates, 1971, 818  
 scarlet fever, 54-5  
 statistics, 818-22  
 tuberculosis, 55-6  
 typhoid fever, 54
- rates  
 age-specific, 1856-1858 to 1965-1967, 51  
 by States, 1967-1971, 817  
 crude, effect on life assurance, 343  
 from malignant neoplasms in age groups,  
 1920-1922 to 1965-1967, 820  
 infant, 50-1  
 1863-1971, 1072-3  
 1967-1971, 808, 823  
 1837-1971, 1071-3
- Death, Causes of*, Commonwealth Bureau of Census  
 and Statistics, 45
- Deaths *see also* Cremations, Death, Funerals  
 by States, 1967-1971, 817  
 cerebrovascular diseases, by age group and sex,  
 1971, 821  
 children, 50-1  
 heart disease  
 by age group and sex, 1971, 822  
 rates per 100,000 population, 59  
 homicide, 1967-1971, 822  
 infant  
 and stillbirths, 1967-1971, 825  
 at certain ages by cause and sex, 1971, 824  
 by States, 1967-1971, 823  
 Melbourne Statistical Division and  
 remainder of State, 1967-1971, 823  
 1863-1971, 1072-3  
 1967-1971, 808, 823  
 malignant neoplasms, by age group and sex, 1971,  
 821  
 motor vehicles, 1967-1971, 822  
 rate, 1967-1971, 808  
 registration commenced, 1134  
 1836-1971, 1071-3  
 1967-1971, 808, 817
- Debentures, stamp duty rates at 1 January 1972, 997
- Deborah*, prison hulk, 572
- Debt  
 cases, Magistrates' Courts, 1967-1971, 968  
 charges  
 assistance, Commonwealth  
 grants, Consolidated Fund receipts, 1966-67  
 to 1970-71, 990  
 payments, 1970-71, 989  
 Consolidated Revenue Fund, expenditure  
 1852 to 1899-1900, 286  
 1901-02 to 1969-70, 290  
 local government authorities, 1970, 853  
 public *see* Public debt  
 recovery of, charges, Consolidated Revenue Fund,  
 revenue  
 1852 to 1899-1900, 285  
 1901-02 to 1969-70, 289
- Deceased persons, estates, number  
 net value, 1969-1971, 1028  
 value, etc., 1967-1971, 1027
- Decentralisation of Industries Committee, 190
- Decimal currency introduced, 1142
- Deeds, stamp duty rates at 1 January 1972, 998
- Deep leads, 158
- Deering, joined George Coppin, 527
- Defence *see also* Armed Forces  
 Consolidated Revenue Fund, expenditure, 1852 to  
 1899-1900, 286  
 Department *see* Department of Defence  
 Ministry of, established, 457  
 Standards Laboratories  
 computer, use, 713  
 research, 679-80  
 Training Scheme, 501  
 transferred to Commonwealth, 449
- Defence Act* 1903-1904, 459
- Delacombe, Major-General Sir Rohan, Governor,  
 768, 1150
- Delatite River, gold discovered, 156
- Delegete River, border survey, 90
- Delta, Melbourne Cup winner, 1152
- Demographic development, 1-59  
 Aboriginals, 23-30  
 censuses, 11-22  
 immigration, 31-7  
 population, 38-44  
 statistical recording since 1836, 3-10  
 vital statistics, 45-59
- Demography, statistics, 784-825  
 historical, 1069-75  
 marriages, births, divorce, and deaths, 1071-3  
 population, 1069-71  
 increase, 1074-5  
 population, 784-807  
 vital, 808-25
- Demography*, Commonwealth Bureau of Census and  
 Statistics, 45
- Dendy's Special Survey at Brighton, 89
- Denison group, newspaper publishers, 602
- Dennis, C. J.  
*Songs of a sentimental bloke*, 523  
 work published by E. W. Cole, 605
- Dennys, C. J., founder, Dennys, Lascelles Ltd, 353
- Dennys, Lascelles Ltd, 353, 356
- Denominational Schools Board, 445, 477, 1133
- Dental  
 Board of Victoria, set up, 543  
 Graduates Society, 544  
 Hospital of Melbourne, established, 637  
 research, University of Melbourne, 637-8  
 Service, School, 435, 548  
 Society of Victoria, formed, 544
- Dentistry, development, 543-4
- Department of  
 Agriculture  
 Animal Health Division, disease control, 137  
 Board of Agriculture replaced, 688  
 colleges, 146-7, 148  
 established, 448, 1135  
 extension and advisory services, 143-5  
 pasture fertilisation, 122  
 permanent head first appointed, 143  
 research, 688-90  
 soil surveys with C.S.I.R., 120  
 subterranean clover, 126
- Civil Aviation, formation, 255
- Crown Lands and Survey  
 Closer Settlement Commission business, 449-50  
 distance measuring, 692  
 Forests Branch, 447  
 research, 691-2  
 Vermin and Noxious Weeds Destruction Board,  
 136, 144, 710-1
- Defence  
 Chemical Adviser's Branch, 679  
 headquarters, 458-9
- Education *see* Education Department
- Health  
 Commonwealth  
 Commonwealth  
 Bureau of Dental Standards  
 formed, 559, 561, 637  
 research, 672-3  
 Radiation Laboratory, research, 675-6  
 Serum Laboratories, research, 676-8  
 history, 559-61
- State  
 established, 450, 546-7  
 history, 544-7  
 Infant Welfare Department, Chief Pre-School  
 Educational Supervisor's position  
 created, 480  
 kindergartens, 479-81  
 maternal and child welfare, 547-8  
 mental health, 548-51
- Industrial and Reformatory Schools, established,  
 568
- Labour and  
 Industry  
 boiler inspection, 161  
 development, 447  
 Wages Boards, 400, 402-3  
 National Service, hostels for immigrants, 581
- Mental Hygiene, 547
- Public Health, established, 546

- Department of—*continued*  
 Public Instruction  
   annual exhibitions awarded, 485  
   created, 1135  
 State Development, development, 450  
 Supply  
   Aeronautical Research Laboratories, research, 678–9  
   Antarctic Division, Melbourne, research, 680  
   armaments manufacture, 681–2  
   Clothing Factory, 682  
   computer, use, 713  
   Defence Standards Laboratories, 679–80, 713  
   production establishments, research, 681–2  
   research, 678–82  
   the Navy, Williamstown Dockyard, 334  
   Trade and Customs, 559–60  
   Water Supply *see* State Rivers and Water Supply Commission  
 Departures, overseas, by States, 1967–1971, 806  
 Deposits *see* Bank, Banking, Banks  
 Depreciation allowances, Public Authorities' Capital Account, 1966–67 to 1970–71, 988  
 Depression  
   1890s, effect on  
     architecture, 194  
     banking, 338–9  
     building, 200–1  
     employment, 393  
     friendly societies, 363  
     immigration, 34–5  
     maritime trade, 385  
     Melbourne, 181  
     pastoral finance companies, 355  
     primary education, 483  
     schools of mines, 489  
     social and cultural activities, 431, 621  
     Stock Exchange of Melbourne, The, 349  
     University of Melbourne, 495  
   1930s, effect on  
     employment, 394  
     Faculty of Education, University of Melbourne, 492  
     housing industry, 360  
     maritime trade, 385  
     Melbourne, 182  
     pastoral finance companies, 355  
     Stock Exchange of Melbourne, The, 350  
     teachers colleges, 492  
     trade, 369  
     unions, 407  
 Derwent, ship, 233  
 Derwent Bank, opened, 337  
 Despatch, steamship, 232, 234  
 Determinations, industrial, Wages Boards *see* Wages Boards  
 Dethridge, George Leo, judge, 769  
 Devilbend Reservoir, 217  
 Devil's advocate, *The*, Morris West, 522  
 Dewar and McWilliam, flame ionisation detector discovered, 724  
 Dewar Shield, Rugby Union award, 610  
 Diabetes mellitus  
   cause of death  
     in age groups, 1971, 819  
     1971, 818  
   control, 535  
 Diamond  
   Hill, South Africa, 458  
   Valley  
     population, censuses 1966 and 1971, 797  
     Shire  
       area, 30 June 1971, 800  
       population, censuses 1966 and 1971, 800  
 Diatomite production, quantity and value, 1968–69 to 1970–71, 907  
 Dickie, Vance Oakley, M.L.C., 769, 771  
 Dictionary of Australian biography, Percival Serle, 524  
 Die Neue Welt, newspaper, 603  
 Dietetics, 556, 557  
 Difficult young man, A, Martin Boyd, 520  
 Digger over the top, monument, 513  
 Dimboola  
   population, censuses 1966 and 1971, 798  
   Shire  
     area, 30 June 1971, 802  
     population, censuses 1966 and 1971, 802  
 Diphtheria  
   cause of death, 57  
   control, 534  
 Directory of Victoria, Sands and McDougall, 604  
 Disasters, natural *see* Natural disasters  
 Discharged Servicemen's  
   Employment Board, 469  
   Preference Board, 468–9  
 Discovery, 85–6 *see also* Exploration  
 Disease control, livestock, 136–7  
 Diseases *see also* Death, causes of  
   Code, International Classification of, causes of death, 818–20  
   control and incidence, 534–6  
   infectious, control, 552–3  
   infective and parasitic, cause of death in age groups, 1971, 819  
 Displaced Persons Migration Scheme, obsolescence, 581  
 Display, *The*, ballet, 531  
 Disputes, industrial *see* Industrial disputes  
 Dissolutions of marriage *see* Divorce, Marriage, dissolutions  
 Distance measuring, Department of Crown Lands and Survey, 692  
 Distant Land, Judah Waten, 522  
 District  
   rainfall, 1962–1971, 766  
   Road Boards, 374, 445, 452  
 Divorce  
   decrees granted  
     petitioners' ages and issue, 1971, 812  
     1861–1971, 1072–3  
     1971, 811  
     grounds for, 1971, 812  
     law, 463  
     liberalisation, 464  
     Legal Aid Committee applications, 1971, 966  
     petitions filed  
       and decrees granted: dissolution, nullity, and judicial separation, 1967–71, 812  
       1861–1971, 1072–3  
       1971, 811  
     Supreme Court, 465–6  
   Divorce Act 1889, 1073  
 Divorced persons  
   censuses, 1966 and 1971, 792  
   marriages, 1967–1971, and 1940–49 to 1971, 810  
 Dixon, Brian James, M.L.A., 771  
 Dixon, Stephen C., principal St James' and St Paul's Training Institution, 491  
 Dockyard facilities, 334  
 Doctors, role in medicine, 534–6 *see also* Medical, Medicine  
 Domain Observatory, 230  
 Domestic Arts Teachers College, established, 492  
 Don Juan, Melbourne Cup winner, 1152  
 Donaghy, Michael, rope works, 326  
 Donald  
   population, censuses 1966 and 1971, 798  
   Shire  
     area, 30 June 1971, 802  
     population, censuses 1966 and 1971, 802  
 Doncaster and Templestowe  
   area, 30 June 1971, 800  
   population, censuses 1966 and 1971, 797, 800  
 Dookie Agricultural College, 146–7  
   plant breeding, 689  
 Dorset Horn sheep  
   distribution in Statistical Districts, 31 March 1971, 896–7  
   numbers, etc., 1968, 1970, and 1971, 898  
 Doube, Valentine Joseph, M.L.A., 771  
 Doyle, Julian John, M.L.A., 771  
   resigned, 772  
 Drainage  
   Consolidated Fund receipts, 1966–67 to 1970–71, 990  
   local government responsibilities, 207–8  
   Melbourne and Metropolitan Board of Works, 214–5  
   sewerage, etc., Consolidated Fund payments, 1966–67 to 1970–71, 991  
 Drake, E. T., Government Statist, 6  
 Dramatists, 523  
 Dredges, Charles Ruwolt Pty Ltd, 739–40  
 Dreyfus, George, composer, 527  
 Dried  
   fruit produced from vineyards, 1888–89 to 1970–71, 1088–9  
   tree fruits, production, seasons 1966–67 to 1970–71, 892  
 Drivers  
   and riders' licences in force, 30 June 1967–1971, 1057  
   Licence Suspense Account  
     drivers' licence fees received, 1966–67 to 1970–71, 996

- Drivers—*continued*  
 Licence Suspense Account—*continued*  
 taxes, motor vehicle, received, 1966–67 to 1970–71, 997  
 licences  
 and fees  
 collected, 1966–67 to 1970–71, 992  
 1966–67 to 1970–71, 996  
 in force at 30 June  
 1925–1971, 1124  
 1967–1971, 1057
- Driving  
 offences  
 Children's Court, 1969 and 1970, 969  
 Magistrates' Courts  
 1969 and 1970, 972  
 1970 and 1971, 973  
 under the influence  
 higher court cases, 1969–70, 974  
 persons convicted  
 ages, 1970, 976  
 and result of hearing, 1970, 975
- Drought relief, expenditure, 1966–67 to 1970–71, 1003  
 Droughts, 73, 82, 393
- Drouin  
 newspaper, 601  
 population, censuses 1966 and 1971, 798
- Drug Houses of Australia Ltd, research and development, 721–2
- Drugs *see also* Pharmaceutical, Pharmacy research and development  
 Drug Houses of Australia Ltd, 721–2  
 Nicholas Pty Ltd, 727–8  
 use in medicine, 532–3
- Druleigh Business College, 3DB Melbourne, radio station, 586
- Drysdale, Russell, artist, 508
- Ducks and drakes slaughtered, 1966–67 to 1970–71, 901
- Dudley, Lady, bush nursing, 555
- Duffy, Charles Gavan  
 Land Act of 1862, 427  
 Minister for Lands, Land Act, 96  
 Premier, 1150
- Dugan, Sir Winston Joseph, Governor, 1150
- Duigan, J. R., first flight, Australian made aeroplane, 330
- Duke of Cornwall and York, Federal Parliament opened, 1137
- Duke of Edinburgh (Prince Alfred), 1867 visit electric lights, 220  
 welcome music, 525
- Duke of Edinburgh (Prince Philip)  
 arrives in Melbourne, 1142  
 made first Freeman of the City of Melbourne, 1141  
 Olympic Games opened, 1141
- Duke of Gloucester, Shrine of Remembrance dedicated, 1139
- Duke of York, Commonwealth Parliament opened, 1139
- Duke, Charles, dry docks, 334
- Duke and Orr's Amalgamated Dry Docks Ltd, 334
- Dulux Australia Ltd, research and development, 722–3
- Duncan, A. M., Chief Inspector, London Metropolitan Police, appointment to Victoria, 471
- Dundas Shire  
 area, 30 June 1971, 801  
 population, censuses 1966 and 1971, 801
- Dunlop, J. B., first pneumatic motor vehicle tyre, 747–8
- Dunlop, Melbourne Cup winner, 1152
- Dunlop  
 Australia Ltd  
 research and development, 747–8  
 rubber goods, 330  
 Pneumatic Tyre Co., The, share issue underwritten, 349
- Dunmunkle Shire  
 area, 30 June 1971, 802  
 population, censuses 1966 and 1971, 802
- Dunn, Benjamin James, judge, 769
- Dunn, Bernard Phillip, M.L.C., 770
- Dunn, E. J., mineral collection presented to National Museum of Victoria, 505
- Dunolly  
 hospital built, 557  
 newspaper, 601
- Dunstan, Sir Albert Arthur  
 Premier, 436, 1151  
 term of office, 768
- Dunstan, D. A., agreed to construction of Dartmouth Dam, 1143
- Dunstan, Roberts Christian, M.L.A., 769, 771
- Dusty, Frank Dalby Davison, 521
- Dutch persons  
 censuses 1966 and 1971, 791  
 naturalised, 1967–1971, 807
- Dutton, Captain William, cabin at Portland Bay, 172
- Dutton, Orlando, sculpture exhibition, 513
- Duty *see specific headings*
- Dwight, H. T., printer, 604
- Dyeing, etc., materials, imports and exports, 1969–70 and 1970–71, 1039
- Dyson, Edward, novelist, 522
- E.M.F. Electric Company Pty Ltd, formed, 721
- E.S. and A. Savings Bank Ltd, deposits, 1967–1971  
 1015 *see also* Australia and New Zealand Banking Group Ltd, Australia and New Zealand Savings Bank Ltd
- EZ Industries, 335
- Eagle Star, ferry, 234
- Eaglehawk  
 Borough  
 area, 30 June 1971, 803  
 population, censuses 1966 and 1971, 796, 803  
 newspaper, 601  
 water supply, 218
- Earnings *see also* Wage, Wages  
 average  
 full-time employees, industry groups, October 1971, 831  
 weekly, per employed male unit, 1962–63 to 1966–67, 831  
 factory, 1901 to 1969–70, 910
- Earthquake recordings, 684–5
- East  
 Central  
 District, rainfall variation, 766  
 Statistical Division  
 area  
 by municipality, 30 June 1971, 804  
 of State, percentage, census 1971, 795  
 30 June 1971, 804  
 manufacturing establishments, 1968–69, 911  
 map, inside back cover  
 population  
 by municipality, censuses 1966 and 1971, 804  
 census 1971, 795  
 censuses  
 1947–1971, 787  
 1966 and 1971, 804  
 intercensal changes, 1961–1971, 787
- Gippsland  
 District, rainfall variation, 766  
 National Park, expenditure 1966–67 to 1970–71, 919
- Loddon Shire  
 area, 30 June 1971, 803  
 population, censuses 1966 and 1971, 803
- Melbourne, Catholic Ladies College, founded, 486
- Salé, meteorological office, 674
- Eastern  
 Freeway, 196  
 Market  
 development, 366  
 established, 1134  
 Suburbs Technical College (later Swinburne), established, 501
- Eastlake, Charles, paintings selected for Museum of Art, 515
- Eastman Kodak Co. (Rochester, U.S.A.), amalgamation with Baker and Rouse Pty Ltd, 724
- Ebden, C. H., Bonegilla run established, 103
- Eccles, Sir John Carew, F.R.S., 633
- Echuca  
 area, 30 June 1971, 803  
 climatic elements, means, 764  
 –Moama, population, censuses 1966 and 1971, 798  
 newspaper, 601  
 population, censuses 1966 and 1971, 803  
 port, 374, 375  
 siting, 174  
 United Bearing Corporation Ltd, 331
- Economic  
 activity, 265–71  
 development, 265–421  
 economy, Victorian, 265–83  
 employment and industrial relations, 391–409  
 financial relations with the Commonwealth, 284–306  
 manufacturing industry, 322–36  
 maritime trade, 382–90  
 private finance, 337–64

- Economic development—*continued*  
 rural industry, 307–21  
 superannuation, 410–21  
 transport, 372–81  
 wholesale and retail trade, 365–71  
*Economist*, newspaper, 601  
 Economy  
 economic activity, 265–71  
 public sector, 278–83  
 trading relations, 271–8  
 Eddy, Randolph John, M.L.C., 770  
*Edna*, ship, 232, 233  
 Edmunds, Cyril Thomas, M.L.A., 771  
 Education, 477–507  
 adult, 506–7  
 Adult Education Association of Victoria, 507  
 Council of Adult Education, 623  
 development, 502  
 discussion groups, 1968–1972, 936  
 income and expenditure, 1967–68 to 1971–72, 936  
 lecture classes and enrolments, 1968–69 to 1970–71, 935  
 lectures on Stock Exchange, 350  
 expenditure, Education Department, 1968–69 to 1971–72, 924  
 agricultural *see* Agricultural education  
 art, 516–9 *see also* National Gallery  
 Commonwealth specific purpose payments 1959–60 and 1969–70, 306  
 Consolidated  
 Fund payments, 1966–67 to 1970–71, 991  
 Revenue Fund, expenditure 1852 to 1899–1900, 286  
 1901–02 to 1969–70, 290  
 Department *see also other headings under* Education  
 created, 478  
 expenditure, 1968–69 to 1971–72, 924  
 of Public Instruction created, 1135  
 speech therapy, 536  
 development, 434–5  
 examinations, 497–9  
 Higher School Certificate, entries, passes, etc., 1967–1971, 927  
 public, 1855–1971, 1101–3  
 expenditure  
 government schools and teacher education, 1971–72, 925  
 per capita, State, 1969–70, 280  
 Fink Commission, 478, 483, 489–90, 495–501  
 in Music and Dramatic Arts Society, promotion of ballet, 530  
 legal, 475–6  
 libraries, 502–4  
 medical, developments, 561–3  
 National Museum of Victoria, 504–6  
 physical, 499–501  
 pre-school, 479–82  
 centres, subsidised, type and enrolments, 1968–1971, 938  
 expenditure, 1968–69 to 1971–72, 924  
 primary, 482–4  
 expenditure, 1971–72, 925  
 school, schooling, schools *see* School, Schooling, Schools  
 Science Museum of Victoria, 506  
 secondary, 484–8 *see also specific schools*  
 expenditure, 1971–72, 925  
 scholarships, government, 1967–1971, 923  
 social work, 573–5  
 State expenditure, 280  
 statistics, 920–36  
 Council of Adult Education, 935–6  
 Education Department, expenditure, 924–5  
 historical, 1098–1106  
 La Trobe University, 932–3  
 Melbourne Kindergarten Teachers College, 935  
 Monash University, 930–1  
 scholarships and bursaries, 923  
 schools  
 government, primary and secondary, 920–2  
 registered, 925–7  
 technical education, 923  
 tertiary colleges, enrolments, staff, 1967–1971, 1106  
 University of Melbourne, 927–9  
 Victorian Institute of Colleges, 934  
 Victorian Universities and Schools Examinations Board, 927  
 teacher, 490–3
- Education—*continued*  
 technical, 488–90  
 enrolments and courses, 1971, 923  
 expenditure, 1971–72, 925  
 scholarships, government, 1967–1971, 923  
 schools, number and course enrolments, 1965–1971, 923  
 tertiary *see also specific colleges*  
 expenditure, 1968–69 to 1971–72, 924  
 non-university, 501–2  
 university, 493–7 *see also specific universities*  
 enrolments, staff, degrees conferred, 1855–1971, 1104–5  
 scholarships, government, 1967–1971, 923  
 Educational buildings  
 commenced, value when completed, 1967–68 to 1971–72, 980  
 completed, value, 1967–68 to 1971–72, 981  
 new work done, value, 1967–68 to 1971–72, 981  
 Edward VII  
 accession, 1137  
 death, 1137  
 statue, Bertram Mackennal, 512  
 Edwards, George, actor, 588  
 Edwards' Pyrite and Ore Reduction Co., gold refining equipment, 729  
 Eel, catch, 1966–67 to 1970–71, 905  
 Eggs *see also* Poultry  
 and dairy products  
 imports and exports, value, 1969–70 and 1970–71, 1039  
 marketing, 320–1  
 prices, average retail, 1949–1971, 848  
 production  
 value, local, 1966–67 to 1970–71, 909  
 1966–67 to 1970–71, 900  
 Ehrlich, Paul, discoverer of Salvarsan, 532  
 Eight  
 hour working day, agreed to in building trades, 1134  
 Hours League, 405  
 Eildon  
 Power Station, electricity generated, power source, etc., 1971–72, 915  
 Reservoir, 118  
 television translator station, 917  
 water supply, 218  
 Elands River, South Africa, 458  
 Elder, Thomas, wool marketing and pastoral finance, 353  
 Elder Smith and Co. Ltd, merger with Goldsbrough Mort and Co. Ltd and Younghusband Ltd, 355–6  
 Elderly persons, housing, 206  
 Elections, parliamentary, statistics, 781–3  
 Electoral  
 Districts, Legislative Assembly, area, 780  
 Provinces, Legislative Council, area, 781  
 system, statistics, 780–3  
*Electoral Act* 1856, 438  
*Electoral Act* 1910, 440  
 Electors  
 enrolled on joint roll, 1963–1972, 780  
 numbers  
 Legislative  
 Assembly, 771–2  
 Council, 770–1  
 restrictive qualifications, 439  
 Electric  
 lighting company first formed, 1136  
 motors manufactured, 1970–71 and 1971–72, 912  
 Electrical  
 appliances, research, 734  
 Contractors' Federation, 409  
 engineering, research, 639  
 goods, retail sales, value, 1966–67 to 1970–71, 1037  
 installation materials, wholesale price index, 1967–68 to 1970–71, 849  
 machinery, etc.  
 imported, importing State, 1969–70, 273  
 imports and exports, 1969–70 and 1970–71, 1040  
 Electricity, 219–24  
 early history, 220–1  
 expenditure, State net loan, aggregate to 30 June 1969, 282  
 generated, power stations, and sources of power, 1971–72, 915  
 generation, Alcoa Australia Ltd, 224  
 local government, 208  
 authorities, revenue and expenditure, 1970, 855  
 State Electricity Commission of Victoria, establishment, 221–4

- Electricity supply  
 Consolidated Fund receipts, 1966-67 to 1970-71, 990  
 expenditure, 1966-67 to 1970-71, 1003  
 research by State Electricity Commission of Victoria, 706-8
- Electrolytic  
 Refining and Smelting Co., 335  
 Zinc Company of Australasia Pty Ltd, zinc refining, 730
- Electronic data processing *see* Computers
- Elgar's Special Survey at Kew, 89
- Elizabeth II  
 accession, 1141  
 arrives in Melbourne, 1141, 1142  
 Elizabethan Trust, 623
- Elbery, Robert Lewis John  
 astronomical observatory, Williamstown, 629  
 F.R.S., 632  
 General Post Office clock, 260  
 geophysical observations, 684  
 lectures at School of Mines and Industries, Ballarat, 652  
 local mean time, 230
- Elliott, Douglas George, M.L.C., 771
- Elliott, Herb, athlete, 613
- Elmore, Campaspe River flow, 763
- Elmslie, George Alexander, Premier, 1151
- Elsternwick, trotting, 612
- Eltham  
 population, censuses 1966 and 1971, 797  
 Shire  
 area, 30 June 1971, 800  
 population, censuses 1966 and 1971, 800
- Emblem, wheat, acreage sown, etc., 1968-69 to 1970-71, 888
- Emerald  
 Hill (South Melbourne), municipality proclaimed, 179  
 population, censuses 1966 and 1971, 798  
*Empire*, pilot ship, 239  
*Empire of the South*, newspaper, 600  
 Empire Settlement Act of 1922, 35
- Employed wage and salary earners *see* Wage and salary earners
- Employees  
 government and private, 1947-1972, 1080  
 insurance, 346  
 percentage affected by awards, etc., industry groups, May 1968, 827  
 private and government, percentage affected by awards, etc., May 1968, 827
- Employers' associations, 408-9
- Employment, 391-6 *see also* Industry of the population, Unemployment and unemployment, 391-6  
 statistics, 843-7  
 computers, effect, 713-4  
 factory, 330  
 1860 to 1969-70, 1095-7  
 1901 to 1969-70, 910  
 manufacturing  
 establishments, by States, 1968-69, 911  
 industries, Australia, 1966, 269  
 statistics, historical, 1080
- Endacott, S. J., publisher, 605
- Endeavour*, Captain Cook, 85
- Endeavour Oil N.L., oil exploration, 165
- Endocrinology, research, 535
- Energy statistics, 915-6  
 gas industry, 916  
 State Electricity Commission of Victoria, 915
- Engine manufacture, Commonwealth Government  
 Engine Works, 334
- Engineering  
 heavy, development, 325  
 research, 734-8  
 Monash University, 645-6  
 University of Melbourne, 638-9
- Engines, numbers in rural use, 138
- English  
 Leicester sheep  
 distribution in Statistical Districts, 31 March 1971, 896-7  
 1968, 1970, and 1971, 898  
 perch, catch, 1966-67 to 1970-71, 905  
 Scottish and Australian Bank Ltd *see also* Australia and New Zealand Banking Group, E.S. and A. Savings Bank Ltd  
 absorbed London Chartered Bank, 339  
 branches and agencies, number, 30 June 1970, 1010  
 English, Scottish and Australian Bank Ltd—*continued*  
 merger with Australia and New Zealand Bank, 339  
 opened, 338  
 superannuation, 411
- Ensilage  
 made, Statistical Districts, 1970-71, 889  
 stocks, Statistical Districts, 31 March 1971, 889
- Enteritis and other diarrhoeal diseases, cause of death in age groups, 1971, 819  
 1971, 818
- Enterprise*, schooner, 232  
 settlers and cargo landed at Yarra River, 172
- Entertainment  
 and recreation buildings  
 commenced, value when completed, 1967-68 to 1971-72, 980  
 completed, value, 1967-68 to 1971-72, 981  
 new, work done, value, 1967-68 to 1971-72, 981  
 social, cultural, and recreational, 620-4
- Entertainments tax, Consolidated Revenue Fund, revenue, 1901-02 to 1969-70, 289
- Environment Protection Act* 1970, 238
- Environment Protection Authority, anti-pollution priority areas declared, 1146
- Environmental research *see* Fisheries and Wildlife Department, research; Forests Commission, research; Natural resources, conservation; Soil Conservation Authority
- Epidemiological Research Unit, Fairfield Hospital, 692-3
- Epilogue, 753-7
- Eppalock Reservoir, 118
- Equestrian  
 Federation of Australia, formed, 617  
 sports, 617
- Equitable Life Assurance Society of the United States, 343
- Erosion *see* Soil
- Erwin, G. D., M.H.R., 783
- Esmond, James, gold discovery, 155
- Esmond and Cavanagh, gold miners, 156
- Essendon  
 Airport, 254  
 aircraft movements, passengers, 1967-1971, 1063  
 meteorological office opened, 674  
 operations transferred to Melbourne Airport, 1144  
 regular global air service inaugurated, 1141  
 and Melbourne Airports, movements, etc., 1960-1971, 1126  
 area, 30 June 1971, 800  
 population, censuses 1966 and 1971, 797, 800
- Eso  
 /B.H.P. fractionation plant, Western Port, 238  
 Exploration and Production Australia Inc., natural gas and crude oil exploration, 164
- Esson, Louis, dramatist, 523  
 Pioneer Players, 529
- Estates of deceased persons, number  
 net value, 1969-1971, 1028  
 value, etc., 1967-1971, 1027
- Estimated population *see* Population, estimated
- Estonians naturalised, 1967-1971, 807
- Eucalyptus oil, manufacture, 323, 721
- Eureka  
 Hotel, burning down, 157  
 stockade, gold miners' rebellion, 157, 455-6, 1134
- Euridice*, sculpture, Inge King, 514
- Euroa  
 population, censuses 1966 and 1971, 798  
 Shire  
 area, 30 June 1971, 803  
 population, censuses 1966 and 1971, 803
- European  
 Assurance Society, failure, 343  
 born persons, censuses 1966 and 1971, 791
- Eva*, ship, 234
- Evans, Alexander Thomas, M.L.A., 771
- Evans, Bruce James, M.L.A., 771
- Evans Brothers, *Victorian Municipal Directory*, 604
- Evaporation, Melbourne, 767
- Even Stevens, Melbourne Cup winner, 1152
- Evening News*, newspaper, 600
- Evening Peel, Melbourne Cup winner, 1152
- Evening Star*, newspaper, 600
- Evening Sun*, newspaper, 602
- Events, important  
 brief chronology, 1770-1970, 1131-42  
 1971 and 1972, 1143-9
- Eviction cases, Magistrates' Courts, 1967-1971, 96
- Ewart, Professor Alfred James  
 F.R.S., 633  
*Flora of Victoria*, 642



- Examinations  
 Higher School Certificate, entries, passes, etc., 1967-1971, 927  
 history, 497-9  
 public, 1855-1971, 1101-3  
*Examiner and Melbourne Weekly News*, newspaper, 600
- Excellite Resin Pty Ltd, taken over by Monsanto Australia Ltd, 726
- Excelsior*, steamship, 232
- Excise  
 duty collected  
 by States, 1970-71, 1043  
 on principal commodities, 1968-69 to 1970-71, 1042  
 revenue collected, Victorian ports, 1970-71, 1042
- Executive Council  
 appointed, 445  
 development, 441-4
- Executor and Trustee Institute, established, 353
- Exhibition Building, 180  
 architecture, 194  
 Commonwealth Parliament opened, 1137
- Ex-nuptial births *see* Births, ex-nuptial
- Expectancy of life, 51
- Expenditure, State *see* Consolidated Fund, Consolidated Revenue Fund
- Exploration, 1131-2  
 coastal, 85-7  
 inland, 87-8
- Explorers' routes, map, facing 86
- Explosives  
 control, Mines Department, 161  
 etc., imports and exports, 1969-70 and 1970-71, 1040  
 manufacture  
 Department of Supply, 681  
 ICI Australia Ltd, 723, 724
- Export  
 Payments Insurance Corporation, business, etc., 1967-68 to 1970-71, 1022  
 price index numbers, 1961-62 to 1970-71, 849
- Exports *see also* Maritime trade and imports, economic importance, 271-8  
 Australian, value and proportion handled at Victorian ports, 1966-67 to 1970-71, 1038  
 beef cattle, 311-2  
 classification, 1969-70 and 1970-71, 1039-40  
 country of consignment, 1968-69 to 1970-71, 1041  
 customs duty collected, by States, 1970-71, 1043  
 from Victorian ports, recorded value, 1966-67 to 1970-71, 1038  
 overseas, State of final shipment, 1969-70, 272  
 revenue collected, Victorian ports, 1970-71, 1042  
 value  
 and customs and excise duty collected, 1970-71, 1043  
 by classification, 1969-70 and 1970-71, 1039-40  
 wool, 309-11
- Express*, newspaper, 600
- Express*, steamship, 232
- External Affairs, transferred to Commonwealth, 449
- Eye disorders, treatment, 538-9
- Eyre, Edward John, explorer, 88
- EZ Industries, 335
- Factories *see* Manufacturing  
 Office, Chief Secretary's Department, 398  
*Factories and Shops Act* 1896, 397, 463  
*Factories and Shops Act* 1907, 368  
*Factories and Shops Act* 1909, 398  
*Factories and Shops (Long Service Leave) Act* 1953, 398
- Factoring, finance companies  
 amount financed, 1966-67 to 1930-71, 1034  
 balances  
 and other liquidations, 1966-67 to 1970-71, 1034  
 outstanding, 1967-1971, 1034
- Factory *see* Manufacturing
- Facts and Figures, Statistical and General*, 5
- Fairfield  
 Hospital  
 Epidemiological Research Unit, research, 692-3  
 medical education, 562  
 Infectious Diseases Hospital, 552  
 paper manufacturing, 330  
 Queen's Memorial Infectious Diseases Hospital, 552, 558
- Fairlea, women's prison, established, 573
- Fairley, Sir Neil Hamilton, F.R.S., 634
- Faith in Australia*, aircraft, 261
- Faithfull, George, settler  
 Ovens and King Rivers, 186  
 Wangaratta district, 104
- Falcon, wheat, acreage sown, 1968-69 to 1970-71, 888
- Fallow, area, 1858-59 to 1970-71, 1081-3
- Famechon, Johnny, boxer, 619
- Family  
 assistance  
 Ministry of Social Welfare  
 analysis of families being assisted, 30 June 1971, 953  
 applications, children involved, cost, 1967-68 to 1971-72, 953  
 Section, Social Welfare Department, 570  
 Colonisation Loan Society, 33  
 Council of Victoria, work with Institute of Mental Health Research and Postgraduate Training, 697  
 Counselling Section, Social Welfare Department, 570  
 Welfare  
 Advisory Council, 570-1  
 Division, Social Welfare Department, 570-1
- Faraday*, cable ship, 261
- Fares, early railways and coaches, 374-5
- Farm *see also* Agriculture, Crops, Dairying, Land, Rural, etc.  
 activity, principal items, 1970-71, 879  
 competitions, 143  
 machinery *see* Machinery, farm  
 power used *see* Machinery, farm
- Farmers  
 Debts Adjustment Board, 308  
 interests, law reform, 464-5
- Farming *see* Agriculture, Crops, Dairying, Farm, Land, Rural, etc.
- Farms, leased from the Crown, 464-5
- Farr, Dr William, statistician, 3
- Farrer, William, wheat breeding, 313
- Fatal impact*, Alan Moorehead, 524
- Fauna, 79-81  
 conservation, 68
- Faust*, opera, 528
- Fawcett, J., Yarra Sculptors Society, 513
- Fawkner, John Pascoe  
 books dispensed, 502  
 campaign against squatter control, 425  
 dispute with Henry Batman, 468  
*Enterprise*, schooner, 172  
 house used as a hospital, 557  
 libelled by George Arden, 596  
*Melbourne Advertiser* published, 365, 595, 1132  
 Melbourne settled, 232, 383, 1132  
*Port Phillip Herald* described, 596  
*Port Phillip Patriot and Melbourne Advertiser*, 595-6
- Fawkner*, Harbor Trust steamer, 457
- Federal  
 Council of Australasia Act, accepted, 1136  
 Court of Bankruptcy, 467  
 Hotel, (temperance), 621  
 Stock Exchange Co. Ltd, 348  
 Woollen Mills Pty Ltd, 327
- Federated Pharmaceutical Service Guild of Australia, 564
- Federation  
 campaign for, 431-2, 440  
 effect  
 legal profession, 474  
 public sector, 288-306  
 wheat, introduction, 105
- Fédération Dentaire Internationale, Commonwealth Bureau of Dental Standards, 673
- Feed, animal, imports and exports, 1969-70 and 1970-71, 1039
- Fees and charges, Consolidated Revenue Fund, revenue  
 1852 to 1899-1900, 285  
 1901-02 to 1969-70, 289
- Feldberg, Wilhelm Siegmund, F.R.S., 634
- Fell, Robert William, M.L.A., 771
- Felton, Alfred  
 bequest to National Gallery, 516  
 partnership with Frederick Grimwade, 324, 714, 721  
 Felton and Grimwade, 324, 329, 714, 721  
 Felton, Grimwade and Co., wholesale druggists, 516  
 Felton Grimwade Dental Company Pty Ltd, taken over, 722
- Fence production, Cyclone, 733
- Fencing, 619
- Fenner, Frank John, F.R.S., 634

- Fenton, James J., Government Statist, 6  
 Fergusson and Mitchell, printers and publishers, 605  
 Ferntree Gully National Park, expenditure, 1966-67 to 1970-71, 919  
 Ferres, John, Government Printer, 604  
 Fertilised area, Australia, season 1969-70, 267  
 Fertiliser  
   distributors and broadcasters on rural holdings, 1967-1971, 883  
   manufacture, 333  
 Fertilisers  
   imports and exports, 1969-70 and 1970-71, 1039  
   used, holdings, area, etc., 1966-67 to 1970-71, 883  
 Fertility rates and crude birth rates  
   1860-1862 to 1910-1912, 46  
   1920-1922 to 1965-1967, 47  
 Festival Hall, Melbourne, boxing, 619  
 Fibreglass production, 715  
 Fibremakers Ltd, textile research, 740-1  
*Fiddler on the Roof*, musical, 529  
 Field  
   art exhibition, 512  
   Naturalists' Club of Victoria, founded, 631  
   peas *see* Peas, field  
 Fiery Creek (Beaufort), gold discovered, 157  
 Fig trees  
   Statistical Districts, season 1970-71, 892  
   1967-68 and 1970-71, 891  
 Figs, production, 1966-67 to 1970-71, 891  
 Filbert trees  
   Statistical Districts, season 1970-71, 892  
   1967-68 and 1970-71, 891  
 Filberts, production, 1966-67 to 1970-71, 891  
 Film, photographic, research and development, 724-6  
 Finance  
   companies  
     amounts financed, 1966-67 to 1970-71, 1034  
     balances  
       collections and other liquidations, 1966-67 to 1970-71, 1034  
       outstanding, 1967-1971, 1034  
     pastoral  
       development, 353-6  
       rural advances, 1967-1971, 877  
     housing, 359-61  
     loans from major institutions, 1967-68 to 1971-72, 986  
   private, 337-64, 1008-36  
     banking, 337-42, 1008-15, 1118-9  
     building societies, 1023, 1118-9  
     Commonwealth Banking Corporation, 1012-3  
     companies, 1030  
     company legislation, 351-2  
     co-operative organisations, 361-2, 1024-5  
     Export Payments Insurance Corporation, 1022  
     finance companies, 1034  
     friendly societies, 362-4  
     housing finance, 359-61  
     instalment credit, 356-9  
       for retail sales, 1035-6  
     insurance, 342-7  
       fire, marine, and general, 1018-21, 1118-9  
       life, 1016-7, 1118-9  
       land transfer, 1028-30  
       life insurance, 1016-7  
       pastoral finance companies, 353-6  
       probate, 1027-8  
       public trustee, 1025-6  
       Reserve Bank of Australia, 1009-10  
       retail sales, instalment credit, 1035-6  
       short-term money market, 1032-3  
       State Savings Bank of Victoria, 1014  
       statistics, 1008-36  
       historical, 1118-9  
     Stock Exchange of Melbourne, 347-51, 1031-2  
     trustee companies, 352-3, 1026  
   public  
     Commonwealth payments to or for the State, 989  
     pensions and gratuities, State, 1002  
 Public  
   Authorities'  
     Capital Account, 1966-67 to 1970-71, 988  
     Current Account, 1966-67 to 1970-71, 987  
     debt, 1004-8  
     revenue and expenditure, 990-1  
     statistics, 987-1008  
     taxation, 992-1001  
     works, services, etc., expenditure, 1003  
   rural, statistics, 875-7  
 Financial  
   Agreement Act, Commonwealth grants, Consolidated Fund receipts, 1966-67 to 1970-71, 990  
   Financial—*continued*  
   assistance  
     Commonwealth grants, Consolidated Fund, receipts, 1966-67 to 1970-71, 990  
     grants, 1959-1970, 300-1  
     relations with the Commonwealth, 284-306  
     after Federation, 288-306  
     Consolidated Revenue Fund, 289-90  
     financial assistance grants, 1959-1970, 300-1  
     government borrowing, co-ordination, 291-5  
     income taxation, uniformity, 295-8  
     pay-roll taxation, 304-5  
     per capita payments, 290-1  
     receipts duty, State, 302  
     revenue  
       and expenditure, State, 1949-50 to 1969-70, 301  
       assistance arrangements, 1970-71 to 1974-75, 302-4  
       specific purpose payments, 305-6  
       tax reimbursement grants after 1945, 298-9  
       taxation, uniformity, legal challenges, 299-300  
     Separation to Federation, 284-8  
   Financial Emergency Act 1931, 1139  
   Financial Relationship of the Commonwealth and the States, *The. A Statement by the Premiers of all of the States*, 302  
   Fine arts *see* Arts  
 Fines  
   Consolidated  
     Fund, receipts, 1966-67 to 1970-71, 990  
     Revenue Fund, revenue  
       1852 to 1899-1900, 285  
       1901-02 to 1969-70, 289  
 Fink, Theodore, Royal Commission into education, 478, 483, 489-90, 495-6, 501  
 Finn, Edmund (Garryowen)  
   *Chronicles of early Melbourne*, 523  
   published by Fergusson and Mitchell, 605  
   *Melbourne Morning Herald*, 599  
   *Port Phillip Patriot and Melbourne Advertiser* described, 596  
 Finnish persons naturalised, 1967-1971, 807  
 Fintona College, 486  
 Fire *see also* Bushfires  
   and Accident Underwriters Association, formed, 347  
   brigades  
     contributions from insurance companies, 1966-67 to 1970-71, 1020  
     Country Fire Authority, 1966-1971, 871  
     insurance companies, 346  
   insurance *see* General insurance, fire, marine, and general  
   marine, and general insurance *see* Insurance, fire, marine, and general  
   Melbourne, November 1897, 346  
   Prevention Society, 346  
   stations, Metropolitan Fire Brigades Board, 1967-1971, 870  
   Underwriters Association  
     amalgamated with Accident Underwriters Association, 347  
     formed, 346  
 Fire Brigades Act 1890, 346  
 Firearms, offences, Children's Court cases, 1970, 970  
*Firebird*, ballet, 530  
 Fireclay production, quantity, and value, 1968-69 to 1970-71, 907  
 Fires *see* Bushfires, Fire  
 Firewood  
   output, 1966-67 to 1970-71, 902  
   production, value, local, 1966-67 to 1970-71, 909  
 First World War *see* War, First World  
 Fish, 80 *see also* Fisheries  
   catch, 1966-67 to 1970-71, 905  
   etc., imports and exports, 1969-70 and 1970-71, 1039  
   market, development, 367  
 Fisher, David, settler  
   at Geelong, 173  
   Mt Shadwell Station, 103  
 Fisher, P. S., M.H.R., 783  
 Fisheries *see also* Fish  
   and Wildlife Department  
     area of wildlife reserves, 30 June 1971, 874  
     fish hatchery, Snobs Creek, 615  
     research, 693-4  
   men, boats, and equipment, 1966-67 to 1970-71, 904  
   production, value  
     and quantity, 1966-67 to 1970-71, 904  
     gross, 1966-67 to 1970-71, 908  
     local, 1966-67 to 1970-71, 909  
     net, 1928-29 to 1970-71, 1092

- Fisheries—*continued*  
 research, Fisheries and Wildlife Department, 693–4  
 take, quantity and gross value, 1966–67 to 1970–71, 904
- Fishermens Bend  
 aircraft factory, 681  
 Coode Canal, 235  
 General Motors-Holden's Pty Ltd factory, 329
- Fishing, 615  
 forestry, and trapping, production, value, net, 1966–67 to 1970–71, 909
- Fitz Roy, Governor, 595
- Fitzroy  
 area, 30 June 1971, 800  
 library service, 503  
 municipality proclaimed, 179  
 newspaper, 601  
 population, censuses 1966 and 1971, 797, 800
- Flag, Australian, incorporation of Southern Cross, 157
- Flagstaff Gardens, Melbourne  
 geomagnetic observations, 684  
 Meteorological and Magnetic Observatory, 629  
 site, golf first played, 612
- Flathead  
 rock, catch, 1966–67 to 1970–71, 905  
 tiger, catch, 1966–67 to 1970–71, 905
- Flats  
 and houses  
 approved, 1967–68 to 1971–72, 980  
 new, commenced, completed, etc.  
 geographical distribution, 1967–68 to 1971–72, 982  
 ownership, 1967–68 to 1971–72, 982  
 building  
 commenced, value when completed, 1967–68 to 1971–72, 980  
 completed, value, 1967–68 to 1971–72, 981  
 new  
 completed, number and value, 1945–46 to 1971–72, 1095  
 work done, value, 1967–68 to 1971–72, 981
- Fleming, Sir Alexander, and Florey, Howard,  
 penicillin discovered, 677
- Fleming, Robert, Flemington racecourse named, 611
- Flemington  
 municipality proclaimed, 179  
 racecourse, 611
- Flemming, James, opinion of settlement on Yarra  
 River, 172
- Flesh in armour*, Leonard Mann, 521
- Flinders, Captain Matthew  
 Bass Strait discovered, 1131  
 coastal exploration, 86, 172  
 Port Phillip Bay charted, 1131  
 Van Diemen's Land, circumnavigation, 86
- Flinders  
 Naval Base, established, 459  
 population, censuses 1966 and 1971, 797  
 Royal Australian Naval College, 459  
 Shire  
 area, 30 June 1971, 800  
 population, censuses 1966 and 1971, 800  
 Street, Melbourne, naming, 176
- Flood protection, State Rivers and Water Supply  
 Commission, 449
- Floods, occurrences, 81
- Flora  
 at the time of discovery *see* Vegetation at time of  
 discovery  
 conservation, 68  
 names, glossary of, 77–9  
*Flora of Victoria*, Professor Ewart, 642  
 Florey, Howard, and Fleming, Sir Alexander,  
 penicillin discovered, 677
- Florey Laboratories, 640
- Flotta Lauro Travelling Scholarship, sculpture  
 competition, 514
- Flounder, catch, 1966–67 to 1970–71, 905
- Flour  
 manufactured, 1970–71 and 1971–72, 912  
 prices, average retail, 1949–1971, 848  
 railway traffic, 1966–67 to 1970–71, 1052  
 research, 744–5
- Floyd, Dr A. E., 525
- Floyd, William Laurence, M.L.A., 771
- Fluorspar production, quantity and value, 1968–69  
 to 1970–71, 907
- Flying *see* Aircraft, Australian Flying Corps, Aviation,  
 Royal Australian Air Force
- Fodder  
 green  
 area and gross value, 1970–71, 884
- Fodder—*continued*  
 green—*continued*  
 cultivated area, Statistical Districts, season  
 1970–71, 886  
 growers, Statistical Districts, season 1970–71, 885  
 maize production, seasons 1966–67 to 1970–71,  
 889  
 stock, area and gross value, 1970–71, 885
- Fog, Melbourne, 767
- Fokine, choreographer, 530
- Fonteyn, Margot (later Dame Margot), ballet dancer,  
 530
- Food  
 adulteration  
 prevention, 545  
 research by Science Museum of Victoria, 704  
 Consumer Price Index, Melbourne, 1962–63 to  
 1971–72, 848  
 industry, retail, 370–1  
 retail sales, value, 1966–67 to 1970–71, 1037  
 technology, research, 742–6
- Football, history, 609–10
- Footscray  
 area, 30 June 1971, 800  
 Gas and Coke Co. Ltd, 226  
 Institute of Technology, 502  
 enrolments, 1970 and 1971, 934  
 municipality proclaimed, 179  
 newspaper, 600  
 population, censuses 1966 and 1971, 797, 800  
 technical school established, 501
- Footwear  
 imports and exports, 1969–70 and 1970–71, 1040  
 manufactured, 1970–71 and 1971–72, 913  
 retail sales, value, 1966–67 to 1970–71, 1037  
*For the term of his natural life*, Marcus Clarke, 519–20
- Forage harvesters on rural holdings, 1967–1971, 883
- Foraminifera*, National Museum of Victoria, 701
- Forbes, Rev. James, teacher training, 490
- Forbes, Captain W. C., *Edina*, 232
- Ford Motor Company of Canada Ltd, 329
- Geelong  
 development assisted, 236  
 plant, 328
- Fordham, Robert Clive, M.L.A., 771
- Foreign  
 born persons  
 censuses 1966 and 1971, 791  
 period of residence in Australia, censuses 1966  
 and 1971, 792  
 language newspapers, 600, 603
- Foreshore protection, Melbourne and Metropolitan  
 Board of Works, 214
- Forest *see also* Forestry, Forests  
 areas burnt by fires, 1966–67 to 1970–71, 903  
 closed (rain forest) at time of discovery, 75–6  
 Creek (Castlemaine) gold  
 discovered, 156  
 rush population, 157  
 dry open and woodland at time of discovery, 74–5  
 fires *see* Bushfires  
 products, research, C.S.I.R.O., 665–6  
 reserved, area, 30 June 1971, 874  
 roads, 242–3  
 expenditure, Country Roads Board, 1966–67  
 to 1970–71,  
 length, 1971, 861  
 timber, output, 1966–67 to 1970–71, 902  
 warm temperate at time of discovery, 76  
 wet open at time of discovery, 75
- Forest Roads and Stock Routes Act* 1943, 243
- Forestry, 111–3 *see also* Forest, Forests, Timber  
 and Timber Bureau, research, 682
- Consolidated Fund  
 payments, 1966–67 to 1970–71, 991  
 receipts, 1966–67 to 1970–71, 990
- Department of State Forests, 112  
 expenditure  
 State net loan, aggregate to 30 June 1969, 282  
 1966–67 to 1970–71, 1003
- fishing, and trapping, production, value, net,  
 1966–67 to 1970–71, 909
- logging techniques, development, 112
- Mines Department, 161  
 production, value  
 gross, 1966–67 to 1970–71, 908  
 local, 1966–67 to 1970–71, 909  
 net, 1928–29 to 1970–71, 1092
- research  
 Forests Commission, 694–6  
 University of Melbourne, Faculty of Science, 643  
 Royal Commission, 1897, 111

- Forestry—*continued*  
 statistics, 902-3  
 wood pulping, 112  
*Forestry Bureau Act* 1930, 682  
 Forests *see also* Forest, Forestry  
 Acts, 111-2  
 Commission  
 establishment, 112, 449, 1138  
 recreational areas, 623  
 research, 694-6  
 conservation, 111-2  
 Consolidated Revenue Fund  
 expenditure, 1901-02 to 1969-70, 290  
 revenue  
 1852 to 1899-1900, 285  
 1901-02 to 1969-70, 289  
 cool temperate at time of discovery, 75-6  
 hardwood, 113  
 softwood, 113  
 output, 1966-67 to 1970-71, 903  
*Forests Act* 1907, 111  
*Forests Act* 1918, 112  
*Forests Act* 1958, 112  
 Forrest, James Herbert, judge, 769  
 Fort  
 Dumaresq, Phillip Island, 455  
 Nepean, 457  
 first British shot fired of  
 First World War, 459  
 Second World War, 460  
*Fortunes of Richard Mahony, The*, Henry Handel  
 Richardson (Ethel Florence Lindesay  
 Richardson), 520  
 Fossils  
 Aboriginal, 23-4  
 first palaeontologists, 153  
 research by National Museum of Victoria, 700, 701  
 Tertiary, first catalogue, 153  
 Foster, E. J., postmaster, Melbourne, 258  
 Foster, John Vesey Fitzgerald Leslie, Officer  
 administering the Government of the Colony of  
 Victoria, 1149  
 Foster care, wards of State, 569-70  
 Foundries, 325  
*Fountain*, sculpture, General Motors-Holden's  
 building, 514  
 Fox, E. M., M.H.R., 783  
 Fox, E. Phillips, artist, 511  
 Fox hunting, 617  
 Foxzami, Melbourne Cup winner, 1152  
 Foy, Mark, Foy and Gibson, 367  
 Foy and Gibson  
 factories established, 368  
 retailers, 367  
 worsted and woollen mill, 324  
 Foys Fair, 368  
 France, Australian Imperial Forces, 459  
 Franchise, Parliamentary, 437-41  
 Francis, Henry and Co., pharmacists, 563  
 Francis, James Goodall, Premier, 1150  
 Franch, Ivan Frederick Charles, judge, 769  
 Franklin, Governor, Queen's School established,  
 (Tasmania), 485  
 Frankston  
 area, 30 June 1971, 800  
 District Gas and Electric Co. Ltd, 226  
 horticultural research station, 690  
 Keith Turnbull Research Station, 710  
 population, censuses 1966 and 1971, 797, 800  
 Reservoir, 216  
 Teachers College  
 established, 493  
 sculpture, 514  
 Fraser, Dawn, swimmer, 614  
 Fraser, J. M., M.H.R., 783  
 Fraser, Neale, tennis player, 611  
 Fraser National Park, expenditure, 1966-67 to  
 1970-71, 919  
 Fraud  
 higher court cases  
 persons convicted  
 ages, 1970, 976  
 and result of hearing, 1970, 975  
 1969 and 1970, 974  
 offences  
 Children's Court  
 cases, 1970, 970  
 1969 and 1970, 969  
 Magistrates' Courts, 1969 and 1970, 972  
 summonses, Magistrates' Courts, 1967-1971, 968  
 Frederico, Hubert Theodore, judge, 769  
 Free  
 Kindergarten Union of Victoria  
 development, 479-80  
 established, 517  
 Library Service Board, 623  
 established, 503  
 Government grants, 504  
 places, government, granted, 1967-1971, 923  
 Freeman, Inspector Samuel, London Police, 471  
 Freeways, 242  
 Country Roads Board, expenditure, 1966-67 to  
 1970-71, 863  
 design and development, 196  
 length, 1971, 861  
 Melbourne and Metropolitan Board of Works, 214  
 Freight  
 railway, between Victoria and New South Wales,  
 1946-1970, 276  
 rates, 375  
 French, C., entomologist, 136  
 French  
 beans, area sown, production, value, gross, 1970-71,  
 893  
 Island  
 area, 30 June 1971, 804  
 McLeod Reformatory Prison, established, 572  
 population, censuses 1966 and 1971, 804  
 persons naturalised, 1967-1971, 807  
 Freshwater fish, catch, 1966-67 to 1970-71, 905  
 Fretwell, Elizabeth, opera singer, 531  
 Freyer, P. Johnston, prostate operation, 537  
 Friendly societies *see also* Co-operative organisations,  
 Co-operative societies  
 benefits, amounts disbursed, 1966-67 to 1969-70,  
 965  
 development, 362-4  
 dispensaries, income tax payable, 1971-72, 1001  
 funds, 1966-67 to 1969-70, 963  
 ground (Olympic Park), athletics, 613  
 housing loan payments, 1967-68 to 1971-72, 986  
 membership, branches, etc., 1966-67 to 1969-70,  
 964  
 receipts and expenditure, 1966-67 to 1969-70, 964  
*Friendly Societies Act* 1877, 362  
*Friendly Societies (War Service) Act* 1939, 363  
 Froebel education methods, 479  
 Frome-Broken Hill, oil well drilling, 164  
 Frost Engineering Co. Ltd, twist drills, 331  
 Fruit *see also specific fruits*  
 and vegetables, imports and exports, value, 1969-70  
 and 1970-71, 1039  
 area  
 by States, 1970-71, 879  
 grown, Statistical Districts, season 1970-71, 892  
 used, 1966-67 to 1970-71, 891  
 dried  
 and canned, Export Price Index, 1961-62 to  
 1970-71, 849  
 production  
 1888-89 to 1970-71, 1088-9  
 1966-67 to 1970-71, 892  
 exported, State of final shipment, 1969-70, 272  
 for canning, 134  
 growers  
 number, 1966-67 to 1970-71, 891  
 Statistical Districts, season 1970-71, 892  
 growing, 1966-67 to 1970-71, 891  
 holdings, number, area, etc., 1968-69, 882  
 mechanical harvesting, 140  
 production  
 local value, 1966-67 to 1970-71, 908  
 1900-01 to 1970-71, 1088-9  
 railway traffic, 1966-67 to 1970-71, 1052  
 trees, plants, etc.  
 in orchards and gardens, 1967-68 and 1970-71,  
 891  
 Statistical Districts, season 1970-71, 892  
 value, gross, 1966-67 to 1970-71, 891  
 Fry, William Gordon, M.L.C., 771  
 Fuel, 219-28  
 electricity and brown coal, 220-4  
 gas, 224-8  
*Fuel and Power Act* 1965, 167  
 Fuller, Benjamin, theatre owner and entrepreneur,  
 531  
 Fuller, Sir John Michael Fleetwood, Governor, 1150  
 Fullers Theatres Ltd, Australian Broadcasting  
 Company, 586  
 Funeral *see also* Cremation, Death, Deaths  
 benefits  
 Commonwealth, 575

- Funeral—*continued*  
 benefits—*continued*  
 expenditure, National Welfare Fund, 1967–68  
 to 1971–72, 948  
 friendly societies, amounts disbursed, 1966–67  
 to 1969–70, 965  
 funds, friendly societies, 1966–67 to 1969–70, 963  
 receipts and expenditure, 1966–67 to 1969–70, 964  
*Funny Picture Book*, E. W. Cole, 605  
 Furniture  
 and floor coverings, retail sales, value, 1966–67 to  
 1970–71, 1037  
 imports and exports, 1969–70 and 1970–71, 1040  
 Furphy, J. and Sons, foundry, 325  
 Furphy, Joseph, (Tom Collins), novelist, 430, 519, 520  
 Fyans, Captain Foster, Police Magistrate, Geelong,  
 173  
 Fyansford  
 cement works, 328  
 paper mill, 326
- G.T.V., television station, 590  
 Gabo Island  
 meteorological station, 673  
 shipping destroyed during Second World War, 460  
 Gabriel C. J. and Macpherson, J. H., *Marine molluscs*  
*of Victoria*, 701  
 Galbally, John William, M.L.C., 771  
 Galilee, Melbourne Cup winner, 1152  
 Galli-Curci, singer, 526  
 Gallipoli, Australian Imperial Forces, 459  
 Gamenya, wheat, acreage sown, etc., 1968–69 to  
 1970–71, 888  
*Gannett*, Harbor Trust steamer, 457  
 Gaols *see* Prisons  
 Garden, John, irrigator, 116  
 Gardens *see* Botanic gardens  
 Gardiner, John, settler, 173–4  
 Gardinol Chemical Co., detergent research, 719–20  
 Garfish, catch, 1966–67 to 1970–71, 905  
 Garner, Arthur, partnership with J. C. Williamson  
 and George Musgrove, 528  
 Garnishee cases, Magistrates' Courts, 1967–1971, 968  
 Garrett, Raymond William  
 M.L.C., 770  
 President, Legislative Council, 771  
 Garrick, H. J., M.H.R., 783  
 Garrwonen *see* Finn, Edmund  
 Gas, 224–8 *see also* Natural gas and crude oil  
 and Fuel Corporation of Victoria, 227  
 Bendigo Gas Company, The, acquired, 225  
 Central Brighton and Moorabbin Gas Company  
 acquired, 225  
 established, 433, 450, 1141  
 expenditure, 1966–67 to 1970–71, 1003  
 gas made and purchased, 1968–69 to 1971–72, 916  
 Gas Supply Co. Ltd., The, acquired, 169  
 Geelong Gas Company, The, acquired, 169  
 history, 226  
 local government gas supplies, 208  
 mains, consumers, and sales, 1971–72, 916  
 natural gas, purchase and distribution, 168–70  
 research, 696–7  
 Victorian Pipelines Commission absorbed, 167  
 distribution, 228  
 history, 224–7  
 local government, 208  
 manufacture, 227–8  
 research, 696–7  
 statistics, 916  
 Supply Co. Ltd, The, 169, 225, 226, 228  
 purchase by Gas and Fuel Corporation of  
 Victoria, 169  
 supply started, 1134  
 utilisation, 228  
 Gases, industrial, production, 720–1  
 Gastro-intestinal diseases, history, cause of death, 53–4  
 Gatcliff collection of mollusca, National Museum  
 of Victoria, 505  
 Gatum Gatum, Melbourne Cup winner, 1152  
 Gauguin, Paul, artist, 511  
 Gaulus, Melbourne Cup winner, 1152  
 Gawler, Oswald, Government Statist, 7–8  
*Gazette* (Sydney), founded by George Cavanagh, 596  
 Geelong  
 agricultural estates, 425  
 airfield, 258  
 and  
 Melbourne Railway Co., 245  
 Western District Fire and Marine Insurance Co.,  
 346  
 area, 30 June 1971, 801
- Geelong—*continued*  
 Barwon River, Head of the River rowing contests,  
 616  
 Botanic Gardens, 109  
 boundaries first defined, 1133  
 cement manufacture, 328  
 City, population summary, censuses 1966 and  
 1971, 796, 801  
 climatic elements, means, 765  
 College, founded, 485  
 development, 184  
 gaol, used by Defence Department, 573  
 Gas Company, The, 169, 225, 227  
 Grammar School, founded, 485  
 Harbor Trust, 236  
 established, 1137  
 revenue and expenditure, 1967–1971, 1048  
 hospital built, 557  
 incorporated as a town, 445, 452, 1133  
 Industrial  
 Exhibition, 1887, 326  
 School, 568  
 insurance companies, established, 346  
 manufacturing plants established between wars, 328  
 —Melbourne, shipping, 232  
 Municipal Waterworks Trust, 219  
 Myer, Sidney, 368  
 newspapers, 596, 597, 600  
 police established, 470  
 port  
 cargoes discharged and shipped, 1969–70 and  
 1970–71, 1045  
 customs and excise revenue collected, 1970–71,  
 1042  
 vessels entered, 1969–70 and 1970–71, 1044  
 post office established, 259  
 proclaimed a city, 1137  
 radio station, call sign, 917  
 railway to Melbourne commenced, 1134  
 retail trade, growth, 366  
 Royal Australian Naval College, 459  
 settlement, 172–3  
 sewerage, statistics, 1970, 869  
 Statistical District  
 area, 30 June 1971, 804  
 population, censuses 1966 and 1971, 804  
 Teachers College, established, 492  
 telephone exchange, first automatic, 260, 1138  
 urban area, population summary, censuses 1966  
 and 1971, 796, 798  
 visit by J. C. Williamson and Maggie Moore, 528  
 Volunteer Rifle Corps, 456  
 water supply, 216, 217  
 Waterworks and Sewerage Trust, 216, 217, 219  
 administering Act of Parliament, 864  
 West  
 area, 30 June, 1971, 801  
 City, population summary, censuses 1966 and  
 1971, 796, 801  
 wholesale trade, growth, 366  
 wool auctions, 309–10  
 effect on trade, 367–8  
 woollen mills, 324, 1135  
 4th King's Own Regiment, stationed, 455  
*Geelong Advertiser*  
 circulation, 598  
 James Harrison, 597  
 praised by La Trobe, 597  
*Geelong Municipal Water Act* 1907, 219  
 Genée, Adeline, ballet dancer, 530  
 General  
 insurance *see* Insurance, fire, marine, and general  
 insurance  
 Motors-Holden's Pty Ltd  
 Fishermens Bend factory, 329  
 motor vehicle manufacture, 332  
 research and development, 734  
 Post Office, 258–60  
 "General Assembly of Australia", 440  
 Genetics  
 and human variation, research, La Trobe  
 University, 650  
 research, Faculty of Science, University of  
 Melbourne, 643  
 Genoa flooded, 1971, 1143  
 Geographical  
 features  
 area of States and Territories, 762  
 rivers, stream flows, 763  
 Society of Victoria, founded, 631  
 Geography  
 climate, 70–3

- Geography—*continued*  
 conservation of natural resources, 63–70  
 natural  
   disasters, 81–4  
   resources, conservation, 63–70  
   vegetation at time of discovery, 73–9  
 wildlife, 79–81
- Geological  
 Museum, 153  
 research, Faculty of Science, University of Melbourne, 643  
 Survey of Victoria, 1852–1970, 152–5  
   beginnings and early work, 152–3  
   coal, 153  
   drilling, 154  
   gold mining, decline, 154  
   mapping, 153, 154  
   petroleum industry, help to, 155  
   Selwyn, A. R. C., 152, 629  
   Smyth, R. Brough, 629
- George V  
 accession, 1137  
 death, 1139  
 Memorial Garden, Wangaratta, 110
- George VI  
 accession, 1139  
 death, 1141
- Georgian House, publishers, 605
- Georgiana's Journal*, edited by Hugh McCrae, 523
- Germans  
 censuses 1966 and 1971, 791  
 naturalised, 1967–1971, 807
- Getting of wisdom*, *The*, Henry Handel Richardson (Ethel Florence Lindesay Richardson), 520
- Gibbons, W. S., Victorian Institute for the Advancement of Science, 630
- Giesecking, Walter, pianist, 526
- Gifford, Helen, composer, 527
- Gift Duty Act* 1971, 998
- Gilbert, C. Web, Yarra Sculptors Society, 513
- Gilbert Chandler Institute of Dairy Technology, 148
- Gill, Samuel Thomas, artist, 508
- Gillard, Oliver James, judge, 769
- Gillbee, William, Listerian operation performed, 536
- Gillen, F. J., collection donated to National Museum of Victoria, 505
- Gillies, Duncan, politician, 430  
 Premier, 1151
- Gjiruth, Professor J. A., Veterinary School, University of Melbourne, 628
- Ginifer, John Joseph, M.L.A., 771
- Giornale Italiano*, newspaper, 603
- Gipps, Sir George, Governor of New South Wales  
 gold discovery suppressed, 155  
 land tenure, unfair to small land holders, 94–5  
 Portland proclaimed a town, 172  
 reluctance to enforce use of theodolites, 89  
 sea pilots licence first granted, 239
- Gippsland  
 Basin, oil exploration, 165  
 Cement and Lime Co., 328  
 development, 186  
 District, rainfall, 1962–1971, 766  
 exploration, 88, 186, 1132, 1133  
 floods, 1971, 1143  
 gas and oil fields, 167–8  
 Gas Processing and Crude Oil Stabilisation Plant, L. Longford, 167–8  
 goldfields, geological survey, 153  
 Institute of Advanced Education, 502  
 enrolments, 1970 and 1971, 934  
 natural gas  
   and oil reserves, 165  
   discovered, 1142  
 oilfields, type of crude oil produced, 171  
 south-west, geological survey, 152  
 Statistical  
   District  
     crops, yield, season 1970–71, 886  
     ensilage  
       made, 1970–71, 889  
       stocks, 31 March 1971, 889  
     fruit trees, plants, etc., season 1970–71, 892  
     growers of certain crops, season 1970–71, 885  
     lambling  
       forecast, etc., 1971, 899  
       season 1970–71, 898  
     land occupied, area, etc., season 1970–71, 881  
     livestock, distribution, 31 March 1971, 894  
     map, 880
- Gippsland—*continued*  
 Statistical—*continued*  
 District—*continued*  
   pigs and pig keepers, 31 March 1971, 895  
   sheep and lambs  
     breeds, 31 March 1971, 896–7  
     shorn, etc., season 1970–71, 899  
     31 March 1971, 898  
 Division  
   area  
     by municipality, 30 June 1971, 804  
     of State, percentage, census 1971, 795  
     30 June 1971, 804  
   manufacturing establishments, 1968–69, 911  
   map, inside back cover  
   population  
     by municipality, censuses 1966 and 1971, 804  
     census 1971, 795  
     censuses  
       1947–1971, 787  
       1966 and 1971, 804  
     intercensal changes, 1961–1971, 787
- Gippsland*, ship, 233
- Gippslander*, train, 250
- Girton College, Bendigo, 486
- Gisborne  
 newspaper, 601  
 Shire  
   area, 30 June 1971, 801  
   population, censuses 1966 and 1971, 801
- Gladman, Frederick John, principal St James' and St Paul's Training Institution, 491
- Gladstone*, H.M.A.S., converted to pilot ship, 240
- Glass industry, research and development, 714–5
- Gleeson, Stanley Edmond, M.L.C., 771
- Glen Huntley*, ship, typhus victims, 552
- Glennaladale  
 Mitchell River flow, 763  
 National Park, expenditure, 1966–67 to 1970–71, 919
- Glencoe, Melbourne Cup winner, 1152
- Glengel  
 River  
   flow, annual, 763  
   relationship to boundary of South Australia, 89  
 Shire  
   area, 30 June 1971, 801  
   population, censuses 1966 and 1971, 801
- Glenhunting Rehabilitation Centre, 550
- Glenloch, Melbourne Cup winner, 1152
- Glennaggie  
 Macalister River flow, 763  
 Reservoir, 118
- Glomar III*, oil drilling rig, 164–5
- Gobbi, Tito, opera singer, 531
- Goble, Dorothy Ada, M.L.A., 771
- Goitre, treatment, 535
- Golconda*, Vance Palmer, 521
- Gold, 155–62 *see also* Goldfields. Mineral technology  
 assayed content of minerals, 1968–69 to 1970–71, 906  
 bullion production, quantity and value, 1968–69 to 1970–71, 907  
 buying, Mines Department, 161  
 diggings, lithographs by Samuel Thomas Gill, 508  
 discoveries, 155–7, 1134  
 effect on  
   banking, 338  
   building, 198–9  
   education system, 477  
   employment, 391–3, 427  
   manufacturing industry, 322  
   pastoral industry, 307  
   retail and wholesale trade, 366–7  
   rural development, 104  
   wholesale and retail trade, 366–7  
 general effect, 753–4  
 increase in shipping, 230  
 lawyers attracted, 473  
 Export Price Index, 1961–62 to 1970–71, 849  
 exports, control, 341–2  
 miners  
   Eureka Stockade, 157, 455–6, 1134  
   newspapers, 600  
 mining  
   accidents, 162  
   decline, 154  
   social effects, 427  
   Eureka Stockade, 157, 455–6, 1134  
   legislation, 160–1  
   licences, 157, 160  
   methods and techniques, 158–9

- Gold—*continued*  
 mining—*continued*  
 miners  
 grievances, 157  
 Right, 157  
 safety, 162  
 sharebroking firms, increase, 347-8  
 siting of towns, 174  
 production, 156-7, 162  
 quantity and value, 1851 to 1970-71, 1093-4  
 quantities yielded, 156-7, 162  
 rush begins, 1134  
 rushes  
 effect on  
 architecture, 193  
 border survey, 90  
 immigration, 32-3  
 mail volume, 259  
 Melbourne, 178  
 rural lands, 427  
 society, 426  
 transport, 141, 373-4  
 government control, 426  
 prisons overcrowded, 571  
*Gold Diggers' Advocate*, newspaper, 600  
 Golden  
 Beach field, natural gas and oil reserves, 21 May 1971, 165  
 perch catch, 1966-67 to 1970-71, 905  
*Golden Crown*, ship, 232  
 Goldfields *see also* Gold  
 Consolidated Revenue Fund, revenue. 1852 to 1899-1900, 285  
 Police, 470  
 social order, 427  
 Goldsbrough, Richard, wool auctions, Melbourne, 309, 353-4  
 Goldsbrough Mort and Co. Ltd, merger with Elder Smith and Co. Ltd, 355-6  
 Golf  
 history, 612  
 World (Canada) Cup held in Melbourne, 607-8  
 Good Neighbour  
 Council of Victoria, 581-2, 583, 584  
 Movement, 581  
 Goold, Dr, Bishop, St Francis pro-Cathedral, 1133  
 Goorambat, Broken River flow, 763  
 Gooseberries  
 acres grown  
 Statistical Districts, season 1970-71, 892  
 1967-68 and 1970-71, 891  
 production, 1966-67 to 1970-71, 891  
 Gordon, Adam Lindsay  
 balladist, 522  
 work published by George Robertson, 604  
 Gordon  
 Institute of Technology, 502  
 enrolments, 1970 and 1971, 934  
 research, scientific, 654  
 Shire  
 area, 30 June 1971, 803  
 population, censuses 1966 and 1971, 803  
 Technical College  
 Australian Wool Board grant, 654  
 established, 501  
 Gore, Walter, choreographer, 530  
 Gorman, James Galvin, judge, 769  
 Gorton, J. G.  
 became Prime Minister, 1142  
 M.H.R., 783  
 replaced as Prime Minister, 1143  
*Gossip*, newspaper, 601  
 Goulburn  
 -Campaspe-Loddon Irrigation System, 218  
 -Loddon Irrigation System, area, lands irrigated, water delivered, 1969-70, 878  
 Reservoir, capacity, etc., 877  
 River  
 flow, annual, 763  
 irrigation storages, 877  
 Shire  
 area, 30 June 1971, 803  
 population, censuses 1966 and 1971, 803  
 Valley  
 gold discovered, 157  
 television stations, 918  
 Weir, 117  
 Gould, John, bird skins donated to National Museum of Victoria, 505  
 Government  
 administration, 444-50  
 Consolidated Fund payments, 1966-67 to 1970-71, 991  
 Government—*continued*  
 Aircraft Factory  
 Nomad aircraft ("Project N"), first test flight, 1145  
 production, 681  
 and administration  
 electoral system, State, 780-2  
 judiciary, 769  
 ministries, 768-9  
 Parliament  
 Commonwealth, 782-3  
 State, 770-9  
 Acts passed, 1971, 774-9  
 statistics, 768-83  
 bodies, wage and salary earners in civilian employment, 1966-1972, 847  
 borrowing, co-ordination, 291-5  
 Botanist appointed, 1134  
 expenditure, pensions and gratuities, 1966-67 to 1970-71, 1002  
 financial activity, Public Authorities'  
 Capital Account, 1966-67 to 1970-71, 988  
 Current Account, 1966-67 to 1970-71, 987  
 grants  
 church schools, 485  
 libraries, 503-4  
 local authorities, 852  
 House, social entertainment, 620  
 housing activities, statistics, 983-6  
 instrumentalities, 433 *see also individual titles*  
 local *see* Local government, Municipal, Municipalities  
 parliamentary, cost, 1967-68 to 1971-72, 773  
 Printer, first office holders, 604  
 schools *see* Schools, government  
 Statist, duties, 6-7  
 Statist's Office *see also* Commonwealth Bureau of Census and Statistics  
 history since 1836, 3-10  
*Government Gazette*  
 first issued in Port Phillip District, 1133  
 pilot vacancies advertised, 239  
*Government Statist Act* 1908, 7  
*Government Statist's Report on the Vital Statistics of Melbourne and Suburbs*, 45  
 Governor, 768  
 in Council, powers regarding municipalities, 454  
 Governors, 1149-50  
 Gowans, Urban Gregory, judge, 769  
 Graduate House, 495  
 Grafter, The, Melbourne Cup winner, 1152  
 Grain  
 crops *see also individual crops*  
 cultivated area, Statistical Districts, season 1970-71, 886  
 growers, Statistical Districts, season 1970-71, 885  
 drills on rural holdings, 1967-1971, 883  
 Elevators Board  
 Geelong terminal, 236  
 revenue, expenditure, etc., 1967-1971, 887  
 railway traffic, 1966-67 to 1970-71, 1052  
 Grainger, Percy, 526, 527  
 Gramophone, cultural and recreational influence, 622  
 Grand Flaneur, Melbourne Cup winner, 1152  
 Grand Hotel (Hotel Windsor), completion, 180  
 Grant, J. M., Land Act of 1865, 97, 427  
 Grant, James, coastal exploration, 86, 1131  
 route map, facing 20  
 Grant, county and council, 452  
 Granter, Frederick James, M.L.C., 770  
 Granya area, geological survey, 153  
 Grapefruit  
 production, 1966-67 to 1970-71, 891  
 trees  
 Statistical Districts, season 1970-71, 892  
 1967-68 and 1970-71, 891  
 Grapes, 134  
 area, yield, and gross value, 1970-71, 885  
 for  
 drying, production, per cent, Australia, season 1969-70, 268  
 table, production, by States, 1970-71, 879  
 gathered, seasons 1966-67 to 1970-71, 892  
 Grass and clover for seed  
 area  
 Australia, season 1969-70, 267  
 Statistical Districts, season 1970-71, 886  
 yield and gross value, 1970-71, 884  
 growers, Statistical Districts, season 1970-71, 885  
 yield, Statistical Districts, season 1970-71, 886  
 Grasslands and grassy woodlands at time of discovery, 74

- Gratuities, government expenditure, 1966-67 to 1970-71, 1002  
 Gravel production, quantity and value, 1968-69 to 1970-71, 907  
 Gray, Dr Andrew, Melbourne Institution for Diseases of the Eye and Ear, 557-8  
 Gray, Ian, judge, 769  
 Greater Union Theatres Ltd, Australian Broadcasting Company, 586  
 Greece, Australian Imperial Forces, 460  
 Greek persons  
   censuses 1966 and 1971, 791  
   naturalised, 1967-1971, 807  
 Green, H. M., *History of Australian literature*, 519  
 Green  
   fodder *see* Fodder  
   Gully fossils, 23-4, 701  
 Greens Lake, capacity, etc., 877  
 Greenvale Reservoir, 212, 1145  
 Greenwood, Ivor John, Senator, 783  
 Gregan McMahon Players, formed, 529  
 Gregory, A. C., expedition from Perth to Northern Territory, 630  
 Gregory, John Walter, F.R.S., 632  
 Grenville Shire  
   area, 30 June 1971, 801  
   population, censuses 1966 and 1971, 796, 801  
 Grey, Earl  
   co-operation between colonies, 440  
   elected to New South Wales Executive Council, 426, 753  
 Greyhound racing, 620  
   history, 612  
 Griffin, Walter Burley, architect, 195  
 Griffith, Sir Samuel, comment on mining law, 160  
 Griffiths, Captain, settler, Port Fairy, 103  
 Grimes, Charles, coastal exploration, 86, 1131  
 Grimwade, Frederick, partnership with Alfred Felton, 324, 714, 721  
 Grimwade, Frederick Sheppard, M.L.C., 771  
 Grimwade, Sir Russell  
   Australian Oxygen Company, 720  
   research at Felton Grimwade laboratories, 721  
 Grimwade, Felton, and Co., eucalyptus oil, 721  
 Groceries  
   prices, average retail, 1949-1971, 848  
   retail sales, value, 1966-67 to 1970-71, 1037  
 Grocers, liquor licences, tax payments, 1966-67 to 1970-71, 995  
 Gross, Kenneth Samuel, M.L.C., 770  
 Groundwater, geological survey, 154  
 Growers of certain crops, season 1970-71, 885  
   *see also individual crops*  
 Gruy, H. J., and Associates, report on natural gas reserves, 169  
 Guarantees, stamp duty rates at 1 January 1972, 998  
 Guilfoyle, Margaret Georgina Constance, Senator, 783  
 Guilfoyle, W. J., botanic gardens, 109, 110, 621  
*Gully and other verses*, *The*, Furnley Maurice (Frank Wilmot), 523  
*Gunner*, *The*, monument, 513  
 Gunters measuring chain, use, 89, 691  
 Guy, Athol George, M.L.A., 772  
 Gymnastics, 619  
 Gynaecology, 540-1  
 Gypsum  
   plaster board, manufacture, 333  
   production, quantity and value, 1968-69 to 1970-71, 907  
   research, 715-6  
 Gypsy Moth aircraft production, 330  
 H. J. Heinz Co. Australia Ltd, research and development, 743-4  
 H.S.V., television station, 590  
 H.V. McKay Planetarium, Science Museum of Victoria, 705  
 Haileybury College, 486  
 Haines, William Clark, Premier, 1150  
 Halberd, wheat, acreage sown, etc., 1968-69 to 1970-71, 888  
 Half Moon Bay, breakwater, 459-60  
 Halford, Professor G. B.  
   Medical School, University of Melbourne, 494, 561, 639  
   snake venom experiments, 628  
 Halibut field, natural gas and oil, 165, 168  
 Hall, G. W. L. Marshall, 525  
 Hall, L. Bernard, artist, 511  
 Half Mark, Melbourne Cup winner, 1152  
 Halliday, oil well drilling, 164  
 Ham, Thomas  
   postage stamps, 259  
   publisher, 604  
 Hamer, D. J., M.H.R., 783  
 Hamer, Rupert James  
   elected Deputy Premier of Victoria, 1144  
   M.L.A., 772  
   M.L.C., 770  
   Premier  
     appointed, 1148  
     term of office, 768, 1151  
 Hamilton, Guy, *Sydney Cove*, 85  
 Hamilton, Harold Murray, M.L.C., 770  
 Hamilton  
   Airport, passenger movements, 1971, 1063  
   area, 30 June 1971, 801  
   climatic elements, means, 764  
   College, 486  
   Frost Engineering Co. Ltd, 331  
   newspaper, 600  
   ordnance factory, 331  
   population, censuses 1966 and 1971, 798, 801  
   radio station, call sign, 917  
   siting, 174  
   *Hamilton Spectator*, newspaper, 600  
 Hammond, Joan, opera singer, 531  
 Hammond, Stanley, *Chadstone sculpture*, 515  
 Hampden Shire  
   area, 30 June 1971, 801  
   population, censuses 1966 and 1971, 801  
 Hampton Park, population, censuses 1966 and 1971, 798  
 Hancock, W. K., *Australia*, 523  
 Handball, 619  
 Handel Festival, music, 525  
 Handicapped children's benefits, expenditure, National Welfare Fund, 1967-68 to 1971-72, 948  
 Hannan, George Conrad, Senator, 783  
 Hansen, Dr, fermentation research, 742  
*Hansom cab*, *The mystery of a*, Fergus Hume, 180  
 Harbor Trusts *see individual titles*  
 Harbours  
   Consolidated Revenue Fund  
     expenditure, 1901-2 to 1969-70, 290  
     revenue  
       1852 to 1899-1900, 285  
       1901-02 to 1969-70, 289  
   expenditure  
     State net loan, aggregate to 30 June 1969, 282  
     1966-67 to 1970-71, 1003  
   local government responsibilities, 208  
   rivers, lights, Consolidated Fund payments, 1966-67 to 1970-71, 991  
   receipts, 1966-67 to 1970-71, 990  
 Hardware, domestic, etc., retail sales, value, 1966-67 to 1970-71, 1037  
 Hardwood, output, 1966-67 to 1970-71, 902  
 Hardy, Frank, novelist, 522  
 Hargrave, Lawrence  
   aeronautical research, 678  
   chairman, Aerial League of Australia, 253-4  
   Hargraves, Edward, gold discovery, 155  
   Harriot, Melbourne Cup winner, 1152  
 Harrierville  
   area, geological survey, 153  
   gold discovered, 156  
 Harris, Clive William, judge, 769  
 Harrison, Daniel, book publisher and bookshop proprietor, 604  
 Harrison, H. C. A., Australian Rules Football, acceptance secured, 609  
 Harrison, J. E., subterranean clover research, 126  
 Harrison, James  
   *Geelong Advertiser*, 597  
   meat refrigeration system invented, 125, 597  
 Hart, Fritz, free open air concerts, 526  
 Harvester Judgment, 402, 1137  
 Harvesters  
   on rural holdings, 1967-1971, 883  
   used, 137-8  
 Hastings  
   population, censuses 1966 and 1971, 798  
   Shire  
     area, 30 June 1971, 800  
     population, censuses 1966 and 1971, 800  
   40 Pounder Battery Victoria Rangers, formed, 457  
 Hattah Lakes National Park, 1966-67 to 1970-71, 919  
 Hauser, Vernon Thomas, M.L.C., 770  
 Hawthorn  
   area, 30 June 1971, 800



- Hawthorn—*continued*  
 library service, 503  
 municipality proclaimed, 179  
 newspaper, 601  
 population, censuses 1966 and 1971, 797, 800  
 Press, publishers, 605
- Hay  
 and straw, production, value, local, 1966–67 to 1970–71, 908  
 area  
   by States, 1970–71, 879  
   sown, 1970–71, 889  
   Statistical Districts, season 1970–71, 886  
   yield, and gross value, 1970–71, 884  
   1841 to 1970–71, 1086–7  
 production  
   by States, 1970–71, 879  
   per cent, Australia, season 1969–70, 268  
   1841 to 1970–71, 1086–7  
   1970–71, 889  
 stocks, Statistical Districts, 31 March 1971, 889  
 yield  
   average per acre  
     1841 to 1970–71, 1086–7  
     1970–71, 889  
   Statistical Districts, season 1970–71, 886
- Hayes, Geoffrey Phillip, M.L.A., 771
- Haymarket Theatre, 528
- Hayter, Henry Heylyn, 4–6  
 censuses, organisation, 5–6  
 Government Statist, history, 4–5  
*Victorian Year Book* 1873, 5, 753
- Hazelwood Power Station, electricity generated, power source, etc., 1971–72, 915
- Head of the River, rowing contests, Barwon River, Geelong, 616
- Headers, strippers, and harvesters on rural holdings, 1967–1971, 883
- Heales, Richard, Premier, 1150
- Healesville  
 area, 30 June 1971, 800  
 holiday resort, 621  
 population, censuses 1966 and 1971, 798, 800  
 Shire  
   area, 30 June 1971, 804  
   population, censuses 1966 and 1971, 804
- Health, 544–59  
 Act, first passed, 1134  
 and medical research statistics, 937–48  
 Anti-Cancer Council of Victoria, 947  
 Cancer Institute, 947  
 Health Department, 937–40  
 Hospitals  
   and Charities Commission, 942  
   public, and charitable institutions, 942–4  
   Lord Mayor's Fund, 948  
   Mental Health Authority, 941  
 Victorian  
   Bush Nursing Association, 946  
   Nursing Council, 945  
 buildings  
   commenced, value when completed, 1967–68 to 1970–71, 980  
   completed, value, 1967–68 to 1971–72, 981  
   new, work done, value, 1967–68 to 1971–72, 981  
 bush nursing, 555–6  
 cancer, 553–4  
 Commonwealth specific purpose payments, 1959–60 and 1969–70, 306  
 Consolidated Revenue Fund, expenditure  
   1852 to 1899–1900, 286  
   1901–02 to 1969–70, 290  
 Department of *see* Department of Health  
 hospitals, 557–8  
 local government responsibilities, 208–9  
 maternal and child welfare, 547–8  
 mental, 548–51  
 Minister, first appointed, 448  
 nursing, 554–6  
   bush, 555–6  
 paramedical developments, 556–7  
 public, and recreation, Consolidated Fund payments, 1966–67 to 1970–71, 991  
 services, 532–64  
   Commonwealth, 559–61  
   dentistry, 543–4  
   development, 435  
   expenditure  
   National Welfare Fund, 1967–68 to 1971–72, 948  
   per capita, 1969–70, 280  
   health, 544–59
- Health—*continued*  
 services—*continued*  
   medical education, 561–3  
   medicine, development, 532–43  
   pharmacy, 563–4  
   State expenditure, 280–1  
   tuberculosis, 551–2  
*Health Act* 1931, 552  
*Health (Amendment) Act* 1954, 547  
 Heard Island, research station established, 680, 1140
- Hearn, W. E.  
 law code, 461  
 Professor of Modern History, University of Melbourne, 494  
 work published by George Robertson, 604
- Heart  
 disease  
   cause of death, 57–9, 818–20  
   research, 534–5  
   National Heart Foundation of Australia, 655–6  
   surgery, 537
- Heath, Sir Frank, Council for Scientific and Industrial Research established, 657
- Heathcote  
 geological survey, 154  
 gold discovered, 157  
 goldfields, geological survey, 153  
 hospital built, 557  
 newspaper, 600  
 population, censuses 1966 and 1971, 798
- Hecla  
 Electrics Pty Ltd, research and development, 734  
 Rowe Ltd, 734
- Hegarty's Baths, St. Kilda, 614
- Heidelberg  
 agricultural estates, 425  
 area, 30 June 1971, 800  
 Arthur Rylah Institute for Environmental Research, 694  
 Austin Hospital, 558  
 population, censuses 1966 and 1971, 797, 800  
 Repatriation General Hospital, 578  
 Road Trust, established, 451  
 School, artists, 510  
 West, immigration hostel, 581
- Heifetz, Jasha, violinist, 526
- Heinze, Professor (later Sir) Bernard, 525  
 children's concerts, 526
- Helping children to use television wisely*, Australian Broadcasting Control Board, 592
- Helpmann, Sir Robert, Australian Ballet Foundation, 530
- Hematite Petroleum Pty Ltd  
 natural gas and crude oil exploration, 164  
 subsidiary, B.H.P. Co. Ltd, 335
- Hemiglypta*, oil tanker, 170
- Hen eggs set, 1966–67 to 1970–71, 900
- Henry Francis and Co., pharmacists, 563
- Hens and stags slaughtered, 1966–67 to 1970–71, 901
- Henty, Edward  
 Portland Bay settlement, 103, 172, 232, 309, 383, 391, 425, 1132  
 potatoes, first crop, 132  
 "tonguers" strike suppressed, 403
- Henty, Stephen, coastal shipping, *Edina*, 233
- Henty family, Portland Botanic Gardens, 110
- Hentys, The*, Lady Marnie Bassett, 524
- Hepatitis, incidence, 535
- Her Majesty's Theatre, 528
- Herald*, H.M.S., Bass Strait survey, 230
- Herald*, newspaper  
 art exhibition, 511  
 Chair of Fine Arts, University of Melbourne, 518  
 circulation, 601–3  
 sold by David Syme, 599
- Herald and Weekly Times* Ltd  
 strengthened by Keith (later Sir Keith) Murdoch, 602  
 3DB Melbourne, acquired, 586
- Herman, Dr Hyman, Chairman, Brown Coal Advisory Committee, 222, 706–7
- Herman, Sali, artist, 508
- Herman Central Scientific Laboratory, Richmond, State Electricity Commission of Victoria, 707
- Heron, wheat, acreage sown, etc., 1968–69 to 1970–71, 888
- Herring, Sir Edmund, succeeded as Lieutenant-Governor of Victoria, 1148
- Hetherington, Dr Charles, "Report on the Orderly Development of Petroleum in Victoria, Australia", 166

- Hewitt, Eric Edgar, judge, 769  
Hewson, H. A., M.H.R., 783  
*Hexagon, The*, Hal Porter, 522  
Heyfield  
  population, censuses 1966 and 1971, 798  
  water supply, 218  
Heytesbury Shire  
  area, 30 June 1971, 801  
  population, censuses 1966 and 1971, 801  
Heywood  
  population, censuses 1966 and 1971, 798  
  Rocla Pipe factory, 718  
Hi Jinx, Melbourne Cup winner, 1152  
Hicks, Lieutenant, 85  
Hider, Charles Allen Moir, M.L.C., 771  
Hides  
  etc., export price index, 1961-62 to 1970-71, 849  
  skins, etc., imports and exports, value, 1969-70  
  and 1970-71, 1039  
Higgins, Henry Bourne, judge, 433  
  University Extension Board, 506  
High  
  Court of Australia  
  decision, cited in England, 464  
  established, 466, 1137  
  legal principles of House of Lords followed, 462  
  schools *see* Education, School, Schools  
Higher  
  courts *see* Courts, higher  
  elementary schools *see* Education, School, Schools  
  School Certificate Examination  
  passes, 1970-1971, 1103  
  replaces Matriculation examination, 488  
  1967-1971, entries and passes, 927  
Highways *see also* Roads  
  Country Roads Board expenditure, 1966-67 to  
  1970-71, 863  
  length, 1971, 861  
  Melbourne and Metropolitan Board of Works,  
  213-4  
Higinbotham, George, politician, 433  
Hills, Edwin Sherbon, F.R.S., 634  
Hiraji, Melbourne Cup winner, 1152  
Hire purchase *see also* Instalment credit, Instalment  
  purchase  
  companies, short-term money market, 1967-1971,  
  1032  
  instalment credit for retail sales, balances  
  outstanding, 1967-1971, 1036  
  operations, retail, agreements made, goods  
  purchased, etc., 1966-67 to 1970-71, 1036  
  wholesale, finance companies  
  amount financed, 1966-67 to 1970-71, 1034  
  balances outstanding, 1967-1971, 1034  
*Hire Purchase Act* 1959, 357  
*His natural life*, Marcus Clarke, 519-20  
  published by George Robertson, 604  
Hiscock, Thomas, gold discovery, 156  
Historical statistics *see* Statistics, historical  
*History of Australian literature*, H. M. Green, 519  
*Hlas Domova*, newspaper, 603  
Hobart  
  census populations, 1947-1971, 786  
  mechanics institute, formed, 489  
  Town Grammar School, opened, 484  
Hobson Park, Traralgon, 550  
Hobsons Bay  
  coastal batteries, 456  
  Railway Co., 251  
Hockey, 616  
Hodde, Robert  
  country towns planned, 174  
  Geelong, instructions for surveying, 173  
  Melbourne planned, 88-9, 173, 175-6, 1132  
  railway plans, 245  
Hoffman Kiln, brick making, 200  
Hogan, Edmond John, Premier, 1151  
Holding, Allan Clyde, M.L.A., 772  
Holdings *see* Rural holdings  
Hollway, Thomas Tuke, Premier, term of office, 768,  
  1151  
Holt, Bland, theatrical entrepreneur, 528  
Holt, H. E., Prime Minister, 1142  
Holt, John, bequest establishing St Vincent's School  
  of Medical Research, 654  
Holten, R. McN., M.H.R., 783  
Holy Ghost Fathers, school founded in Ballarat, 486  
Holyman Airways Pty Ltd, 256, 377  
Home  
  Finance Trust, established, 360  
  Home—*continued*  
  Savings  
  Grant Scheme, applications approved, grants,  
  etc., 984  
  grants, expenditure, National Welfare Fund,  
  1967-68 to 1971-72, 948  
*Home Nursing Subsidy Act* 1956, 556  
Homicide, deaths, 1967-1971, 822  
Homoeopathic Hospital (later Prince Henry's  
  Hospital), 558, 1135  
Honey  
  exported, State of final shipment, 1969-70, 272  
  industry, statistics, 902  
  production, 1967-1971, 902  
  value of production  
  gross, 1967-1971, 902  
  local, 1966-67 to 1970-71, 909  
Hoobin, Jack, cyclist, 614  
Hood and Co., pharmacists, 563  
Hope, John Adrian Louis, Governor and  
  Commander-in-Chief, 1149  
Hopetoun, water supply, 218  
Hopkins River  
  discovery, 103  
  flow, annual, 763  
Hopman, Harry, tennis coach, 611  
Hops, area, yield, gross value, 1970-71, 884  
Hormones, study, 535  
Horne, R. H., *Orion*, 604  
Horse racing *see* Racing, horse  
Horses, numbers, 1861-1971, 893  
Horsham  
  area, 30 June 1971, 802  
  climatic elements, means, 764  
  development, 186  
  new township, 428  
  ordnance factory, 331  
  population, censuses 1966 and 1971, 798, 802  
  radio station, call sign, 917  
  siting, 174  
  United Gas Co. Ltd, 226  
  water supply, 218  
  Wimmera River flow, 763  
Horticultural  
  crops *see* Crops and individual headings  
  research  
  C.S.I.R.O., 668  
  stations, Department of Agriculture, 690  
Hospital  
  benefit funds  
  friendly societies, 1966-67 to 1969-70, 963  
  receipts and expenditure, 1966-67 to 1969-70,  
  964  
  benefits *see also* Medical benefits, Nursing home  
  benefits, Pharmaceutical benefits  
  expenditure, National Welfare Fund, 1967-68  
  to 1971-72, 948  
  organisations, members, and payments, 1966-67  
  to 1970-71, 951  
  buildings, expenditure, 1966-67 to 1970-71, 1003  
Hospitals *see also* individual hospital titles  
  and  
  Charities  
  Commission  
  ambulance services, 1967-68 to 1970-71, 942  
  Charities Board replaced, 565  
  establishment, 435, 447, 1140  
  hospital control, 567  
  nursing recruiting, 555  
  Fund  
  finance for bush nursing hospitals, 556  
  Tattersall lotteries payments, 1966-67 to  
  1970-71, 995  
  Sunday Appeal and Lord Mayor's Fund,  
  receipts 1966-67 to 1970-71, 948  
  institutions approved as training schools and  
  number of students training, 30 June 1971,  
  945  
  architecture, 196-7  
  bush nursing, receipts and expenditure, 1967-1971,  
  946  
  Consolidated Fund payments, 1966-67 to 1970-71,  
  991  
  development, 557-9  
  government grant to offset deficits, 1144  
  public  
  accommodation and inmates, 1970-71, 943  
  and charitable institutions  
  income and expenditure, sources, 1966-67 to  
  1970-71, 943

- Hospitals—continued**  
 public—*continued*  
 and charitable institutions—*continued*  
 number, 1967–1971, 942  
 receipts and expenditure, 1966–67 to 1970–71, 944  
 number, staff, patients, etc., 1856 to 1970–71, 1106–8  
 teaching, date of establishment and university affiliation, 563  
 tuberculosis, Commonwealth payments, 1966–67 to 1970–71, 989
- Hotels**  
 building commenced, value when completed, 1967–68 to 1971–72, 980  
 buildings completed, value, 1967–68 to 1971–72, 981  
 liquor licences, 1967–1971, 978  
 new work done, value, 1967–68 to 1971–72, 981  
 six p.m. closing introduced, 1138  
 temperance, established, 621  
 trading hours extended, 1142
- Hotham, Captain Sir Charles**  
 Captain-General and Governor-in-Chief of the Colony of Victoria, 1149  
 Lieutenant-Governor, 1149  
 Executive Council, 442
- Hotham, municipality proclaimed, 179**
- Houdini, Harry, first aeroplane flight in Victoria, 254, 1137**
- Houghton, William Vasey, M.L.C., 771**
- Hours of work**  
 average weekly, and average earnings, October 1971, 831  
 eight hour day agreed to in building trades, 1134  
 weekly, industry groups, 830
- House**  
 building materials, wholesale price index, 1967–68 to 1970–71, 849  
 of  
 Lords  
 effect on law, 464  
 legal principles, comment by Sir John Latham, 462  
 Representatives, Victorian members, 783
- Household supplies, Consumer Price Index, Melbourne, 1962–63 to 1971–72, 848**
- Houses and flats**  
 approved, 1967–68 to 1971–72, 980  
 new, commenced, completed, etc.  
 geographical distribution, 1967–68 to 1971–72, 982  
 ownership, 1967–68 to 1971–72, 982  
 building  
 commenced, value when completed, 1967–68 to 1971–72, 980  
 completed, value, 1967–68 to 1971–72, 981  
 new  
 commenced, completed, etc., material of outer walls, 1967–68 to 1971–72, 983  
 completed, number and value, 1945–46 to 1971–72, 1095  
 work done, value, 1967–68 to 1971–72, 981
- Housing see also Building**  
 activities, government, statistics, 983–6  
 Agreements, Commonwealth–State, 205, 1140  
 and building statistics  
 building, 980–3  
 government housing activities, 983–6  
 architecture and style, 192–7  
 building and construction, 197–204  
 Commission, Victorian, 204–6  
 Commonwealth–State Housing Agreements, 205  
 dwelling construction, completed and under contract, geographical distribution, 1966–67 to 1970–71, 986  
 elderly persons, housing, 206  
 established, 202, 360, 433, 1139  
 high density housing, 205–6  
 house  
 building, 202  
 selling, 203  
 revenue and expenditure, 1966–67 to 1970–71, 985  
 Consumer Price Index, Melbourne, 1962–63 to 1971–72, 848  
 expenditure  
 State net loan, aggregate to 30 June 1969, 282  
 1966–67 to 1970–71, 1003  
 finance, 359–61 *see also* Co-operative organisations  
 loans from major institutions, 1967–68 to 1971–72, 986
- Housing—continued**  
 high density, Housing Commission, 205–6  
 Loans Insurance Corporation, established, 361  
 societies, co-operative  
 and savings banks, housing loans, paid, 1967–68 to 1971–72, 986  
 number, members, shares, etc., 1967–1971, 986
- Housing Act 1937, 204**
- Hovell, Captain William Hilton**  
 effects of reports on Geelong area, 172  
 explorer, 77, 87, 1132  
 routes of exploration with Hume, map, facing 86  
 rivers, naming of, 92
- Howard, A. W., pasture legume subterranean clover, 125**
- Howitt, Alfred William, explorer, 75, 77**
- Howqua Shire, ceased, 454**
- Hughes, Robert, composer, 527**
- Hughes, W. M., Advisory Council of Science and Industry established, 657**
- Huguenots, The, opera, 531**
- Humble, Keith, composer, 527**
- Hume, Fergus, The mystery of a hansom cab, 180**
- Hume, Hamilton**  
 effects of reports on Geelong area, 172  
 explorer, 77, 87, 1132  
 routes of exploration with Hovell, map, facing 86  
 rivers, naming of, 92
- Hume**  
 Pipe Co. (Aust.) Ltd, 716  
 Reservoir, 118  
 River, named and re-named, 1132  
 Steel Ltd, 716
- Humes Ltd, pipe manufacture, research, and development, 716–7**
- Humfray, John, Commissioner of Mines, 161**
- Humidity, Melbourne, 767**
- Hungarians naturalised, 1967–1971, 807**
- Hunt, Alan John, M.L.C., 769, 771**
- Hunter, Governor, naming of Bass Strait, 86**
- Huntly Shire**  
 area, 30 June 1971, 803  
 population, censuses 1966 and 1971, 803
- Hutton, Andrew, grazier, 88**  
 route of exploration, map, facing 86
- Hutton, Major General Sir Edward, reorganising Armed Forces, 459**
- Huybers, Jessie Catherine (Tasma), Uncle Piper of Piper's Hill, 521**
- Hydraulic Power Co., 180, 182**
- Hydrocarbon pipeline, licences and permits, 167**
- Hydrological research**  
 Melbourne and Metropolitan Board of Works, 699  
 Soil Conservation Authority, 705
- Hygeia, paddle steamer, 233**
- Hyperplasia of prostate, cause of death, 1971, 818**
- Hypertensive disease, cause of death, 1971, 818**
- I.C.I. see Imperial Chemical Industries**
- Ice**  
 cream manufactured, 1970–71 and 1971–72, 912  
 hockey, 618
- Il Globo*, newspaper, 603**
- Illiteracy, 41–2**  
 1861, 426
- Illustrated Melbourne Family News*, newspaper, 600**
- Illustrated Melbourne News*, newspaper, 600**
- Immigrant welfare, development, 579–83**
- Immigrants**  
 assisted, arrivals, 1947–1971, 806  
 Home, 565  
 hostels, 581  
 language instruction, 582–3
- Immigration, 31–7**  
 before gold rushes, 31–2  
 birth rate rising, decline, 1860–1880, 33–4  
 Chinese, 33  
 Commonwealth initiatives in the 1920s, 35  
 Convict Prevention Act 1852, 33  
 decline due to rising birth rate, 1860–1880, 33–4  
 Department of *see* Department of Immigration  
 depression  
 1890s, 34–5  
 1930s, 36  
 Development and Migration Commission, 35  
 discontinued, 1880s, 580  
 Empire Settlement Act of 1922, 35  
 employment, effect on, 392, 395  
 Federation to 1920, 35  
 females, 1850s and 1860s, 426  
 gold discoveries, effects of, 32–3  
 Immigration Restriction Act 1901, 33, 35  
 net and rate, 1836–1971, 1074–5

- migration—*continued*  
   Office, Victorian Government, 36–7  
   overseas, 1967–1971, 807  
   post-war (from 1945), 36–7  
   restrictions, 33  
   1880–1900, 34–5  
   1930–1945, 36  
*Immigration Restriction Act 1901*, 33, 35  
 Immunology, research, 533–4  
 Imperial  
   Chemical Industries  
     (Australasia) Ltd, 723  
     I.C.I. Australia Ltd  
       research and development, 723–4  
       superannuation, 413  
     I.C.I.A.N.Z. Ltd, 329  
     Ltd of the United Kingdom, 329  
     Conference on Naval Defence, 459  
*Imperial Acts Application Act 1922*, 461  
 Important events  
   brief chronology, 1770–1970, 1131–42  
   1971–1972, 1143–9  
 Imports *see also* Maritime trade  
   and exports, economic importance, 271–8  
   Australian, value and proportion handled at  
     Victorian ports, 1966–67 to 1970–71, 1038  
   classification, 1969–70 and 1970–71, 1039–40  
   countries of origin, 1968–69 to 1970–71, 1041  
   customs and excise duty collected by States, 1043  
   into Victorian ports, recorded value, 1966–67 to  
     1970–71, 1038  
   overseas, importing State, 1969–70, 273  
   revenue collected, Victorian ports, 1970–71, 1042  
   value  
     and customs and excise duty collected, 1970–71,  
       1043  
     by classification, 1969–70 and 1970–71, 1039–40  
 Incest  
   higher court cases, 1969 and 1970, 974  
   persons convicted  
     ages, 1970, 976  
     and result of hearing, 1970, 975  
 Income  
   personal, and savings per capita, 1969–70, 277  
   tax *see* Tax, Taxation  
*Income Tax and Social Services Contribution Act 1961*,  
   345  
*Income Tax Assessment Act 1936–1972*, 1001  
 Indecent  
   assault  
     higher court cases, 1969 and 1970, 974  
     persons convicted  
       ages, 1970, 976  
     and result of hearing, 1970, 975  
   behaviour, Children's Court cases, 1970, 970  
 Indemnities, stamp duty rates at 1 January 1972, 998  
 Independent Chapel, Russell Street, opened, 1133  
*Indeterminate Sentences Act 1907*, 572  
 Indeterminate Sentences Board, responsibilities, 572  
 Index of  
   maps in *Victorian Year Book*, 1961–1972, 1169–70  
   special articles in *Victorian Year Book*, 1961–1972,  
     1162–8  
 Industrial  
   accidents  
     females, 837  
     males, 837–40  
     workers compensation claims, 1957–58 to  
       1970–71, 1079  
   agreements, incidence, 826  
   and Technological Museum (now Science Museum  
     of Victoria), 505, 506  
   development, 704  
   opened, 1135  
   Appeals Court, created, 401  
   arbitration and conciliation, 399–403  
   assurance, 344  
   awards  
     incidence, 826  
     percentage of  
       employees affected, by industry groups,  
       May 1968, 827  
       private and government employees  
       affected, May 1968, 827  
   conditions, statistics, 826–42  
   historical, 1076–9  
   crops, area, yield, and gross value, 1970–71, 884 *see*  
     *also individual headings*  
   determinations, incidence, 826  
   development, 322–36  
   dispute, definition, 400  
   Industrial—*continued*  
     disputes *see also* stoppages *below*  
     industry groups, 1967–1971, 834  
       1913–1971, 1077–8  
     Exhibition, Geelong, 1887, 826  
     law, reform, 406  
     relations, 396–409  
       arbitration and conciliation, 399–403  
       employers' associations, 408–9  
       factory legislation, 396–9  
       stoppages, 403–5  
       trade unions, 405–8  
     research and development facilities *see* Research,  
       industrial  
     Schools, 568  
     shares, Stock Exchange of Melbourne, 1031–2  
     stoppages, 403–5 *see also* disputes *above*, Trade  
       unions  
   *Industrial and Provident Societies Act 1873*, 361  
 Industry  
   economic activity, 268–71  
   groups  
     hours of work, weekly, 830  
   industrial  
     accidents, 1969–70 and 1970–71, 837  
     disputes, 1967–1971, 834  
     percentage of employees affected by awards,  
       May 1968, 827  
     trade unions, 1970–71, 841  
   wage  
     and salary earners in civilian employment,  
       1966–1972, 846–7  
     rates, minimum weekly, 30 June 1972, 829  
     work force in, census 1966, 266  
   loans outstanding from Commonwealth  
     Development Bank, 30 June 1971, 1013  
   manufacturing statistics *see* Manufacturing  
     of the population, 42–3 *see also* Employment  
     census 1971, 793  
   Infant *see also* Children, Children's  
     death rates *see* Death rates, infant  
     deaths *see* Deaths, infant  
     homes, number, 1967–1971, 942  
   Life Protection Provisions, Children's Welfare  
     Act, children involved, 1967–68 to 1971–72,  
       955  
   mortality rate, 1863–1971, 1072–3  
   welfare, 547–8  
   centres  
     capital grants approved and amounts paid for  
       building, 1968–1971, 938  
     government subsidies, 547  
   Division, Department of Public Health,  
     established, 547  
   expenditure, Health Department, 1966–67 to  
     1970–71, 939  
   local government, 209  
   services  
     inaugurated, 435  
     statistics, 1968–1971, 937  
   Infectious Diseases Hospital, Fairfield, 552  
 Influenza  
   cause of death, 1971, 818  
   epidemics, 535  
   virus vaccines, Commonwealth Serum  
     Laboratories, 628  
 Inglewood  
   eucalyptus oil manufacture, 323  
   newspaper, 601  
 Inherent erosion hazard and soil erosion, *map*, 67  
 Innes, V. E., M.H.R., 783  
 Inquest cases, 1966–1970, 973  
 Insignia, wheat  
   acreage sown, etc., 1968–69 to 1970–71, 888  
   introduction, 106, 690  
   49, acreage sown, etc., 1968–69 to 1970–71, 888  
 Instalment  
   credit  
     development, 356–9  
     for retail sales, 1966–67 to 1970–71, 1034–6  
     purchase, stamp duty rates at 1 January 1972, 997  
 Institute of  
   Applied Science, 704  
   Mental Health Research and Postgraduate  
     Training, research, 697–8  
   Science and Industry, established, 657  
   Social Welfare, training courses, 575  
   Training for Community Service, 575  
 Institutes of Advanced Education, scientific research,  
   652–4  
 Instrumentalities  
   founding, 433

- Instrumentalities—*continued*  
 government, housing loan payments, 1967–68 to 1970–71, 986
- Insulin, discovery, 677
- Insurance, 342–7  
 companies  
 contributions to  
 Country Fire Authority, 1966–67 to 1970–71, 871  
 Metropolitan Fire Brigades Board, 1966–67 to 1970–71, 870  
 fire brigade, 346  
 mortgages of real estate lodged for registration, 1968–69 to 1970–71, 1029  
 (other than life), stamp duty rates at 1 January 1972, 997
- fire, marine, and general, 345–7  
 claims, percentage to premium income by class of business, 1966–67 to 1970–71, 1018  
 expenditure by class of business, 1966–67 to 1970–71, 1020  
 revenue  
 and expenditure, 1904–1971, 1118–9  
 by class of business, 1966–67 to 1970–71, 1019  
 housing loans, 361
- Institute of Victoria, established, 343
- life, 342–5 *see also* Superannuation  
 business in existence, 1966–1970, 1017  
 companies  
 housing loan payments, 1967–68 to 1971–72, 986  
 income tax payable, 1971–72, 1001  
 friendly societies, 1966–67 to 1969–70, 963–5  
 policies  
 discontinued or reduced, 1968–1970, 1017  
 in force, 1891, 343  
 issued, new, 1966–1970, 1016  
 stamp duty rates at 1 January 1972, 997  
 sum insured, 1900–1971, 1118–9  
 premium receipts and policy payments, 1966–1970, 1016
- Melbourne's first company, 1132
- motor vehicle  
 State Motor Car Insurance Office, premiums received, claims paid, etc., 1966–67 to 1970–71, 1021  
 third party  
 surcharges, 1966–67 to 1970–71, 992  
 vehicles insured, 1970–71, 1021
- offices, short-term money market, 1967–1971, 1032
- Inter-Dominion Championship, trotting, 612
- Intercapital Daylight*, train, 250
- Intercensal increases *see* Population
- Intercolonial  
 Exhibition, prize awarded to Museum of Natural History, 505
- Medical Congress, Melbourne, 534
- Interest  
 Consolidated Fund receipts, 1966–67 to 1970–71, 990  
 Public Authorities' Current Account, 1966–67 to 1970–71, 987  
 rates, Public Debt, State, at 30 June 1971, 1006  
 Intermediate exam, passes, etc., 1917–1962, 1102–3
- Internal combustion engines, numbers in rural use, 138
- International  
 Exhibition, Melbourne, 180, 1136  
 music, 525
- Harvester Company of Australia Pty Ltd  
 Geelong plant established, 328  
 motor vehicle manufacture, 332  
 research and development, 734–5  
 trade development assisted, 236
- House, 495
- Organization for Standardization, Commonwealth  
 Bureau of Dental Standards, 673
- Research and Development Conference,  
 Fibremakers Ltd, 741
- Wool Textile Organization, standards met by  
 Australian Wool Testing Authority, 671
- Interstate  
 Buyers Ltd, 370  
 oil well drilling, 164  
 shipping *see* Shipping
- Intestinal obstruction and hernia, cause of death, 1971, 818
- Invalid pensions  
 expenditure, National Welfare Fund, 1967–68 to 1971–72, 948  
 number and amount, 1910–11 to 1970–71, 1111–2  
 pensioners and payments, 1967–68 to 1971–72, 949
- Inverloch, population, censuses 1966 and 1971, 798
- Investigator*, coastal exploration, 86
- Investment  
 foreign, in industry, 335  
 interstate, 277–8  
 private, in transport, 376
- Irish born persons, censuses 1966 and 1971, 791
- Irishman*, newspaper, 601
- Iron  
 and steel  
 exported, State of final shipment, 1969–70, 272  
 imports and exports, 1969–70 and 1970–71, 1040  
 assayed content of minerals, 1968–69 to 1970–71, 906  
 buildings, 178, 192  
 galvanised, railway traffic, 1966–67 to 1970–71, 1052  
 ore  
 Lal Lal, 325  
 production, quantity and value, 1968–69 to 1970–71, 907  
 Pot, Olympic theatre, 178, 192, 528  
 steel, etc., railway traffic, 1966–67 to 1970–71, 1052
- Irrigated area, Australia, season 1969–70, 267
- Irrigation, 116–9  
 area of systems, lands irrigated, and water delivered, 1969–70, 878  
 conference 1890, 117  
 Consolidated Fund, 1966–67 to 1970–71, 990, 991  
 early efforts, 116  
 expenditure, State net loan, aggregate to 30 June 1969, 282  
 lands irrigated, water delivered, and area of systems, 1969–70, 878  
 Murray River waters, 119  
 research  
 State Rivers and Water Supply Commission, 710  
 Station, Kyabram, 690  
 reservoirs, 118  
 Royal Commission on water supply, 116–7  
 State Rivers and Water Supply Commission, 117–8  
 research, 710  
 storages, capacity, district served, 877  
 trusts, abolished, 708  
 water  
 supplied, area of systems and lands irrigated, 1969–70, 877  
 supply, etc., Consolidated Fund, 1966–67 to 1970–71, 990, 991
- Irrigation Act* 1886, 116–7
- Irvine, William Hill, Premier, 1151
- Irving, M. H., Professor of Classical and Comparative Philology and Logic, University of Melbourne, 494
- Isaacs, Alick, F.R.S., 635
- Isaacs, Sir Isaac, 433  
 Governor-General, 1139
- Ischaemic heart disease *see* Heart disease
- Israeli naturalised, 1967–1971, 807
- Italians  
 censuses, 1966 and 1971, 791  
 naturalised, 1967–1971, 807
- J. Bosisto and Co. Ltd, takeover, 722
- J. C. D.*, ship, 233
- J. Minifie Pty Ltd, merger to form KMM Pty Ltd, 745
- Jacaranda Press, publishers, 605
- Jackson, Samuel, St Francis' Church, 192
- James, Gwyn, Melbourne University Press, 605
- Jamieson, newspaper, 601
- Jams manufactured, 1970–71 and 1971–72, 912
- Janefield Colony, 549
- Janet Clarke Hall, 495
- Japanese naturalised, 1967–1971, 807
- Jarman, A. W., M.H.R., 783
- Jarrahhmond, Snowy River flow, 763
- Jenkins, H. A., M.H.R., 783
- Jenkins, Owen Glyndwr, M.L.C., 770
- Jervis Bay, Royal Australian Naval College, 459
- Jervois, Colonel Sir William, Port Phillip defence, 457
- Jessie MacPherson Hospital, established, 543
- Jesuits, Xavier College founded, 486
- Jet engines, production, 732–3
- Jewish Herald*, newspaper, 601
- Jews, censuses 1966 and 1971, 793
- Jillong *see* Geelong
- Jingellic, N.S.W., Murray River flow, 763
- Jock Marshall Reserve, Monash University, 649
- John Alden Shakespearean Company, visit, 529
- John and Elizabeth*, ship, 234
- John Lysaght (Australia) Ltd, steelworks, Western Port, 238

- Johns, Peter, 735  
 Johns and Waygood Ltd, research and development, 735-7  
 Johnson, Gertrude, National Theatre, 529  
 Johnson, L. K., M.H.R., 783  
 Johnson, W., editor of *Transactions*, 564  
 Johnston, George, *My brother Jack*, 521-2  
 Johnston, J. S., partnership with Edward Wilson, 599  
 Joint roll, electors enrolled, 1963-1972, 780  
 Jomantas, Vincent, sculptor, 514  
 Jona, Walter, M.L.A., 772  
 Jones, Barry Owen, M.L.A., 772  
 Jones, Frederic Wood, F.R.S., 633  
*Journal de Melbourne*, foreign language newspaper, 600  
*Journal of Agriculture*, 143, 145  
 Joyce, Eileen, pianist, 526  
*Judgment of Socrates*, Tom Bass, 515  
*Judicature Act* 1872, 466  
*Judicature Act* 1883, 466  
 Judicial Committee of the Privy Council, 462, 464  
 Judiciary, 769  
*Julia Percy*, ship, 233  
 Julius, G. A. (later Sir George), Executive Committee, Council for Scientific and Industrial Research, 657  
 Jumbunna, black coal, 153  
 Junior  
   Commercial examination, passes, etc., 1906-1917, 1102  
   public examination, passes, etc., 1906-1917, 1102  
   technical schools, number, pupils' sex, 1971, 921  
 Jury service, women eligible, 1142  
 Just, Gordon, judge, 769  
 Justice *see also* Law  
   and the administration of law, statistics, 966-79  
   Children's Court, 969-71  
   Courts, 967-71  
   crime, 972-7  
   historical, 1113-7  
   law, 966  
   licensing legislation, 978  
   racing legislation, 979  
   police, 979  
   Consolidated Fund payments, 1966-67 to 1970-71, 991
- KMM Pty Ltd, research and development, 744-5  
 Kandos Cement Co. Ltd, 328  
 Kane, Julius, sculptor, 514  
 Kangaroo Ground, newspaper, 601  
 Kaniva Shire  
   area, 30 June 1971, 802  
   population, censuses 1966 and 1971, 802  
 Kaolin production, quantity and value, 1968-69 to 1970-71, 907  
 Kara Kara Shire  
   area, 30 June 1971, 802  
   population, censuses 1966 and 1971, 802  
 Karkaroc Shire  
   area, 30 June 1971, 802  
   population, censuses 1966 and 1971, 802  
 Kay, Captain Joseph Henry, F.R.S., 632  
 Kaye, William, judge, 769  
 Kean, Charles, and wife, actors, 528  
 Keilor  
   area, 30 June 1971, 800  
   fossils, 23-4, 701  
   Maribyrnong River flow, 763  
   population, censuses 1966 and 1971, 797, 800  
 Keith Turnbull Research Station, Frankston, Vermin and Noxious Weeds Destruction Board, 710  
 Kellaway, Charles Halliley, F.R.S., 633  
 Kelly, Ned  
   captured, 428, 1136  
   paintings by Sidney Nolan, 512  
 Kelly and Lewis Pty Ltd  
   aircraft engines, 330  
   pumps, 325  
 Kendall, Henry, work published by George Robertson, 604  
 Kendall, W. T., Melbourne Veterinary College, 643  
 Kent, Daniel Eric, M.L.C., 770  
 Kent, Mr and Mrs W. H., collection presented to National Gallery, 516  
 Kerang  
   Borough  
   area, 30 June 1971, 803  
   population, censuses 1966 and 1971, 803  
   Kerang—*continued*  
   population, censuses 1966 and 1971, 798  
   Shire  
   area, 30 June 1971, 803  
   population, censuses 1966 and 1971, 803  
 Kerferd, George Briscoe, Premier, 1150  
 Kernot, F. A., Bequest, dental research, 637  
 Kernot, W. C., research on timbers and wind pressure, 638  
 Kerr, William  
   *Argus*, sold, 599  
   *Melbourne almanac and Port Phillip directory*, 604  
   *Melbourne Times*, 599  
   *Patriot*, editor, 596  
   *Port Phillip Herald*, established, 596  
 Kew  
   area, 30 June 1971, 800  
   asylum, 549  
   Day Centre, 550  
   Elgar's Special Survey, 89  
   Kindergarten Training College, 479  
   Methodist Ladies College, founded, 486  
   municipality proclaimed, 179  
   population, censuses 1966 and 1971, 797, 800  
   Rockingham Red Cross Home, 579  
   Xavier College, founded, 486  
 Khull, Edward  
   Government Printer, 604  
   stock and share list, 347  
 Kiddle, Margaret, writer, 524  
 Kidney transplants, 535  
 Kiewa  
   Power Station, electricity generated, power sources, etc., 1971-72, 915  
   River flow, annual, 763  
   valley, geological survey, 154  
 Kilborn, Pam, 613  
 Killara, ship, 234  
 Kilmore  
   hospital built, 557  
   Irish farmers, 425  
   Marist Brothers School, founded, 486  
   newspaper, 600  
   population, censuses 1966 and 1971, 798  
   Shire  
   area, 30 June 1971, 801  
   population, censuses 1966 and 1971, 801  
 Kilmore Standard of Freedom, newspaper, 600  
 Kimpton, W. S., W. S. Kimpton and Sons Pty Ltd, founded, 744  
 Kindergarten Training College, Kew, 479  
 Kindergartens  
   development, 479-82  
   subsidised, number and enrolments, 1968-1971, 938  
 King George V Memorial Garden, Wangaratta, 110  
 King, Inge, sculptor, 514  
 King, R. S., M.H.R., 783  
 King Ingoda, Melbourne Cup winner, 1152  
 King  
   River Dam, Commonwealth payments, 1968-69 to 1970-71, 989  
   Street Bridge, failure investigated, 638, 1141  
*King of Sport*, newspaper, 601  
 Kingfish field, natural gas and oil reserves, 21 May 1971, 165  
   development, 168  
 Kinglake National Park, 108  
   expenditure, 1966-67 to 1970-71, 919  
 King's  
   Bridge, research on broken girders, 638  
   Cup, Bisley, England, won by Perc Pavey, 618  
   Own Regiment, 4th, stationed at Melbourne and Geelong, 455  
   Theatre, 528  
 Kingsburgh, Melbourne Cup winner, 1152  
 Kingsley, Henry, *The recollections of Geoffrey Hamlyn*, 520  
 Kipnis, Alexander, singer, 526  
 Kirk's  
   Horse Bazaar, 368  
   Reservoir, 216  
 Kirkwood, Carl, M.L.A., 772  
 Kirsova, Helene, ballet dancer, 530  
 Kismet, musical, 529  
 Kista Dan, ship, Antarctic exploration, 680  
 Kitchener, Lord, military defence scheme, report, 459  
 Kiwis, *The*, variety revue, 529  
 Knibbs, Sir George, Commonwealth Statistician, later Director, Institute of Science and Industry, 657  
 Knight, Alexander Wilson, M.L.C., 771

- Knitting mills, 328-9  
 Knowles, Mr and Mrs, plays staged, 527  
 Knox  
   area, 30 June 1971, 800  
   population, censuses 1966 and 1971, 797, 800  
 Kodak (Australasia) Pty Ltd, research and development, 724-6  
*Komet*, yacht, 240  
 Kooyong, tennis, 611  
 Korea, Australian Regular Army, 460  
 Korean War *see* War, Korean  
 Koroit  
   Borough  
     area, 30 June 1971, 801  
     population, censuses 1966 and 1971, 801  
   population, censuses 1966 and 1971, 798  
 Korong  
   Shire  
     area, 30 June 1971, 803  
     population, censuses 1966 and 1971, 803  
     water supply authority, 864  
 Korumburra  
   black coal, 153  
   population, censuses 1966 and 1971, 798  
   Shire  
     area, 30 June 1971, 804  
     population, censuses 1966 and 1971, 804  
 Kow Swamp  
   capacity, etc., 877  
   skeletons, fossils, 23  
 Kowree Shire  
   area, 30 June 1971, 802  
   population, censuses 1966 and 1971, 802  
 Kraft Foods Ltd, research and development, 745-6  
 Kreisler, Fritz, violinist, 526  
 Kyabram  
   Borough  
     area, 30 June 1971, 803  
     population, censuses 1966 and 1971, 803  
   Irrigation Research Station, 690  
   movement, 432  
   population, censuses 1966 and 1971, 798  
   water supply authority, 864  
*Kyeema*, aircraft, 255  
 Kyneton  
   Botanic Gardens, 109, 110  
   climatic elements, means, 765  
   hospital, 557  
   newspaper, 600  
   population, censuses 1966 and 1971, 798  
   Shire  
     area, 30 June 1971, 801  
     population, censuses 1966 and 1971, 801  
 L.G.S. ratio, trading banks, 1969-1971, 1008  
 L.P.G., production, 168  
*La Bohème*, Dame Nellie Melba's last performance broadcast, 585-6  
 La Nauze, J. A., historian, 524  
 La Trobe, Charles Joseph  
   comment on effects of gold rushes on Melbourne, 178  
   convicts refused, 425-6, 1133  
   executive council, 441-2  
   *Geelong Advertiser* praised, 597  
   gold escort, 391  
   government control during gold rushes, 426  
   house, 192, 197  
   inspection of gold diggings, 156  
   land offered to Melbourne Cricket Club, 609  
   Lieutenant-Governor, 445, 1149  
   mineral surveyor, need for, 152  
   newspaper circulation estimate, 598  
   newspapers described to Governor Fitz Roy, 595  
   open land left around Melbourne, 179  
   pensioners used as police, 470  
   *Port Phillip Herald* described, 597  
   *Port Phillip Patriot* described, 597  
   Royal Botanic Gardens, 109  
   Superintendent, Port Phillip District, 94, 437, 444, 468, 1132, 1149  
 La Trobe  
   Library  
     collection of Samuel Thomas Gill's works, 509  
     opened, 503, 1142  
   Secondary Teachers College, 493  
   University  
     architecture, 197  
     bachelor degree enrolments classified by schools, 30 April 1970-1972, 932  
     choirs, 525  
     degrees conferred by schools, 1970-1972, 933  
 La Trobe—*continued*  
   University—*continued*  
     established, 488  
     expenditure, 1967-1971, 933  
     income, 1967-1971, 933  
     opened, 496, 1142  
     research, scientific, 649-51  
     School of  
       Agriculture, 146  
       research, 650  
       Biological Sciences, research, 650  
       Physical Sciences, research, 650-1  
     students enrolled, sex and course type, 1968-1972, 932  
 Laanecoorie  
   Loddon River flow, 763  
   Weir, 117  
 Labor  
   movement, politics after 1890, 432  
   parties, founding, 432-3  
 Labour  
   and Industry, Department of *see* Department of Labour and Industry  
   force, definitions, 843  
   Minister of, appointed, 448  
   organisations, statistics, 841  
*Labour*, newspaper, 601  
*Labour and Industry Act* 1953, 399  
*Labour and Industry Act* 1958, 396, 399, 402  
*Labour and Industry (Amendment) Act* 1960, 402  
*Labour and Industry (Amendment) Act* 1965, 403  
*Labour and Industry (Amendment) Act* 1966, 403  
 Laby, Thomas Howell, F.R.S., 633  
 Lacrosse, 617  
 Lady Julia Percy Island, discovered, 1131  
*Lady Nelson*, coastal exploration, 86  
 Lady Northcote Permanent Orchestra Trust Fund, The, 525  
*Lady of Lyons*, play, 527  
 Laing, Charles, architect, St Peter's Church, 192  
 Lake  
   Buffalo, capacity, etc., 877  
   Corangamite, Acclimatization Society of Victoria introduced oysters and crayfish, 631  
   Eildon  
     capacity, etc., 877  
     recreational area, 623  
   Eppalock, 218  
   capacity, etc., 877  
   recreational area, 623  
   Glennaggie, capacity, etc., 877  
   Hume, capacity, etc., 877  
   Merrimu, capacity, etc., 877  
   Nillahcootie, capacity, etc., 877  
   Tyers, Aboriginal reserve, 29  
 Lakes, The, National Park, 108, 919  
 Lakes Entrance  
   Development  
     (Lake Bunga) No. 1 oil well, 163  
     No. 2 oil well, 163  
   district, oil search, 153  
   oil exploration, 163  
   population, censuses 1966 and 1971, 798  
 Lal Lal, iron ore deposits, 325  
 Lalor, Peter  
   elected to Parliament, 157  
   Eureka Stockade, 157  
 Lamb, A., M.H.R., 783  
 Lamb Inn, meeting held to form Melbourne Fire and Marine Insurance Company, 345  
 Lambing  
   forecast, rams used, breed, 1971, 899  
   in Statistical Districts, season 1970-71, 898  
   1967-68 to 1971-72, 898  
 Lambs  
   in Statistical Districts, 31 March 1971, 898  
   shorn and wool clipped, seasons 1966-67 to 1970-71, 899  
   slaughtered, 1966-67 to 1970-71, 901  
   by States, 1970-71, 879  
 Lamp display, G.P.O., 1887, 220  
 Lancey, J. H., John Batman visited, 172  
 Land *see also* Crown land, Geography, Natural resources, conservation  
   alienation, 427-8  
   at 30 June 1971, 874  
   statistics, 874  
   certificates of title issued, 1967-1971, 1028  
   crown grants and leases, 1967-1971, 1028  
   law, 463  
   reform, 464  
   life on the, development, 149-51

- Land—*continued*  
 occupied, Statistical Districts, area, etc., season 1970–71, 881  
 revenue, Consolidated Revenue Fund  
 1852 to 1899–1900, 285  
 1901–02 to 1969–70, 289  
 sales, during gold rushes, 427  
 settlement, 93–100 *see also* Property distribution,  
 Rural development  
 Act, land acquired, expenditure, etc., 1959–1971,  
 876  
 Acts since 1960, 99–100  
 and irrigation statistics, 873–8  
 alienation of land, 874  
 land utilisation, 873  
 rural finance facilities, 875–7  
 water supply and land settlement, 877–8  
 assisted, to 1938, 102  
 before 1860, 93–6  
 expenditure  
 State net loan, aggregate to 30 June 1969, 232  
 1966–67 to 1970–71, 1003  
 first land sales, 94  
 Gippsland, 99  
 Mallee, 98–9  
 other than soldier settlement, land acquired,  
 expenditure, etc., 1959–1971, 876  
 Port Phillip District, 93–6  
 selection Acts, 96–8  
 squatting, 93–5  
 surveying *see* Surveying  
 tax  
 assessments  
 holdings, taxpayers, etc., 1970, 994  
 1966–1970, 994  
 collected, 1966–67 to 1970–71, 992  
 Consolidated Revenue Fund, revenue  
 1852 to 1899–1900, 285  
 1901–02 to 1969–70, 289  
 tenure, law reform developments, 464  
 titles issued, 1967–1971, 1028  
 transfer, Torrens system adopted, 1135  
 transfers lodged at the Titles Office under the  
 Transfer of Land Act, 1966–67 to 1970–71, 1029  
 use, 111–51 *see also* Natural resources, conservation  
 agricultural  
 crops, 129–35  
 education, 145–9  
 extension and advisory services, 143–5  
 forestry, 111–3  
 irrigation, 116–9  
 livestock and pastoral, 123–8  
 machinery and power, 137–40  
 pastoral and livestock, 123–8  
 pest, weed, and disease control, 135–7  
 research, Soil Conservation Authority, 705–6  
 rural life, 149–51  
 soil management, 119–23  
 timber milling, 114–6  
 transport, rural, 140–3  
 utilisation  
 cereal crops, season 1970–71, 873  
 rural holdings  
 Australia, season 1969–70, 267  
 1836–37 to 1970–71, 1081–3  
*Land Act* 1860, 96  
*Land Act* 1869, 65, 98, 111, 116  
*Land Act* 1884, 98  
*Land Act* 1911, 100  
*Land Conservation Act* 1970, 81  
*Land Owner's Gazette*, newspaper, 601  
*Land Settlement Act* 1959, 103  
 Lands  
 and survey, Consolidated Fund payments, 1966–67  
 to 1970–71, 991  
 Commissioner of, conflict with Board of Science,  
 152  
 Department, meteorological observations, 673  
 Purchase and Management Board, formed, 449  
 sales, rents, royalties, Consolidated Fund receipts,  
 1966–67 to 1970–71, 990  
 Landy, John, athlete, 613  
 Lang, Rev. J. D., 425  
 Lang Lang proving ground, General Motors-Holden's  
 Pty Ltd, 734  
 Langhorne, George, missionary work among  
 Aborigines, 26  
 Langi Kal Kal Training Centre, established, 573  
 Language instruction, immigrants, 582–3  
 Lantern, Melbourne Cup winner, 1152  
*Lapwing*, ship, 232  
 Lara  
 population, censuses 1966 and 1971, 798  
 Serendip Wildlife Research Station, 694  
 Larceny  
 Children's Court cases, 1970, 970  
 higher court cases  
 persons convicted  
 ages, 1970, 976  
 and result of hearing, 975  
 1969 and 1970, 974  
 Larkin Aircraft Supply Company, 330  
 Larundel Mental Hospital, 549  
 Last, Clifford, sculptor, *Family group*, 514  
*Latest information with regard to Australia Felix*,  
 George Arden, 603  
 Latham, Sir John  
 campaign against library service deficiencies, 503  
 comment on decisions of House of Lords, 462  
 Latrobe  
 River, flow, annual, 763  
 Valley  
 coal  
 deposits, developments, 328  
 resources, survey, 153  
 Development Advisory Committee, 191  
 electricity and brown coal production, 221–4  
 female labour pool, 333  
 sewerage statistics, 1970, 869  
 television stations, 918  
 Water and Sewerage Board, 219  
 administering Act of Parliament, 864  
 Latvians naturalised, 1967–1971, 807  
 Laughton, A. M., Government Statist, 7  
 census 1911, 15  
 Launceston General Hospital, association with Cancer  
 Institute, 686  
 Lauriston Reservoir, 218  
*L'Avanguardia Libertaria*, newspaper, 603  
 Laverton  
 meteorological office, 674  
 oil refineries, 332  
 Law *see also* Courts, Legal  
 administration statistics *see* Justice and the  
 administration of law, statistics  
 and  
 justice, 461–76  
 Chief Secretary's Department, regulatory  
 functions, 469–70  
 courts, 465–7  
 education, legal, 475–6  
 Law Department, 467–9  
 legal  
 development, 461–3  
 social factors, 463–5  
 profession, 473–5  
 Solicitor-General, 472–3  
 Victoria Police, 470–2  
 order, etc., expenditure per capita, State,  
 1969–70, 280  
 Consolidated  
 Fund, payments, 1966–67 to 1970–71, 991  
 Revenue Fund, expenditure, 1901–02 to 1969–70,  
 290  
 Courts, building started, 180  
 Department, development, 467–9  
 dependence on English law, 462  
 Institute, 474–5  
 List, first published, 473  
 petroleum development, 166–7  
 reform, 463  
 Lawler, Ray, dramatist, 523  
*Summer of the Seventeenth Doll*, 529  
 Lawn  
 bowls, history, 612–3  
 Tennis Association of Victoria, 610–1  
 Lawrence, Marjorie, opera singer, 526, 531  
 Lawrence Rocks, discovered, 1131  
 Laws, gold mining, 160–1  
 Lawson, Sir Harry Sutherland Wightman, Premier,  
 435, 1151  
 Lawyers *see* Legal profession  
 Lead  
 assayed content of minerals, 1968–69 to 1970–71,  
 906  
 concentrate, production, quantity and value,  
 1968–69 to 1970–71, 907  
*Leader*, newspaper, 600  
 Learmonth, Noel, *The Portland Bay settlement*, 524  
 Learmonth's, settlers, Lake Colac, 103  
 Leather  
 Industry Research Association, 742  
 research, 741–2



- Leaving Certificate Examination  
   discontinued, 1146  
   passes, etc., 1917-1963, 1102-3  
 Lebanese naturalised, 1967-1971, 807  
 Leckie, Roland John, judge, 769  
 Lectures, 621  
 Leeper, Dr Alexander, Trinity College, 495  
 Legacy  
   formed, 622  
   voluntary welfare, 566  
 Legal *see also* Courts, Law  
   Aid Committee, 469  
   business, applications, etc., 1971, 966  
   departments and judiciary, Consolidated Revenue  
   Fund, expenditure, 1852 to 1899-1900, 286  
   development, 461-3  
   social factors, 463-5  
   education, 475-6  
   profession, development, 473-5  
*Legal Practitioners Reciprocity Act* 1903, 476  
*Legal Profession Practice Act* 1891, 476  
 Le Gallienne, Dorian, composer, 527  
 Legislation  
   company, development, 351-2  
   factory, development, 396-9  
   gold mining, 160-1  
   petroleum development, 166-7  
 Legislative  
   Assembly *see also* Parliament, Parliamentary  
   district areas, 780  
   electors, 771-2  
   full adult suffrage granted, 1137  
   members elected, 30 May 1970, 771-2  
   sittings, 1950-1970, 773  
   universal adult male suffrage adopted, 1134  
   voting at general elections, 1952-1970, 781  
   Council *see also* Parliament, Parliamentary  
   adult suffrage adopted, 1140  
   electors, 770-1  
   meeting first held, 1134  
   members elected  
     29 April 1967, 771  
     30 May 1970, 770  
   Museum of Natural History established, 504  
   province areas, 781  
   sittings, 1950-1970, 773  
   voting at elections, 782  
 Legitimations and adoptions, 1967-1971, 817  
 Lehmann, Lotte, singer, 526  
 Leigh, Vivien, actress, 529  
 Leigh Shire  
   area, 30 June 1971, 802  
   population, censuses 1966 and 1971, 802  
 Leisure activities, social and cultural, 620-4  
 Lemnos, Campbell's Soups (Aust.) Pty Ltd, 331  
 Lemon and lime trees, 891-2  
   limes, production, 1966-67 to 1970-71, 891  
 Leongatha, population, censuses 1966 and 1971, 798  
 Leopold, population, censuses 1966 and 1971, 798  
*Les endormies*, Rupert Bunny, 511  
 Letters *see also* Mail  
   delivery rates, 259  
   handled, Postmaster-General's Department, 1901  
   to 1970-71, 1127-8  
   handling, 258-60  
   of administration  
     applications by Public Trustee, 1966-67 to  
     1970-71, 1026  
     estates, number, value, etc., 1967-1971, 1027  
     posted and received, 1966-67 to 1970-71, 1065  
 Lettuce, area sown, gross value of production,  
   1970-71, 893  
 Level Crossings Fund, motor vehicle registration  
   fees received, 1966-67 to 1970-71, 996, 997  
 Leviathan, retail store, 367  
 Lewers, Gerald, sculptor, 515  
 Lewis, Edward Wallace, M.L.A., 772  
 Lewis, Essington, 756  
 Lewis, William John, M.L.A., 772  
 Lexton Shire  
   area, 30 June 1971, 802  
   population, censuses 1966 and 1971, 802  
 Liardet, Wilbraham, inn established at Sandridge, 177  
 Liardet's Brighton Pier Hotel, archery club formed,  
   617  
 Liberal politicians, dominance of early politics, 433  
 Libraries  
   art galleries, etc., Consolidated Fund payments,  
   1966-67 to 1970-71, 991  
   commercial, 622  
   development, 502-4  
   expansion, 621  
   Libraries—*continued*  
   public, expenditure by Education Department,  
   1968-69 to 1971-72, 924  
 Library  
   Council of Victoria, 504, 623  
   Public, of Victoria  
     building, 178, 182, 194  
     history, 502-3  
   Service Board, established, 503  
   State, 503-4  
   Training School, established, 504  
*Library Council of Victoria Act* 1965, 504  
 Licences *see Subject headings*  
   Reduction Board *see* Liquor Control Commission  
*Licensed Victuallers' Advocate*, newspaper, 601  
 Licensing Fund  
   payment, Consolidated Revenue Fund, revenue,  
   1929-30 to 1969-70, 289  
   revenue and expenditure, 1966-67 to 1970-71, 978  
 Liens on crops and wool, 1967-1971, 1030  
 Lieutenant-Governor, 768  
 Life  
   assurance *see* Insurance, life  
   expectancy *see* Death rates, age specific  
   insurance *see also* Insurance, life  
     Medical Research Fund of Australia, 640  
   Offices' Association of Australia, formation, 344  
   on the land, development, 149-51  
 Lifts  
   hydraulic, effects on building, 180-1  
   research, 736  
 Light Fingers, Melbourne Cup winner, 1152  
 Lighthouses, 229-31  
   Bass Strait, 1892, map, 231  
   harbours, rivers, Consolidated Fund  
   payments, 1966-67 to 1970-71, 991  
   receipts, 1966-67 to 1970-71, 990  
 Ligno-cellulose board mills, 333  
 Lillydale Shire  
   area, 30 June 1971, 800  
   population, censuses 1966 and 1971, 800  
 Lilydale  
   lime, 324  
   population, censuses 1966 and 1971, 797  
 Limes *see* Lemons and limes  
 Limestone, production, quantity and value, 1968-69  
   to 1970-71, 907  
 Lincoln  
   House, paramedical training, 557  
   sheep, numbers, etc., 1968, 1970, and 1971, 898  
 Lind, Alan Alfred Campbell, M.L.A., 772  
 Lind National Park, 108  
 Lindell Report 1960, 562  
 Lindrum, Walter, billiards player, 620  
 Lindsay, Norman, novels, 521  
 Lindsay family, artists, 510  
 Linseed  
   area  
     sown, seasons 1966-67 to 1970-71, 890  
     yield, and gross value, 1970-71, 884  
   production and gross value, seasons 1966-67 to  
   1970-71, 890  
   yield (average) per acre, seasons 1966-67 to  
   1970-71, 890  
 Liquid  
   and government securities ratio, trading banks,  
   1969-1971, 1008  
   petroleum gas  
     distribution, 170  
     export, 170  
     production, 168, 907  
 Liquor  
   Control Commission  
     constituted, 472  
     hotel licensing, 209  
   laws, Royal Commission, 1142  
   licences  
     number, 1967-1971, 978  
     tax, payments, 1966-67 to 1970-71, 995  
   tax  
     collected, 1966-67 to 1970-71, 992  
     1966-67 to 1970-71, 995  
 Lismore, settled, 103  
 Listeners' licences, 586  
   number  
     1932, 588  
     1971, 595  
 Lister, Joseph, antiseptic surgery, 532, 536, 538  
 Literacy, 41-2  
*Literary News*, newspaper, 601  
 Literature, 519-24  
 Lithuanians naturalised, 1967-1971, 807

- Little, Douglas Macfarlan, judge, 769  
 Little, John Albert, Senator, 783
- Little  
 Athletics Movement, 613  
 Desert National Park, expenditure, 1967-68 to 1970-71, 919  
 Theatre, St Martin's, built, 623
- Live births *see* Births
- Livestock *see also individual headings*  
 and pastoral, development since 1920s, 127-8  
 disease control, 136-7  
 distribution, in Statistical Districts, 31 March 1971, 894  
 increases due to increased pastures, 107  
 numbers, 124-5  
   by States, 1970-71, 879  
   1837-1971, 1090-1  
   1861-1971, 893  
 sheep breeding before 1875, 123-4
- Lloyd, B., M.H.R., 783
- Lloyd's of London, insurance agency established, 345-6
- Loan  
 Council, 294  
   takes over States' debts, 1139  
 expenditure (net) on works and services, State, aggregate to 30 June 1969, 282  
 raising and repayments, Consolidated Fund receipts, 1966-67 to 1970-71, 990
- Loans *see also specific headings*  
 personal *see* Instalment credit  
 Public *see* Public debt
- Local  
 Authorities Superannuation Board, Benefit Contracts Account, 1967-1971, 850  
 government *see also* Municipal, Municipalities, *specific headings*  
 areas  
   area, 30 June 1971, 800-5  
   population, censuses 1966 and 1971, 800-5  
 authorities  
   business undertakings, 1970, 855  
   and ordinary services, revenue and expenditure, 1966-1970, 851  
   loan expenditure and receipts, 1966-1970, 856-7  
 Country Roads Board Account  
   1966-1970, 861  
   1970, 860  
 loan  
   expenditure and receipts, 1966-1970, 856-7  
   liability, 1966-1970, 857  
   loans outstanding, 1966-1970, 851  
   new money loan raisings, 1966-67 to 1970-71, 872  
   ordinary services  
     and business undertakings : revenue and expenditure, 1966-1970, 851  
     expenditure, 1970, 853-4  
     loan expenditure and receipts, 1966-1970, 856-7  
     revenue, 1970, 852  
   Private Street Account, receipts and expenditure 1966-1970, 859  
   1970, 858  
   properties rated, 1966-1970, 851  
 Department, established, 450, 454  
 development, 450-4  
 libraries, 503  
 services, history, 206-10  
 statistics, 850-72
- Local Government Act* 1874, 141, 207, 453  
*Local Government Department Act* 1958, 454
- Loch, Sir Henry Brougham, Governor and Commander-in-Chief, 1149
- Loddon  
 River  
   flow, annual, 763  
   irrigation storages, 877  
   valley, geological survey, 152
- Loganberries  
 acres grown  
   Statistical Districts, season 1970-71, 892  
   1967-68 and 1970-71, 891  
 production, 1966-67 to 1970-71, 891
- Logging *see also* Forest, Forestry, Forests, Timber Research Station, Forestry and Timber Bureau, 682
- London  
 Chartered Bank of Australasia  
   absorbed by English, Scottish and Australian Bank, 339  
   opened, 338  
 dockworkers strike, relief contribution, 432
- London—*continued*  
 Mechanics Institute, established, 489  
   to Melbourne Centenary Air Race, 1139
- Long Island Point (Hastings), fractionation plant, 168, 1142
- Longerenong Agricultural College, 146-7
- Longford, natural gas treatment and crude oil stabilisation plant, 167
- Longmore's Land Act, 98
- Lonsdale, Captain William  
 Aborigines, work for, 26  
 house, 192  
 magistrate, Port Phillip Bay, 94, 437, 444  
*Melbourne Advertiser* suppressed, 595  
 Melbourne located, 173  
 Port Phillip District settlement, 1132  
 postal service, 258  
 Statistical Register, 4
- Lonsdale*, ship, 232
- Lonsdale*, torpedo boat, 457  
 transferred to Commonwealth, 459
- Lord Cardigan, Melbourne Cup winner, 1152
- Lord Fury, Melbourne Cup winner, 1152
- Lord Nolan, Melbourne Cup winner, 1152
- Lord  
 High Chancellor, 465  
 Mayor's Fund and Hospitals and Charities Sunday appeal, receipts, 1966-67 to 1970-71, 948
- Lorne, population, censuses 1966 and 1971, 798
- Lothian, T. C., publisher, 605
- Lotteries, Tattersall, subscriptions, duty paid, etc., 1966-67 to 1970-71, 995
- Lottery  
 duty, Consolidated Revenue Fund, revenue, 1901-02 to 1969-70, 289  
 tax collected, 1966-67 to 1970-71, 992
- Lottery Ticket, The*, play, 527
- Lovegrove, Denis, M.L.A., 772
- Lowan Shire  
 area, 30 June 1971, 802  
 population, censuses 1966 and 1971, 802
- Lowenfeld, Viktor, children's art, 517
- Lower  
 North District, rainfall variation, 766  
 North-east District, rainfall variation, 766  
 Yarra Crossing, 196
- Loxton, Samuel John Everett, M.L.A., 772
- Lucas, E. and Co. Pty Ltd, frock manufacturer, 324
- Lucerne, area, yield, and gross value, 1970-71, 884
- Lucia di Lammermoor*, opera, 531
- Lucinda Brayford*, Martin Boyd, 520, 524
- Luderick, catch, 1966-67 to 1970-71, 905
- Lurgi brown coal gasification plant, Morwell, 169, 227, 228, 696, 1141, 1142
- Lush, George Hermann, judge, 769
- Lutana*, aircraft, 255
- Lutherans, censuses 1966 and 1971, 793
- Lying-in-Hospital (Royal Women's Hospital), established, 557, 1134
- Lyle, Sir Thomas Ranken  
 F.R.S., 633  
 Professor, Faculty of Science, University of Melbourne, 641
- Lynch, P. R., M.H.R., 783
- Lyndhurst  
 first high frequency national radio station built, 587  
 short wave complexes, Postmaster-General's Department, 683
- Lyster, William Saurin, operatic company, 531
- Lysterfield Reservoir, 216-7
- Macainsh, Noel, poet, 523
- Macalister, Lachlan, 77, 88
- Macalister  
 District, irrigation, 877, 878
- River  
   flow, annual, 763  
   irrigation storage, 877
- MacArthur, General Douglas, headquarters established in Melbourne, 460
- Macarthur, John, merino sheep breeding, 123
- Macarthur, William, merino sheep breeding, 123
- Macartney, F. T., poet, 523
- McAuley, Elizabeth, physiotherapy, 556
- McCabe, James Edmund, M.L.A., 772
- McCalman and Garde, stripper harvester manufacturers, 138, 738
- McColvin, Lionel, recommendations for libraries, 503-4
- McCombie, Thomas, bought *Port Phillip Gazette*, 599
- McCormack, John, singer, 526
- McCormick reaper, 138

- McCoy, Professor (later Sir) Frederick  
F.R.S., 632  
Museum of Natural History, 504-5  
Specimens purchased, 504-5  
National Museum of Victoria  
built in University of Melbourne, 494  
Director, 504, 630, 700  
scientific contributions, 505  
University of Melbourne  
Faculty of Science, 494, 627, 641, 642  
Professor of Natural Science, 494, 630
- McCrae, George Gordon, work published by George Robertson, 604
- McCrae, Hugh, 523
- McCrea, Dr William  
Chief Medical Officer, 545  
Colonial Surgeon, 544-5
- McCubbin, Fred, artist, 508, 510  
National Gallery, school of painting, 516
- McCulloch, James (later Sir James), Premier, 1150-1
- McDonald, J., Yarra Sculptors Society, 513
- MacDonald, James David, M.L.A., 772
- McDonald, John Gladstone Black, Premier, term of office, 768, 1151
- McDonald, Russell Stanley Leslie, M.L.A., 772
- McDonald, Stuart Richard, M.L.C., 771
- McDonnell, Alfred Reginald Bruce, Clerk of Parliaments, and Legislative Council, 771
- Macdougall, Melbourne Cup winner, 1152
- Macfarlan, Ian, Premier, term of office, 768, 1151
- MacFarland, J. H. (later Sir John), Ormond College, 495
- McHaffie, Lieutenant-Colonel John, Phillip Island "run", 237
- McInerney, Murray Vincent, judge, 769
- McIvor  
(Heathcote), gold discovered, 157  
Shire  
area, 30 June 1971, 801  
population, censuses 1966 and 1971, 801
- McKay, H. V.  
agricultural and earthmoving machinery, 325  
farm machinery manufacture, 738  
Planetarium, 506  
Science Museum of Victoria, 705  
stripper harvester, 138
- Mackay, Rev. Mackintosh, sermon published by George Robertson, 604
- Mackennal, Bertram, sculptor, 512
- Mackennal, John Simpson, sculptor, 512
- McKenzie, D. C., M.H.R., 783
- Mackenzie, James, heart disease research, 534
- Mackenzie, Sir Morell, laryngeal surgery, 540
- McKillop, George, explorer, 88  
rivers, naming of, 92-3  
route of exploration, map, facing 86
- McKinney, J. P., *Crucible*, 521
- Mackinnon, Lachlan, partner in the *Argus*, 599, 604
- McLaren, Ian Francis, M.L.A., 772
- McLean, Allan, Premier, 1151
- McLean, W., Government Statist, 6
- McLennan and Co. Pty Ltd, merger to form KMM Pty Ltd, 745
- McLeod, J. H., Lake Corangamite discovered, 103
- McLeod Reformatory Prison, French Island, 572
- McLeod sanatorium, Repatriation Department, 579
- McMahon, Captain, Police Commissioner, 471
- McMahon, Gregan  
Gregan McMahon Players, formed, 529  
Melbourne Repertory Theatre, 528-9
- McMahon, W., became Prime Minister, 1143
- McManus, Francis Patrick, Senator, 783
- McMaster Laboratory, Sydney, C.S.I.R. research, 667
- McMillan, Angus, explorer, 75, 88, 1132  
rivers, naming of, 93  
route of exploration, map, facing 86
- Macmillan and Co., publishers, 605
- McNab, Bruce Finlay, judge, 769
- Macnamara, Dame Jean, rabbit control, 136
- Macpherson, J. H., and Gabriel, C. J., *Marine molluscs of Victoria*, 701
- MacPherson, John Alexander, Premier, 1150
- MacPherson's Ltd, research and development, 737-8
- Macquarie Island, scientific station, 680
- McWilliam and Dewar, flame ionisation detector, 724
- M.M.B.W. *see* Melbourne and Metropolitan Board of Works
- Machinery  
farm, 137-40  
cultivation, 137-8  
fruit and vegetables, 140  
manufacture, 140
- Machinery—*continued*  
farm—*continued*  
mechanisation, 140  
milk, 139-40  
power  
stationery, 138  
tractive, 139  
research and development, 734-5, 738  
wool, 139  
1967-1971, 883  
imported, importing State, 1969-70, 273  
imports and exports, 1969-70 and 1970-71, 1040
- Mack, Ronald William, M.L.C., 771
- Macson Numerically Controlled Machining Centre, 737
- Maffra  
population, censuses 1966 and 1971, 798  
Shire  
area, 30 June 1971, 804  
population, censuses 1966 and 1971, 804
- Magistrates' Courts  
appeals, Legal Aid Committee, applications, 1971, 966  
arrest cases  
summarily convicted: charges and results of hearing, 1969 and 1970, 972  
summarily disposed of: charges and nature of offence, 1969 and 1970, 972  
cases, civil, 1967-1971, 968  
convictions, dismissals, etc., 1859-1970, 1113-5  
development, 467  
pre-sentence reports, 1967-68 to 1971-72, 960  
summons cases summarily disposed of: number of charges and nature of offence, 1970 and 1971, 973
- Mail *see also* Letters  
air services, regular, tons flown, 1971, 1063  
Australia-England weekly, commenced, 1136  
first dispatched direct to England, 1132  
Postcode system introduced, 1142  
rates, 259  
service  
Melbourne-Adelaide started, 1133  
Sydney-Melbourne overland, 1132  
services, 258-60
- Maintenance, Legal Aid Committee applications, 1971, 966
- Maize  
area  
sown, seasons 1966-67 to 1970-71, 889  
yield, and gross value, 1970-71, 884  
cultivated area, Statistical Districts, season 1970-71, 886  
(fodder) growers, Statistical Districts, season 1970-71, 885  
for grain  
area, 1838 to 1970-71, 1086-7  
production, 1841 to 1970-71, 1086-7  
yield per acre, 1841 to 1970-71, 1086-7  
green fodder, seasons 1966-67 to 1970-71, 889  
planters on rural holdings, 1967-1971, 883  
production, seasons 1966-67 to 1970-71, 889  
value, 1966-67 to 1970-71, 889, 908  
yield  
(average) per acre, seasons 1966-67 to 1970-71, 889  
Statistical Districts, season 1970-71, 886
- Majorca, newspaper, 601
- Malaya, Australian Imperial Forces, 460
- Maldon  
gold discovered, 157  
hospital built, 557  
newspaper, 600  
Shire  
area, 30 June 1971, 801  
population, censuses 1966 and 1971, 801  
water supply, 218
- Malignant neoplasms  
cause of death  
in age groups, 1971, 819-20  
1971, 818  
death rates in age groups, 1920-1922 to 1965-1967, 820  
deaths, by age group and sex, 1971, 821
- Mallacoota Inlet National Park, 108
- Mallec  
development 1890s, 105  
District  
cereal crops, area and yield, season 1970-71, 873  
rainfall, 1962-1971, 766  
North District, rainfall variation, 766

**Mallee—continued**

- Research Station
    - oat breeding, 131
    - soil conservation, 120
    - scrub, 77
    - South District, rainfall variation, 766
  - Statistical District
    - crops, yield, season, 1970-71, 886
    - ensilage
      - made, 1970-71, 889
      - stocks, 31 March 1971, 889
    - fruit trees, plants, etc., season 1970-71, 892
    - growers of certain crops, season 1970-71, 885
    - hay stocks, 31 March 1971, 889
    - lambling
      - forecast, etc., 1971, 899
      - season 1970-71, 898
    - land occupied, area, etc., season 1970-71, 881
    - livestock distribution, 31 March 1971, 894
    - map, 880
    - pigs and pig keepers, 31 March 1971, 895
    - rams, according to breed, 31 March 1971, 897
    - sheep
      - and lambs, 31 March 1971, 898
      - shorn, etc., season 1970-71, 899
      - breeds, 31 March 1971, 896
  - Division
    - area
      - by municipality, 30 June 1971, 802
      - of State, percentage, census 1971, 795
      - 30 June 1971, 804
    - manufacturing establishments, 1968-69, 911
    - map, inside back cover
    - population
      - by municipality, censuses 1966 and 1971, 802
      - census 1971, 795
      - censuses
        - 1947-1971, 787
        - 1966 and 1971, 804
        - intercensal changes, 1961-1971, 787
- Mallee Pastoral Leases Act* 1883, 98
- Malmsbury**  
gardens, 110  
Reservoir, 218
- Malt**, manufactured, 1970-71 and 1971-72, 912
- Maltese born persons**, censuses 1966 and 1971, 791
- Malua**, Melbourne Cup winner, 1152
- Malvern**  
area, 30 June 1971, 800  
population, censuses 1966 and 1971, 797, 800
- Malvolio**, Melbourne Cup winner, 1152
- Man of La Mancha, The*, musical, 529
- Man-shy*, Frank Dalby Davison, 521
- Mandarin trees**  
Statistical Districts, season 1970-71, 892  
1967-68 and 1970-71, 891
- Mandarins**, production, 1966-67 to 1970-71, 891
- Manhood** suffrage approved, 428, 439
- Manifold**, John, poet, 522
- Manifold**, Thomas, settler, Point Henry, 103
- Mann**, Leonard, novels, 521
- Mann**, S. F., Aboriginal artefact collection presented to National Museum of Victoria, 505
- Manners-Sutton**, Sir John Henry Thomas, Governor and Commander-in-Chief, 1149
- Mannix**, Dr Daniel, Archbishop, 1138
- anti-conscription, 435  
death, 1141
- Mansbridge**, Albert, Workers Educational Association, 507
- Mansell**, Arthur Robert, M.L.C., 771
- Mansfield Shire**  
area, 30 June 1971, 803  
population, censuses 1966 and 1971, 803
- Manslaughter**  
commitments by coroners, 1967-1970, 973  
higher court cases, 1969 and 1970, 974  
persons convicted  
ages, 1970, 976  
and result of hearing, 1970, 975
- Manson**, James Williamson, M.L.A., 772
- Manufactured articles**, 1970-71 and 1971-72, 912-3
- Manufacturing**  
development, 322-36  
energy, 915-6  
establishments  
commenced and completed, value, 1967-68 to 1971-72, 980, 981  
development, 1901 to 1969-70, 910  
employment, 911  
Australia, 1966, 269

**Manufacturing—continued**

- establishments—*continued*  
employment—*continued*  
1860 to 1969-70, 1095-7  
1901 to 1969-70, 910  
fuel used, value, 1901 to 1969-70, 910  
land, buildings, plant, etc., value  
1865 to 1967-68, 1095-7  
1901 to 1967-68, 910  
materials used, value, 1901 to 1969-70, 910  
number  
1850 to 1969-70, 1095-7  
1901 to 1969-70, 910  
1968-69, 911  
output, value  
1880 to 1969-70, 1095-7  
1901 to 1969-70, 910  
production, value, 1919-20 to 1969-70, 1096-7  
products, 1970-71 and 1971-72, 912-3  
purchases, transfers in, and selected expenses, 911  
sales, transfers out, etc., 911  
value added, 910, 911  
wages and salaries paid in Statistical Divisions, 1968-69, 911  
growth, 1860s, 428  
legislation, development, 396-9  
products, 1970-71 and 1971-72, 912-3  
tariff protection, 388-90  
work force (percentage), Australia, census 1966, 266
- Manures**, railway traffic, 1966-67 to 1970-71, 1052
- Maori War**, Second, 456
- Mapping** *see also* Surveying for land settlement and mapping  
aerial photography, 91  
developments, Department of Crown Lands and Survey, 692  
Geological Survey, 152
- Maps in Victorian Year Books**, 1961-1972, 1169-70
- Marabou**, Melbourne Cup winner, 1152
- Marcus Clark Ltd**, superannuation, 412
- Marcus Oldham Farm Agricultural College**, 147
- Maribyrnong**  
explosives factory, 681  
first motor car race, 617  
immigrant hostel, 581  
ordnance factory, 681  
River, flow, annual, 763
- Marine**  
Board  
of Victoria, 231  
Port Phillip pilots, 240  
fish *see* Fish  
insurance *see* Insurance, fire, marine, and general  
*Marine Act* 1890, 231  
*Marine molluscs of Victoria*, Macpherson, J. H., and Gabriel, C. J., 701
- Marist Brothers**, schools founded, 486
- Marital status** of the population, censuses 1966 and 1971, 792
- Maritime trade**, 382-90 *see also* Exports, Imports, Ports, Shipping  
before 1850, 383-4  
coastal shipping, 232-4  
early port development, 382-3  
from  
1850-1870, 384  
1870-1910, 385  
1910-1950, 385-7  
1950-1970, 387-8  
tariff protection, 388-90
- Marked Man, A*, Ada Cambridge, 521
- Marketable Certificates of Deposit**, introduced, 341
- Marketing of Primary Products Act* 1937, 129
- Markets**, primary produce, etc., development, 365-7
- Marlin**  
gas field, 165, 167  
oil field, 164
- Marong Shire**  
area, 30 June 1971, 803  
population, censuses 1966 and 1971, 796, 803
- Maroondah**  
reservoir, 210  
water output, 1966-67 to 1970-71, 865  
water supply system, M.M.B.W. capital outlay, 1966-67 to 1970-71, 865
- Marriage** *see also* Marriages, Married dissolutions *see* Divorce  
Guidance Council of Victoria, training of marriage counsellors, 575
- rate  
by States, 1967-1971, 808  
1837-1971, 1071-3

- Marriage—*continued*  
 rate—*continued*  
 1967–1971, 808  
 settlements, 464  
 Marriages *see also* Marriage, Married  
 bridegrooms and brides  
 age, mean, 1967–1971, 810  
 percentage in age groups, 1971, 809  
 relative ages, 1971, 809  
 civil, 1967–1971, 811  
 conjugal condition  
 of persons marrying, 1967–1971, 810  
 percentage of persons marrying in each,  
 1940–1971, 810  
 mean age of bridegrooms and brides, 1967–1971,  
 810  
 minors  
 1900–1902 to 1965–1967, 50  
 1967–1971, 809  
 number  
 by States, 1967–1971, 808  
 1837–1971, 1071–3  
 registration commenced, 3, 1134  
 religious and civil, 1971, 811  
 1967–1971, 808  
*Marriages, Births, and Deaths : Preliminary Statement,*  
*Commonwealth Bureau of Census and Statistics,*  
 45  
 Married *see also* Marriage, Marriages  
 (ever) males and females in population aged 15 years  
 and over, 1881–1966, 40  
 persons, censuses 1966 and 1971, 792  
 Women Teachers Pensions Fund, expenditure,  
 government, 1966–67 and 1967–68, 1002  
 Women's Superannuation Fund, expenditure,  
 government, 1968–69 to 1970–71, 1002  
 Marshall, Alan, novelist, 522  
 Marshall, John, swimmer, 614  
 Martin, Sir Charles James, F.R.S., 632  
 Martin, Sir Leslie Harold, F.R.S., 634  
 Martin, C. J., snake venom experiments, 628  
 Martin, David, novelist, 522  
 Martin, Phillip, poet, 523  
 Martin, William Joseph, judge, 769  
 Martin  
 and King Pty Ltd, railway rolling stock  
 manufacture, 334  
 Committee, report on technical education, 490, 502  
 Martini-Henri, Melbourne Cup winner, 1152  
 Martyn, Laurel, Ballet Victoria, 530  
 Maryborough  
 area, 30 June 1971, 801  
 gold discovered, 157  
 hospital built, 557  
 Knitting Mills (Cuttie) Ltd, 328–9  
 newspaper, 600  
 population, censuses 1966 and 1971, 798, 801  
 radio station, call sign, 917  
 siting, 174  
 water supply, 877  
 Mary's Mount, girls school, founded, 486  
 Maryvale, paper  
 manufacturing, 330  
 pulp mill, 695, 746–7  
 Masculinity  
 age distribution, and conjugal condition of the  
 population, 39–41  
 of the population in age groups  
 1854–1881, 48  
 1891–1933, 49  
 1947–1966, 49  
 1947–1971, 789  
 urban and rural areas, census 1971, 795  
 1836–1971, 1069–71  
 Mass  
 media, 585–605  
 broadcasting and television, 585–95  
 press, 595–603  
 publishing, 603–6  
 production, government, 327  
 Massey-Ferguson (Australia) Ltd, research and  
 development, 738  
 Massina, A. H., printer, 605  
 Massine, choreographer, 530  
 Masson, Professor (later Sir) David Orme  
 C.S.I.R. research, 629  
 F.R.S., 633  
 Institute of Science and Industry (later C.S.I.R.O.),  
 established, 657  
 University of Melbourne, Faculty of Science, 627,  
 641, 642  
 Master  
 Builders' Association, 408  
 in Lunacy, 468  
*Master of the Supreme Court Act* 1948, 468  
 Maternal  
 and Child Welfare Branch, Department of Health  
 547–8  
 welfare, 547–8  
 expenditure, Health Department, 1966–67 to  
 1970–71, 939  
 Maternity  
 allowances  
 expenditure, National Welfare Fund, 1967–68  
 to 1971–72, 948  
 number and  
 amount paid, 1912–13 to 1970–71, 1111–2  
 payments, 1967–68 to 1971–72, 949  
 homes, number, 1967–1971, 942  
*Maternity Allowance Act* 1912, given Royal assent, 1138  
 Mathematics, research, La Trobe University, 651  
 Mathers, Peter, novelist, 522  
 Matheson, Dr G. C., appointed director, Walter and  
 Eliza Hall Institute of Research in Pathology  
 and Medicine, 640  
 Mathews, C. R. T., M.H.R., 783  
 Matriculation examination *see also* Higher School  
 Certificate Examination  
 first held, 493–4  
 passes, etc.  
 1855–1906, 1101  
 1944–1969, 1102–3  
*Matrimonial Causes Act* 1959, 466, 1073  
 Mattresses manufactured, 1970–71 and 1971–72, 913  
 Maurice, Furnley, (Frank Wilmot), poet, 523  
*Mavis*, pilot ship, 239  
 Mawson, Antarctic station, 680, 1141  
 May, Robert William, M.L.C., 771  
 Mead, Dr Elwood, Chairman, State Rivers and  
 Water Supply Commission, 117  
 Meadmore, Clement, sculptor, A.M.P. Square, 515  
 Meadow hay, area, yield, and gross value, 1970–71,  
 884  
 Meagher, Edward Raymond, M.L.A., 768, 772  
 Meals-on-wheels  
 Commonwealth subsidy, 577  
 local government, 210  
*Meanjin Quarterly*, C. B. Christesen, 523  
 Means test, alterations, 577  
 Measles, cause of death, 55  
 1971, 818  
 Meat  
 butchers, retail sales, value, 1966–67 to 1970–71,  
 1037  
 canned, manufactured, 1970–71 and 1971–72, 912  
 export price index, 1961–62 to 1970–71, 849  
 exported, State of final shipment, 1969–70, 272  
 frozen, first delivery to England, 106  
 health laws, 545  
 imports and exports, value, 1969–70 and 1970–71,  
 1039  
 prices, average retail, 1949–1971, 848  
 production, per cent, Australia, season 1969–70,  
 268  
 Mechanical  
 engineering research, 638–9  
 C.S.I.R.O., 664–5  
 services components, Wholesale Price Index,  
 1967–68 to 1970–71, 849  
 Mechanics institutes  
 adult education, 506  
 art education, 519  
 established, 488–9  
 libraries, 503, 621  
 Medawar, P. B., Nobel Prize shared with Sir  
 Macfarlane Burnet, 641  
 Media *see* Mass media  
 Medical *see also* Medicine  
 benefits *see also* Hospital benefits, Nursing home  
 benefits, Pharmaceutical benefits  
 development, 560–1  
 expenditure, National Welfare Fund, 1967–68  
 to 1971–72, 948  
 friendly societies, 364  
 organisations, members, payments, etc., 1966–67  
 to 1970–71, 952  
 pensioners, expenditure, National Welfare Fund,  
 1967–68 to 1971–72, 948  
 Plan, Commonwealth, introduced, 561  
 development *see also* research *below*  
 education, 561–3  
 gynaecology, 540–1

- Medical—continued**  
 development—*continued*  
 medical practice, 541–3  
 obstetrics, 540–1  
 paediatrics, 540  
 dispensaries, number, 1967–1971, 942  
 education, developments, 561–3  
 practice, 541–3  
 research *see also* development *above*  
 Committee, University of Melbourne, 640  
 computers used, 713  
 developments, 628  
 Funds Committee, University of Melbourne, 640  
 Monash University, 646–8  
 National Heart Foundation of Australia, 655–6  
 St Vincent's School of Medical Research, 654–5  
 statistics *see* Health and Medical research statistics  
 Thomas Baker, Alice Baker and Eleanor Shaw  
 Medical Research Institute, 647–8  
 University of Melbourne, 639–40  
 Walter and Eliza Hall Institute of Medical  
 Research, 640–1  
 School, University of Melbourne, 561–3, 1135  
 Service, School, 435, 548  
 services funds, friendly societies, 1966–67 to 1969–70,  
 963–4  
 social work, 556–7  
 staff  
 mental health institutions, 1848–1971, 1108–11  
 public hospitals, 1911–12 to 1970–71, 1107–8  
 students, numbers, 562  
 treatment, emergency, radio doctor centre opened,  
 1143  
 Medicinal products, imports and exports, 1969–70  
 and 1970–71, 1039  
 Medicine, development, 532–43 *see also* Medical  
 biochemistry, 533–4  
 drugs, 532–3  
 otorhinolaryngology, 539–40  
 physician's role, 534–6  
 physiology, 533–4  
 radiology, 533  
 Medics, pasture improvement, 126  
 Medley Hall, 495  
 Meek, William, first solicitor, 473  
 Melba, Dame Nellie, opera singer, 526, 531  
 death, 1139  
*La Boheme* broadcast, 585–6  
 Melba Memorial Conservatorium of Music, The, 525  
 Melbourne, Viscount, Melbourne (city) named after,  
 1132  
 Melbourne, 175–83  
 administration commenced, 175  
 Airport (Tullamarine) *see also* Essendon Airport  
 aircraft movements, 1064  
 meteorological office, 674  
 opened, 1142  
 passenger movements, 1063, 1064  
 and  
 Essendon  
 Airports, movements, etc., 1960–1971, 1126  
 Railway Co., 247  
 Hobson's Bay  
 Railway Co., 245  
 first railway opened, 1134  
 purchased by government, 1135  
 United Railway Co., 248  
 Metropolitan  
 Board of Works, 210–5  
 administering Act of Parliament, 864  
 created, 180, 208, 433, 1136  
 drainage, 214–5  
 farm at Werribee  
 revenue and expenditure, 1966–67 to  
 1970–71, 867  
 1970–71, 866  
 foreshores, 214  
 highways, 213–4  
 Melbourne plan to 21st century announced,  
 1146  
 metropolitan planning scheme, 436, 1140  
 parks, 214  
 Planning  
 and Highways Account, revenue and  
 expenditure, 1966–67 to 1970–71, 868  
 scheme, metropolitan, 436, 1140  
 Port Phillip Bay, environmental study, 694  
 property rated, assessed value, 1970–71, 866  
 research, 698–700  
 revenue, expenditure, etc., 1966–67 to  
 1970–71, 867
- Melbourne—continued**  
 and—*continued*  
 Metropolitan—*continued*  
 Board of Works—*continued*  
 sewerage, 208, 212–3  
 connections, 1966–67 to 1970–71, 865  
 system  
 capital outlay, 1966–67 to 1970–71, 866  
 inaugurated, 1136  
 statistics, 865–8  
 superannuation, 413  
 town planning, 186–9  
 water  
 consumption, 1966–67 to 1970–71, 865  
 output, 1966–67 to 1970–71, 865  
 supply, 210–2  
 waterworks, capital outlay, 1966–67 to  
 1970–71, 865  
 Tramways Board, 182, 208, 253 *see also*  
 Tramways, provincial cities  
 established, 433, 1138  
 expenditure, revenue, etc., 1967–68 to  
 1970–71, 1055  
 motor omnibus systems  
 mileage and passenger journeys, 1925–1971,  
 1122–3  
 operating expenses, receipts, etc., 1966–67  
 to 1970–71, 1056  
 1966–67 to 1970–71, 1055  
 revenue, expenditure, etc., 1967–68 to  
 1970–71, 1055  
 tramways  
 mileage and passenger journeys,  
 1886–1971, 1122–3  
 mileages, passenger journeys, etc.,  
 1966–67 to 1970–71, 1054  
 operating receipts, expenses, etc.,  
 1966–67 to 1970–71, 1056  
 Suburban Railway Co., 247  
 area, 30 June 1971, 800  
 banks first opened, 1132  
 Benefit Building Society, 359  
 Bicycle Club, 614  
 Botanic Gardens, 109, 629–30, 701–2, 1133  
 Bottle Works Co., The, founded, 714  
 Bowling Club, 613  
 broadcasting, first station, 260  
 Brokers' Association, attempt to form stock  
 exchange, 347  
 buildings, comment by the *Argus*, 178  
 capital city of Commonwealth, 181–2  
 census populations, 1947–1971, 786  
 Chorale, 524–5  
 churches, 177  
 City  
 Council  
 electricity production, 220, 221  
 grant to Melbourne Theatre Company, 529  
 Pentridge contract for bluestone cancelled, 572  
 proclaimed, 1133  
 rate increase, 1146  
 town planning, 186–7  
 of  
 abattoirs, revenue and expenditure, 1970, 855  
 Borough of Flemington and Kensington  
 absorbed, 454  
 business undertakings, 1970, 855  
 Country Roads Board Account, 1970, 860  
 electricity, revenue and expenditure, 1970, 855  
 Gas and Coke Co., 225  
 loan receipts, 1970, 856  
 ordinary services  
 expenditure, 1970, 853–4  
 revenue, 1970, 852  
 superannuation, 413  
 Town of North Melbourne absorbed, 454  
 water supply, revenue and expenditure, 1970,  
 855  
 status reached, 177  
 climatic elements, yearly means and extremes, 767  
 cloudiness, 767  
 Club, formed, 620  
 Conservatorium, founded, 525  
 Consumer Price Index, 848  
 Corporation, established, 451  
 Cricket  
 Club, 608–9  
 tennis first played, 610  
 Ground, 608–9  
 Cup, 611  
 first run, 1135  
 week, social activities, 620

Melbourne—*continued*

- Cup—*continued*  
 winners, 1861–1972, 1152  
 Dental Hospital, established, 543  
 depression, effect of  
 1890s, 181  
 1930s, 182  
 description by Anthony Trollope, 175  
 development, 175–83  
 Electric Supply Co., 221  
 acquisition by S.E.C., 223  
 Geelong tramways, 253  
 Exhibition, 1854, National Museum's specimens  
 displayed, 630  
 Fire  
 and Marine Insurance Co., formation, 345  
 November 1897, 346  
 floods, 81, 1146  
 Gaol, 571, 572  
 Gas  
 Company, first all-welded gas holder constructed,  
 721  
 illumination experiment, 1133  
 manufacture ceased, 169  
 supply started, 1134  
 Works, 225  
 gold rush, effects, 178  
 government started, 175  
 Grammar School  
 first Australian Rules football match played, 609  
 founded, 485  
 Harbor Trust, 234–6  
 Alfred Graving Dock, purchased, 334  
 established, 375, 433, 447, 1135  
 revenue and expenditure, 1967–1971, 1047  
 High School, founded, 434, 1137  
 Hospital  
 foundation stone laid, 1133  
 laboratory research, Walter and Eliza Hall  
 Institute of Research in Pathology and  
 Medicine, 628  
 opened, 557, 1133  
 Hydraulic Power Co., hydraulic lift, 180–1, 182  
 incorporated as a town, 445, 451, 1133  
 Institution for Diseases of the Eye and Ear (later  
 Royal Victorian Eye and Ear Hospital),  
 established, 557–8, 1135  
 International Exhibition  
 building for, 180  
 music, 525  
 Kindergarten Teachers' College, 479, 480, 492  
 enrolments, 1968–1972, 935  
 income, 1967–1971, 935  
 Ladies Welfare Society, 566  
 Lady Gowrie Child Centre, opened, 480  
 land sales, 94  
 Liedertafel, established, 524  
 Little Theatre Company, founded, 529  
 Mail  
 Exchange, mail handled, 262  
 overland to England and Sydney, 1132  
 services to Adelaide started, 1133  
 Market  
 Commissioners, established, 451  
 first opened, 1133  
 Mechanics Institute  
 formed, 489  
 library, 503  
 Medical School  
 established, 542  
 women admitted, 543  
 Metropolitan Planning Scheme, 188  
 report, 187  
 milk supply, 319  
 Motor Body Works, 329  
 Mount Alexander and Murray River Railway Co.,  
 The, 142, 245, 1134  
 municipality declared, 177  
 Music Festival Association Concerts, 525  
 naming, 88, 173, 175, 1132  
 newspapers first published, 1132  
 Orphanage, separated from St James Cathedral,  
 566  
 Philharmonic Society, founded, 524  
 plan by Robert Hoddie, 88, 175–6, 1132  
 population *see also* Census, Censuses, Melbourne  
 Statistical Division, population  
 censuses 1966 and 1971, 797, 800  
 increasing, 436  
 1836–1971, 1069–71  
 Port *see also* Melbourne Harbor Trust  
 cargoes discharged and shipped, 1969–70 and  
 1970–71, 1045

Melbourne—*continued*

- Port—*continued*  
 customs and excise revenue collected, 1970–71,  
 1042  
 vessels entered, 1969–70 and 1970–71, 1044  
 Post Office, 258  
 proclaimed a city, 1133  
 Public Library  
 foundation stone laid, 1134  
 Museum and Art Gallery, disallowed to open on  
 Sundays, 621  
 opened, 502, 1134  
 rail link to Adelaide and Sydney, established, 1136  
 Railway  
 Company, 247  
 network, 247–9  
 to  
 Geelong, commenced, 1134  
 Sandridge (Port Melbourne), opened, 1134  
 Repertory Theatre, formed, 529  
 settlement, 172, 175, 1132  
 sewerage works, started, 180, 181  
 Statistical Division  
 area  
 by municipality, 30 June 1971, 800  
 of State, percentage, census 1971, 795  
 30 June 1971, 804  
 houses, new, commenced, completed, etc.,  
 1967–68 to 1971–72, 982  
 Housing Commission dwelling construction,  
 1966–67 to 1970–71, 986  
 infant deaths, 1967–1971, 823  
 manufacturing establishments, 1968–69, 911  
 map, inside back cover  
 population  
 and remainder of the State, censuses  
 1901–1971, 788  
 by municipality, censuses 1966 and 1971, 800  
 census 1971, 795  
 censuses  
 1947–1971, 787  
 1966 and 1971, 804  
 intercensal changes, 1961–1971, 787  
 statisticians conference first held, 1135  
 Stock Exchange *see* Stock Exchange of Melbourne  
 Ltd, The  
 streets  
 gas lit, 1134  
 named, 1132  
 suburbs, expansion, 179, 182–3  
 Symphony Orchestra  
 country town concerts, 526  
 formed, 525, 593  
 free open air concerts, 526  
 merged with University Symphony Orchestra,  
 525  
 Teachers College  
 art teacher training, 518  
 establishment, 491  
 Technical College, art teacher training, 519  
 telegraphic communications established with  
 Sydney and Adelaide, 1134  
 Williamstown, 1134  
 Telephone Exchange Co. Ltd, first telephone  
 exchange, 260, 1136  
 television  
 programmes, commercial, composition, 1971–72,  
 918  
 stations, 30 June 1972, 918  
 Theatre Company, 529–30  
 Town  
 Council, first elected, 1133  
 Hall, opening, music, 525  
 planning, 186–9  
 Trades Hall Committee, formed, 405  
 tramways *see* Melbourne and Metropolitan  
 Tramways Board  
 (Tullamarine) Airport *see* Melbourne Airport  
 Underground Rail Loop  
 Authority, levy on railways, 1970–71, 1053  
 construction begins, 1144  
 station sites approved, 1145  
 University *see also* University of Melbourne  
 Press, publishers, 605  
 Rowing Club, formed, 616  
 urban area, population  
 of urban centres, censuses 1966 and 1971, 797–8  
 summary, censuses 1966 and 1971, 796  
 Veterinary College, 137, 643, 644  
 Volunteer Rifle Regiment, 456  
 wage, basic  
 and minimum, Commonwealth Conciliation and  
 Arbitration Commission, 1907–1972, 1076

- Melbourne—*continued*  
 wage, basic—*continued*  
   Victorian State, 1953–1967, 1077  
   4th King's Own Regiment, 455  
*Melbourne*, naval vessel, 459  
*Melbourne*, tug, sunk, 1148  
*Melbourne*  
   *Advertiser*, 365, 595, 1132  
   *album*, lithographs, Charles Troedel, 179  
   *almanac and Port Phillip directory*, William Kerr, 604  
   *Courier*, 598  
   *Daily News*, 598, 599  
   *Evening Mail*, 600  
   *Family Journal*, 598  
   *Illustrated News*, 600  
   *Morning Herald*, 599  
   *Observer*, 603  
   *Odes*, Furnley Maurice, (Frank Wilmot), 523  
   *Punch*, 600, 621  
   *Review*, 621  
   *Times*, 598, 599  
   *Weekly*  
     *Courier*, 598  
     *Dispatch*, staff deserted, 599  
*Melbourn* *Deutsch Zeitung*, foreign language newspaper, 600  
 Meldrum, Max, artist, 511  
 Melton  
   airfield, 258  
   population, censuses 1966 and 1971, 798  
   Reservoir, capacity, etc., 877  
   Shire  
     area, 30 June 1971, 800  
     population, censuses 1966 and 1971, 800  
     Werribee River flow, 763  
 Members of Parliament *see* Parliament  
*Memoirs*, National Museum of Victoria, 505, 700  
*Men of Yesterday*, Margaret Kiddle, 524  
 Menhennitt, Clifford Inch, judge, 769  
 Meningitis, cause of death, 1971, 818  
 Meningococcal infection, cause of death, 1971, 818  
 Mental Health  
   Authority  
     Mental Health Research Institute, 697–8  
     persons under care  
       1967–1971, 941  
       1 December 1970 and 30 November 1971, 941  
     volunteer training courses, 567, 575  
     developments, 548–51  
     institutions  
       number, 1967–1971, 942  
       patients, staff, etc., 1848–1971, 1108–11  
       receipts and expenditure, 1966–67 to 1970–71, 944  
     Research Institute, Parkville, 550, 697  
     Professorial (later Parkville) Psychiatric Unit, 550, 697  
   hospitals  
     Consolidated Fund, payments, 991  
     Fund, Tattersall lotteries, payments, 1966–67 to 1970–71, 995  
   Hygiene Authority, 435, 450, 547, 550, 1140 *see also*  
     Mental Health Authority  
   institutions  
     Commonwealth payments, 1966–67, to 1970–71, 989  
     Consolidated fund receipts, 1966–67 to 1970–71, 990  
 Mentor, Melbourne Cup winner, 1152  
 Menzies, Rt Hon. Sir Robert Gordon  
   F.R.S., 635  
   retired, 1142  
 Menzies Ministry (Liberal-Country Party) succeeds  
   Chifley Ministry, 1140  
 Merbein, population, censuses 1966 and 1971, 798  
 Mercer  
   brothers, Mt. Shadwell Station, 103  
   House, opened, 492  
*Mercury*, newspaper, John Davies, 597  
*Mercury and Victorian Standard*, newspaper, 600  
 Mercy  
   College, Ascot Vale, 493  
   Maternity Hospital, opened, 1143  
 Merino  
   Comeback  
     rams, distribution in Statistical Districts, 31  
       March 1971, 897  
     sheep, numbers, etc., 1968, 1970 and 1971, 898  
   Merino—*continued*  
     rams  
       distribution in Statistical Districts, 31 March  
       1971, 897  
       mated, Statistical Districts, 1971, 899  
     sheep  
       breeding, John and William Macarthur, 123  
       distribution in Statistical Districts, 31 March  
       1971, 896  
       numbers, etc., 1968, 1970 and 1971, 898  
 Merrindale Biological Research Station, Croydon, 723  
 Merriwee, Melbourne Cup winner, 1152  
 Merz, Charles Hesterman, electrification of railways,  
   221, 248  
 Meszaros, Andor, sculpture, Biology Building,  
   University of Melbourne, 515  
 Metalliferous ores, exported, State of final shipment,  
   1969–70, 272  
 Metals  
   and metal manufactures, imports and exports,  
     1969–70 and 1970–71, 1040  
   export price index, 1961–62 to 1970–71, 849  
   non-ferrous, exported, State of final shipment,  
     1969–70, 272  
 Metcalfe Shire  
   area, 30 June 1971, 801  
   population, censuses 1966 and 1971, 801  
 Meteorological and Magnetic Observatory, Flagstaff  
   Gardens, Melbourne, 629  
 Meteorology, research *see also* Climate  
   Commonwealth Bureau of Meteorology, 673–5  
   University of Melbourne, Faculty of Science, 643  
*Meteorology Act 1955*, 674–5  
 Methodist  
   Ladies College, founded, 486  
   schools  
     and teachers, number, 1967–1971, 925  
     pupils  
       ages, 1971, 926  
       1967–1971, 925  
 Methodists, censuses 1966 and 1971, 793  
 Metropolitan  
   Board of Works *see* Melbourne and Metropolitan  
     Board of Works  
   drainage and river improvement rate, Melbourne  
     and Metropolitan Board of Works, 1970–71,  
     866  
   Fire Brigades Board  
     constituted, 346  
     fire stations, employees, 1967–1971, 870  
     revenue and expenditure, 1966–67 to 1970–71,  
     870  
   Gas Company, 225, 227, 228, 1135  
   general rate, Melbourne and Metropolitan Board  
     of Works, 1970–71, 866  
   Golf Club, championship events, 612  
   improvement rate, Melbourne and Metropolitan  
     Board of Works, 1970–71, 866  
   Planning  
     Commission, 182  
     Scheme, 214  
   route numbering scheme, Road Safety and Traffic  
     Authority, 244  
   Town Planning Commission, finance, 187  
   Transportation Committee, 188  
*Metropolitan Gas Company's Act 1878*, 225  
 Mia Mia, flight of first Australian made aeroplane,  
   330  
 Michaelis-Hallenstein Pty Ltd, leather research, 741  
 Michel, Louis, gold discovery, 155  
 Michell, Anthony George Maldon, F.R.S., 633  
 Michell, John Henry  
   F.R.S., 633  
   Faculty of Science, University of Melbourne, 642  
 Microsurgery, 538  
 Middle East, Australian Imperial Forces, 459  
*Midnight Sun*, newspaper, 602  
*Midwives Act 1915*, 541  
 Migrant, Migrants, Migration *see* Immigrant,  
   Immigrants, Immigration  
 Milburn, David, irrigator, 116  
 Mildura  
   Airport, passenger movements, 1971, 1063  
   area, 30 June 1971, 802  
   Chaffey settlement, 433  
   climatic elements, mean, 764  
   development, 185  
   horticultural research station, 690  
   immigrant holding centre, 581  
   irrigation settlement established, 1136  
   meteorological office, 674



- Mildura—continued**  
 population, censuses 1966 and 1971, 798, 802  
 radio station, call sign, 917  
 Shire  
   area, 30 June 1971, 802  
   population, censuses 1966 and 1971, 802  
 siting, 174  
 television stations, 918  
 Triennial, sculpture competition, 514  
 Urban Water Trust, 219  
   administering Act of Parliament, 864  
 water supply, 218
- Milk**  
 condensed  
   made, 1967–1971, 895  
   manufactured, 1970–71 and 1971–72, 912  
 marketing *see* Dairying industry, development  
 powdered  
   full cream, made, 1967–1971, 895  
   manufactured, 1970–71 and 1971–72, 912  
   prices, average retail, 1949–1971, 848  
   produced, 1967–1971, 894  
   production  
     by States, 1970–71, 879  
     percentage, Australia, season 1969–70, 268  
     value, local, 1966–67 to 1970–71, 908  
     1892–93 to 1970–71, 1090–1
- Milk Board Act 1951**, 319
- Milking machines**  
 development and numbers, 139–40  
 on rural holdings, 1967–1971, 883
- Miller, E. Morris**, *Australian literature from its beginnings to 1935*, 519
- Miller, Jacques Francis Albert Pierre**, F.R.S., 635
- Millet (broom)**, area, yield, and gross value, 1970–71, 884
- Mine managers**, examination, 162
- Mineral**  
 fuels  
   exported, State of final shipment, 1969–70, 272  
   imported, importing State, 1969–70, 273  
   manufactures, imports and exports, 1969–70 and 1970–71, 1040  
 mineralogy *see* Geological  
 production, quantity and value  
   1851 to 1970–71, 1093–4  
   1968–69 to 1970–71, 907  
 research, C.S.I.R.O., 660–2  
 Resources, Bureau of *see* Bureau of Mineral  
   Resources, Geology and Geophysics  
 tar, etc., imports and exports, 1969–70 and 1970–71, 1039  
 technology, research and development, 729–31
- Minerals**, assayed content, 1968–69 to 1970–71, 906
- Miners**  
 associations, 405, 406  
 Eureka Stockade rebellion, 157, 455–6, 1134  
 Right, replaces Gold Licence, 157
- Mines**  
 Commissioner of, first appointed, 161  
 Courts of, abolishment, 160  
 Department  
   development and responsibilities, 161  
   explosives control, 161  
   forest control, 447  
   gold buying, 161  
   oil exploration, 163–4  
   reservoir construction, 215  
 Minister of  
   first appointed, 161  
   pipeline licences, 167  
 Secretary for, first appointed, 161
- Minhamite Shire**  
 area, 30 June 1971, 802  
 population, censuses 1966 and 1971, 802
- Minimum weekly wage rates** *see* Wage rates, minimum weekly
- Mining**, 152–71 *see also* Gold  
 accidents, 162  
 and quarrying  
   production, value, net, 1929 to 1970–71, 1094  
   statistics, 906–7  
 Boards  
   abolished, 449  
   reconstituted, 161, 449  
 Consolidated Revenue Fund, expenditure  
   1852 to 1899–1900, 286  
   1901–02 to 1969–70, 290  
 expenditure, 1966–67 to 1970–71, 1003  
 Geological Survey of Victoria, 1852–1970, 152–5  
 gold, 155–62  
 law, 160–1
- Mining—continued**  
 natural gas and crude oil, 162–71  
 safety, 162  
 shares, Stock Exchange of Melbourne, 1031–2  
 Minister for Labour, unemployment relief, 449  
 Ministries  
   since responsible government, 1150  
   18 September 1943 to 1972, 768–9  
 Ministry, 442–4  
   for Aboriginal Affairs, created, 450  
   of Defence, established, 457  
   of Electrical Undertakings, set up, 450  
   of Fuel and Power, formation, 167, 450  
   of Labour and Industry, set up, 450  
   of Public Health, established, 546  
   of Social Welfare  
     revenue and expenditure, 1967–68 to 1971–72, 962  
     statistics, 953–62  
       family assistance, 953  
       prisons, prisoners, etc., 957–8  
       probation, 959–60  
       wards of State, 954–6  
       Youth Welfare Division, 961  
   of Transport, set up, 450  
   62nd, 30 September 1972, 768–9
- Minors, marriages**  
 1900–1902 to 1965–1967, 50  
 1967–1971, 809
- Mint, Royal**, building completed, 180
- Mirboo Shire**  
 area, 30 June 1971, 804  
 population, censuses 1966 and 1971, 804
- Mitchell, Clive Alexander**, M.L.C., 771
- Mitchell, David**, lime, 324
- Mitchell, Major Thomas**, 87–8  
 “Australia Felix” report, 173  
 Port Phillip District explored, 175, 1132  
 rivers, naming of, 92, 93  
 route of exploration, map, facing 86  
 Western Victoria explored, 103–4
- Mitchell, Thomas Walter**, M.L.A., 772
- Mitchell, William Henry Fancourt**, Chief  
 Commissioner of Police, 471
- Mitchell River**  
 flow, annual, 763  
 geological survey, 153  
 gold discovered, 156
- Mitta Mitta River**  
 flow, annual, 763  
 gold discovered, 156
- Mobil Oil Australia Ltd**, Altona refinery, 170
- Mobile cranes** *see* Motor vehicles
- Mockridge, Russell**, cyclist, 614
- Model and Normal School**, East Melbourne, 491
- Moe**  
 area, 30 June 1971, 804  
 City, population summary, censuses 1966 and 1971, 796, 804  
 development, 186  
 siting, 174  
 –Yallourn  
   population, censuses 1966 and 1971, 798  
   urban area, population summary, censuses 1966 and 1971, 796
- Mokoan**  
 Dam, research by State Rivers and Water Supply  
 Commission, 709–10  
 Reservoir, 118
- Molesworth, Mr Justice**, mining law, 160
- Moliagul**, gold discovered, 157
- Molluscs**  
 catch, 1966–67 to 1970–71, 905  
 production, quantity and value, 1966–67 to 1970–71, 904
- Monash, General Sir John**, 755  
 death, 223, 1139  
 First World War, 459  
 State Electricity Commission of Victoria, 222
- Monash**  
 Secondary Teachers College, established, 493  
 University *see also* La Trobe University, University  
 of Melbourne  
   choirs, 525  
   computers, 649  
   degrees conferred in faculties, 1968–1972, 930  
   Department of Zoology, Port Phillip Bay  
     environmental study, 700  
   enrolments in faculties, 30 April 1971 and  
   1972, 930  
   expenditure, 1967–1971, 931

- Monash—continued**  
 University—*continued*  
   Faculty of  
     Engineering, research, 645–6  
     Medicine, research, 646–7  
     Science, research, 648–9  
   income, 1967–1971, 931  
   Jock Marshall Reserve, 649  
   legal education, 476  
   medical  
     research, 646–8  
     teaching, 562  
   opened, 487–8, 496, 1141  
   research, scientific, 645–9  
   students enrolled, course type and sex, 930  
   Thomas Baker, Alice Baker and Eleanor Shaw  
     Medical Research Institute, 647–8  
**Moncrieff, Gladys**, singer, 529  
**Money**  
   market, short-term *see* Short-term money market  
   orders issued and paid, 1966–67 to 1970–71, 1064  
**Moneylenders Act 1958**, 357–8  
**Monsanto**  
   Australia Ltd  
     established, 329, 727  
     research and development, 726–7  
   Ltd, Southern Cross Chemical Co. formed with  
     Nicholas Pty Ltd, 727  
**Monsieur Jacques**, play, 527  
**Mont Park**  
   mental hospital, 549  
   short wave reception centre, Postmaster-General's  
     Department, 683  
**Monte Carlo Company** (ballet), 530  
**Montez, Lola**, actress, 528  
**Monthly**  
   *Official List*, Stock Exchange of Melbourne, 349, 350  
   *Report on Vital Statistics*, Registrar-General, 45  
**Moomba Masters**, water ski championships, 615  
**Moonee Valley racecourse**, 612  
**Moorabbin**  
   Airport, 258  
   area, 30 June 1971, 800  
   population, censuses 1966 and 1971, 797, 800  
**Moorabool River**, flow, annual, 763  
**Moore, Maggie**, brought to Australia, 528  
**Moorehead, Alan**  
   novelist, 521  
   *Fatal impact*, 524  
**Mooroopna**, population, censuses 1966 and 1971, 798  
**Mordialloc**  
   area, 30 June 1971, 800  
   population, censuses 1966 and 1971, 797, 800  
**Moresby, H.M.A.S.**, survey ship, 232  
**Morgan, William and Margaret**, endowment to  
   National Gallery, 516  
**Morison, Elsie**, opera singer, 531  
**Mornington**  
   climatic elements, means, 765  
   Peninsula  
     earth tremor, 1145  
     geological survey, 153  
     water supply, 216–7  
   population, censuses 1966 and 1971, 797  
**Reservoir**, 216  
**Shire**  
   area, 30 June 1971, 800  
   population, censuses 1966 and 1971, 800  
**Morrison, Dr Alexander**, languages added to  
   matriculation subjects, 487  
**Morrison, John**, novelist, 522  
**Morrow, James**, stripper harvester, 138  
**Mort, Thomas**, New South Wales Fresh Food and  
   Ice Co. Ltd, 316  
**Mortgage**  
   discharge, stamp duty rates at 1 January 1972, 998  
   Guarantee Insurance Corporation of Australia  
     Ltd, formed, 361  
   transfer, stamp duty rates at 1 January 1972, 998  
**Mortgages**  
   lodged at the Titles Office under Transfer of Land  
     Act, 1966–67 to 1970–71, 1029  
   of real estate lodged for registration at the Titles  
     Office, by type of mortgagee, 1968–69 to  
     1970–71, 1029  
   registered, 1866–1971, 1118–9  
   stamp duty rates at 1 January 1972, 997  
   stock, 1967–1971, 1030  
   Titles Office dealings under the Property Law  
     Act, 1966–67 to 1970–71, 1029  
**Mortlake**  
   population, censuses 1966 and 1971, 798  
**Mortlake—continued**  
**Shire**  
   area, 30 June 1971, 802  
   population, censuses 1966 and 1971, 802  
**Morton, W. L.**, explorer, 77  
**Morwell**  
   brown coal  
     discovered, 1134  
     open cut, 153, 1138  
   electricity and brown coal, production, 221  
   Lurgi brown coal gasification plant, 169, 227, 228  
     696, 1141, 1142  
   population, censuses 1966 and 1971, 798  
   Power Station, electricity generated, power source,  
     etc., 1971–72, 915  
**Shire**  
   area, 30 June 1971, 804  
   population, censuses 1966 and 1971, 796, 804  
   siting, 174  
**Morwong** (jackass fish), catch, 1966–67 to 1970–71,  
   905  
**Moss, George Colin, M.L.A.**, 772  
**Mothercraft**  
   lectures, Department of Health, 547  
   nurses, 31 December 1971, 945  
**Motor**  
   accident damages claims, Legal Aid Committee  
     applications, 1971, 966  
   boat racing, 616  
   car *see* vehicle, vehicles *below*  
   cycle racing, 617  
   cycles  
     licences *see* Drivers  
     number, 1953–54 to 1969–70, 379  
     on register, 1924–25 to 1970–71, 1124  
     registered, 1936–37 to 1970–71, 1124  
   industry, development in Melbourne, 329–30  
   omnibus services  
     Melbourne and Metropolitan Tramways Board  
       mileage and passenger journeys, 1925–1971,  
       1122–3  
       operating receipts, expenses, etc., 1966–67 to  
       1970–71, 1056  
       1966–67 to 1970–71, 1055  
     private vehicles, mileage, revenue, etc., 1966–67  
     to 1970–71, 1056  
   racing, 617  
   Registration Branch  
     gross revenue collected, 1966–67 to 1970–71, 1058  
     revenue collected, 1924–25 to 1970–71, 1124  
     transport, 1953–54 to 1969–70, 379  
   vehicle *see also* vehicles *below*  
   accidents, cause of death  
     in age groups, 1971, 819  
     1971, 818  
   effect on leisure, 623  
   engines, manufacture, 332  
   first produced, 329  
   insurance *see* Insurance, motor vehicle  
   products, research, 738–9  
   registration fees and taxes collected, 1966–67  
     to 1970–71, 992  
   stamp duty rates at 1 January 1972, 998  
   taxes, etc., collected, 1966–67 to 1970–71, 992,  
     996–7  
   tyres, research and development, 747–9  
   vehicles *see also* vehicle *above*  
   accidents *see* Road traffic accidents  
   cars and station wagons, 1953–54 to 1969–70, 379  
   census, 30 September 1971, 1059  
   deaths, 1967–1971, 822  
   effect on town planning, 188  
   illegal use and larceny  
     Children's Court cases, 1970, 970  
     higher court cases, 1969 and 1970, 974  
     persons convicted  
       ages, 1970, 976  
       and result of hearing, 1970, 975  
   licences *see* Drivers  
   manufacture, government encouragement, 332  
   manufactured, 1970–71 and 1971–72, 913  
   new, registrations by make  
     cars and station wagons, 1969–1971, 1059  
     other vehicles, 1970 and 1971, 1060  
   on register  
     1924–25 to 1970–71, 1124  
     1955–1971, 1058–9  
   parts, petrol, etc., retail sales, value, 1966–67  
     to 1970–71, 1037  
   personal consumption expenditure, 1953–54  
     to 1969–70, 379  
   private use, 378–9

- Motor—*continued*  
 vehicles—*continued*  
 railway traffic, 1966–67 to 1970–71, 1052  
 registered, 1936–37 to 1970–71, 1124  
 registration  
 and licence rates, 1 March 1972, 1057  
 fees and taxes, 1966–67 to 1970–71, 996  
 stamp duty, 1966–67 to 1970–71, 996  
 research, 734  
 seat belts made compulsory, 1142  
 taxes collected on  
 ownership and operation, 1966–67 to 1970–71,  
 992, 996–7  
 third party insurance surcharges, 1966–67 to  
 1970–71, 992  
 paid to Consolidated Fund, 1966–67 to  
 1970–71, 997  
 third party insurance surcharges collected,  
 289, 992, 997  
 transport development, 376–9  
*Motor Vehicles Agreement Act 1940*, 332  
 Motors, electric, manufactured, 1970–71 and  
 1971–72, 912  
 Moulded Products (Australasia) Ltd, 728  
 Mount  
 Beauty, population, censuses 1966 and 1971, 798  
 Buffalo  
 National Park, 108  
 expenditure, 1966–67 to 1970–71, 919  
 recreational area, 623  
 survey 1908, 153  
 Buller, exploration by Mueller, 88  
 Derrimut, University of Melbourne, Faculty of  
 Agriculture, scientific research, 146, 636  
 Eccles National Park, expenditure, 1966–67 to  
 1970–71, 919  
 Macedon, holiday resort, 621  
 Richmond National Park, expenditure, 1966–67 to  
 1970–71, 919  
 Rouse Shire  
 area, 30 June 1971, 802  
 population, censuses 1966 and 1971, 802  
 Royal geriatric hospital, 565  
 Shadwell Station, establishment, 103  
 Wills, tin deposits, 153  
 Mt Alexander Company, The, railways, 142  
*Mt Alexander Mail*, miner's newspaper, 600  
 Mounted Police, 470  
 Mowbray, George Edward John, Governor, 1150  
 Mozart's operas performed, 531  
 Mueller, Baron Sir Ferdinand Jakob Heinrich von  
 botanic gardens, 109, 629–30, 702  
 botanical collections held in National Herbarium  
 of Victoria, 702–3  
 expeditions to collect botanical specimens, 88, 630  
 F.R.S., 632  
 Government Botanist, 1134  
 lectures at School of Mines and Industries,  
 Ballarat, 652  
 National Herbarium established, 629  
 Mullen, Samuel, publisher and bookshop owner, 604  
 Mullet, yellow eye, catch, 1966–67 to 1970–71, 905  
 Mullins' mallee roller, 137  
 Municipal  
 administrative costs, 854  
 Association, town planning, 187  
 government *see* Local government  
 infant welfare centres, 1968–1971, 937  
 institutions, establishment, 453, 1134  
 Municipalities *see also* Local government  
 area, 30 June 1971, 800–5  
 Assistance Fund  
 Country Fire Authority contributions, 1966–67  
 to 1970–71, 871  
 drivers' licence fees received, 1966–67 to 1970–71,  
 996  
 taxes, motor vehicle, received, 1966–67 to  
 1970–71, 997  
 endowments, Consolidated Revenue Fund, 1852  
 to 1899–1900, 286  
 library services, 503  
 loans, grants expenditure, 1966–67 to 1970–71, 1003  
 Metropolitan Fire Brigades Board contributions,  
 1966–67 to 1970–71, 870  
 numbers, 850  
 population, censuses 1966 and 1971, 800–5  
 powers of Governor in Council, 454  
 Munitions  
 factories, 330, 331  
 production, Department of Supply, 681–2  
 Supply Laboratories, Department of Supply, 679  
 Munn–Pitt Report, 1935, 503  
 Munro, James, Premier, 1151  
 Murchison, Goulburn River flow, 763  
 Murder  
 committals for, by coroners, 1967–1971, 973  
 higher court cases, 1969 and 1970, 974  
 persons convicted  
 ages, 1970, 976  
 and result of hearing, 1970, 975  
 Murdoch, Sir Keith  
 growth of journalism, 756  
 newspaper editor and publisher, 602  
 Murdoch, Walter, essayist, 523  
 Murdoch's gas production process, 227  
 Murray, Sir George, Colonial Secretary, 87  
 Murray, Hugh, settler, Colac, 103  
 Murray, John, politician, 433  
 Premier, 1151  
 Murray, Lieutenant John  
 coastal exploration, 86  
 route, map, facing 86  
 discovery of Port Phillip Bay, 455  
 report on Geelong, 172  
 Murray  
 Committee, report on education, 496, 642  
 River *see* River Murray  
 Valley  
 Development League, regional planning, 190  
 irrigation, area of system, lands irrigated, and  
 water delivered, 1969–70, 878  
 television station, national, 918  
 Murray-Smith, Stephen, *Overland*, 523  
 Murrumbidgee River, traced, 1132  
 Murtoa, population, censuses 1966 and 1971, 798  
 Museum *see also* National Museum of Victoria,  
 Science Museum of Victoria  
 of  
 Applied Science, 704  
 Art, opened, 515  
 Natural History, established, 504  
 Musgrove, George, partnership with J. C. Williamson  
 and Arthur Garner, 528  
 Music, 524–7 *see also* Opera  
 for the People concerts, 526  
 Musica Viva Society, 526  
 Mussels, catch, 1966–67 to 1970–71, 905  
 Mustard, area, yield, gross value, 1970–71, 884  
 Mutton, John Patrick, M.L.A., 772  
 Mutton, prices, average retail, 1949–1971, 848  
 Mutual  
 Assurance Society of Victoria  
 established, 343  
 merger with National Mutual Life, 343  
 Life Assurance Society of New York, 343  
*My brother Jack*, George Johnston, 521–2  
*My Fair Lady*, musical, 529  
*My mask*, Norman Lindsay, 521  
*My notebook*, newspaper, 600  
 Myer, Sidney, retailer, 368  
 Myer Music Bowl, construction, 195  
*Myrmidon*, H.M.S., survey ship, 230  
 Myrtleford  
 gold discovered, 156  
 population, censuses 1966 and 1971, 798  
 Shire  
 area, 30 June 1971, 803  
 population, censuses 1966 and 1971, 803  
 television translator station, 917  
*Mystery*, ship, 232  
*Mystery of a hansom cab*, *The*, Fergus Hume, 180  
 Naming of places, rivers, etc., 92–3  
*Narrabeen*, ship, 234  
 Narracan Shire  
 area, 30 June 1971, 804  
 population, censuses 1966 and 1971, 796, 804  
*Narrative of George Russell of Golhill*, *The*, published  
 by Phillip Brown, 523  
 Narrawong, Captain William Dutton, 172  
 Nathalia  
 population, censuses 1966 and 1971, 798  
 Shire  
 area, 30 June 1971, 803  
 population, censuses 1966 and 1971, 803  
 National  
 Art Gallery and Cultural Centre Building  
 Committee, 515–6  
 Association of Testing Authorities, Werribee  
 Hydraulic Experimental Station, 709  
 Bank  
 of Australasia Ltd, *The*  
 branches and agencies, number, 30 June 1970  
 and 1971, 1010

- National—*continued*  
 Bank—*continued*  
 of Australasia Ltd, The—*continued*  
 history, 338–9  
 superannuation, 411  
 Savings Bank Ltd, The, deposits, 1967–1971, 1015  
 Biological Standards Laboratory, 559, 561  
 Council of  
 Women, established, 583–4  
 Wool Selling Brokers of Australia,  
 Australian Wool Testing Authority, 670  
 Debt  
 Commission, co-ordination of government  
 borrowing, 293  
 Sinking Fund  
 contribution by Victorian Railways, 1966–67  
 to 1970–71, 1053  
 receipts, 1966–67 to 1970–71, 1007  
 repurchases and redemptions, 1966–67 to  
 1970–71, 1004  
 securities repurchased and redeemed, 1008  
 Fitness Council of Victoria, 623  
 adult education, 507  
 established, 500  
 Gallery  
 Art School, 510, 516  
 Association, adult education, 507  
 of Victoria  
 architecture, 195  
 art  
 education, 518  
 exhibitions with Council of Adult  
 Education, 507  
 development, 515–6  
 opened, 1142  
 sculpture over entrance, 514  
 Gas Association, formed, 696  
 Health  
 and Medical Research Council  
 Commonwealth Bureau of Dental Standards  
 subsidised, 672  
 grants  
 dental research, 637–8  
 Epidemiological Research Unit, Fairfield  
 Hospital, 692  
 medical research, 640  
 Nutrition Committee, assistance by W. S.  
 Kimpton and Sons Pty Ltd, 744  
 report on care of pre-school children  
 considered, 479–80  
 research grants to the Institute of Mental  
 Health Research and Postgraduate  
 Training, 697  
 service, developments, 560–1  
 Heart Foundation of Australia, medical research,  
 655–6  
 established, 1141  
 Herbarium of Victoria *see also* Royal Botanic  
 Gardens  
 established, 629, 1134  
 research, 702–3  
 Museum of Victoria *see also* Science Museum of  
 Victoria  
 built in University of Melbourne grounds, 494  
 development, 504–6  
 established, 627, 630, 642, 1134  
 research, 700–1  
 Music Camp, 526  
 Mutual Life Association of Australasia Ltd  
 established, 342  
 merger with Mutual Assurance Society of  
 Victoria, 343  
 superannuation, 412  
 parks, 108–9  
 area, 30 June 1971, 874  
 Authority, 108–9  
 expenditure, 1966–67 to 1970–71, 919  
 recreation, 623  
 Service, 108  
 Physical Laboratory, England, defence standards,  
 679  
 Reform and Protection League, 429  
 Road Research Conferences, Australian Road  
 Research Board, 670  
 Schools Board, 445, 477, 1133  
 Security (Banking) Regulations, 342  
 Sirex Fund, 682  
 Standards Laboratory  
 Commonwealth Standards of Measurement, 679  
 established, 658  
 television stations, 918
- National—*continued*  
 Theatre  
 established, 529  
 Movement  
 inaugurated, 531  
 revived, 623  
 Trust of Australia (Victoria)  
 adult education, 507  
 growth, 624  
 Welfare Fund, expenditure, 1967–68 to 1971–72,  
 948  
 Y.M.C.A., 573  
 National Health Act 1953, 561  
 National Health and Pensions Insurance Act 1938,  
 1139  
 National Parks Act 1956, 108  
 Nationalities of vessels, cargoes discharged and  
 shipped, 1968–69 to 1970–71, 1046  
 Nationality  
 of the population, censuses 1966 and 1971, 791  
 previous, of persons naturalised, 1967–1971, 807  
 Natural  
 disasters, 81–4  
 Commonwealth payments, 1967–68 to 1970–71,  
 989  
 droughts, occurrences, 82  
 effects, control, 82–3  
 fires  
 occurrences, 81–2  
 1939, 83–4  
 floods, occurrences, 81  
 gas  
 and crude oil  
 development legislation, 166  
 distribution, 170  
 exploration, 162–7  
 Gippsland fields  
 development, 167–8  
 reserves, 165  
 legislation, exploration and development,  
 166–7  
 offshore, 1960–1971, 164–6  
 onshore, 1921–1971, 162–4  
 reserves in Gippsland fields, 165  
 connected to consumers, 1142  
 conversion completed, 1142  
 discovered in Gippsland, 1142  
 distribution by utilities, 169–70  
 fractionation plant opened at Long Island,  
 Western Port, 1142  
 Gippsland fields development, 167–8  
 made, 1968–69 to 1971–72, 916  
 production, 1968–69 to 1970–71, 907  
 purchase by utilities, 168–9  
 reserves, report by H. J. Gruy and Associates,  
 169  
 increase  
 Australia, annual averages and totals, 785  
 intercentral  
 analysis, 1947–54 to 1966–71, 786  
 1901–1971, 786  
 per 1,000 of the mean population, annual  
 averages and totals, 785  
 population, and rate, 1836–1971, 1074–5  
 resources and conservation, 63–70  
 Naturalisation certificates granted, 1967–1971, 807  
 Naturalised persons, previous nationality, 1967–1971,  
 807  
 Naval Engagements, play, 527  
 Naval unit, sent to China (Boxer Rebellion), 458  
 Navigation, coastal, 229–32 *see also* Shipping,  
 coastal  
 Navigation Act 1912, 231  
 Navy, 456–7, 459 *see also* Royal Australian Navy,  
 Royal Navy  
 Nectarine trees  
 Statistical Districts, season 1970–71, 892  
 1967–68 and 1970–71, 891  
 Nectarines, production, 1966–67 to 1970–71, 891  
 Neglected and Criminal Children's Act 1864, 568  
 Neglected Children's Act 1887, 569  
 Neilson, Shaw, poet, 519, 522  
 work published by T. C. Lothian, 605  
 Nelson, F. G., statistician, 3  
 Nelson, Francis Robert, judge, 769  
 Nelson.  
 flagship, navy, 457  
 hulk, wards of State accommodated, 568  
 ship, 233  
 training ship acquired, 456  
 Neos Kosmos, newspaper, 603

- Nepean**  
torpedo boat, 457  
transferred to Commonwealth, 459
- Nephritis**, cause of death, 1971, 818
- Nesbitt, Francis**, Queen's Theatre Royal, 527
- Netherlands born persons**, censuses 1966 and 1971, 791
- Neumayer, Professor G.**, Meteorological and Magnetic Observatory, 629, 673, 684
- New**  
Broken Hill Consolidated Ltd, 335  
Guinea, Australian Imperial Forces, 459  
money loan raisings, local government, semi-governmental, public bodies, 1966-67 to 1970-71, 872
- South Wales**  
area, 762, 799  
birth rates, 1967-1971, 814  
births  
ex-nuptial, 1967-1971, and percentage of total births, 816  
1967-1971, 813  
census populations, 1947-1971, 784  
customs and excise duty collected, 1970-71, 1043  
death rates, 1967-1971, 817  
deaths, 1967-1971, 817  
farm activity, principal items, 1970-71, 879  
founded, 1131  
Fresh Food and Ice Co. Ltd, Thomas Mort, 316  
infant  
death rates, 1967-1971, 823  
deaths, 1967-1971, 823  
instalment credit for retail sales, 1970-71, 1035  
marriage rates, 1967-1971, 808  
marriages, 1967-1971, 808  
natural increase, annual  
averages, 1931-1940 to 1961-1970, 785  
totals, 1967-1971, 785  
overseas arrivals and departures, 1967-1971, 806  
population  
density, 31 December 1971, estimated, 799  
increase, intercensal periods, 1947-54 to 1966-71, 785  
percentage, 31 December 1971, estimated, 799  
31 December 1971, estimated, 799  
Savings Bank, opened, 337  
trade, overseas, value, and duty collected, 1970-71, 1043
- York**  
City Ballet, 530  
Life Insurance Company, 343
- Zealand**  
born persons, censuses 1966 and 1971, 791  
Loan and Mercantile Agency Co. Ltd  
merger with Dalgety and Co. Ltd, 355  
reconstruction, 355  
transferred operations to Australia, 354  
woolbrokers, 310  
Maori War, 456
- Newbery, J. Cosmo**, head, Science Museum of Victoria, 703
- Newham and Woodend Shire**  
area, 30 June 1971, 801  
population, censuses 1966 and 1971, 801
- Newhaven**, Melbourne Cup winner, 1152
- Newman College**  
opened, 495  
Walter Burley Griffin, architect, 195
- Newport Power Station**, electricity generated, power source, etc., 1971-72, 915
- "**Newrad**", Australian Broadcasting Commission broadcasting network, 593
- News Letter of Australasia**, newspaper, 600
- Newsday**, newspaper, 602-3
- Newspapers** *see also* Publishing  
advertisements, early traders, 365  
books and stationery, retail sales, value, 1966-67 to 1970-71, 1037  
development, 595-603
- Newstead Shire**  
area, 30 June 1971, 801  
population, censuses 1966 and 1971, 801
- Newton, Hibbert Richard**, judge, 769
- Newtown City**  
area, 30 June 1971, 801  
population, censuses 1966 and 1971, 796, 801
- Nhill**  
climatic elements, means, 764  
golf club, 612  
population, censuses 1966 and 1971, 798  
television translator stations, 917
- Nicholas, George R.**, 727
- Nicholas**  
Institute for Medical and Veterinary Research, established, 727-8  
Pty Ltd, research and development, 727-8
- Nicholson, William**, Premier, 1150
- Nicholson and Co.**, stripper harvester manufacturers, 138
- Nicholson Land Act** 1860, 96, 427
- Nickle, Major-General Sir Robert**  
army headquarters established, 455  
Eureka stockade, 157
- Nicol, Graham John**  
Chairman of Committees, Legislative Council, 771  
M.L.C., 770
- Nieuw Holland**, cargo passenger ship, collision with tug *Melbourne*, 1148
- Night and Morning**, play, 528
- Night Watch**, Melbourne Cup winner, 1152
- Nightmarch**, Melbourne Cup winner, 1152
- Nillahcootie Dam Spillway**, research by State Rivers and Water Supply Commission, 709
- Nilsen, O. J., and Co.**, 3UZ Melbourne, 586
- Nimblefoot**, Melbourne Cup winner, 1152
- Nitrogen in the soil**, 122
- Nixon, P. J., M.H.R.**, 783
- Nobel**  
company, 329  
Prize, Sir Frank Macfarlane Burnet, 633
- Nolan, Sidney**, artist, 512
- Nomad aircraft** ('Project N') made its first test flight, 1145
- Non-profit companies**, tax, income, payable, 1971-72, 1001
- Non-rural industries**, production, value, net, 1928-29 to 1970-71, 1092 *see also specific headings*
- Norfolk**, ship, Van Diemen's Land circumnavigation, 86
- Normal Schools**, 490-1
- Norris, Dr W. P.**, Commonwealth Director of Quarantine, 560
- Norris, John Gerald**, judge, 769
- North**  
Broken Hill Ltd, 335  
superannuation, 413
- Central**  
District, rainfall variation, 766  
1962-1971, 766
- Statistical**  
District  
crops, yield, season 1970-71, 886  
ensilage  
made, 1970-71, 889  
stocks, 31 March 1971, 889  
fruit trees, plants, etc., season 1970-71, 892  
growers of certain crops, season 1970-71, 885  
hay stocks, 31 March 1971, 889  
lambling  
forecast, etc., 1971, 899  
season 1970-71, 898  
land occupied, area, etc., season 1970-71, 881  
livestock distribution, 31 March 1971, 894  
map, 880  
pigs and pig keepers, 31 March 1971, 895  
rams according to breed, 31 March 1971, 897  
sheep  
and lambs  
shorn, season 1970-71, 899  
31 March 1971, 898  
breeds, 31 March 1971, 896
- Division**  
area  
by municipality, 30 June 1971, 801  
of State, percentage, census 1971, 795  
30 June 1971, 804  
manufacturing establishments, 1968-69, 911  
map, inside back cover  
population  
by municipality, censuses 1966 and 1971, 801  
census 1971, 795  
censuses  
1947-1971, 787  
1966 and 1971, 804  
intercensal changes, 1961-1971, 787
- Eastern**  
District, rainfall, 1962-1971, 766
- Statistical**  
District  
crops, yield, season 1970-71, 886

- North—*continued*  
 Eastern—*continued*  
 Statistical—*continued*  
 District—*continued*  
 ensilage  
 made, 1970–71, 889  
 stocks, 31 March 1971, 889  
 fruit trees, plants, etc., season 1970–71, 892  
 growers of certain crops, season 1970–71, 885  
 hay stocks, 31 March 1971, 889  
 lambing  
 forecast, etc., 1971, 899  
 season, 1970–71, 898  
 land occupied, area, etc., season 1970–71, 881  
 livestock distribution, 31 March 1971, 894  
 map, 880  
 pigs and pig keepers, 31 March 1971, 895  
 rams according to breed, 31 March 1971, 897  
 sheep  
 and lambs  
 shorn, season 1970–71, 899  
 31 March 1971, 898  
 breeds, 31 March 1971, 896  
 Division  
 area  
 by municipality, 30 June 1971, 803  
 of State, percentage, census 1971 795  
 30 June 1971, 804  
 manufacturing establishments, 1968–69, 911  
 map, inside back cover  
 population  
 by municipality, censuses 1966 and 1971, 803  
 census 1971, 795  
 censuses  
 1947–1971, 787  
 1966 and 1971, 804  
 intercensal changes, 1961–1971, 787  
 Melbourne  
 Electric Tramways and Lighting Co., 221  
 acquisition by S.E.C., 223  
 kindergarten, 479  
 newspaper, 601  
 Seaspray No. 1 oil well, 164  
 Northcliffe, Lord, 602  
 Northcote  
 area, 30 June 1971, 800  
 library service, 503  
 population, censuses 1966 and 1971, 797, 800  
 North-Eastern Co-operative Society Ltd, 361  
 Northern  
 District  
 cereal crops, area and yield, season 1970–71, 873  
 rainfall, 1962–1971, 766  
 Statistical  
 District  
 crops, yield, season 1970–71, 886  
 ensilage  
 made, 1970–71, 889  
 stocks, 31 March 1971, 889  
 fruit trees, plants, etc., season 1970–71, 892  
 growers of certain crops, season 1970–71, 885  
 hay stocks, 31 March 1971, 889  
 lambing  
 forecast, etc., 1971, 899  
 season 1970–71, 898  
 land occupied, area, etc., 1970–71, 881  
 livestock distribution, 31 March 1971, 894  
 map, 880  
 pigs and pig keepers, 31 March 1971, 895  
 rams according to breed, 31 March 1971, 897  
 sheep  
 and lambs  
 shorn, season 1970–71, 899  
 31 March 1971, 898  
 breeds, 31 March 1971, 896  
 Division  
 area  
 by municipality, 30 June 1971, 803  
 of State, percentage, censuses 1971, 795  
 30 June 1971, 804  
 manufacturing establishments, 1968–69, 911  
 map, inside back cover  
 population  
 by municipality, censuses 1966 and 1971, 803  
 census 1971, 795  
 censuses  
 1947–1971, 787  
 1966 and 1971, 804  
 intercensal changes, 1961–1971, 787
- Northern—*continued*  
 Territory  
 area, 762, 799  
 birth rate, 1967–1971, 814  
 births  
 ex-nuptial, and percentage of total births, 1967–1971, 816  
 1967–1971, 813  
 census populations, 1947–1971, 784  
 customs and excise revenue collected, 1970–71, 1043  
 death rate, 1967–1971, 817  
 deaths, 1967–1971, 817  
 farm activity, principal items, 1970–71, 879  
 infant  
 death rates, 1967–1971, 823  
 deaths, 1967–1971, 823  
 marriage rates, 1967–1971, 808  
 marriages, 1967–1971, 808  
 natural increase, annual  
 averages, 1931–40 to 1961–70, 785  
 totals, 1967–1971, 785  
 overseas arrivals and departures, 1967–1971, 806  
 population  
 density, 31 December 1971, estimated, 799  
 increase, intercensal periods, 1947–1954 to 1966–1971, 785  
 percentage, 31 December 1971, estimated, 799  
 31 December 1971, estimated, 799  
 trade overseas, value, and duty collected, 1970–71, 1043  
 Norwegians naturalised, 1967–1971, 807  
 Note issue, 341  
 Numurkah  
 population, censuses 1966 and 1971, 798  
 Shire  
 area, 30 June, 1971, 803  
 population, censuses 1966 and 1971, 803  
 Nunawading  
 area, 30 June 1971, 800  
 population, censuses 1966 and 1971, 797, 800  
 Nuptial confinements *see* Confinements  
 Nursery Kindergarten Extension Board, 479  
 Nurses  
 Board of Victoria, 554  
 numbers, 555  
 practising, 31 December 1971, 945  
 Nurses Act 1956, 554  
 Nursing *see also* Bush nursing  
 aides, 31 December 1971, 945  
 Association, formed, 554  
 development, 554–6  
 home benefits, Commonwealth, 1966–67 to 1970–71, 951  
 staff  
 mental health institutions, 1848–1971, 1108–11  
 public hospitals, 1888–89 to 1970–71, 1106–8  
 Nuske, F. A., established Victorian Producers' Co-operative Co. Ltd, 355  
 Nutrition of children, expenditure, National Welfare Fund, 1967–68 to 1971–72, 948  
 Nylex Corporation Ltd, research and development, 728–9  
 Oakleigh  
 area, 30 June 1971, 800  
 Gas Company Ltd, 226  
 immigrant hostel, 581  
 population, censuses 1966 and 1971, 797, 800  
 Oasis, play, 528  
 Oaten hay, area, yield, gross value, 1970–71, 884  
 Oats, 131  
 area  
 States, 1970–71, 879  
 Statistical Districts, season 1970–71, 886  
 sown, seasons 1966–67 to 1970–71, 888  
 yield, and gross value, 1970–71, 884  
 1838 to 1970–71, 1024–5  
 for grain, seasons 1966–67 to 1970–71, 888  
 growers, Statistical Districts, season 1970–71, 885  
 Mallee District, area and yield, season 1970–71, 873  
 Northern District, area and yield, season 1970–71, 873  
 production  
 by States, 1970–71, 879  
 seasons 1966–67 to 1970–71, 888  
 Statistical Districts, season 1970–71, 886  
 value, local, 1966–67 to 1970–71, 908  
 1840 to 1970–71, 1084–5  
 value, gross, seasons 1966–67 to 1970–71, 888  
 Wimmera District, area and yield, season 1970–71, 873

- Oats—*continued*  
 yield  
 1840 to 1970-71, 1084-5  
 1966-67 and 1970-71, 888
- Observatories, 230
- Observer*, newspaper, 598
- Obstetrics, 540-1
- Occupational  
 status of the population, census 1971, 845  
 therapy, 556-7  
 Therapy School of Victoria, 502  
 enrolments, 1970 and 1971, 934  
 opened, 556
- Occupations of the population, 42-3  
 major groups, census 1971, 844
- Ocean*, ship, settlement at Port Phillip, 87
- Ocean Grove-Barwon Heads, population, censuses  
 1966 and 1971, 798
- O'Connell, Geoffrey John, M.L.C., 770
- Odd lots, Stock Exchange of Melbourne, 350
- Odontological Society of Victoria, 543, 544, 637
- O'Dowd, Bernard, poet, 522  
 work published by T. C. Lothian, 605
- O'Driscoll, John Xavier, judge, 769
- Officer Cadet School (Army), Portsea, 460
- Offices  
 building commenced, value when completed,  
 1967-68 to 1971-72, 980  
 buildings completed, value, 1967-68 to 1971-72,  
 981  
 new, work done, value, 1967-68 to 1971-72, 981
- Official*  
 List, Stock Exchange of Melbourne, statistics  
 published, 350  
 Record, Stock Exchange of Melbourne, 349  
 Annual Report first published, 350
- Ogden, Harold George, judge, 769
- Oil *see also* Natural gas and crude oil, Petroleum  
 crude  
 distribution, 170  
 export, 170  
 Gippsland fields, development, 168  
 marketing, 171  
 production, 1969-70 to 1970-71, 907  
 refineries, expansion, 171  
 refining, 170-1  
 discovered in Bass Strait, 1142  
 engines, numbers in rural use, 138  
 gas made, 1968-69 to 1971-72, 916  
 refining industry, development, 332-3  
 search for, Department of Mines, 450  
 seeds, 133  
 nuts, etc., imports and exports, value, 1969-70  
 and 1970-71, 1039
- Old  
 Melbourne Goal, 571, 572  
 People's Welfare Council, 566, 584  
 Tin Shed, The, 262  
 Vic Company, 529
- Old Melbourne memories*, Rolf Boldrewood, 523
- Old Rowley, Melbourne Cup winner, 1152
- Oldmeadow, M. W., M.H.R., 783
- Olive trees  
 Statistical Districts, season 1970-71, 892  
 1967-68 and 1970-71, 891
- Oliver, Charles, sculpture exhibition, 513
- Olives, production, 1966-67 to 1970-71, 891
- Olivier, Laurence, actor, 529
- O'Loughlin, Sir Bryan, Premier, 1151
- Olympic  
 Cables Pty Ltd, 748  
 Consolidated Industries Ltd, 748  
 Games, 1956, Melbourne, 436, 607, 1141  
 General Products Pty Ltd, 748  
 group of companies, research and development,  
 748-9  
 Park, athletics, 613  
 Swimming Pool, 195  
 Theatre ("Iron Pot"), 178, 192, 528  
 Tyre and Rubber Co. Pty Ltd, 748  
 rubber goods, 330  
 wheat, acreage sown, etc., 1968-69 to 1970-71, 888
- Omeo  
 climatic elements, means, 765  
 district, gold discovered, 156  
 Shire  
 area, 30 June 1971, 803  
 population, censuses 1966 and 1971, 803
- Omeo*, ship, 233
- Omnibus services *see* Motor omnibus services
- One Big Union Herald*, newspaper, 601
- Onia-Gegi gas producing plant, 227
- Onions  
 area  
 seasons 1966-67 to 1970-71, 890  
 States, 1970-71, 879  
 Statistical Districts, season 1970-71, 886  
 yield, and gross value, 1970-71, 885  
 growers, Statistical Districts, season 1970-71, 885  
 prices, average retail, 1949-1971, 848  
 production  
 by States, 1970-71, 879  
 seasons 1966-67 to 1970-71, 890  
 value  
 gross, seasons 1966-67 to 1970-71, 890, 893  
 local, 1966-67 to 1970-71, 908  
 yield  
 average, per acre, seasons 1966-67 to 1970-71,  
 890  
 Statistical Districts, season 1970-71, 886  
 1970-71, 885
- Op. 8*, John Manifold, 522-3
- Open air studies in Australia*, National Museum of  
 Victoria, 701
- Opera, development, 531
- Operation Phoenix, Victorian Railways, railway  
 upgrading, 247, 756
- Operative Stonemasons Society, 405, 1133
- "Operatives" Board of Trade, formed, 405
- Ophthalmology, 538-9
- Opperman, Hubert (later Sir Hubert), cyclist, 614
- Optical Munitions Panel, 642
- Orange trees  
 Statistical Districts, season 1970-71, 892  
 1967-68 and 1970-71, 891
- Oranges, production  
 1900-01 to 1970-71, 1088-9  
 1966-67 to 1970-71, 891
- Orbost  
 climatic elements, means, 765  
 flooded, 1971, 1143  
 population, censuses 1966 and 1971, 798  
 Shire  
 area, 30 June 1971, 804  
 population, censuses 1966 and 1971, 804  
 television translator station, 917
- Orchardists, Statistical Districts, season 1970-71, 885
- Orchards  
 area, yield, and gross value, 1970-71, 885  
 cultivated area, Statistical Districts, season  
 1970-71, 886
- fruit  
 produced, 1900-01 to 1970-71, 1088-9  
 trees, plants, etc., 1967-68 to 1970-71, 891
- Orchestral music *see* Music
- Ores, etc., imports and exports, 1969-70 and 1970-71,  
 1039, *see also* Mineral, Minerals
- Organisations, labour, statistics, 841
- Oriana Madrigal Choir, 524-5
- Oriental Bank Corporation, opened, 338
- Orion*, R. H. Horne, reprinted by James J. Blundell,  
 604
- Ormandy, Eugene, conductor, 526
- Ormond, Francis  
 Chair of Music at University of Melbourne, 525  
 donation to open Working Men's College, 489  
 Ormond College established, 495
- Ormond College, opened, 495
- Orthodox Church, members, censuses 1966 and 1971,  
 793
- Orthopaedic surgery, 537
- Osborne, Professor W. A., C.S.I.R. formation, 629
- Osborne, Richard, proprietor, *Warrnambool*  
*Examiner*, 596-7
- O'Shanassy, John, Premier, 1150
- O'Shanassy  
 Reservoir, water output, 1966-67 to 1970-71, 865  
 water supply system, Melbourne and Metropolitan  
 Board of Works, 210-1  
 capital outlay, 1966-67 to 1970-71, 865
- O'Shea, Joseph Raymond, judge, 769
- Osteomyelitis, treatment, 540
- Othello*, play, 528
- Otorhinolaryngology, 539-40
- Ottawa Agreement  
 effect on pastoral industry, 308  
 tariffs, 389
- Otway  
 basin, oil exploration, 165  
 Ranges, bushfires, 82  
 Shire  
 area, 30 June 1971, 802  
 population, censuses 1966 and 1971, 802  
 Water Supply System, 217

- Outbreak of love*, Martin Boyd, 520  
 Outer walls, material, new houses, commenced, completed, etc., 1967-68 to 1971-72, 983  
*Outlaw, The*, ballet, 530  
 Outtrim, black coal discovered, 153  
 Ouyen  
   population, censuses 1966 and 1971, 798  
   water supply, 218  
 Owens  
   River  
     flow, annual, 763  
     irrigation storage, 877  
     valley, gold discovered, 156  
*Overland*, Stephen Murray-Smith, 523  
*Overland*, train, 250  
 Overseas  
   arrivals and departures by States, 1967-1971, 806  
   grants, Public Authorities Current Account, 1966-67 to 1970-71, 987  
   migration, 1967-1971, 807  
   shipping, entrances, clearances and net tons, 1966-67 to 1970-71, 1043  
   trade  
     imports and exports, Victorian ports, recorded value, 1966-67 to 1970-71, 1038  
     revenue collected at Victorian ports, 1968-1971, 1042  
 Overton, William, gas lighting, 224-5  
 Oxley Shire  
   area, 30 June 1971, 803  
   population, censuses 1966 and 1971, 803  
 Oxygen production, Commonwealth Industrial Gases Ltd, The, 720  
*Ozone*, paddle steamer, 232-3
- P.R.A. *see* Petroleum Refineries (Australia) Pty Ltd  
*Pacific*, pilot vessel, 239  
 Pacific cable, completed, 1137  
 Paddy's Market, 366  
   Collingwood, 368  
 Paderewski, pianist, 526  
 Paediatrics, 540  
 Paint manufacture, research and development, 720, 722-3  
 Painting, 508-12 *see also* Sculpture  
 Pakenham East, population, censuses 1966 and 1971, 798  
 Palestine, Australian Imperial Forces, 459  
 Palladium, assayed content of minerals, 1968-69 to 1970-71, 906  
 Palmer, Nettie, novelist, 521  
 Palmer, Vance  
   novelist, 521  
   Pioneer Players, 529  
 Panel vans *see* Motor vehicles  
 Panning, gold washing, 158  
 Pao-ting, China, Victorian troops sent, 458  
 Pape, Sir George Augustus, judge, 769  
 Paper  
   and pulp, railway traffic, 1966-67 to 1970-71, 1052  
   imports and exports, 1969-70 and 1970-71, 1039, 1040  
   making 325-6, 330  
     research 695, 746-7  
   mill, Samuel Ramsden, 325-6  
 Paramedical developments, 556-7  
 Parents, average ages, 1967-1971, 814  
 Parish Roads Act of 1840, 140-1  
 Parisian, The, Melbourne Cup winner, 1152  
 Parks, Melbourne and Metropolitan Board of Works, 214  
 Parkville  
   Children's Hospital, 558  
   Council for Scientific and Industrial Research  
     Animal Health Laboratories built, 628  
     (formerly Professorial) Psychiatric Unit, 550, 697  
   Mental Health Research Institute, 550  
   School of Veterinary Science, 644  
 Parliament *see also* Parliamentary, Parliaments  
   Commonwealth  
     first meeting at Canberra, 1139  
     members, Victorian, 783  
     memorial ode sung at opening, 528  
     opened in Exhibition Building, 1137  
     proceedings broadcast, 594  
   House (Victorian)  
     ceilings, Charles Summers, 512  
     foundation stone laid, 178  
     public debt at 30 June 1900, 288  
   State  
     Acts passed, 1971, 774-9  
     first, 1134
- Parliament—*continued*  
 State—*continued*  
   members  
     elected, 770-2  
     Legislative Assembly, 771-2  
     Legislative Council, 770-1  
     number increased, 439  
     payment, 428, 439-40  
     plural voting, 453, 1137  
 Parliamentary *see also* Parliament, Parliaments  
   Contributory  
     Retirement Fund, expenditure, government, 1966-67 to 1970-71, 1002  
     Superannuation Fund, expenditure, government, 1966-67 to 1970-71, 1002  
     development, 437-41  
     elections, statistics, 781-3  
     franchise, 437-41  
     government, cost, 1967-68 to 1971-72, 773  
     privileges, 438-9  
     representation  
       Port Phillip District, 437  
       1952-1970, 782  
 Parliaments *see also* Parliament, Parliamentary  
   duration, 1950-1970, 773  
   sittings, number, 1950-1970, 773  
 Parolees  
   analysis, adult and youth, 1970-71 and 1971-72, 960  
   1958-1971, 1117  
 Parr, Lenton, sculptor, 514  
*Parramatta*, torpedo boat destroyer, 459  
 Parsnips, area sown, production, gross value, 1970-71, 893  
 Partnerships, stamp duty rates at 1 January 1972, 998  
*Passage, The*, Vance Palmer, 521  
*Passengers, Harbors, and Navigation Act* 1865, 231  
 Passionfruit  
   Statistical Districts, season 1970-71, 892  
   1967-68 and 1970-71, 891  
 Pasteur, Louis, 532, 536  
 Pastoral  
   and  
     dairying statistics, 893-901  
     livestock developments since 1920s, 127-8  
   finance companies  
     development, 353-6  
     rural advances, 1967-1971, 877  
   production  
     value  
       by States, 1970-71, 879  
       gross, 1966-67 to 1970-71, 908  
       local, 1966-67 to 1970-71, 908  
       net  
         1928-29 to 1970-71, 1092  
         1966-67 to 1970-71, 909  
         1882-83 to 1970-71, 1090-1  
     settlement *see* Land Settlement  
 Pasture  
   improvement, 125-6, 127-8  
     Department of Agriculture, 689  
     League, Victorian, 122, 127, 144  
     legumes, 125-6  
     native, area, 1904-05 to 1970-71, 1082-3  
     seeds, 133  
     sown, area, 1855-56 to 1970-71, 1081-3  
 Pastures  
   effects of superphosphate and subterranean  
     clover, 106-7  
   fertiliser used, holdings, area, etc., 1966-67 to 1970-71, 883  
 Patents, responsibility transferred to Commonwealth, 449  
*Patriot*, newspaper, bought by G. D. Boursiquot, 596  
 Patriotic Funds Council, 469  
 Patrobas, Melbourne Cup winner, 1152  
 Patron, Melbourne Cup winner, 1152  
 Patterson, Sir James Brown, Premier, 1151  
 Patterson, Gerald, tennis player, 611  
 Patterson, Sid, cyclist, 614  
 Pavey, Perc, rifle shooter, 618  
 Pavilion Theatre (later Theatre Royal), 527, 1133  
 Pavlova, ballerina, 530  
 Pay-roll  
   tax, Consolidated Fund payments, 1966-67 to 1970-71, 991  
   taxation, transfer to States, 304-5  
 Paynesville, population, censuses 1966 and 1971, 798  
 Peach trees  
   Statistical Districts, season 1970-71, 892  
   1967-68 and 1970-71, 891  
 Peaches  
   dried, seasons 1966-67 to 1970-71, 892



- Peaches—continued**  
 prices, average retail, 1949–1971, 848  
 production  
 1900–01 to 1970–71, 1088–9  
 1966–67 to 1970–71, 891
- Peacock, A. S., M.H.R.**, 783
- Peacock, Alexander James**, 433  
 Chief Secretary, 401  
 Premier, 1151
- Pear**  
 production, percentage, Australia, season 1969–70, 268  
 trees  
 1967–68 and 1970–71, 891  
 Statistical Districts, season 1970–71, 892
- Pearl, The**, Melbourne Cup winner, 1152
- Pearl Fishers, The**, opera by Bizet, 531
- Pears**, 135  
 dried, seasons 1966–67 to 1970–71, 892  
 prices, average retail, 1949–1971, 848  
 production  
 1900–01 to 1970–71, 1088–9  
 1966–67 to 1970–71, 891
- Pearson, Charles Henry**, 433  
 Minister of Public Instruction, 491  
 recommendations for State high schools, 485
- Peas**  
 field  
 area, yield, and gross value, 1970–71, 884  
 Statistical Districts, season 1970–71, 886  
 green, area sown, gross value of production, 1970–71, 893
- Penal see also Prisoners, Prisons and Gaols Department, formed**, 572  
 Department, Chief Secretary's Department, 572
- Penicillin**, discovery, 677
- Penny, whaler at Port Fairy**, 172
- Pension rates, alterations**, 577
- Pensioner medical service**, 576  
 initiated, 561  
 pensioners, doctors, services, and payments, 1966–67 to 1970–71, 952
- Pensioners**  
 age and invalid  
 1900–01 to 1970–71, 1111–2  
 1967–68 to 1971–72, 949  
 aged, housing, Commonwealth payments, 1969–70 and 1970–71, 989  
 invalid see age and invalid *above*  
 medical benefits, expenditure, National Welfare Fund, 1967–68 to 1971–72, 948  
 pharmaceutical benefits, expenditure, National Welfare Fund, 1967–68 to 1971–72, 948
- Pensions see also Superannuation age and invalid**  
 expenditure, National Welfare Fund, 1967–68 to 1971–72, 948  
 numbers and amount paid, 1900–01 to 1970–71, 1111–2  
 pensioners and payments, 1967–68 to 1971–72, 949  
 and superannuation, Consolidated Fund payments, 1966–67 to 1970–71, 991  
 Commonwealth, 575, 576–7  
 government expenditure, 1966–67 to 1970–71, 1002  
 invalid and age see heading age and invalid *above*  
 Victorian Railways, amounts paid, 1966–67 to 1970–71, 1053
- war and service**  
 amounts paid, etc., 1916–17 to 1970–71, 1112–3  
 members of forces and dependants, 1967–68 to 1971–72, 951
- widows'**  
 expenditure, National Welfare Fund, 1967–68 to 1971–72, 948  
 number and amount paid, 1942–43 to 1970–71, 1111–2  
 payments and pensioners, 1967–68 to 1971–72, 949
- Pentathlon, modern**, 613–4
- Pentridge**  
 Prison, 572, 958  
 Stockade, 571, 572
- People's**  
*Tribune*, newspaper, 600  
*Weekly*, newspaper, 601
- Peptic ulcer**, cause of death, 1971, 818
- Per capita payments**, 290–1
- Perceval, John**, artist, 512
- Percy, Hal**, Melbourne Little Theatre, 529
- Perendale sheep**, distribution in Statistical Districts, 31 March 1971, 896–7
- Perinatal morbidity**, cause of death in age groups, 1971, 819
- Period of residence of persons born outside Australia**, censuses 1966 and 1971, 792
- Permanent building societies see Building societies**
- Permewan's Food Stores Pty Ltd**, 369
- "Perpetual leasehold"**, 465
- Perry, Dr Charles**, Bishop of Melbourne, 491  
 St James Cathedral, 1133  
 T. H. Braim ordained, 485
- Perry, W.**, *The Science Museum of Victoria*, 705
- Perry Engineering Co. Ltd**, amalgamation with Johns and Waygood Ltd, 736
- Personal**  
 consumption expenditure on motor vehicles, 1953–54 to 1969–70, 379  
 Emergency Advice Service, Mental Hygiene Authority, 550  
 income and savings per capita, 1969–70, 277
- Perth**, census populations, 1947–1971, 786
- Pest Control**, 135–7
- Pestalozzi**, educationalist, 485
- Pet food cannery, Lakes Entrance**, 333
- Peter MacCallum Clinic**, 533, 553, 686
- Peter Pan**, Melbourne Cup winner, 611, 1152
- Petrochemical industry**, development, 333
- Petrol**  
 excise duty collected, 1968–69 to 1970–71, 1042  
 railway traffic, 1966–67 to 1970–71, 1052  
 rationing, 1139
- Petroleum see also Oil**  
 gas, liquid, production, 168  
 industry, geological survey, 155  
 Orderly Development of, in Victoria, Australia, Report on the, Dr Charles Hetherington, 166
- products**  
 imports and exports, 1969–70 and 1970–71, 1039  
 marketing, 171  
 trade importance, 386
- Refineries (Australia) Pty Ltd**,  
 delivery of crude oil, 170  
 refinery, Altona, 333, 1144  
 refining industry, development, 332–3  
*Petroleum Act* 1958, 164, 166  
*Petroleum (Submerged Lands) Act* 1967, 164, 166
- Petroliferous gas discovered near Port Campbell**, 1141
- Petrology see Geological, Geology**
- Petrouchka**, ballet, 530
- Petty Sessions, Courts of see Courts of Petty Sessions**
- Pfalz**, German ship, escape prevented, 459
- Phar Lap**, Melbourne Cup winner, 611, 1152
- Pharmaceutical**  
 benefits  
 Commonwealth, 575, 576  
 Consolidated Fund receipts, 1966–67 to 1970–71, 990  
 expenditure, National Welfare Fund, 1967–68 to 1971–72, 948  
 for pensioners, expenditure, National Welfare Fund, 1967–68 to 1971–72, 948  
 prescriptions, cost, etc., 1966–67 to 1970–71, 952
- Society of Victoria**  
 formed, 563  
 Victorian College of Pharmacy, 564
- Pharmaceutical Benefits Act 1952, 561**
- Pharmacists**, compulsory registration, 564
- Pharmacy**  
 Board, formed, 564  
 developments, 563–4  
 Guild of Australia, formed, 564
- Pharos**, survey ship, 230
- Philharmonic Society, Melbourne**, (later Royal Melbourne), 524, 621
- Phillip, Captain Arthur**  
 lay out of towns, 206–7  
 New South Wales founded, 1131
- Phillip Island**, 237  
 and Westernport Shipping Co., 234  
 Cape Woolamai named, 1131  
 ferry service, 234  
 first landed on, 1131  
 Fort Dumaresq, 455  
 motor racing, 617
- Shire**  
 area, 30 June 1971, 804  
 population, censuses 1966 and 1971, 804
- Philosophical**  
 Institute of Victoria, activities, 630  
 Society of Victoria, founded, 627, 630
- Phipps, George Augustus Constantine**, Governor and Commander-in-Chief, 1149
- Phoenix Foundry, Ballarat**, locomotives, 325

- Phos*, newspaper, 603  
 Phosphoric acid, production, 719  
 Phosphorus, soil deficiency, 121-2  
 Photographic equipment, research and development, 623, 724-6
- Physical**  
 education, development, 499-501  
 environment statistics, 762-7  
 climate, 763-7  
 geographical features, 762-3  
 metallurgy research, C.S.I.R.O., 663
- Physician, role in medicine, 534-6
- Physics, research  
 La Trobe University, 651  
 University of Melbourne, 643
- Physiology  
 development, 533-4  
 research, Faculty of Science, University of Melbourne, 643
- Physiotherapy, 556-7  
 School of Victoria, 502  
 enrolments, 1970 and 1971, 934
- Piastre, Melbourne Cup winner, 1152
- Picherit's farm*, painting, Max Meldrum, 511
- Pick-up balers on rural holdings, 1967-1971, 883
- Picture theatres, cultural and recreational influence, 622
- Pigeon racing, 618
- Pigs**  
 and pig keepers in Statistical Districts, 31 March 1971, 895  
 distribution, Statistical Districts, 31 March 1971, 894  
 holdings  
 and size of herd, 31 March 1969, 895  
 number, area, etc., 1968-69, 882  
 numbers  
 by States, 1970-71, 879  
 1846-1971, 1090-1  
 1861-1971, 893  
 sale of, stamp duty rates at 1 January 1972, 998  
 slaughtered  
 value, local, 1966-67 to 1970-71, 908  
 1966-67 to 1970-71, 901
- Pike, long-finned, catch, 1966-67 to 1970-71, 905
- Pilchard, catch, 1966-67 to 1970-71, 905
- Pilot**  
 Board, 231, 239  
 licences, 1967-1971, 1063
- Pilots**  
 Port Phillip, 239-40  
 Sea, ships piloted through Port Phillip Heads, 1960-1971, 1046
- Pinafore*, *H.M.S.*, operetta, 528
- Pinnacle, wheat, acreage sown, etc., 1968-69 to 1970-71, 888
- Pinus radiata*  
 introduction, 109, 702  
 planting by Forests Commission, 695  
 wood wasp attack, 682
- Pioneer Players formed, 529
- Pipe**  
 manufacture research, 716-8  
 Humes Ltd, 716-7  
 Rocla Concrete Pipes Ltd, 717-8  
 protection, Melbourne and Metropolitan Board of Works, 698  
 testing, State Rivers and Water Supply Commission, 708-9
- Pipelines Act* 1967, 167
- Piping Lane, Melbourne Cup winner, 1152
- Place Names Committee, 92, 93
- Planet, oil well drilling, 164
- Planning *see also* Regional planning, Town planning  
 local government, 209
- "Planning Policies for the Melbourne Metropolitan Region", Board of Works report, 189
- Plant**  
 breeding, Department of Agriculture, 689-90  
 names, glossary of, 77-9
- Plantations, softwood, output, 1966-67 to 1970-71, 903
- Plants *see also* Vegetation  
 introduction, botanic gardens, 109, 701-2
- Plaster**  
 board manufacture, 333  
 products, research and development, 715-6  
 sheets manufactured, 1970-71 and 1971-72, 912  
 Wholesale Price Index, 1967-68 to 1970-71, 849
- Plastic**  
 materials, imports and exports, 1969-70 and 1970-71, 1040  
 surgery, 538
- Plastics and synthetic resins, manufactured, 1970-71 and 1971-72, 912
- Platinum, assayed content of minerals, 1968-69 to 1970-71, 906
- Play centres, subsidised, number and enrolments, 1968-1971, 938
- Playwrights, 523
- Pleasant Creek Special School, Stawell, 549
- Plenty Mental Hospital, 549
- Plum trees  
 Statistical Districts, season 1970-71, 892  
 1967-68 and 1970-71, 891
- Plumbing fixtures, Wholesale Price Index, 1967-68 to 1970-71, 849
- Plums**  
 production, 1966-67 to 1970-71, 891  
 prunes produced, seasons 1966-67 to 1970-71, 892
- Plural voting, 453, 1137
- Pneumonia**  
 cause of death  
 in age groups, 1971, 819  
 1971, 818  
 control, 534
- Poems of Bernard O'Dowd, The*, 522
- Poetry *see* Literature
- Poets, 522-3
- Pohlman, R. W., barrister, 473
- Point**  
 Cook  
 Central Flying School, 459  
 R.A.A.F. Academy, 460
- Henry**  
 aluminium smelter, 333-4, 731  
 settlement, 103
- Hicks (formerly Cape Everard)  
 first landing, 1131  
 lighthouse established, 230  
 sighted by Lieutenant Hicks, 85, 1131
- Nepean  
 fort, 457  
 isolation station, 552  
 quarantine station, 54, 552, 559  
 Ormond, quarantine station, 552
- Poitrel, Melbourne Cup winner, 1152
- Poles**  
 censuses 1966 and 1971, 791  
 naturalised, 1967-1971, 807
- Police**, 470-2  
 Classification Board, 471, 472  
 Consolidated  
 Fund payments, 1966-67 to 1970-71, 991  
 Revenue Fund, expenditure  
 1852 to 1899-1900, 286  
 1901-02 to 1969-70, 290  
 Department, responsibilities, 472  
 Discipline Board, 472  
 force, strength, etc.  
 1856-1971, 1116-7  
 30 June 1967-1971, 979
- Pensions Fund, expenditure, government, 1966-67 to 1970-71, 1002
- St Johnston, Colonel Sir Eric, report, 1143
- Superannuation Fund, expenditure, government, 1966-67 to 1970-71, 1002
- warnings  
 age of offender, 1970, 971  
 1967-1970, 971
- Police Regulation Act* 1853, 471, 1117
- Police Regulation Act* 1946, 472
- Poliomyelitis  
 incidence, 535  
 vaccine, discovery, 677
- Political and social development *see* Social and political development
- Poll Dorset sheep**  
 distribution in Statistical Districts, 31 March 1971, 896-7  
 numbers, etc., 1968, 1970, and 1971, 898
- Pollard manufactured, 1970-71 and 1971-72, 912
- Polo-crosse, 617
- Polo Prince, Melbourne Cup winner, 1152
- Powarth sheep**  
 distribution in Statistical Districts, 31 March 1971, 896-7  
 mated, Statistical Districts, 1971, 899  
 numbers, etc., 1968, 1970, and 1971, 898
- Ponsford, W. H., cricketer, 608
- Poor Persons Legal Assistance Act* 1927, 468
- Population, 38-44 *see also* Births, Children, Census, Censuses, Immigration  
 age, 39-41, 788-90  
 Australian Colonies, 1850 and 1860, 32  
 birthplaces, 41, 791

- Population—*continued*  
 conjugal condition, age distribution, and masculinity, 39–41  
 density, 265, 799  
 education, schooling level attained, census 1971, 794  
 estimated 1836–1971, 799  
 groups, various sizes in urban centres, censuses 1966 and 1971, 797  
 growth, 38–9  
 1836–1971, 1074–5  
 illiteracy, 41–2  
 increase, 34, 785–6, 1074–5  
 industry, 42–3, 793  
 literacy, 41–2  
 marital status, censuses 1966 and 1971, 792  
 married (ever) males and females, proportion, 1881–1966, 40–1  
 masculinity, 39–41, 48–9, 789, 795  
 mean 1837–1971, 1069–71  
**Melbourne**  
 Statistical Division and remainder of the State, censuses 1901–1971, 788  
 1863–1971, 1069–71  
 municipalities, censuses 1966 and 1971, 800–5  
 nationality, censuses 1966 and 1971, 791  
 natural increase, 785, 786, 1074–5  
 occupational status, census 1971, 845  
 occupations, 42–3, 844  
 percentage, 31 December 1971, estimated, 799  
 public debt per head, 1967–1971, 1005  
 religion, 42, 793  
 residence, period of, by persons born outside Australia, censuses 1966 and 1971, 792  
 rural areas, percentage, censuses 1966 and 1971, 795  
 savings bank deposits per head, 1967–1971, 1015  
 schooling, level attained, census 1971, 794  
 States and Territories, 31 December 1971, estimated, 799  
 Statistical Divisions, 787, 795  
 summary, censuses 1966 and 1971, 796  
 tax collected per head, 1966–67 to 1970–71, 992  
 urban  
 areas, percentage, censuses 1966 and 1971, 795  
 centres, censuses 1966 and 1971, 797–8  
 urbanisation, 44  
 variation, intercensal, 1966–1971, 796  
 1836–1971, estimated, 799, 1069–71  
 Pork, prices, average retail, 1949–1971, 848  
**Port**  
**Albert**  
 meteorological station, 673  
 newspaper, 600  
 timber shipping, 114  
**Campbell**  
 National Park, expenditure, 1966–67 to 1970–71, 919  
 No. 1 oil well, 164  
 petroliferous gas discovered, 1141  
 shipping, 233  
**Fairy**  
 (Belfast) school opened by T. H. Braim, 485  
**Borough**  
 area, 30 June 1971, 802  
 population, censuses 1966 and 1971, 802  
 hospital built, 557  
 Irish farmers, 425  
 newspaper, 600  
 population, censuses 1966 and 1971, 798  
 rifle company, 456  
 settlement, 103, 172  
 shipping, 233  
**Melbourne (formerly Sandridge)**  
 area, 30 June 1971, 800  
 artillery batteries built, 455  
 engine works, Department of Supply, 681  
 established, 177  
 newspaper, 601  
 population, censuses 1966 and 1971, 797, 800  
 railway to Melbourne opened, 1134  
**Phillip**  
 Association  
 John Batman settled at Melbourne, 172  
 treaty with Aborigines, 1835, 25–6, 172, 1132  
 Authority, Port Phillip Bay environmental study, 700  
**Bay**  
 boat racing, 616  
 charted, 1131  
 coastal shipping, 232–3  
 discovery, 455, 1131  
 environmental study, 694, 699–700  
**Port—continued**  
**Phillip—continued**  
**Bay—continued**  
 surveyed, 1131  
 surveys by National Museum of Victoria, 701  
 yachting, 615  
 Club, formed, 620  
 defence, 457  
**District**  
 administration, 437  
 claimed as part of New South Wales, 1132  
 convicts prevented from landing by Governor La Trobe, 1133  
 divided into squatting districts, 1133  
 exploration by Major Mitchell, 1132  
**Government**  
 administration, 444–5  
 Gazette first issued, 1133  
 started, 175  
 judge (first resident) appointed, 1133  
 law, 461  
 mail direct  
 from England, 1133  
 to England, 1132  
 open for settlement, 383, 1132  
 parliamentary representation, 437  
 population census, first, 1132  
 post office, first official, 1133  
 represented in Legislative Council of New South Wales, 1133  
 separation from New South Wales, 177  
 settlement, 93–6  
 Heads, ships piloted through by Port Phillip Sea Pilots, 1960–1971, 1046  
 Hotel, Victorian Golf Association formed, 612  
 pilots, 239–40  
 plan 1836, Robert Russell, 88  
 Savings Bank, amalgamation with Post Office Savings Bank, 338  
 sea pilots, ships piloted through heads, 1960–1971, 1046  
 “Special Surveys”, 89  
 surveying, 86, 88–90  
**Port**  
 Fairy Gazette, newspaper, 600  
 Phillip Gazette  
 ceased, 599  
 circulation, 598  
 description by La Trobe, 597  
 first published, 595–6, 1132  
 Phillip Herald (later Herald)  
 became Melbourne Morning Herald, 599  
 circulation, 598  
 first published, 596, 1133  
 G. D. Boursiquot, reporter, 598  
 Phillip Patriot and Melbourne Advertiser  
 bought by G. D. Boursiquot, 596, 598–9  
 circulation, 598  
 description by La Trobe, 597  
 insurance criticised, 345  
 published, 595–6  
 Portarlington, population, censuses 1966 and 1971, 798  
 Porter, Hal, novelist, 522  
**Portland**  
 Airport, passenger movements, 1971, 1063  
 Botanic Gardens, 110  
 Braim, T. H., Archdeacon, 485  
 development, 184  
 Harbor Trust, 236–7, 1140  
 revenue and expenditure, 1966–67 to 1970–71, 1049  
 harbour opened, 1141  
 meteorological station, 673  
 population, censuses 1966 and 1971, 798  
 port *see also* Portland Harbor Trust  
 cargoes discharged and shipped, 1969–70 and 1970–71, 1045  
 customs and excise revenue collected, 1970–71, 1042  
 vessels entered, 1969–70 and 1970–71, 1044  
 rifle company, 456  
 settlement, 172, 309, 1132 *see also* Henty, Edward  
 shipping, 233  
**Shire**  
 area, 30 June 1971, 802  
 population, censuses 1966 and 1971, 802  
 superphosphate manufacture, 333  
 television translator stations, 917  
**Town**  
 area, 30 June 1971, 802  
 population, censuses 1966 and 1971, 802  
 wool auction, 310

- Portland**  
*Bay Settlement, The*, Noel Learmonth, 524  
*Gazette*, circulation, 598  
*Gazette and Belfast Advertiser*, 597  
*Guardian*, circulation, 598  
*Guardian and Normanby General Advertiser*, established, 597  
*Mercury and Port Fairy Register*, founded, 597  
*Portrait of the artist's mother*, Max Meldrum, 511  
Ports *see also* Maritime trade  
cargoes discharged and shipped, 1969–70 and 1970–71, 1045  
Consolidated Revenue Fund, expenditure, 1901–02 to 1969–70, 290  
imports and exports, value, proportion handled, 1966–67 to 1970–71, 1038  
vessels entered, 1969–70 and 1970–71, 1044  
*Ports, Harbors, and Shipping Act* 1854, 231  
Portsea, Officer Cadet School (Army), 460  
Poseidon, Melbourne Cup winner, 1152  
Posinatus, Melbourne Cup winner, 1152  
Post Office  
Melbourne, 178, 1132  
Savings Bank, 338  
transferred to Commonwealth, 449  
Victorian  
postage, 1837–1900, 1126  
telephone subscribers, 1887–1900, 1126  
*Post Office Place fountain*, Teisutis Zikaras, 515  
Post offices, telephone offices, persons employed, 1966–67 to 1970–71, 1064  
Postage  
introduced, 1133  
stamps  
engraved, Thomas Ham, 604  
first Commonwealth issue, 260  
Port Phillip District's first, 259  
Victorian Post Office, 1837–1900, 1126  
Postal  
and telegraph offices, Consolidated Revenue Fund, revenue, 1852 to 1899–1900, 285  
Institute, 260  
orders issued and paid, 1966–67 to 1970–71, 1064  
services, 258–61  
and communications, 258–62  
Sorters Union, 260  
Postcode, introduction, 262, 1142  
Postmaster-General's Department, 260  
broadcast licences in force, 1924–25 to 1970–71, 1127–8  
broadcasting and television, 585–95  
developments, 260–2  
letters, etc., handled, 1901 to 1970–71, 1127–8  
research, 682–4  
Second World War, effect, 261  
statistics, 1064–6  
telephone services in operation, 1901 to 1970–71, 1127–8  
television licences in force, 1956–57 to 1970–71, 1127–8  
Posts and telegraphs, Consolidated Revenue Fund, expenditure, 1852 to 1899–1900, 286  
Potassium, soil deficiency, 122  
Potato  
Marketing Board, dissolved, 320  
production, seasons 1966–67 to 1970–71, 890  
Potatoes, 132–3  
area  
by States, 1970–71, 879  
by Statistical Districts, season 1970–71, 886  
production and gross value, 1970–71, 893  
seasons 1966–67 to 1970–71, 890  
yield, and gross value, 1970–71, 885  
1838 to 1970–71, 1086–7  
growers, Statistical Districts, season 1970–71, 885  
holdings, number, area, etc., 1968–69, 882  
prices, average retail, 1949–1971, 848  
production  
by States, 1970–71, 879  
value  
gross, seasons 1966–67 to 1970–71, 890  
local, 1966–67 to 1970–71, 908  
1840 to 1970–71, 1086–7  
yield  
average, per acre, seasons 1966–67 to 1970–71, 890  
per acre, 1840 to 1970–71, 1086–7  
Statistical Districts, season 1970–71, 886  
Potter, C. V., zinc refining, 730  
Potter's Sulphide Ore Treatment Ltd, 730  
Poultry, 128–9 *see also* Eggs  
chickens hatched, 1966–67 to 1970–71, 900  
Poultry—*continued*  
holdings, number, area, etc., 1968–69, 882  
production, value  
gross  
by States, 1970–71, 879  
1966–67 to 1970–71, 908  
local, 1966–67 to 1970–71, 909  
net  
1928–29 to 1970–71, 1092  
1966–67 to 1970–71, 909  
slaughtered  
for human consumption, 1966–67 to 1970–71, 901  
weight, dressed, 1966–67 to 1970–71, 901  
Powdered full cream milk, made, 1967–1971, 895  
Power  
electric *see* Electricity  
farm *see* Machinery, farm  
of attorney or appointment of agent, stamp duty rates at 1 January 1972, 997  
stations, electricity generated, source of power, etc., 1971–72, 915  
*Power without glory*, Frank Hardy, 522  
Poyser, Arthur George, Senator, 783  
Prahran  
area, 30 June 1971, 800  
College of Technology, 502  
enrolments, 1970 and 1971, 934  
Council, first meeting, 179  
library service, 503  
Market, development, 367  
municipality proclaimed, 179  
newspaper, 600  
population, censuses 1966 and 1971, 797, 800  
Technical Art School, established, 501  
Prawns  
catch, 1966–67 to 1970–71, 905  
production, quantity and value, 1966–67 to 1970–71, 904  
Preference shares, Stock Exchange of Melbourne, The, 1031–2  
Pregnancy, childbirth, cause of death, 1971, 818  
Preiss, botanical collection housed in National Herbarium of Victoria, 703  
Premier's  
Department  
establishment, 448  
independence from Chief Secretary's Department, 450  
since responsible government, 1150–1  
Pre-natal  
clinics and attendances, 1967–1971, 938  
service, Department of Health, 547  
Prendergast, George Michael, Premier, 1151  
Prerogative Court of Canterbury, 465  
Presbyterian  
Church services, transferred to site of present Scots Church, 1132  
Ladies College, 486  
schools, statistics, 1967–1971, 925–6  
Presbyterians  
censuses 1966 and 1971, 793  
State patronage, 485  
Pre-school  
centres  
capital grants approved and amounts paid for building, 1968–1971, 938  
local government, 209–10  
subsidised, type and enrolments, 1968–1971, 938  
children, Department of Health report on the care of, 479–80  
education, development, 479–82  
welfare, expenditure, Health Department, 1966–67 to 1970–71, 939  
President, prison hulk, 572  
Press, the *see* Newspapers, Publishing  
Prestige Ltd, 331  
Preston  
and Northcote Community Hospital, 559  
area, 30 June 1971, 800  
East, immigrant hostel, 581  
Institute of Technology, 502  
enrolments, 1970 and 1971, 934  
population, censuses 1966 and 1971, 797, 800  
technical school established, 501  
Price, Dr J. R., Chairman, C.S.I.R.O., 658  
Price, John, killed by prisoners, 572  
Price index numbers, retail, capital cities combined, 1901–1972, 1081  
Prices  
average retail, selected commodities, 1949–1971, 848

- Prices—*continued*  
 statistics, 848-9, 1081  
 wool, development, 311
- Priestley, Charles Henry Brian, F.R.S., 635
- Priestley, R. E. (later Sir Raymond), Vice-Chancellor, University of Melbourne, 496
- Primary  
 education *see* Education  
 industries *see also individual headings*  
 other than farming, statistics, 902-7  
 fisheries and wildlife, 904-5  
 forestry, 902-3  
 mining and quarrying, 906-7  
 research, Department of Agriculture, 688-90  
 statistics, historical, 1081-94  
 work force, percentage, Australia, census 1966, 266
- production  
 expenditure, 1966-67 to 1970-71, 1003  
 statistics, 873-909  
 farming, 879-902  
 land settlement and irrigation, 873-8  
 primary industries other than farming, 902-7  
 value  
 gross, 1966-67 to 1970-71, 908  
 local, 1966-67 to 1970-71, 908-9  
 net  
 1966-67 to 1970-71, 909  
 1928-29 to 1970-71, 1092
- schools *see* Schools, government, primary
- Primmer, Cyril Graham, Senator, 783
- Prince  
 Alfred, hospital named after, 558  
 Henry's Hospital, 197  
 established, 558  
 medical undergraduate education, 562  
 opened as Homoeopathic Hospital, 1135
- Prince Alfred *see* Duke of Edinburgh
- Prince Foote, Melbourne Cup winner, 1152
- Prince Philip *see* Duke of Edinburgh
- Princes Bridge, commenced, 1133
- Princess of Tasmania*  
 Melbourne to Devonport ferry service, 1141  
 passengers, vehicles, etc., 1970-71, 1043
- Princess Theatre, 528  
 completion, 180  
 visit by Old Vic Company, 529
- Principles of flotation*, Dr I. W. (later Sir Ian) Wark, 730
- Prisoners, 957-8
- Prisons  
 accommodation, 958  
 Consolidated Fund payments, 1966-67 to 1970-71, 991  
 development, 571-3  
 Division, Social Welfare Department, 571  
 expenditure, Consolidated Revenue Fund, 1852 to 1899-1900, 286  
 number, prisoners, 1856-1971, 1116-7  
 prisoners received and discharged, 1967-68 to 1971-72, 958
- Private  
 companies, tax, income, payable, 1971-72, 1001  
 finance *see* Finance, private  
 sector *see* Finance, private  
 Street Account, local government authorities, receipts, expenditure, etc., 1966-1970, 859  
 1970, 858
- Privileges Act* 1857, 438-9
- Privy Council, Judicial Committee of the, 462, 464
- Probate  
 applications by Public Trustee, 1966-67 to 1970-71, 1026  
 duties collected, 1966-67 to 1970-71, 992  
 duty  
 Consolidated Revenue Fund, revenue  
 1852 to 1899-1900, 285  
 1901-02 to 1969-70, 289  
 rates, 1971, 993  
 Legal Aid Committee, applications, 1971, 966  
 Probates, estates, number, value, etc., 1967-1971, 1027
- Probation and Parole Division, Social Welfare Department, 571
- Probationers *see also* Wards of State  
 ages, 1970-71 and 1971-72, 959  
 children and adults, 1967-68 to 1971-72, 959  
 Children's Court probation orders, 1970-71 and 1971-72, 960  
 employed, Apprenticeship Commission, 1968-1972, 842
- Probationers—*continued*  
 probation orders, adult courts, 1970-71 and 1971-72, 960  
 1935-1971, 1116-7
- Processed Milk Products Bounty Act* 1962, 318
- Prodromus of the palaeontology of Victoria*, Professor (later Sir) Frederick McCoy, 505, 700
- Prodromus of the zoology of Victoria*, Professor (later Sir) Frederick McCoy, 505, 700
- Producer  
 co-operatives, number, members, income, and assets, 1926-27 to 1969-70, 361  
 societies, transactions, liabilities, assets, etc., 1970-71, 1024
- Production *see also individual subject headings*  
 summaries, Australia, 914
- Professional Golfers' Association of Australia, 612
- Professorial (later Parkville) Psychiatric Unit, 550, 697
- Progress and Statistics*, 5
- Progress of Victoria*, 5
- Properties rated, local government authorities, 1966-1970, 851
- Property  
 distribution, 100-3 *see also* Land settlement, Rural development  
 assisted land settlement to 1938, 102  
 closer settlement, 101-2  
 government re-distribution, 100-1  
 soldier settlement, 102-3
- Law Act, Titles Office dealings, 1966-67 to 1970-71, 1029
- leases, stamp duty rates at 1 January 1972, 997  
 licences, stamp duty rates at 1 January 1972, 998  
 qualifications, members of parliament, abolished, 439  
 transfers, stamp duty rates at 1 January 1972, 997
- Protector*, ship, sent to Boxer Rebellion, 458
- Protein chemistry, C.S.I.R.O. research, 659
- Prunes  
 plum trees  
 Statistical Districts, season 1970-71, 892  
 1967-68 and 1970-71, 891  
 production 1966-67 to 1970-71, 891, 892
- Psychiatric  
 Hospital, Royal Park, medical education, 562  
 morbidity, statistics, compilation, 697  
 Unit, Professorial (later Parkville), 550, 697
- Psychological Practices Act* 1965, 557
- Psychology, 556, 557
- Public  
 administration and services, work force (percentage), census 1966, 266
- Authorities'  
 Capital Account, funds, sources and uses, 1966-67 to 1970-71, 988  
 Current Account, receipts and outlay, 1966-67 to 1970-71, 987
- bodies, new money loan raisings, 1966-67 to 1970-71, 872
- buildings, expenditure, 1966-67 to 1970-71, 1003
- companies, tax, income, payable, 1971-72, 1001
- debt  
 at 30 June 1900, 288  
 charges, Consolidated Fund payments, 1966-67 to 1970-71, 991
- State  
 interest  
 and expenses, 1966-67 to 1970-71, 1007  
 Commonwealth payments, 1966-67 to 1970-71, 989  
 liability, annual, 1967-1971, 1006  
 rates at 30 June 1971, 1006
- loans  
 due dates at 30 June 1971, 1005  
 outstanding, 1967-1971, 1005  
 sinking fund, Commonwealth payments, 1966-67 to 1970-71, 989  
 transactions, summary, 1966-67 to 1970-71, 1004
- enterprises' income, Public Authorities' Current Account, 1966-67 to 1970-71, 987
- examinations *see* Examinations
- finance *see* Finance, public
- hospitals *see* Hospitals, public
- Library of Victoria *see* Libraries, Library offices, etc., public debt at 30 June 1900, 288
- schools *see* Schools, registered and *individual titles*
- sector, 306 *see also* Finance, public
- Service  
 Board for Victoria, established, 1136  
 superannuation, 411

- Public—*continued*  
 Solicitor's Office  
   created, 468  
   criminal cases dealt with, 1967–1971, 966  
 Stock Exchange Co. Ltd, 348  
 Trustees  
   common fund, investments, proceeds, etc.,  
     1966–67 to 1970–71, 1025  
   probate and letters of administration applications,  
     wills lodged for custody, 1966–67 to 1970–71,  
     1026  
 works  
   borrowing, 281–2  
   Consolidated  
     Fund payments, 1966–67 to 1970–71, 991  
     Revenue Fund, expenditure  
       1852 to 1899–1900, 286  
       1901–02 to 1969–70, 290  
     Department, Roads and Bridges Branch formed,  
       454  
     Director of, appointment, 445  
     expenditure, 1966–67 to 1970–71, 1003  
     local government authorities, 1970, 852, 853  
   *Public Account Act* 1970, 1003  
   Public Roads Act of 1833, 140  
   *Public Service Arbitration Act* 1920–1956, 400  
   Publications issued by the Commonwealth Bureau  
     of Census and Statistics, Victorian Office, 1161  
   Publishing, development, 603–6 *see also* Newspapers  
   Puckapunyal, army training camp, 460  
   Puddling machines, gold washing, 158  
 Pulpwood  
   output from softwood plantations, 1966–67 to  
     1970–71, 903  
   railway traffic, 1966–67 to 1970–71, 1052  
 Pump manufacturers, 325  
 Pumpkins, area sown, production, value, gross,  
 1970–71, 893  
 Pupils *see also* Students  
   age and grade, government primary and secondary  
     schools, 1971, 922  
   ages, government primary and secondary schools,  
     1967–1971, 921  
   government and registered schools, 1967–1971,  
     920, 926–7  
   number, 1852–1971, 1098–1100  
   registered schools, ages and school denomination,  
     1967–1971, 925–6  
   sex, government primary and secondary schools,  
     921  
 Purple noon's transparent might, *The*, painting,  
 Arthur Streeton, 510  
 Pursuit, oil well drilling, 164  
 Pyalong Shire  
   area, 30 June 1971, 801  
   population, censuses 1966 and 1971, 801  
 Pye, Hugh, wheat breeding, 130  
 Pykes Creek Reservoir, capacity, etc., 877  
 Pyrenees (mountains), gold discovered, 156  
 Quack, The, Melbourne Cup winner, 1152  
 Quadrat, wheat, acreage sown, etc., 1968–69 to  
 1970–71, 888  
 Quarantine, 544, 545  
   developments, 559–60  
   station  
     Point  
       Nepean, 54, 552, 1134  
       Ormond, 552  
       Williamstown, 552  
 Quarry products, production and value, 1968–69 to  
 1970–71, 907  
 Quarrying and mining, statistics, 906–7  
 "Queen Anne" architecture, 194–5, 201  
*Quarterly Journal and Transactions*, pharmaceutical  
 journal, 564  
 Queen Victoria  
   Hospital  
     Cancer Institute accommodated, 686  
     established, 543, 1136  
     medical education, 562  
     Jubilee, lamp display at General Post Office, 220  
     Market, development, 366  
     Memorial Hospital, established, 558  
 Queen's  
   College  
     Ballarat, 486  
     University of Melbourne, opened, 495  
   Memorial Infectious Diseases Hospital  
     established, 558  
   Yarra Bend Reserve, 552  
 Theatre Royal, 527  
 Queenscliff  
   Army Staff College, 460  
   artillery battery and keep, 457  
   holiday resort, 621  
 Queenscliff  
   Borough  
     area, 30 June 1971, 801  
     population, censuses 1966 and 1971, 801  
     population, censuses 1966 and 1971, 798  
 Queensland  
   area, 762, 799  
   birth rates, 1967–1971, 814  
   births  
     ex-nuptial, and percentage of total births,  
       1967–1971, 816  
       1967–1971, 813  
   census populations, 1947–1971, 784  
   customs and excise duty collected, 1970–71, 1043  
   death rates, 1967–1971, 817  
   deaths, 1967–1971, 817  
   farm activity, principal items, 1970–71, 879  
   infant  
     death rates, 1967–1971, 823  
     deaths, 1967–1971, 823  
   instalment credit for retail sales, 1970–71, 1035  
   marriage rates, 1967–1971, 808  
   marriages, 1967–1971, 808  
   National Bank, absorbed by National Bank of  
     Australasia Ltd, 339  
   natural increase, annual  
     averages, 1931–1940 to 1961–1970, 785  
     totals, 1967–1971, 785  
   overseas arrivals and departures, 1967–1971, 806  
   population  
     density, 31 December 1971, estimated, 799  
     increase, intercensal periods, 1947–1954 to  
       1966–1971, 785  
     percentage, 31 December 1971, estimated, 799  
     31 December 1971, estimated, 799  
   trade, overseas, value, and duty collected,  
     1970–71, 1043  
 Quince trees  
   Statistical Districts, season 1970–71, 892  
   1967–68 and 1970–71, 891  
 Quinces, production, 1966–67 to 1970–71, 891  
 R.A.A.F. *see also* Royal Australian Air Force  
 Academy, Point Cook, 460, 495  
 Flight Research and Development Unit, 678  
 R.A.N. *see* Royal Australian Navy  
 R.M.I.T. *see* Royal Melbourne Institute of  
 Technology  
 R.S.L. *see* Returned Sailors' and Soldiers' Imperial  
 League of Australia  
 R.S.S.I.L.A. *see* Returned Sailors' and Soldiers'  
 Imperial League of Australia  
 Rabbits  
   and hares, trapped, value, local, 1966–67 to  
     1970–71, 909  
   control, 710  
   effect on rural industries, 308  
   introduced, 80, 631  
   pest control, 136  
 Raby, whaler at Port Fairy, 172  
 Racing  
   horse  
     meetings, 1967–1971, 979  
     Melbourne Cup winners, 1861–1972, 1152  
     taxation, 1966–67 to 1970–71, 992, 995  
   motor, 617  
 Radiation Laboratory, Commonwealth *see*  
 Commonwealth Radiation Laboratory  
 Radio *see also* Broadcasting  
   Australia, 594  
   coastal navigation, 231–2  
   communication stations authorised, 1967–1971,  
     1065  
   cultural and recreational influence, 622  
   receivers, development, 589  
   telephone, mobile service, introduction, 261  
   telephony, first demonstration, 585  
 Radiology, development, 533  
 Rafferty, Joseph Anstice, M.L.A., 772  
 Raffles Advisory Board, created, 468  
 Rail loop, Melbourne underground, construction  
 begun, 1144  
 Railway *see also* Railways  
   Accident and Fire Insurance Fund, 1966–67 to  
     1970–71, 1053  
   Australia's first, opened, 1134  
   bridge, first all welded, constructed, 721

- Railway—*continued*  
 construction  
   before 1880, 374  
   effect on trade, 274  
   freight between Victoria and New South Wales, 1946–1970, 276  
 Renewals and Replacement Fund, contributions, 1966–67 to 1970–71, 1053  
 rolling stock, manufacture, 334  
 standard gauge opened between Albury and Melbourne, 1141  
 workshops, 325  
*Railway Construction Act* 1884, 246  
 Railways *see also* Railway  
 automated hump shunting system introduced, 1142  
 bogey exchange, 379  
 Building, Spencer Street, sculptures by J. S. Mackennal, 512  
 Commissioners constituted, 1136  
 Consolidated Fund  
   payments, 1966–67 to 1970–71, 991  
   receipts, 1966–67 to 1970–71, 990  
 Revenue Fund  
   expenditure  
     1852 to 1899–1900, 286  
     1901–02 to 1969–70, 290  
   revenue  
     1852 to 1899–1900, 285  
     1901–02 to 1969–70, 289  
 cost, equipment and rolling stock, 1967–1971, 1050  
 development, 182, 374–6  
   early rural 142–3  
 electrification, 1138  
 expenditure and revenue  
   per average mile open, 1966–67 to 1970–71, 1054  
   State net loan, aggregate to 30 June 1969, 282  
   1966–67 to 1970–71, 1003, 1053  
 founding, 433  
 freight, 379–80  
   services, 250–1  
 goods and livestock traffic, 1966–67 to 1970–71, 1052  
 government takeover, 142, 1134  
 interstate traffic, 379–80  
 lines open, mileage, passenger journeys, etc., 1862–1971, 1122–3  
 management, 249  
 Minister appointed, 448  
 Operation Phoenix, 247, 756  
 passenger  
   journeys falling, 379  
   services, 250  
 public debt at 30 June 1900, 288  
 revenue and expenditure  
   per average mile open, 1966–67 to 1970–71, 1054  
   1966–67 to 1970–71, 1053  
 road motor services, mileage, revenue, etc., 1966–67 to 1970–71, 1054  
 rolling stock in service, 1966–67 to 1970–71, 1050  
 route mileage, 1966–67 to 1970–71, 1051  
 staff, numbers, salaries, etc., 1966–67 to 1970–71, 1050  
 State network, 245–7  
 suburban network, 247–9  
 superannuation, 411  
   Fund, State, expenditure, 1966–67 to 1970–71, 1002  
 technical  
   college, 501  
   developments, 251–2  
 traffic, 1966–67 to 1970–71, 1051  
 Rain Lover, Melbourne Cup winner, 611, 1152  
 Rainbird, Melbourne Cup winner, 1152  
 Rainbow, water supply, 218  
 Rainfall  
   annual  
     distribution, 763  
     variation, 766  
   average  
     annual, map, 71  
     distribution, 763  
     monthly, selected towns, 764–5  
   district, 766  
   Melbourne, 767  
   variability, 72–3 *see also* Droughts  
   variation, annual, 766  
 Raisins  
   and sultanas, production  
     by States, 1970–71, 879  
     1888–89 to 1970–71, 1088–9  
   *continued*  
   produced, seasons 1966–67 to 1970–71, 892  
   yield  
     and gross value, 1970–71, 885  
     Statistical Districts, season 1970–71, 886  
 Rams, distribution in Statistical Districts according to breed, 31 March 1971, 897 *see also* Sheep  
 Ramsay, E., post office interior design, 259  
 Ramsay, Hugh, artist, 511  
 Ramsay Report, tertiary education, 502  
 Ramsden, Samuel, paper mill, 325–6  
 Randall, Brett, Melbourne Little Theatre, 529  
 Randolph, convict transport ship, 1133  
 Ranger, pilot ship, 239  
 Rape  
   higher court cases, 1969 and 1970, 974  
   persons convicted  
     ages, 1970, 976  
     and result of hearing, 1970, 975  
   seed, area, yield, and gross value, 1970–71, 884  
 Rapke, Trevor George, judge, 769  
 Raspberries  
   acres grown  
     Statistical Districts, season 1970–71, 892  
     1967–68 and 1970–71, 891  
   production, 1966–67 to 1970–71, 891  
 Rattlesnake, H.M.S., Port Phillip survey, 229  
 Rattray, storekeeper, 186  
 Real estate, mortgages *see* Mortgages  
 Rebecca, ship, 232  
 Receipts duty, State, 302  
*Recollections of Geoffry Hamlyn, The, Henry* Kingsley, 520  
*Recollections of squatting in Victoria*, Edward Curr, 523  
 Reconstruction Training Scheme, 501  
 Reconveyances, Titles Office dealings under the Property Law Act, 1966–67 to 1970–71, 1029  
 Record players, interest in music promoted, 623  
 Recreation  
   and public health, Consolidated Fund payments, 1966–67 to 1970–71, 991  
   facilities, local government, 209  
   social and cultural, 620–4  
   sport, 607–20  
   statistics *see* Cultural and recreational statistics  
 Red  
 Cliffs  
   population, censuses 1966 and 1971, 798  
   Power Station, electricity generated, power source, etc., 1971–72, 915  
 Cross Society  
   blood banks, 533  
   income, expenditure, blood donations, etc., 1966–67 to 1970–71, 963  
   voluntary welfare, 566  
   women involved, 622  
 Red Handed, Melbourne Cup winner, 1152  
 Redpath, Norma, sculptor, *Relief*, 514  
 Reed, Joseph, builder and architect, 194  
 Reese, William Frederick Llewellyn, M.L.A., 772  
 Refineries *see* Oil, crude  
 Refinery gas made, 1968–69 to 1971–72, 916  
*Reformer*, newspaper, 600  
 Refrigeration  
   effect on  
     dairying industry, 316  
     trade, 274  
   meat export, James Harrison, 125, 597  
 Regional planning, 189–91 *see also* Town planning  
 Registered  
   club liquor licences, 1967–1971, 978  
   schools *see* Schools, registered  
 Registrar  
   General's Department, statistical recording, 3–6  
   of Births, Deaths, and Marriages, transferred to Government Statist, 468  
 Registration, motor vehicles *see* Motor vehicles  
*Registration Act* 1853, 3–4  
 Registrations, motor vehicles *see* Motor vehicle  
 Reid, Sir George Oswald, M.L.A., 768, 772  
 Reliance, boat, coastal exploration in the 1790s, 85  
 Reliance, ship, 234  
 Relief, sculpture, Norma Redpath, 514  
 Religion of the population, 42, 793  
 Religious buildings, value, 1967–68 to 1971–72, 980, 981  
 Rental business, stamp duty rates at 1 January 1972, 997  
 Repatriation  
   Commission, formed, 577–8  
   Department, development, 578–9

- Repatriation—continued**  
 developments, 577-9  
 General Hospital  
   Caulfield, 578  
   Heidelberg, 578  
 Training Scheme, 501  
**Reppo Ltd**  
 automotive parts, 330  
 research and development, 738-9  
**Representation, parliamentary, 1952-1970, 782**  
**Rescue homes, number, 1967-1971, 942**  
**Research**  
   agricultural  
     Consolidated Fund payments, 1966-67 to 1970-71, 991  
     University of Melbourne, 636  
     and Statistics Division, Social Welfare Department, 571  
   Commonwealth facilities, 669-85 *see also* C.S.I.R.O.  
   Australian  
     Road Research Board, 669-70  
     Wool Testing Authority, 670-1  
   Commonwealth  
     Bureau of  
       Census and Statistics, 671-2  
       Dental Standards, 672-3  
       Meteorology, 673-5  
       Radiation Laboratory, 675-6  
       Serum Laboratories Commission, 676-8  
     Department of Supply, 678-82  
     Forestry and Timber Bureau, 682  
     Postmaster-General's Department, 682-4  
     Toolangi Geophysical Observatory, 684-5  
   dental  
     Commonwealth Bureau of Dental Standards, 672-3  
     University of Melbourne, 637-8  
   engineering, University of Melbourne, 638-9  
   Farm, State, Werribee, cereal breeding, 130, 689-90  
   grants, Commonwealth payments, 1966-67 to 1970-71, 989  
   industrial  
     chemical products, 719-29  
     computers, 712-4  
     construction materials, 715-9  
     food technology, 742-6  
     glass materials, 714-5  
     leather, 741-2  
     machinery, 731-40  
     mineral technology, 729-31  
     papermaking, 746-7  
     rubber, 747-9  
     textiles, 740-1  
   scientific  
     La Trobe University, 649-51  
     Monash University, 645-9  
     University of Melbourne, 641-3  
   State facilities, 686-711  
     Cancer Institute, 686-7  
     Country Roads Board, 687-8  
     Department of  
       Agriculture, 688-90  
       Crown Lands and Survey, 691-2  
     Fairfield Hospital, Epidemiological Research Unit, 692-3  
     Fisheries and Wildlife Department, 693-4  
     Forests Commission, 694-6  
     Gas and Fuel Corporation, 696-7  
     Institute of Mental Health, Research and Postgraduate Training, 697-8  
     Melbourne and Metropolitan Board of Works, 698-700  
   National  
     Herbarium of Victoria, 702-3  
     Museum of Victoria, 700-1  
     Royal Botanic Gardens, 701-2  
     Science Museum of Victoria, 703-5  
     Soil Conservation Authority, 705-6  
   State  
     Electricity Commission, 706-8  
     Rivers and Water Supply Commission, 708-10  
     Vermin and Noxious Weeds Destruction Board, 710-1  
**Reservations, 108-9**  
   Crown Land, area, 30 June 1971, 874  
**Reserve Bank Act 1959-1966, 342**  
**Reserve Bank of Australia**  
   Australian Banks Export Re-Finance Corporation Ltd, 340  
   Reserve Bank of Australia—*continued*  
   central banking  
   business, liabilities and assets, average, 1966-67 to 1970-71, 1009  
   powers transferred from Commonwealth Trading Bank, 340  
   development, 341-2  
   profits  
   distribution, 1966-67 to 1970-71, 1010  
   net, 1966-67 to 1970-71, 1010  
   Rural Credits Department, liabilities and assets, average, 1966-67 to 1970-71, 1009  
   trading banks accounts, 340  
**Reservoirs *see also* Irrigation, Water supply research, State Rivers and Water Supply Commission, 708-9**  
   rural water supply, 118  
**Residence, period of, by persons born outside Australia, censuses 1966 and 1971, 792**  
**Residence Areas Act 1881, 161**  
**Resources, natural *see* Natural resources**  
**Respiratory system diseases, cause of death, 1971, 818-20**  
**Restaurant liquor licences, 1967-1971, 978**  
**Retail**  
   and wholesale trade, 365-71  
   hire purchase operations, agreements made, goods purchased, etc., 1966-67 to 1970-71, 1036  
   price  
   index numbers, capital cities, combined, 1901-1972, 1081  
   indexes, 848  
   prices, average, selected commodities, 1949-1971, 848  
   sales  
   instalment credit, 356-9  
   value, 1966-67 to 1970-71, 1037  
   trade, value of retail sales, 1966-67 to 1970-71, 1037  
**Retailed bottled liquor licences, 1967-1971, 978**  
**Rethberg, Elizabeth, singer, 526**  
**Retirement benefits *see* Superannuation**  
**Returned**  
   Sailors' and Soldiers' Imperial League of Australia, formed, 622  
   servicemen, settlement *see* Soldier settlement  
   Services League, voluntary welfare, 566  
   soldiers  
   and Sailors Woollen and Worsted Co-operative Manufacturing Company, Geelong, 327  
   rural finance, 1945-1971, 876  
**Revenue, Melbourne Cup winner, 1152**  
**Revenue *see also* Consolidated Fund, Consolited Revenue Fund**  
   and expenditure, State, 1949-50 to 1969-70, 301  
   assistance agreements, 1970-71 to 1974-75, 302-4  
   government  
   after Federation, 288-306  
   before Federation, 284-8  
**Reynolds, Dick, footballer, 610**  
**Rheola goldfields, geological survey, 153**  
**Rheumatic fever**  
   active, cause of death, 1971, 818  
   treatment, 540  
**Ribbentrop, 1896, forester, 111**  
**Richard Waygood and Company, bought by Peter Johns, 735**  
**Richardson, Professor A.E.V., Executive Committee, Council for Scientific and Industrial Research, 657**  
**Richardson, C. Douglas, Yarra Sculptors Society, 513**  
**Richardson, Ethel Florence Lindesay *see* Richardson, Henry Handel**  
**Richardson, Henry Handel, novelist, 430, 519, 520**  
**Richardson, Ralph, actor, 529**  
**Richmond**  
   area, 30 June 1971, 800  
   municipality proclaimed, 179  
   newspaper, 600  
   population, censuses 1966 and 1971, 797, 800  
   Power Station, electricity generated, power source, etc., 1971-72, 915  
   stockade erected, 572  
   trotting, 612  
**Rickards, Harry, 528**  
**Ridley wheat stripper, 105, 137**  
**Rifle shooting, 618**  
**Rigby Ltd, publishers, 605**  
**Rimfire, Melbourne Cup winner, 1152**  
**Ringwood**  
   area, 30 June 1971, 800  
   population, censuses 1966 and 1971, 798, 800  
**Rip, pilot ship, 239**



- Ripon Shire  
 area, 30 June 1971, 802  
 population, censuses 1966 and 1971, 802
- Rising Fast, Melbourne Cup winner, 1152
- River  
 improvement, State Rivers and Water Supply Commission, 449
- Murray  
 bridges and punts, Country Roads Board expenditure, 1966-67 to 1970-71, 863  
 Commission, 119  
 flow, annual, 763  
 irrigation  
 storage, 877  
 system, area, lands irrigated, and water delivered, 1969-70, 878  
 salinity reduction, Commonwealth payments, 1967-68 to 1970-71, 989  
 use for transport, 142-3  
 Weirs, capacity, etc., 877
- Rivers  
 and Water Supply Commission, State *see* State Rivers and Water Supply Commission  
 expenditure, 1966-67 to 1970-71, 1003  
 flows, schedule, 763  
 harbours, lights, Consolidated Fund payments, 1966-67 to 1970-71, 991  
 receipts, 1966-67 to 1970-71, 990  
 naming of, 92-3
- Rivett, Professor (later Sir) Albert Cherbury David  
 director, C.S.I.R., 629  
 Executive Committee, C.S.I.R., 657  
 F.R.S., 633
- Rivette, Melbourne Cup winner, 1152
- Road *see also* Roads  
 Board, Central *see* Central Road Board  
 construction, research by Country Roads Board, 687-8  
 districts, 452, 453, 1134  
 maintenance contributions, 1966-67 to 1970-71, 992, 996  
 making, local government, 207  
 motor services, Victorian Railways, mileage, revenue, etc., 1966-67 to 1970-71, 1054
- Safety  
 and Traffic Authority, 243-4, 1143  
 Commonwealth payments, 1966-67 to 1970-71, 989  
 (Special Projects) Fund, motor vehicle registration fees received, 1966-67 to 1970-71, 996, 997
- traffic accidents  
 involving casualties, persons killed or injured  
 ages, 1968-69 to 1970-71, 1062  
 description, 1968-69 to 1970-71, 1062  
 rates, etc., 1924-1971, 1125  
 1955-56 to 1970-71, 1062
- Road Safety and Traffic Authority, 243-4, 1143
- transport  
 development, 372-4, 376-9  
 freight, trends, 380  
 goods, State control relaxed, 378  
 regulations, 450  
 taxes, 1966-67 to 1970-71, 992, 996-7  
 trusts, 451  
 vehicles, number, 1953-54 to 1969-70, 379
- Road Traffic Act 1935, 472
- Roads *see also* Road  
 and streets, length, 1971, 861  
 Board, Country *see* Country Roads Board  
 Commonwealth payments  
 specific purpose, 1959-60 and 1969-70, 306  
 1966-67 to 1970-71, 989  
 expenditure *see also* Country Roads Board  
 State net loan, aggregate to 30 June 1969, 282  
 1966-67 to 1970-71, 1003  
 forest, Country Roads Board expenditure, 1966-67 to 1970-71, 863  
 history, 240-3  
 rural developments, 140-2
- Robbery  
 Children's Court cases, 1970, 970  
 higher court cases, 1969 and 1970, 974  
 persons convicted  
 ages, 1970, 976  
 and result of hearing, 1970, 975  
 with violence, police warnings, 1967-1970, 971
- Robbery under arms*, Rolf Boldrewood (T. A. Browne), 521
- Robert and Elizabeth*, musical, 529
- Roberts, Tom, artist, 430, 508, 510
- Robertson, Sir Macpherson, Herbarium building presented, 703
- Robertson, Sir Rutherford Ness, F.R.S., 635
- Robertson, George, 604
- Robertson and Mullens, publishers, 604-5
- Robin, wheat, acreage sown, etc., 1968-69 to 1970-71, 888
- Robinson, G. A., Chief Protector, Aboriginals, 1838-1850, 26-7
- Robinson, W. S., industrialist, 756
- Robinvale, population, censuses 1966 and 1971, 798
- Rochester  
 population, censuses 1966 and 1971, 798
- Shire  
 area, 30 June 1971, 803  
 population, censuses 1966 and 1971, 803
- Rock lobster  
 catch, 1966-67 to 1970-71, 905  
 production  
 quantity and value, 1966-67 to 1970-71, 904  
 value, local, 1966-67 to 1970-71, 909
- Rockefeller Foundation, support of Walter and Eliza Hall Institute of Medical Research, 641
- Rockingham, Red Cross Home, Kew, 579
- Rocklands Reservoir, 82, 118, 218
- Rocla Concrete Pipes Ltd, research and development, 717-8
- Rodney Shire  
 area, 30 June 1971, 803  
 population, censuses 1966 and 1971, 803
- Roentgen's discovery of X-rays, 533, 539
- Roman Catholic *see* Catholic
- Romanians naturalised, 1967-1971, 807
- Romney Marsh sheep  
 distribution in Statistical Districts, 31 March 1971, 896-7  
 numbers, etc., 1968, 1970, and 1971, 898
- Romsey  
 newspaper, 601
- Shire  
 area, 30 June 1971, 801  
 population, censuses 1966 and 1971, 801
- Rope manufacture, Michael Donaghy, 326
- Rose, Lionel, boxer, 619
- Rosedale  
 La Trobe River flow, 763  
 ligno-cellulose board mills, 333  
 newspaper, 601
- Shire  
 area, 30 June 1971, 804  
 population, censuses 1966 and 1971, 804
- Ross-Edwards, Peter, M.L.A., 772
- Rosster, John Frederick, M.L.A., 768, 772
- Rotary hoes on rural holdings, 1967-1971, 883
- Rough Range, Western Australia, oil discovery, 163  
 effect on Stock Exchange, 350
- Roublers, 617
- Rouse, J. J., photographic goods marketed, 725
- Route numbering scheme, Road Safety and Traffic Authority, 244
- Rowings, 616
- Rowlands, E. and Co., cordial manufacturer, 324
- Royal  
 Agricultural Society, education, 148-9
- Australian  
 Air Force  
 aerial photography for mapping, 91  
 formed, 459-60  
 Chemical Institute, Professor (later Sir) David Orme Masson, 642  
 Naval College, Flinders, Geelong, Jervis Bay, 459  
 Navy, 459 *see also* Navy, Royal Navy  
 base established at Crib Point, 1138  
 H.M.A.S. *Cerberus*, naval base, 237
- Ballet, 530
- Botanic Gardens, 109, 629-30, 1133 *see also* National Herbarium of Victoria  
 geomagnetic observations, 684  
 research, 701-2
- Children's Hospital  
 clinical  
 Research Unit established, 639  
 teaching, 561  
 Research Foundation, 639
- Commissions into  
 charitable institutions, 565  
 education  
 Fink, 1899-1901, 478, 483, 489-90, 492, 495, 496, 501, 639  
 Pearson, 485  
 1867, 478  
 1902-1904, 495  
 friendly societies, 362  
 insurance, 344

- Royal—*continued*  
 Commissions into—*continued*  
 King Street Bridge failure, 1141  
 liquor laws, 1142  
 monetary and banking systems, 1937, 342  
 Police, 1882, 471  
 prison system, 1870, 572  
 radio stations, 1928, 586  
 surveys, 1870, 91  
 television, 1956, 590  
 vegetable products, 1891, 688  
 West Gate Bridge disaster, 1142  
 Engineers, map production, 91  
 Hobart Hospital, association with Cancer Institute  
 686  
 Irish Regiment, 18th, embarked for England, 457  
 Marines, settlement near Sorrento, 455  
 Melbourne  
 Golf Club, World (Canada) Cup, 608  
 Hospital, 197  
 built, 565  
 clinical teaching, 561  
 design, 558  
 Radiotherapy Department, Cancer Institute,  
 686  
 Walter and Eliza Hall Institute of Medical  
 Research, clinical research unit  
 established, 641  
 Institute of Technology, 501–2  
 enrolments, 1970 and 1971, 934  
 immigrant language training, 583  
 legal education, 476  
 opened as Working Men's College, 489, 1136  
 research, scientific, 653  
 training programme with Cancer Institute, 687  
 Philharmonic Society, 524  
 Show, woodchopping, 617–8  
 Mint  
 building completed, 180  
 opened, 447, 1135  
 transferred to Canberra, 1142  
 Navy, 455  
 replaced by Australian ships, 459  
 hockey introduced, 616  
 Australia Station ships  
 Park  
 psychiatric hospital, 549  
 Zoological Gardens, 631  
 Society  
 London, Fellows connected with Victoria, 505,  
 632–5  
 of Victoria  
 activities, 630  
 formed, 627  
 Tasmania, supply of plants for Botanic  
 Gardens, 110  
 Theatre, 528  
 Victorian  
 Bowling Association, 613  
 College of Nursing, 554  
 Eye and Ear Hospital, 558  
 microsurgery, 538  
 opened as Melbourne Institution for Diseases  
 of the Dye and Ear, 558, 1135  
 Horticultural Society, founded, 631  
 Institute of Architects, town planning, 187  
 Liedertafel, 524  
 Women's Hospital, established as Lying-in-Hospital,  
 557, 1134  
 Zoological and Acclimatization Society, activities,  
 630–1  
 Rubber, imports and exports, value, 1969–70 and  
 1970–71  
 crude, 1039  
 manufactures, 1040  
 research and development, 747–9  
 Rubinstein, Artur, pianist, 526  
 Rugby, history, 610  
 Rupertswood Battery, The, (Victorian Horse  
 Artillery) formed, 457  
 Rural  
 and urban  
 development, 63–262  
 building and housing, 192–206  
 communications, 258–62  
 farming and land use, 111–51  
 geography, before and after settlement, 63–83  
 housing and building, 192–206  
 land use and farming, 111–51  
 local government services, 206–28 *see also*  
 local government  
 mining, 152–71  
 Rural—*continued*  
 and urban—*continued*  
 development—*continued*  
 settlement, 85–110  
 transport, 229–58  
 population, census  
 1966, 266  
 1971, 44  
 areas  
 masculinity, census 1971, 795  
 population, censuses 1966 and 1971, 795, 796  
 Bench Constabulary, 470  
 development, 103–7 *see also* Agriculture, Farming,  
 Land settlement, Property distribution  
 cattle, 106, 124–5  
 cereal growing, 105–6, 129–32  
 dairying, 107, 124–5  
 early settlement, 103–4  
 effects of  
 gold discoveries, 104, 156  
 potato shortages in Ireland, 104  
 Mallee, 105  
 pasture improvement, 106–7, 125–6  
 sheep, 106, 123–5  
 Western District, 103  
 Finance  
 Act, 875  
 and Settlement Commission, 103, 450  
 Corporation, 103, 450  
 statistics, 875–7  
 holdings  
 area  
 Australia, season 1969–70, 267  
 by States, 1970–71, 879  
 classified according to  
 size of holding, number and total area of  
 holdings, 1959–60, 1965–66, and  
 1968–69, 881  
 type of activity, number and area used,  
 1968–69, 882  
 farm machinery, 1967–1971, 883  
 fertilisers used, number, area, etc., 1966–67  
 to 1970–71, 883  
 land utilisation  
 and number, 1836–37 to 1970–71, 1081–3  
 Australia, season 1969–70, 267  
 number  
 and land utilisation, 1836–37 to 1970–71,  
 1081–3  
 by States, 1970–71, 879  
 wheat growing, livestock depastured and  
 size of holding, 1968–69, 882  
 industries  
 loans outstanding from Commonwealth  
 Development Bank, 30 June 1971, 1013  
 production  
 Australia, season 1969–70, 268  
 value, net, 1928–29 to 1970–71, 1092  
 industry, 307–21  
 beef cattle, 311–2  
 dairying, 316–9  
 economic  
 activity, 267–9  
 development, 307–21  
 beef cattle, 311–2  
 dairying, 316–9  
 sheep, 309–11  
 wheat, 312–6  
 other primary products, 319–21  
 sheep, 309–11  
 wheat, 312–6  
 life, 149–51  
 loans approved, Commonwealth Development  
 Bank, 1970–71, 876  
 Reconstruction Commission, 102, 636  
 reservoirs, water supply, 118  
 transport, 140–3  
 water resources, research, State Rivers and Water  
 Supply Commission, 708–10  
 Rural Worker's Gazette, newspaper, 601  
 Rusden, G. W., historian, 524  
 Rushworth  
 gold discovered, 157  
 immigrant holding centre, 581  
 population, censuses 1966 and 1971, 798  
 Ruskin Motors Pty Ltd, 329  
 Russell, George, sheep breeding, 123  
 Russell, Gordon, collection presented to National  
 Gallery, 516  
 Russell, John, Melbourne Philharmonic Society,  
 founded, 524

- Russell, Robert  
 Melbourne plan, 175, 1132  
 St James' Cathedral, designer, 192  
 survey of Port Phillip, 88
- Russia, fear of war with, 457
- Russia, Melbourne Cup winner, 1152
- Russians naturalised, 1967-1971, 807
- Rutherglen  
 goldfields, geological surveys, 153  
 newspaper, 601  
 population, censuses 1966 and 1971, 798  
 Research Station  
 established, 689  
 ley farming system, 106  
 soil conservation, 122
- Shire  
 area, 30 June 1971, 803  
 population, censuses 1966 and 1971, 803
- Rutledge, William, invitation to T. H. Braim, 485
- Ruwolt, Charles, engineer, 325, 739
- Ruyton (school), 486
- Rye  
 and barley, area, yield, and gross value, 1970-71, 884  
 area  
 sown, seasons 1966-67 to 1970-71, 889  
 yield, and gross value, 1970-71, 884  
 production, seasons 1966-67 to 1970-71, 889  
 value, gross, seasons 1966-67 to 1970-71, 889  
 yield (average) per acre, seasons 1966-67 to 1970-71, 889
- Ryeland sheep  
 distribution in Statistical Districts, 31 March 1971, 896-7  
 numbers, etc., 1968, 1970, and 1971, 898
- Rylah, Sir Arthur Gordon, M.L.A., 772
- S.E.C. *see* State Electricity Commission of Victoria
- S.T.D. (Subscriber Trunk Dialling), introduction, 261
- Safety  
 mining, 162  
 public, Consolidated Fund payments, 1966-67 to 1970-71, 991
- Safflower, area, yield, gross value, 1970-71, 884
- St Johnston, Colonel Sir Eric, report on Victoria Police, 472, 1143
- St
- Arnaud  
 newspaper, 601  
 population, censuses 1966 and 1971, 798  
 siting, 174  
 Town  
 area, 30 June 1971, 802  
 population, censuses 1966 and 1971, 802
- David's Hall, Queen Victoria Memorial Hospital, patients treated, 558
- Francis' Church  
 architecture, 192  
 foundation stone laid, 1133  
 pro-Cathedral, Bishop Goold installed, 1133  
 voluntary welfare, 566
- Hilda's College, University of Melbourne, 495
- James'  
 and St Paul's Training Institution, 491  
 Cathedral  
 Bishop Perry installed, 1133  
 building, 192  
 foundation stone laid, 1132  
 voluntary welfare, 566
- Kilda  
 and Brighton Railway Co., 247-8  
 area, 30 June 1971, 800  
 Christian Brothers school opened, 486  
 established, 177  
 municipality proclaimed, 179  
 population, censuses 1966 and 1971, 798, 800
- Leonard's, population, censuses 1966 and 1971, 798
- Martin's Theatre  
 built, 623  
 Company, 529
- Mary's Hall (later College), opened, 495
- Nicholas' Hospital, Carlton, 550
- Patrick's  
 College, East Melbourne, founded, 485  
 Roman Catholic Cathedral, William Wardell, architect, 194, 1134
- Paul's Anglican Cathedral  
 Butterfield, William, architect, 194  
 foundation stone laid, 1135-6
- Peter's Church, architecture, 192
- St—*continued*
- Vincent's  
 Hospital  
 clinical teaching, 561  
 opened, 558, 1136  
 School of Medical Research, 654-5, 1141
- Salaries and wages paid, factories, 1903 to 1969-70, 1096-7
- Salary and wage earners  
 employed, government and private, 1947-1972, 1080  
 in civilian employment, 1966-1972, 846-7
- Sale  
 area, 30 June 1971, 804  
 climatic elements, means, 765  
 Continuation School, 486  
 growth, 428  
 immigrant holding centre, 581  
 newspaper, 601  
 population, censuses 1966 and 1971, 798, 804  
 radio station, call sign, 917  
 siting, 174  
 water supply authority, 864
- Sale  
 bills of, number and amount, 1967-1971, 1030  
 of business, stamp duty rates at 1 January 1972, 998
- Salk, poliomyelitis vaccine discovered, 677
- Salmon, Australian, catch, 1966-67 to 1970-71, 905
- Saltworks, French Island, 323
- Salvarsan, drug, 532
- Salvation Army, care of social derelicts, 566  
 Salvationists, censuses 1966 and 1971, 793
- Sam Slick in Victoria*, newspaper, 601
- Sanatoria  
 accommodation and inmates, 1970-71, 943  
 number, 1967-1971, 942  
 receipts and expenditure, 1966-67 to 1970-71, 944
- Sand, production, quantity and value, 1968-69 to 1970-71, 907
- Sandals, etc., manufactured, 1970-71 and 1971-72, 913
- Sandhurst, 185 *see also* Bendigo  
 Borough Council, Corporate High School, established, 486
- Sandown  
 motor racing track, 617  
 racecourse, 611
- Sandridge *see also* Port Melbourne  
 artillery batteries built, 455  
 established, 177  
 municipality proclaimed, 179  
 railway to Melbourne opened, 1134
- Sandringham  
 area, 30 June 1971, 800  
 population, censuses 1966 and 1971, 798, 800
- Sands and McDougall, printers and publishers, *Directory of Victoria*, 604
- Sanitary, etc., fittings, imports and exports, 1969-70 and 1970-71, 1040
- Sargood, Lt Col Sir Frederick, Minister for Defence, 457
- Sasanof, Melbourne Cup winner, 1152
- Saturdee*, Norman Lindsay, 521
- Savings  
 Bank of Port Phillip  
 housing finance, 359  
 opened, 337  
 banks *see* Banks, savings  
 per capita and personal income, 1969-70, 277
- Sawmilling *see* Timber
- Scallops  
 catch, 1966-67 to 1970-71, 905  
 production, value, local, 1966-67 to 1970-71, 909
- Scamble, John, *Geelong Advertiser* bought with James Harrison, 597
- Scanlan, Alan Henry, M.L.A., 769, 772
- Scarlet fever, history, 54-5
- Scheherazade*, ballet, 530
- Schinkel, establishment of subterranean clover, 126
- Schipa, Tito, singer, 526
- Schnabel, Artur, pianist, 526
- Scholarships  
 government granted, 1967-1971, 923  
 tertiary, expenditure, Education Department, 1968-69 to 1971-72, 924
- Scholes, G. G. D., M.H.R., 783
- School *see also* Education, Schools  
 bank accounts, State Savings Bank of Victoria, 1967-1971, 1014  
 buildings, expenditure, 1966-67 to 1970-71, 1003

- School—continued**  
 Dental Service, 435, 548  
 libraries, Commonwealth  
 payments, 1968–69 to 1970–71, 989  
 specific purpose grants, 1959–60 and 1969–70,  
 306  
 Medical Service, 435, 548  
 of Mines and Industries, Ballarat and Bendigo  
 opened, 489, 501, 1135  
 scientific research, 652–3  
*School for Scandal, The*, play, 528  
 Schooling, level attained by the population, census  
 1971, 794  
 Schools *see also* Education, School  
 architecture, 197  
 art education, 516–9  
 Board, 498, 499  
 Boards, Denominational and National, established,  
 1133  
 controlled by Board of Education, 1135  
 government  
 and registered  
 numbers, teachers, and pupils, 1967–1971, 920  
 pupils enrolled  
 and ages, 1967–1971, 927  
 1967–1971, 926  
 class and pupils' sex, 1971, 921  
 number, pupils, and teachers, 1852–1971,  
 1098–1100  
 primary and secondary  
 class of school, pupils' sex, 1971, 921  
 number, teachers, and pupils  
 1852–1971, 1098–1100  
 1967–1971, 920  
 pupils' ages  
 and grade, 1971, 922  
 1967–1971, 921  
 secondary *see* primary and secondary *above*  
 independent *see* registered *below*  
 Inspection and Examinations Board, 497  
 music lessons, 527  
 non-government *see* registered *below*  
 primary, expenditure, 1968–69 to 1971–72, 924  
 public debt at 30 June 1900, 288  
 registered  
 and government  
 number, 1967–1971, 920  
 pupils  
 enrolled  
 and ages, 1967–1971, 927  
 1967–1971, 926  
 1967–1971, 920  
 teachers, 1967–1971, 920  
 Commonwealth payments  
 1959–60 and 1969–70, 306  
 1969–70 and 1970–71, 989  
 Consolidated Fund payments, 1966–67 to  
 1970–71, 991  
 Education Department expenditure, 1968–69 to  
 1971–72, 924  
 number  
 1852–1971, 1098–1100  
 1967–1971, 925  
 pupils  
 ages  
 and school denomination, 1971, 926  
 1967–1971, 926  
 numbers  
 by school denomination, 1967–1971, 925  
 1852–1971, 1098–1100  
 teachers, number  
 1862–1971, 1098–1100  
 1967–1971, 925  
 secondary, expenditure, 1968–69 to 1971–72, 924  
 senior technical, number, staff, and students,  
 1877–1971, 1100–1  
 State  
 agricultural education, 148  
 Consolidated Fund payments, 1966–67 to  
 1970–71, 991  
 expenditure  
 Education Department, 1968–69 to 1971–72,  
 924  
 1971–72, 925  
 technical  
 Consolidated Fund payments, 1966–67 to  
 1970–71, 991  
 expenditure, 1968–69 to 1971–72, 924  
 number, 1965–1971, 923  
**Science**  
 and Industry Fund, engineering research  
 sponsored, 638  
 Australian and New Zealand Association for the  
 Advancement of Science, 631–2  
**Science—continued**  
 Board of, conflict with Commissioner of Lands,  
 152  
 history, 627–32  
 laboratories, Commonwealth payments  
 specific purpose, 1959–60 and 1969–70, 306  
 1966–67 to 1970–71, 989  
 Museum of Victoria *see also* National Museum  
 of Victoria  
 development, 506  
 opened as Industrial and Technological  
 Museum, 1135  
 research, 703–5  
 Royal Society, London, Fellows, 632–5  
*Science Museum of Victoria, The*, W. Ferry, 705  
 Scientific  
 and technological  
 development, 627–749  
 industrial research and development  
 facilities, 712–49  
 research facilities  
 Commonwealth, 669–85  
 C.S.I.R.O., 657–68  
 industrial, 712–49  
 State, 686–711  
 research  
 colleges of advanced education, 652–6  
 C.S.I.R.O., 657–68  
 science, 627–35  
 universities, 636–51  
 organisations, 627–32  
 Scoresby, horticultural research station, 690  
 Scotch College  
 English taught in matriculation, 487  
 first Australian Rules football match played, 609  
 founded, 485  
 Scots Church Visiting Society, became Melbourne  
 Ladies Welfare Society, 566  
 Scott, Sir Ernest, historian, 524  
 Scott and Black, London to Melbourne Centenary  
 Air Race, 1139  
 Scratchley, Lt Col P. H., Port Phillip defence, 457  
 Scrub at time of discovery, 76–7  
 Sculpture, development, 512–5  
 Scurry, W. C., Yarra Sculptors Society, 513  
 Scurvy, control, 535–6  
 Sea Lake, water supply, 218  
 Sealed set scheme, broadcasting, 585  
 Seamen's Union, established, 405–6  
*Search Light*, newspaper, 601  
 Searoad service to Tasmania, vessels, passengers,  
 vehicles, etc., 1970–71, 1043  
 Seat belts made compulsory, 1142  
 Sebastopol Borough  
 area, 30 June 1971, 802  
 population, censuses 1966 and 1971, 796, 802  
 Second World War *see* War, Second World  
 Secondary  
 education *see* Education  
 industry *see* Manufacturing  
 production *see* Manufacturing  
 schools *see* Schools  
 Teachers College, established, 492  
 Secret ballot, 428, 438  
 Securities  
 repurchased and redeemed, National Debt  
 Sinking Fund, 1966–67 to 1970–71, 1008  
 sale, Public Authorities' Capital Account, 1966–67  
 to 1970–71, 988  
 Sedgman, Frank, tennis player, 611  
 Seed  
 Beans Marketing Board, dissolved, 320  
 drill, introduction, 105  
 sown by aircraft, 1966–1971, 883  
 Seismological observations, 684–5  
 Selborne Chambers, legal profession, 475  
 Select Committee on  
 Penal Discipline, 572  
 Roads and Bridges, 451  
 Selection Acts *see* Land settlement  
 Selwyn, Alfred R. C., geological survey, 152, 629  
 Semi-governmental authorities statistics, 862–72 *see*  
*also individual titles*  
 Senate, members, Victorian, 783  
 Senior  
 public examination, passes, etc., 1906–1917, 1102  
 technical schools, number, staff, and students,  
 1877–1971, 1100–1  
 Separation, 426, 437–8  
 Act proclaimed, 1134  
 effect on  
 banking, 338  
 government administration, 445

- Separation—*continued*  
 effect on—*continued*  
   legal profession, 473  
   public sector, 284–8  
   petition sent to England, 1133  
 Serendip Wildlife Research Station, established, 694  
*Series of sketches of the Victorian gold diggings and diggers as they are*, A, Samuel Thomas Gill, 508  
 Serle, Geoffrey, historian, 524  
 Serle, Percival  
   *Bibliography of Australasian poetry and verse*, published, 524  
   collection of Furnley Maurice's (Frank Wilmot) poems, 523  
   *Dictionary of Australian biography*, published, 524  
 Serum Laboratories, Commonwealth *see* Commonwealth Serum Laboratories  
*Serum Laboratories Act* 1961, 676  
 Service, James  
   Federation convention, 440  
   Premier, 430, 1151  
 Service  
   and war pensions, members of forces and dependants, 1967–68 to 1971–72, 951  
   pensions, amounts paid, etc., 1935–36 to 1970–71, 1112–3  
 Settlement, 85–110 *see also* Land settlement,  
   Urban and suburban development  
   botanic gardens, 109–10  
   discovery and exploration, 85–8  
   land settlement, 93–100  
   patterns of, 68–9  
   property distribution, 100–03  
   rivers, naming of, 92  
   rural development, 103–9  
   surveying, 88–92  
 Settlers, 1830s, 425  
 Seventh-day Adventists, censuses 1966 and 1971, 793  
 Sewerage *see also* Water supply  
   authorities, country, income, expenditure, etc., 1970, 869  
   expenditure  
     Melbourne and Metropolitan Board of Works, 1966–67 to 1970–71, 867  
     State net loan, aggregate to 30 June 1969, 282  
     1966–67 to 1970–71, 1003  
   mains, corrosion, 699  
   Melbourne  
     and Metropolitan Board of Works, 212–3  
     works begun, 181  
   revenue, Melbourne and Metropolitan Board of Works, 1966–67 to 1970–71, 867  
   system, capital outlay, Melbourne and Metropolitan Board of Works, 1966–67 to 1970–71, 866  
   water supply, etc., Consolidated Fund payments, 1966–67 to 1970–71, 991  
   receipts, 1966–67 to 1970–71, 990  
 Sewers  
   local government responsibilities, 207–8  
   properties provided with, Melbourne and Metropolitan Board of Works, 1966–67 to 1970–71, 865  
 Sex offences  
   Children's Court, 1970, 970  
   police warnings, 971  
 Seymour  
   army training camp established, 459  
   population, censuses 1966 and 1971, 798  
 Shire  
   area, 30 June 1971, 801  
   population, censuses 1966 and 1971, 801  
 Shakespeare Society, 622  
 Shannon, Murray and Co., amalgamation with Strachan Bostock and Co., 355  
 Share  
   price indexes, introduced, 350  
   transfers, stamp duty rates at 1 January 1972, 997  
 Shares, Stock Exchange of Melbourne, 1031–2  
 Shark, gummy, catch, 1966–67 to 1970–71, 905  
 Shaw, A. G. L., historian, 524  
 Shaw, George Bernard, plays performed, 529  
 Shaw, Thomas, wool expert, 123–4  
 Shearers Union, Amalgamated, 406  
 Shearing machines on rural holdings, 1967–1971, 883  
 Sheep *see also* Wool  
   and cattle stealing  
     higher court cases, 1969 and 1970, 974  
     persons convicted  
       ages, 1970, 976  
     and result of hearing, 1970, 975  
   breeding before 1875, 123  
   breeds  
     distribution in Statistical Districts, 31  
       March 1971, 896  
     number and percentage of total, 1968, 1970, and 1971, 898  
   distribution, Statistical Districts, 31 March 1971, 894  
   effects of grazing on pastures, 106  
   holdings  
     growing cereal grain, 1968–69, 882  
     number, area, etc., 1968–69, 882  
     marketing, development, 309–11  
     merino, breeding, 123–4  
   numbers  
     by States, 1970–71, 879  
     1837–1971, 1090–1  
     1861–1971, 893  
   prices, 311  
   shearing, mechanisation, 139  
   shorn  
     and wool clipped, seasons 1966–67 to 1970–71, 899  
     Statistical Districts, season 1970–71, 899  
   slaughtered  
     value, local, 1966–67 to 1970–71, 908  
     1966–67 to 1970–71, 901  
 Sheet Anchor, Melbourne Cup winner, 1152  
 Shell Co. of Australia Ltd  
   Corio refinery, 170–1, 333  
   oil well drilling, 164  
 Sheltered workshops, Commonwealth subsidies, 576  
*Shenandoah*, American Confederate ship, repaired, 456  
 Shepherd, establishment of subterranean clover, 126  
 Shepparton  
   adult education, 507  
   area, 30 June 1971, 803  
   Cleckheaton Ltd, 331  
   Continuation School, 486  
   development, 185  
   new township, 428  
   newspaper, 601  
   population, censuses 1966 and 1971, 798, 803  
   Preserving Co. Ltd, 327  
   radio station, call sign, 917  
 Shire  
   area, 30 June 1971, 803  
   population, censuses 1966 and 1971, 803  
   short wave complex, Postmaster-General's Department, 683  
   siting, 174  
   television stations, 918  
 Sherbrooke  
   population, censuses 1966 and 1971, 798  
 Shire  
   area, 30 June 1971, 800  
   population, censuses 1966 and 1971, 800  
 Sheriff, writs received, 1967–1971, 967  
 Shiels, William, Premier, 1151  
 Shillito, Thomas Bernard, judge, 769  
 Shilton, Leslie Victor, M.L.A., 772  
 Ship liquor licences, 1967–1971, 978  
 Shipbuilding, 334  
 Shipping *see also* Maritime trade  
   coastal, 232–4 *see also* Navigation, coastal  
   effects of gold discoveries, 230  
   fares, 375  
   freight rates, 375  
   interstate, 381  
     and overseas, entered, and cleared, vessels, tonnage, 1837 to 1970–71, 1120–1  
     1966–67 to 1970–71, 1043  
   intrastate, 380  
   nationality, 1969–70 and 1970–71, 1044  
   overseas and interstate entrances and clearances, net tons, 1966–67 to 1970–71, 1043  
   River Murray, 142–3  
   statistics, 1043–6  
 Ships entered at ports, 1969–70 and 1970–71, 1044  
 Shires *see also* individual Shires, Local government incorporation, 453  
   numbers, 850  
 Shirts manufactured, 1970–71 and 1971–72, 913  
 Shoes manufactured, 1970–71 and 1971–72, 913  
 Shooting, 618  
 Shops  
   building commenced, value when completed, 1967–68 to 1971–72, 980  
   buildings completed, value, 1967–68 to 1971–72, 981

- Shops—*continued*  
 hours extended, 1145  
 new, work done, value, 1967–68 to 1971–72, 981  
 retail, development, 365–71  
 Shore, Arnold, artist, 511  
 Short-term money market, authorised dealers, 1032–3  
 Showgrounds, trotting, 612  
 Shrine of Remembrance  
 dedicated, 1139  
 sculpture, Paul Montford, 513  
 Sick funds, friendly societies, 1966–67 to 1969–70, 963–5  
 Sickness benefits  
 Commonwealth, 575  
 expenditure, National Welfare Fund, 1967–68 to 1971–72, 948  
 payments, persons, etc., 1967–68 to 1971–72, 950  
 Sidney Myer  
 free concerts, 525  
 Music Bowl  
 Music for the People concerts, 526  
 opened, 1141  
 Trust, Music in Schools Fund, 527  
 Silica, production, quantity and value, 1968–69 to 1970–71, 907  
 Silvan Reservoir, 211  
 water output, 1966–67 to 1970–71, 865  
 Silver, assayed output of minerals, 1968–69 to 1970–71, 906  
 Silver Knight, Melbourne Cup winner, 1152  
 Simmonds, James Lionel, M.L.A., 772  
 Simpson, water supply, 217  
 Sims, J. T., sent Thomas Shaw to Australia, 123–4  
 Sinai, Australian Imperial Forces, 459  
 Singapore, taken by Japanese forces, 1140  
 Sinks, stainless steel, manufactured, 1970–71 and 1971–72, 913  
 Sirinumu Dam, Papua, research, State Rivers and Water Supply Commission, 709  
 Sirius, Melbourne Cup winner, 1152  
 Sister Olive, Melbourne Cup winner, 1152  
 Sisters of Charity, St Vincent's Hospital, 558  
 Skating, 618  
 Skiing, 618  
 Skilton, Bob, footballer, 610  
 Skindiving, spearfishing, 615  
 Skipton, first sheep show, 124  
 Skipton, Melbourne Cup winner, 1152  
 Slaughterhouses, 1966–67 to 1970–71, 901  
 Slaughtering, 1966–67 to 1970–71, 901  
 Sleigh, H. C., Ltd, refinery not allowed at Western Port, 1143  
 Slippers manufactured, 1970–71 and 1971–72, 913  
 Sloane, William, wool broker, 354  
 Sludge Abatement Board, 161  
 Sluicing for gold, 158  
*Slum Reclamation and Housing Act 1938*, 204, 360  
 Smallpox  
 incidence, 535  
 vaccination, 560  
 Smellie, E. S., Yarra Sculptors Society, 513  
 Smith, Aurel, M.L.A., 772  
 Smith, Clarence, stump-jump plough, 105, 137  
 Smith, Ian Winton, M.L.A., 769, 772  
 Smith, Thomas Weetman, judge, 769  
 Smith, Howard and Co., coastal shipping, *Derwent*, 233  
 Smyth, Dr John, 492  
 Smyth, R. Brough  
 geological survey, 629  
 Secretary for Mines, 161  
*The Aborigines of Victoria*, 1878, 28  
 Smythe, H. W. H., Geelong surveyed, 173  
 Smythes Creek, gold discovered, 156  
 Smythesdale, newspaper, 601  
 Snake venom antivenene, 628  
 Snapper  
 catch, 1966–67 to 1970–71, 905  
 field, natural gas and crude oil reserves, 21  
 May 1971, 165  
 gas field, 165  
 Snedden, B. M., M.H.R., 783  
 Snobs Creek Freshwater Fishery Research Station and Hatchery, 615, 693  
 Snook (barracouta) catch, 1966–67 to 1970–71, 905  
 Snooker, 620  
 Snowy  
 Mountains Hydro-electric Scheme, 1141  
 River, flow, annual, 763  
 Soaps manufactured, 1970–71 and 1971–72, 913  
 Soccer, history, 610
- Social  
 and political development, 425–37  
 arts, 508–31  
 constitutional and administrative development, 425–60  
 education, 477–507  
 health services, 532–64  
 law and justice, 461–76  
 mass media, 585–606  
 recreation, 607–24  
 social services and welfare, 565–84  
 conditions, statistics, 917–86  
 cultural and recreational, 917–9  
 education, 920–36  
 health and medical research, 937–48  
 historical, 1098–117  
 housing and building, 980–6  
 justice and the administration of law, 966–79  
 social welfare, 948–65  
 entertainment, 620–4  
 expenditure, Consolidated Fund, 1966–67 to 1970–71, 991  
 Sciences Research Council, research grants to  
 Institute of Mental Health Research and  
 Postgraduate Training, 697  
 services  
 and welfare, 565–84  
 child welfare, 568–70  
 Commonwealth social services, 575–7  
 co-ordination, 583–4  
 immigrant welfare, 579–83  
 prisons, 571–3  
 repatriation, 577–9  
 social work education, 573–5  
 voluntary welfare, 565–8  
 Commonwealth, development, 575–7  
 Consolidated Fund payments, 1966–67 to 1970–71, 991  
 State expenditure per capita, 1969–70, 280  
 unemployment, sickness and special benefits,  
 payments, persons, etc., 1967–68 to 1971–72,  
 950  
 welfare *see also* Social services and welfare  
 Consolidated Revenue Fund, expenditure,  
 1901–02 to 1969–70, 290  
 co-ordination, 583–4  
 Department  
 child welfare, 568–70  
 development, 570–1  
 training courses, social workers, 574  
 State expenditure, 281  
 statistics, 948–65  
 co-operative societies, 965  
 friendly societies, 963–5  
 health benefits, national, 951–2  
 Ministry of Social Welfare, 953–62  
 Red Cross Society, 963  
 Repatriation Department, 951  
 Social services, Commonwealth, 948–50  
 work  
 education, 573–5  
 medical, 556–7  
*Social Services Consolidation Act 1947*, 576  
*Social Welfare Act 1960*, 570, 573  
*Social Welfare Act 1970*, 570–1  
*Socialist*, newspaper, 601  
 Society of Chemical Industry of Victoria, award to  
 Carlton and United Breweries Ltd, 743  
 Socks and stockings manufactured, 1970–71 and  
 1971–72, 913  
 Softball, 616  
 Softwood  
 output, 1966–67 to 1970–71, 902  
 plantations, output, 1966–67 to 1970–71, 903  
 Soil  
 Conservation Authority, 120–1  
 extension services, 144  
 research, 705–6  
 erosion and inherent erosion hazard, map, 67  
 management, 119–23 *see also* Land use  
 classification, 120  
 conservation, 120–1  
 Erosion Investigation Committee, 120  
 Mallee Research Station, 120  
 soil  
 deficiencies, 121–3  
 nitrogen, 122  
 phosphorus, 121–2  
 potassium, 122  
 soil moisture, 121  
 trace elements, 122–3  
 surveys and land use, 119–120

- Soil—*continued*  
 moisture, 121  
 Soils, research, C.S.I.R.O., 666  
 Soirées Musicales Chamber Music Society, 526  
 Soldier settlement, 102–3  
 Act, advances to ex-servicemen, 1945–1971, 876  
 Commission, 102  
 amalgamation with Rural Finance Corporation, 450  
 expenditure, 1966–67 to 1970–71, 1003  
*Soldier Settlement Act* 1945, 102  
 Solicitor-General, development of office, 472–3  
*Solicitor-General Act* 1951, 450, 468, 472  
 Solicitors *see* Legal profession  
 Somers, immigrant holding centre, 581  
 Somerville, John Phillip, judge, 769  
 Somes, Michael, ballet dancer, 530  
 Sonder botanical collection in National Herbarium of Victoria, 703  
*Songs of a sentimental bloke*, C. J. Dennis, 523  
 Sorrento, holiday resort, 621  
*Sound of Music*, musical, 529  
 South, George, gas produced, 224  
 South  
 African (Boer) War, 458, 1137  
 Australia  
 area, 762, 799  
 birth rates, 1967–1971, 814  
 births  
 ex-nuptial, and percentage of total births, 1967–1971, 816  
 1967–1971, 813  
 census populations, 1947–1971, 784  
 customs and excise duty collected, 1970–71, 1043  
 deaths and death rates, 1967–1971, 817  
 farm activity, principal items, 1970–71, 879  
 infant deaths and death rates, 1967–1971, 823  
 instalment credit for retail sales, 1970–71, 1035  
 marriages and marriage rates, 1967–1971, 808  
 natural increase, annual, 1931–1940 to 1971, 785  
 overseas arrivals and departures, 1967–1971, 806  
 population  
 density, 31 December 1971, estimated, 799  
 increase, intercensal periods, 1947–1954 to 1966–1971, 785  
 percentage, 31 December 1971, estimated, 799  
 31 December 1971, estimated, 799  
 trade overseas, value, and duty collected, 1970–71, 1043  
 Barwon Shire  
 area, 30 June 1971, 801  
 population, censuses 1966 and 1971, 796, 801  
 Eastern  
 Freeway  
 first stage opened, 1141  
 second stage opened, 1142  
 Purification Plant opened at Carrum, 1143  
 Sewerage System, Melbourne and Metropolitan Board of Works, 213  
 Gippsland Shire  
 area, 30 June 1971, 804  
 population, censuses 1966 and 1971, 804  
 Melbourne  
 area, 30 June 1971, 800  
 (Emerald Hill), municipality proclaimed, 179  
 first water polo game played, 615  
 Gas Company, 225  
 land reclamation, 181  
 library service, 503  
 market, 367  
 newspaper, 600  
 population, censuses 1966 and 1971, 798, 800  
 Suffolk rams, distribution in Statistical Districts, 31 March 1971, 897  
 West Pacific Area, Australian Imperial Forces, 460  
 Southdown sheep  
 distribution in Statistical Districts, 31 March 1971, 896–7  
 numbers, 1968, 1970, and 1971, 898  
 Southern  
 Command, 459  
 Cross Chemical Co., formed, 727  
*Southern Aurora*, train, 250  
*Southern Ray*, *Yeoman and Australian Acclimatiser*, newspaper, 601  
 Southwell, Alec James, judge, 769  
 Sovereign, representatives of the, 1839–1973, 1149–50  
 Spaniards naturalised, 1967–1971, 807  
 Spastic Children's Society of Victoria, formed, 566  
 Speagle, H. L., Editor of Publications, Commonwealth Bureau of Census and Statistics, Victorian Office, 10  
 Spear fishing, underwater, 615  
 Spearfelt, Melbourne Cup winner, 1152  
 Special  
 articles in *Victorian Year Book*, 1961–1972, 1162–8  
 benefits  
 Commonwealth, 575  
 expenditure, National Welfare Fund, 1967–68 to 1971–72, 948  
 payments, persons, etc., 1967–68 to 1971–72, 950  
 revenue assistance, Commonwealth grants, Consolidated Fund receipts, 1966–67 to 1970–71, 990  
 schools, number and pupils' sex, 1971, 921  
 (Wages) Boards, 397  
 Specific purpose payments, Commonwealth, 305–6  
 Specimen Gully, gold discovery, 156  
 Speech therapy, 556–7  
 Speedboat racing, 616  
 Speight, R., Commissioner, Victorian Railways, 249  
 Spence, William Guthrie  
 union leader, 432  
 Victorian gold miners' association, 406  
 Spencer, Professor (later Sir) Walter Baldwin  
 appointed to University of Melbourne, 627  
 conservation, 505, 700  
 cultural anthropology of the Central Australian Aboriginals, work on, 627–8  
 Director, National Museum of Victoria, 700  
 F.R.S., 632  
 National Museum of Victoria, 505  
 University of Melbourne, Faculty of Science, 641  
 Spencer Street  
 (Batman Hill) railway workshops, 325  
 Power Station, electricity generated, power source, etc., 1971–72, 915  
 Spensley, Howard, bequest to National Art Collections Fund, 516  
 Spinsters, marriages, 1967–1971 and 1940–1949 to 1971, 810  
 Spirit merchants, liquor licences, tax payments, 1966–67 to 1970–71, 995  
*Spirit of Progress*, train, 250  
 Spirits  
 beer, and wine, retail sales, value, 1966–67 to 1970–71, 1037  
 excise duty collected, 1968–69 to 1970–71, 1042  
 Sport, 607–20 *see also* Recreation  
 archery, 617  
 athletics, 613–4  
 badminton, 619  
 baseball, 616–7  
 basketball, 618  
 billiards, 619–20  
 boat racing, 616  
 bowls, 612–3  
 boxing, 619  
 canoeing, 616  
 cricket, 608–9  
 croquet, 617  
 cycling, 614  
 fencing, 619  
 fishing, 615  
 football, 609–10  
 golf, 612  
 gymnastics, 619  
 handball, 619  
 hockey, 616  
 horse racing and trotting, 611–2  
 lacrosse, 617  
 motor  
 boat racing, 616  
 racing, 617  
 pigeon racing, 618  
 polo, 617  
 rowing, 616  
 shooting, 618  
 skating, 618  
 skiing, 618  
 snooker, 620  
 spear fishing, 615  
 squash, 607  
 surfing, 615–6  
 swimming, 614  
 table tennis, 618  
 ten-pin bowling, 620  
 tennis, 610–1  
 water  
 polo, 614–5  
 skiing, 615

- Sport—continued**  
 weight lifting, 619  
 woodchopping, 617  
 wrestling, 619  
 yachting, 615  
*Sporting Echo*, newspaper, 601  
*Sporting Globe*, newspaper, 601  
 Sporting newspapers, 601  
*Sporting Wire*, newspaper, 601  
*Sportsman*, newspaper, 601  
 Spowers, Alan, partnership in the *Argus*, 599  
 Spring Hill, gold discovery, 156  
 Springvale  
 area, 30 June 1971, 800  
 immigrant hostel, 581  
 Kelly and Lewis Pty Ltd, pump manufacturers, 325  
 population, censuses 1966 and 1971, 798, 800  
 Squash, world titles held in Melbourne, 607  
 Squatters  
 dominancy, 425  
 hold on land, 427  
 squatting, 93-5  
 Stabey, Nubert Solomon, judge, 769  
 Staley, A.A., M.H.R., 783  
 Stamp  
 duties  
 collected, 1966-67 to 1970-71, 992  
 Consolidated Revenue Fund, revenue  
 1852 to 1899-1900, 285  
 1901-02 to 1969-70, 289  
 rates payable at 1 January 1972, 997-8  
 duty  
 instalment credit, 357-8  
 motor vehicle  
 registration taxes, 1966-67 to 1970-71, 996  
 registrations, collected, 1966-67 to 1970-71, 992  
*Stamps Act* 1958, 357  
*Stamps Act* 1966, 358  
*Standard and Port Phillip Gazette*, newspaper, 598  
 Standards Association of Australia  
 Australian Wool Testing Authority, 671  
 Commonwealth Bureau of Dental Standards, 672-3  
 Stanley, Sir Arthur Lyulph, Governor, 1150  
 Star, newspaper, 602  
 Starke, John Erskine, judge, 769  
 State  
 Accident Insurance Office, 1966-67 to 1970-71, 1021  
 censuses *see* Censuses  
 Coal Mine, Wonthaggi  
 closed, 1142  
 Consolidated Fund  
 payments, 1966-67 to 1970-71, 991  
 receipts, 1966-67 to 1970-71, 990  
 Commonwealth financial relations *see* Financial relations with the Commonwealth  
 debt *see* Public debt  
 Development  
 and Decentralization, Department of, 190  
 Committee, 190  
 Electricity Commission of Victoria  
 electricity generated, power stations, and source of power, 1971-72, 915  
 establishment, 220-4, 433, 449  
 La Trobe valley coal deposits, 221-2, 328  
 local government electricity supplies, 208  
 research, 706-8  
 superannuation, 413  
 expenditure, public sector, 278-83  
 Forest Department, created, 449  
 government  
 departments *see individual titles*  
 research facilities, 686-711  
 Library of Victoria, 502  
 Archives Section, 503  
 Library Training School, 504  
 Motor Car Insurance Office, 1966-67 to 1970-71, 1021  
 of Victoria, superannuation, 413  
 public debt *see* Public debt  
 Regional Boundaries Committee, 190  
 Research Farm, Werribee, 130, 689-90  
 Rivers and Water Supply Commission, 708-10  
 administering Act of Parliament, 864  
 country  
 town water supplies, 215-9  
 water supply systems, 216-9  
 Bellarine Peninsula, 217  
 Coliban, 218  
 local authorities, 218-9
- State—continued**  
 Rivers and Water Supply Commission—*continued*  
 country—*continued*  
 water supply systems—*continued*  
 Mornington Peninsula, 216-7  
 Otway, 217  
 established, 117, 433, 449, 1137  
 extension services, 144, 145  
 recreational areas provided, 623  
 water  
 from sewerage plants, 700  
 supply, local government areas, 208  
 Savings Bank of Victoria  
 accounts, 1967-1971, 1014  
 advances and balances outstanding, 1966-67 to 1970-71, 1014  
 deposits, 1966-67 to 1970-71, 1014, 1015  
 housing  
 finance, 359  
 loans, 360-1  
 interest paid, 1966-67 to 1970-71, 1014  
 opened, 337  
 school bank accounts, 1967-1971, 1014  
 sculpture, George Baldessin, 514-5  
 transactions, 1966-67 to 1970-71, 1014  
 withdrawals, 1966-67 to 1970-71, 1014  
 Schools Amateur Athletic Association, formed, 500  
 Superannuation Fund  
 expenditure, government, 1966-67 to 1970-71, 1002  
 of New South Wales, established, 412  
 receipts, disbursements, etc., 1966-67 to 1970-71, 1002  
 Traffic Accident Record, 244  
 Wildlife Reserves Investigation Committee, appointed, 694  
 Stateless persons naturalised, 1967-1971, 807  
 States  
 and Territories  
 persons per square mile, 31 December 1971, estimated, 799  
 population  
 density, 31 December 1971, estimated, 799  
 estimated, 31 December 1971, 799  
 percentage in each, 31 December 1971, estimated, 799  
 area, 762  
 Statesman, Melbourne Cup winner, 1152  
 Station wagons *see* Motor vehicles  
 Statistical  
 Districts  
 crops  
 number of growers, season 1970-71, 885  
 yield, season 1970-71, 886  
 cultivated area, season 1970-71, 886  
 fruit trees, plants, etc., season 1970-71, 892  
 lambing  
 forecast, rams used, breed, 1971, 899  
 season 1970-71, 898  
 land occupied, area, etc., season 1970-71, 881  
 livestock, distribution, 31 March 1971, 894  
 map, 880  
 pigs and pig keepers, 31 March 1971, 895  
 rams, distribution according to breed, 31 March 1971, 897  
 sheep  
 and lambs, 31 March 1971, 898  
 breeds, distribution, 31 March 1971, 896  
 shorn, wool clipped, etc., season 1970-71, 899  
 yield of principal crops, season 1970-71, 886  
 Divisions  
 area  
 by municipality, 30 June 1971, 800-5  
 of State (percentage), census 1971, 795  
 manufacturing establishments, 1968-69, 911  
 map, inside back cover  
 population  
 by municipality, censuses 1966 and 1971, 800-5  
 census 1971, 795  
 censuses 1947-1971, 787  
 intercensal changes, 1961-1971, 787  
 recording *see* Statistics, recording of  
*Statistical Register*, discontinuation, 7  
*Statistical Registers*, 4, 45 *see also* "Blue Books"  
 Statisticians, first Australian Conference held in Melbourne, 5, 1135  
 Statistics, 761-1066  
 communications, 1064-6  
 demography, 784-825  
 employment and unemployment, 843-7  
 explanatory notes, 761



- Statistics—continued**  
 finance, 987–1036  
 government and administration, 768–83  
 historical, 1069–128  
   demography, 1069–75  
   finance, private, 1118–9  
   industrial conditions, employment, and prices, 1076–81  
   primary and secondary industries and construction, 1081–97  
   social conditions, 1098–117  
   trade, transport, and communications, 1120–8  
 industrial conditions, 826–42  
 local government, 850–72  
 manufacturing industry, 910–6  
 physical environment, 762–7  
 prices, 848–9  
 primary production, 873–909  
 recording of *see also* Census, Censuses, Commonwealth Bureau of Census and Statistics  
   causes of death, classifications used since 1853, 52  
   data, mechanical tabulation 9, 15–20  
   maps, use in censuses, 15–6, 18  
   since 1836, 3–10  
   social conditions, 917–86  
   trade, 1037–43  
   transport, 1043–64  
*Statistics Act* 1958, 9  
*Statistics of the Colony of Victoria*, 4  
 Statist's Office *see* Government Statist's Office  
 Statute law *see also* Legal development  
   Revision Committee, 463  
**Statutory**  
   Corporation payments, revenue, Consolidated Revenue Fund, 1901–02 to 1969–70, 289  
   Reserve Deposit, Reserve Bank of Australia, 1966–67 to 1970–71, 1009  
**Stawell, Sir Richard**, Committee on Social Training, 573  
**Stawell, William F.**  
   Attorney-General, 468  
   lawyer, 425  
**Stawell**  
   gold discovered, 157  
   goldfields, geological survey, 153  
   hospital built, 557  
   newspaper, 601  
   ordnance factory, 331  
   Pleasant Creek Special School, 549  
   population, censuses 1966 and 1971, 798  
   Shire  
     area, 30 June 1971, 802  
     population, censuses 1966 and 1971, 802  
     siting, 174  
   Town  
     area, 30 June 1971, 802  
     population, censuses 1966 and 1971, 802  
     water supply authority, 864  
**Stead, David**, settler in Geelong area, 173  
**Steam**  
   engines  
     Commonwealth Government Engine Works, 334  
     numbers in rural use, 138  
     Navigation Board, 230–1  
     power, rural, 138–9  
**Steel**  
   Mains Pty Ltd, formed, 716  
   products, Wholesale Price Index, 1967–68 to 1970–71, 849  
   research, 731–2  
**Steiglitz, Robert William**, settler in Geelong area, 173  
**Steiglitz area**, geological survey, 153  
**Stephen, William Francis, M.L.A.**, 772  
**Stephens, Brunton**, work published by George Robertson, 604  
**Stewart, George**, census 1836, 3  
**Stewart, Ian**, footballer, 610  
**Stewart, Nellie**, singer, 528  
**Stewart, T. M.**, corporate trusteeship, 352  
**Stillbirths and infant deaths, 1967–1971, 825**  
   *see also* Deaths, infant  
**Stock** *see also* Livestock  
   fodder, area, and gross value, 1970–71, 885  
   slaughtered, 1966–67 to 1970–71, 901  
**Stock**  
   Exchange of Melbourne Ltd, The, 347–51  
     *Annual Report*, 350  
     established, 1135  
     issues listed and nominal value, 1968–1971, 1031  
     securities, turnover, 1966–67 to 1970–71, 1031  
     transactions and value of turnover, 1032  
**Stock—continued**  
   mortgages, 1967–1971, 1030  
   *Stock and Land*, newspaper, 601  
   Stockings, women's, manufactured, 1970–71 and 1971–72, 913  
   Stokes, Russell Newton, M.L.A., 772  
   Stone, Dr Constance, Queen Victoria Memorial Hospital, 558  
   Stone, production, quantity and value, 1968–69 to 1970–71, 907  
   Stonemasons, union established, 405  
   Stores, retail and wholesale, development, 365–71  
   Strachan  
     and Co. Ltd, 356  
     wool consignment agent, 353  
   Bostock and Co., amalgamation with Shannon, Murray and Co., 355  
   Straight Draw, Melbourne Cup winner, 1152  
   *Stranger, The*, play, 528  
   Strangers' Aid Society, 565  
   Stratford, Rocla pipe factory, 718  
   Strathfieldsaye Shire  
     area, 30 June 1971, 803  
     population, censuses 1966 and 1971, 796, 803  
   Strawberries  
     acres grown  
       Statistical Districts, 1970–71, 892  
       1967–68 and 1970–71, 891  
     production, 1966–67 to 1970–71, 891  
   Stream flows, schedule, 763  
   Streams *see* Rivers  
   Street, A. A., M.H.R., 783  
   Streton, Sir Arthur, artist, 430, 510  
   sculpture exhibition welcomed, 513  
   Streets  
     and roads, length, 1971, 861  
     construction, local government authorities, Private Street Account, 858–9  
   Stretton, Mr Justice, Royal Commission on 1939 fires, 83  
   Strikes *see* Industrial disputes, stoppages  
   Strippers on rural holdings, 1967–1971, 883  
   Strode, Thomas  
     *Articles and rules for the regulation of the Melbourne Union Benefit Society*, 604  
     *Latest information with regard to Australia Felix*, 603  
     *Port Phillip Gazette*, 595, 596  
**Strong, Professor H. A.**, lived in Ormond College, 495  
**Struck Oil**, play, 528  
**Strzelecki, Sir Paul Edmund de**  
   explorer, 88  
   F.R.S., 632  
   Gippsland explored, 1133  
   gold discovery, 155  
   route of exploration, map, facing 86  
**Students** *see also* Pupils  
   enrolled, sex and course type, 1968–1972  
   La Trobe University, 932  
   Monash University, 930  
   University of Melbourne, 927  
   medical, numbers, 562  
   senior technical schools, 1877–1971, 1100–1  
**Stump-jump plough**, introduction, 105, 137  
**Sturt, Captain Charles**  
   explorer, 87  
   Murrumbidgee River traced, 1132  
   report on sea access to Murray River, 142  
   Style and architecture, 192–7 *see also* Building  
   Subdivision, plans of, lodged at the Titles Office under the Transfer of Land Act, 1966–67 to 1970–71, 1029  
   Subscriber Trunk Dialling (S.T.D.), introduction, 261  
   Subsidies, Public Authorities' Current Account, 1966–67 to 1970–71, 987  
   Suburban  
     development *see* Urban and suburban development  
     newspapers, 601  
   *Success*, prison hulk, 572  
   *Such is life*, Tom Collins (Joseph Furphy), 520  
   Suffolk sheep  
     distribution in Statistical Districts, 31 March 1971, 896–7  
     numbers, etc., 1968, 1970, and 1971, 898  
   Suffrage  
     adult, 440  
     manhood, 439  
   Sugar  
     cane harvester manufacture, 738  
     export price index, 1961–62 to 1970–71, 849  
     exported, State of final shipment, 1969–70, 272  
     prices, average retail, 1949–1971, 848  
   Sugden, E. H., Queen's College, 495

- Sugden, W. J., insurance companies fire brigade, 346
- Suggitt, Robert Harris, M.L.A., 772
- Suicide, cause of death, 1971, 818-9
- Sullivan, John Forrester, Minister of Mines, 161
- Sullivan Bay, settlement, 1131
- Sulphuric acid
- Cuming Smith and Co. Ltd, 324
- early production, 323
- Sultanas
- and raisins, production
- by States, 1970-71, 879
- 1888-89 to 1970-71, 1088-9
- production, seasons 1966-67 to 1970-71, 892
- yield
- and gross value, 1970-71, 885
- Statistical Districts, season 1970-71, 886
- Summer of the Seventeenth Doll*, play, 529
- Summers, Charles, sculptor, 512
- Summit, wheat, acreage sown, etc., 1968-69 to 1969-70, 888
- Sumner, John, Union Theatre Repertory Company, 529
- Sun Music*, ballet, 531
- Sun News-pictorial*, newspaper, 602
- Sunbury
- airfield, 258
- Clarke's Special Survey, 89
- Industrial School, 568
- population, censuses 1966 and 1971, 798
- Sunday Australian*, newspaper, 603
- Sunday newspapers, 603
- Sunday Observer*, newspaper, 603
- Sunday Review*, newspaper, 603
- Sundercut, stump-jump disc plough-cultivator, 738
- Sunshine
- area, 30 June 1971, 800
- McKay, H. V., agricultural machinery, 325, 738
- population, censuses 1966 and 1971, 798, 800
- Sunshine, mean daily hours of, Melbourne, 767
- Suntyne, seed drill and cultivator, 738
- Superannuation, 410-21 *see also* Insurance, life and pensions, Consolidated Fund payments, 1966-67 to 1970-71, 991
- benefits, preservation, 418
- Board, Police, 471
- British background, 410-1
- developments to 1920, 411-2
- funds, amounts accumulated, estimated, June 1971, 421
- inter-war period, 412-3
- post-war period, 413-8
- social implications, 418-21
- State Fund *see* State Superannuation Fund
- Victorian State Fund, pension unit increases, 414
- Superannuation Act* 1971, 418
- Superphosphate
- aerial use, 1967-1971, 883
- Cuming Smith and Co. Ltd, 324
- effect on pastures, 106-7
- manufacture, 333
- Supreme Court
- civil business, 1967-1971, 967
- development, 465-6
- established, 473, 1134
- first rules enacted, 473
- judges at 1 January 1973, 769
- Library
- building completed, 180
- Committee, 473
- pre-sentence reports, adult, 1967-68 to 1971-72, 960
- Surf Life Saving Association of Australia, Victorian branch formed, 615
- Surface water resources, original, map, 65
- Surfing, 615-6
- Surgery, 536-8
- Survey Co-ordination (Place Names) Act* 1965, 92, 93
- Survey of weekly earnings and hours, 831-2
- Surveying
- coastal navigation, 229-30, 232
- for land settlement and mapping, 88-92
- aerial photography, 91
- boundary with
- New South Wales, 90
- South Australia, 89
- Bourke, Sir Richard, 88
- Commonwealth co-operation, 91
- geodetic surveys, 90
- Glenelg River mouth, trigonometrical survey, 1839, 89
- Hoddle, Robert, 88-9, 173
- inaccuracies in early surveys, 89
- Surveying—*continued*
- for land settlement and mapping—*continued*
- Melbourne, planning, 88
- national mapping scheme, 91
- Place Names Committee, 92
- Royal Commission, 1870, 91
- Russell, Robert, 88
- "Special Surveys", 89
- Survey Co-ordination (Place Names) Act* 1965, 92
- theodolites, use not enforced, 89
- topographic mapping, 91
- Torrens land title system, effect, 90-1
- trigonometrical principles recognised as essential by Government, 90
- geological, 152-5
- research, Department of Crown Lands and Survey, 691-2
- Surveyor-General, 446
- powers vested in Board of Land and Works, 454
- Susskind, Walter, conductor, 526
- Sutherland, Alexander, historian, 524
- work published by George Robertson, 604
- Sutherland Dr Margaret, composer, 527
- Sutherland, Joan, opera singer, 526, 531
- Swan, ship, 234
- Swan Hill
- area, 30 June 1971, 802
- climatic elements, means, 764
- population, censuses 1966 and 1971, 798, 802
- radio station, call sign, 917
- Shire
- area, 30 June 1971, 802
- population, censuses 1966 and 1971, 802
- siting, 174
- television stations, 917, 918
- water supply, 218
- Island, artillery battery, 457
- Swayne family, The*, Vance Palmer, 521
- Swedes naturalised, 1967-1971, 807
- Sweet, George, fossil collection presented to National Museum of Victoria, 505
- Swimming
- history, 614
- introduced to schools, 499
- Swinburne, George, Minister of Water Supply, 117
- Swinburne, Ivan Archie, M.L.C., 770
- Swinburne College of Technology, 502
- enrolments, 1970 and 1971, 934
- established, 501
- Swine *see* Pigs
- Swiss naturalised, 1967-1971, 807
- Sydney
- census populations, 1947-1971, 786
- College, T. H. Braim, 485
- mechanics institute formed, 489
- Sydney*
- Cove*, wrecked, 85
- Limited*, train, 250
- Morning Herald*
- gold discovery announced, 178
- overseas news, 602
- naval vessel, 459
- Sunday Times*, 603
- Syme, David
- Age* editor, 600
- Melbourne Morning Herald*, taken over, 599
- political leadership, 433
- tariff protection, 323, 428
- Syme, Ebenezer, *Age* editor, 600
- Syphilis, cause of death, 1971, 818
- T.A.A. *see* Trans-Australia Airlines
- T.A.B. *see* Totalizator Agency Board
- Table Talk*, newspaper, 601
- Table tennis, 618
- championships, held in Melbourne, 607
- Tailoresses strike, 396
- Tait, J. and N.
- engaged Gregan McMahon, 528
- takeover of J. C. Williamson organization, 529
- Talbot, Sir Reginald Arthur James, Governor, 1150
- Talbot and Clunes
- Shire
- area, 30 June 1971, 801
- population, censuses 1966 and 1971, 801
- water supply authority, 864
- newspaper, 601
- Tallandoon, Mitta Mitta River flow, 763
- Tallangatta, Mitta Mitta River flow, 763

- Tambo River**  
 flow, annual, 763  
 gold discovered, 156
- Shire**  
 area, 30 June 1971, 804  
 population, censuses 1966 and 1971, 804
- Tanjil 2**, ship, 233-4
- Tanner, Sir Edgar Stephen, M.L.A.**, 772
- Tape recorders**, interest in music promoted, 623
- Tapered means test** introduced, 577
- Tarcoola**, Melbourne Cup winner, 1152
- Tariff**  
 Board, established, 389  
 protection, 274-5, 388-90  
 adopted, 1135  
 1860s and 1870s, 428
- Tarnagulla**  
 gold discovered, 157  
 newspaper, 601
- Tarra Valley National Park**, 108  
 expenditure, 1966-67 to 1970-71, 919
- Tarrant Engineering Co.**, first motor vehicle, 329
- Tasma** (Jessie Catherine Huybers), *Uncle Piper of Piper's Hill*, 521
- Tasman**, Abel, voyage of discovery, 85
- Tasmania**  
 area, 762, 799  
 birth rates, 1967-1971, 814  
 births  
 ex-nuptial, and percentage of total births, 1967-1971, 816  
 1967-1971, 813  
 customs and excise duty collected, 1970-71, 1043  
 deaths and death rate, 1967-1971, 817  
 farm activity, 1970-71, 879  
 infant deaths and death rate, 1967-1971, 823  
 instalment credit for retail sales, 1970-71, 1035  
 marriages and marriage rate, 1967-1971, 808  
 natural increase, 1931-1940 to 1971, 785  
 overseas arrivals and departures, 1967-1971, 806  
 population  
 density, 31 December 1971, estimated, 799  
 increase, intercensal periods, 1947-54 to 1966-71, 785  
 percentage, 31 December 1971, estimated, 799  
 31 December 1971, estimated, 799  
 searoad service vessels, passengers, vehicles, etc., 1970-71, 1043  
 trade overseas, value, and duty collected, 1970-71, 1043
- Tate, Frank**  
 Continuation Schools, 486-7  
 Director of Education for Victoria, 492  
 education system reform, 483-4  
 principal, Melbourne Teachers College, 491-2
- Tattersall**  
 lotteries, subscriptions, duty paid, etc., 1966-67 to 1970-71, 995  
 sweep consultations, transferred to Victoria from Hobart, 1141
- Tatura**  
 horticultural research station, 690  
 newspaper, 601  
 population, censuses 1966 and 1971, 798
- Tauber, Richard**, singer, 526
- Tax** *see also* Taxation  
 collected per head of population, 1966-67 to 1970-71, 992  
 entertainments, Consolidated Revenue Fund, revenue, 1901-02 to 1969-70, 289  
 income  
 and total taxes, 1939-40, 296  
 Consolidated Revenue Fund, revenue 1899-1900, 285  
 1901-02 to 1939-40, 289  
 companies, rates payable, 1971-72, 1001  
 first imposed, 1136  
 individuals, income, tax assessed, etc., 1969-70, 1000  
 life assurance premiums, 345  
 "pay as you earn" plan adopted, 1140  
 rates, individuals, 1971-72, 999  
 uniform taxation, 295-8  
 legal challenges, 299-300  
 land, collected, 1966-67 to 1970-71, 992  
 liquor, collected, 1966-67 to 1970-71, 992  
 lottery, collected, 1966-67 to 1970-71, 992  
 motor vehicles, collected on  
 ownership and operation, 1966-67 to 1970-71, 992, 996-7  
 third party insurance surcharges, 1966-67 to 1970-71, 992
- Tax—continued**  
 racing, collected, 1966-67 to 1970-71, 992  
 reimbursement grants after 1945, 298-9  
 road  
 maintenance contributions, 1966-67 to 1970-71, 992  
 transport, collections, 1966-67 to 1970-71, 992
- Taxation** *see also* Tax  
 collections, 1966-67 to 1970-71, 992  
 Consolidated  
 Fund receipts, 1966-67 to 1970-71, 990  
 Revenue Fund, revenue  
 1852 to 1899-1900, 285  
 1901-02 to 1969-70, 289  
 local authorities, ordinary services, 852  
 Public Authorities' Current Account, 1966-67 to 1970-71, 987  
 statistics, 992-1001  
 uniform, 295-8  
 introduced for Australia, 1140  
 legal challenges, 299-300
- Taxes**, road transport, 1966-67 to 1970-71, 996
- Taylor, Alexander William, M.L.A.**, 772
- Taylor, James Allister, M.L.A.**, 772
- Taylor auto-header**, 738
- Tea**  
 coffee, etc., imports and exports, value, 1969-70 and 1970-71, 1039  
 prices, average retail, 1949-1971, 848
- Teacher education**, 490-3 *see also* Teachers, Teaching expenditure, Education Department, 1968-69 to 1971-72, 924
- Teachers** *see also* Teacher education, Teaching College, Melbourne, closed, 483, 491-2  
 colleges, Commonwealth payments  
 specific purpose, 1959-60 and 1969-70, 306  
 1967-68 to 1970-71, 989  
 government and registered schools, 1967-1971, 920  
 numbers, 1862-1971, 1098-1100  
 registered schools, 1967-1971, 925  
 senior technical schools, 1877-1971, 1100-1
- Teaching** *see also* Teacher education, Teachers bursaries granted, 1967-1971, 923  
 hospitals, date of establishment and university affiliation, 563
- Technical**  
 education, 488-90 *see* Education, technical  
 Teachers College  
 art teacher training, 518  
 established, 492, 501  
 training, Commonwealth  
 payments, 1966-67 to 1970-71, 989  
 specific purpose grants, 1959-60 and 1969-70, 306
- Technisearch Ltd**, Royal Melbourne Institute of Technology, 653
- Technological**  
 Commission, established, 489, 501  
 development *see* Scientific and technological development
- Telecommunications** research, Postmaster-General's Department, 682-4
- Telegraphic communication** established  
 Melbourne-Williamstown, 259, 1134  
 Sydney-Melbourne-Adelaide, 1134
- Telegraphy**, introduction, 220, 259
- Telephone**  
 Construction and Maintenance Union, 260  
 developments, 260  
 exchange  
 first automatic, opened at Geelong, 260, 1138  
 Melbourne's first, 260, 1136  
 Exchange Co. Ltd, first telephone exchange, 260  
 offices, post offices, persons employed, 1966-67 to 1970-71, 1064  
 service  
 broadband microwave trunkline service  
 inaugurated between Melbourne and other cities, 1142  
 Melbourne-Sydney, commenced, 1137  
 Victoria-Tasmania, opened, 1139  
 services  
 exchanges, public telephones, etc., 1967-1971, 1066  
 in operation, Postmaster-General's Department, 1901 to 1970-71, 1127-8  
 subscriber trunk dialling system (S.T.D.) introduced, 261, 1141  
 subscribers, Victorian Post Office, 1887-1900, 1126
- Teletypewriter Exchange Service (Telex)**, introduction, 261
- Television** *see also* Broadcasting and broadcasting  
 development, 585-95

- Television—*continued*  
 and broadcasting—*continued*  
 licences in force, 1967–1971, 1066  
 commenced, HSV 7, 1141  
 development, 590–5  
 effect on broadcasting, 592  
 introduction, 261  
 national, programme composition, 919  
 programmes, 591–4  
 commercial, composition, 1971–72, 918  
 receiver licences in force, 1956–57 to 1970–71, 1127–8  
 receivers, 591  
 stations  
 commercial, in operation, 30 June 1972, 918  
 national, location, call sign, date of establishment, 918  
 number, 1971, 595  
 translator, parent station, channel, and commencement date, 917  
 transmission, 590–1  
 research, Postmaster-General's Department, 683–4
- Telex introduced, 261, 1142
- Temperature  
 average daily maximum and minimum, selected towns, 764–5  
 Melbourne, 767  
 of upper air, measurement, 674
- Temple Court, legal chambers, 475
- Templeton, Mrs Colin, porcelain collection presented to National Gallery, 516
- Templeton, Thomas William, M.L.A., 772
- Ten-pin bowling, 620
- Tench, catch, 1966–67 to 1970–71, 905
- Tennis, history, 610–1
- Tennyson, Arthur Hubert, Governor, 1150
- Terang  
 population, censuses 1966 and 1971, 798  
 water supply, 217
- Terrace houses, 193
- Territories, area, 762
- Tertiary education, non-university, 501–2 *see also*  
 Technical education, University education  
 colleges, enrolments, staff, 1967–1971, 1106
- Textile  
 College, Gordon Institute of Technology, research, scientific, 654  
 fibres  
 exported, State of final shipment, 1969–70, 272  
 imports and exports, 1969–70 and 1970–71, 1039  
 yarns  
 fabrics, etc., imported, importing State, 1969–70, 273  
 imports and exports, 1969–70 and 1970–71, 1039
- Textiles  
 C.S.I.R.O. research, 659–60  
 Fibremakers Ltd, research, 740–1
- The Constitution Act Amendment Act 1958 see*  
*Constitution Act Amendment Act, The, 1958*
- The Lakes National Park, 108, 919
- Theatre  
 development, 527–30  
 liquor licences, 1967–1971, 978  
 Royal, 527–8
- Theodolites, use in surveying, 89, 691
- Theosophical Society, Collins Street building bought by Melbourne City Council, 1146
- Thermopylae*, model, Science Museum of Victoria, 704
- Thistle*, ship, 232
- Thomas, Herbert Arthur, M.L.C., 770
- Thomas, William, Aborigines' Guardian, 1850–1861, 27
- Thomas Baker, Alice Baker and Eleanor Shaw  
 Medical Research Institute, 647–8
- Thomas Laurie*, mail to London, 258
- Thompson, Hugh, *Sydney Cove*, 85
- Thompson, John Ashburton, pure food laws, 704
- Thompson, Lindsay Hamilton Simpson  
 became Deputy Premier, 1148  
 M.L.A., 768, 772  
 M.L.C., 771
- Thompson Bros, flour millers, 324
- Thomson, Dr Alexander, settler at Geelong, 173
- Thomson, Peter, golfer, 612
- Thomson  
 River, flow, annual, 763  
 water supply system, M.M.B.W. capital outlay, 1966–67 to 1970–71, 865
- Thorndike, Sybil, actress, 529
- Thunder, days of in Melbourne, 767
- Tiegs, Oscar Werner, F.R.S., 634
- Tientsin, China, Victorian naval unit landed, 458
- Tierney, Dr D. J., Poisons Bill opposed by pharmacists, 563
- Tiles, roofing, manufactured, 1970–71 and 1971–72, 912
- Tilted cross, The*, Hal Porter, 522
- Tim Whiffler, Melbourne Cup Winner, 1152
- Timber  
 hewn, production, value, local, 1966–67 to 1970–71, 909  
 milling, 114–6 *see also* Forestry developments, 115  
 employment, 116  
 location of mills, 114  
 mechanisation, 115  
 output, 115  
 power used, 114, 115  
 sawmills, local value of production, 1966–67 to 1970–71, 909  
 output, 1966–67 to 1970–71, 902  
 railway traffic, 1966–67 to 1970–71, 1052  
 research  
 C.S.I.R.O., 665–6  
 Forestry and Timber Bureau, 682  
 Forests Commission, 694–6  
 Wholesale Price Index, 1967–68 to 1970–71, 849
- Time  
 ball, Point Gellibrand, 230  
 local mean, established, 230  
 payments *see* Instalment credit
- Times*, Ballarat newspaper, 600
- Times, The*, 597
- Tin  
 assayed content of minerals, 1968–69 to 1970–71, 906  
 production, quantity and value, 1968–69 to 1970–71, 907
- Tintern (school), 486
- Title registration, Torrens system, 463
- Titles Office  
 building started, 180  
 dealings, 1966–67 to 1970–71, 1029
- Tivoli Theatre, 528
- To God from the warring nations*, Furnley Maurice (Frank Wilmot), 523
- Toasters manufactured, 1970–71 and 1971–72, 913
- Tobacco, 132  
 area  
 by States, 1970–71, 879  
 by Statistical Districts, season 1970–71, 886  
 sown, seasons 1966–67 to 1970–71, 890  
 yield, and gross value, 1970–71, 884  
 excise duty collected, 1968–69 to 1970–71, 1042  
 growers, Statistical Districts, season 1970–71, 885  
 holdings, number, area, etc., 1968–69, 882  
 imports and exports, value, 1969–70 and 1970–71, 1039  
 production  
 by States, 1970–71, 879  
 seasons 1966–67 to 1970–71, 890  
 value, gross, seasons 1966–67 to 1970–71, 890  
 yield  
 average per acre, seasons 1966–67 to 1970–71, 890  
 Statistical Districts, season 1970–71, 886
- Tobin, George, sea pilot, 239
- Toc H  
 formed, 622  
 voluntary welfare, 566
- Tomato sauce, manufactured, 1970–71 and 1971–72, 912
- Tomatoes, area sown, production, gross value, 1970–71, 893
- Tontine insurance, 343
- Toolangi Geophysical Observatory, research, 684–5
- Toolondo Reservoir, 118
- Toorak Teachers College, established, 492
- Toorourrong Reservoir, 210
- Topara, Melbourne Cup winner, 1152
- Torquay  
 population, censuses 1966 and 1971, 798  
 World Surf Board Championships, 616
- Torrens  
 land title system, introduction, effect on surveying, 90  
 system  
 developments, 464  
 of  
 land transfer adopted, 1135  
 title registration, 463
- Torrumbary irrigation system, area, lands irrigated, water delivered, 1969–70, 878

- Tort, liability of the Crown, 464  
 Toryboy, Melbourne Cup winner, 1152  
 Totalisator  
   Consolidated Revenue Fund, revenue, 1901-02 to 1969-70, 289  
   investments, 1966-67 to 1970-71, 995  
 Totalizer Agency Board  
   computer, use, 713  
   off-course betting, 612  
 Tourists roads, 242 *see also* Country Roads Board length, 1971, 861  
 Tower, *The*, Hal Porter, 522  
 Tower Hill National Park, 108  
 Town  
   and Country Planning Association, 187  
   Board, 190  
     achievements, 189  
     established, 1140  
   Hall, architecture, 194  
   of North Melbourne, absorbed into City of Melbourne, 454  
   planning, 186-9 *see also* Regional planning  
 Towns *see also name of town*  
   incorporation, 453-4  
   numbers, 850  
   siting, 172-4  
 Townsend, Thomas Scott, 172  
 Towong Shire  
   area, 30 June 1971, 803  
   population, censuses 1966 and 1971, 803  
 Trace elements, soil deficiency, 67, 122-3  
 Tractors  
   on rural holdings  
     by States, 1970-71, 879  
     1967-1971, 883  
   rural development and numbers in use, 139  
 Trade  
   Australian, value and proportion handled at Victorian ports, 1966-67 to 1970-71, 1038  
   coastal, 232-4  
   Consolidated Revenue Fund, expenditure, 1852 to 1899-1900, 286  
   economic importance, 271-8  
   free interstate, established, 1137  
   maritime *see* Maritime trade  
   marks, responsibility transferred to Commonwealth, 449  
   overseas  
     imports and exports, Victorian ports, recorded value, 1966-67 to 1970-71, 1038  
     revenue collected at Victorian ports, 1968-69 to 1970-71, 1042  
   retail *see* Retail trade  
   transport, and communications, statistics, 1037-66  
   communications, 1064-6  
   trade  
     overseas and interstate, 1038-43  
     retail, 1037  
     transport, 1043-64  
 Union Congress  
   Australian, 406  
   held in Melbourne, 1135  
 unions, 405-8 *see also* Industrial stoppages  
   first in Victoria, 1133  
   industry groups, 1970-71, 841  
   number, members, etc.  
     31 December 1912-1971, 1077-8  
     1967-1971, 841  
 Trades Hall  
   architecture, 194  
   schools of design founded, 510  
 Trading  
   banks *see* Banks, trading  
   relations, 271-8  
 Trafalgar, population, censuses 1966 and 1971, 798  
 Traffic  
   accidents *see* Road traffic accidents  
   Advisory Committee, constituted, 472  
   Commission, established, 243, 1141  
   count, 1913, 377  
   local government responsibilities, 209  
 Trailers *see* Motor vehicles  
 Training Division, Social Welfare Department, 571  
 Trains *see* Railways  
 Trams, horse drawn, commenced operation in Melbourne, 1135  
 Tramways *see also* Melbourne and Metropolitan  
   Tramways Board  
   cable, 181  
   began operation, 1136  
   ceased operation, 1140  
 Tramways—*continued*  
   electric, opened, 1137  
   expenditure, 1970-71, 1003  
   local government, 208  
   Melbourne and provincial, 253  
   passenger journeys, falling, 379  
   provincial cities, mileages, receipts, etc., 1966-67 to 1970-71, 1057  
   strike, 1950, 1140  
 Trans-Australia Airlines, 257, 377-8  
 Transfer of Land Act, Titles Office dealings, 1966-67 to 1970-71, 1029  
 Transferable Certificates of Deposit, introduced, 341  
 Transfield Prize, sculpture competition, 514  
 Transport, 229-58, 372-81 *see also* Communications  
   aviation, 253-8  
   coastal navigation and shipping, 229-34  
   development, 372-81  
   equipment  
     imported, importing State, 1969-70, 273  
     imports and exports, 1969-70 and 1970-71, 1040  
 Geelong Harbor Trust, 236  
 improvements, effect on interstate trade, 276  
 Melbourne Harbor Trust, 234-6  
 metropolitan, expenditure, State net loan, aggregate to 30 June 1969, 282  
 navigation, coastal, 229-32  
 Portland Harbor Trust, 236-7  
 public, poor facilities in Melbourne, 182  
 railways, 142-3, 244-52  
 Regulation  
   Board  
     formed, 377, 450, 1139  
     licences issued, financial operations, 1966-67 to 1970-71, 1061  
   Fund  
     licence and permit fees, etc., received, 1966-67 to 1970-71, 996  
     motor omnibus registration fees received, 1966-67 to 1970-71, 996  
     taxes, motor vehicle, received, 1966-67 to 1970-71, 997  
 River Murray shipping, 142-3  
 Road Safety and Traffic Authority, 243-4  
 roads, 140-2, 240-3  
   rural, 140-3  
   shipping, coastal, 232-4  
   statistics, 1043-64  
     aviation, civil, 1063-4  
     Geelong Harbor Trust, 1048  
     historical, 1120-6  
     Melbourne Harbor Trust, 1047  
     motor vehicles, 1057-60  
     Port Phillip Sea Pilots, 1046  
     Portland Harbor Trust, 1049  
     railways, 1050-4  
     road traffic accidents, 1062  
     shipping, 1043-6  
     tramway and omnibus services, 1054-7  
     Transport Regulation Board, 1061  
     tramways, 253  
     Western Port, 237-8, 240  
   work force (percentage), by States, census 1966, 266  
 Trapping  
   forestry, and fishing, production, value, net, 1966-67 to 1970-71, 909  
   production, value  
     gross, 1966-67 to 1970-71, 908  
     local, 1966-67 to 1970-71, 909  
     net, 1928-29 to 1970-71, 1092  
 Traralgon  
   area, 30 June 1971, 804  
   cement manufacture, 328  
 City  
   area, 30 June 1971, 804  
   population, censuses 1966 and 1971, 804  
   Forestry and Timber Bureau Research Station, 682  
   Hobson Park, clinic, 550  
   population, censuses 1966 and 1971, 798  
   Rocla pipe factory, 718  
 Shire  
   area, 30 June, 1971, 804  
   population, censuses 1966 and 1971, 804  
   siting, 174  
   television station, commercial, 918  
 Travancore Clinic, 549  
 Travel goods, imports and exports, 1969-70 and 1970-71, 1040  
 Travellers' Aid Society, 565  
 Treasury Officers' Committee, State taxation, 299  
 Trentham  
   gold discovery, 156

- Trentham—*continued*  
 Trehwella Bros, 326  
 Tress, introduction, 261  
 Trethewey, Robert Hugh, M.L.A., 772  
 Trevally, catch, 1966–67 to 1970–71, 905  
 Trehwella Bros, lifting jacks, etc., 326  
 Trewin, Thomas Campion, M.L.A., 772  
 Trezise, Neil Benjamin, M.L.A., 772  
 Tribophysics research, C.S.I.R.O., 662–3  
 Trinity College, opened, 495  
 Triplets born, 1967–1971, 816  
 Tripovich, John Matthew, M.L.C., 771  
 Trivalve, Melbourne Cup winner, 1152  
 Troedel, Charles, *Melbourne album*, lithographs, 175  
 Trollope, Anthony, description of Melbourne, 175  
 Troops, British, 455–7  
 Trotting  
 history, 612  
 meetings, 1967–1971, 979  
 Trout  
 fishing, 615  
 research, 693–4  
 Trucks *see also* Motor vehicles  
 research, 735  
 Trump, The, Melbourne Cup winner, 1152  
 Trust funds, taxation payments, 1966–67 to 1970–71, 992  
 Trustee  
 appointment of, stamp duty rates at 1 January 1972, 998  
 companies, 352–3  
 estates administered, value, 1967–1971, 1026  
 institutions, mortgages of real estate lodged for registration, 1968–69 to 1970–71, 1029  
 public *see* Public trustee  
*Trustee Companies Act* 1928, 352  
 Tubemakers Ltd, association with Humes Ltd, 716  
 Tuberculosis, 55–6  
 and bovine brucellosis, eradication, Commonwealth payments, 1969–70 and 1970–71, 989  
 benefits, expenditure, National Welfare Fund, 1967–68 to 1971–72, 948  
 Branch, Health Department, formed, 435  
 bureaux activities, 1967–1971, 940  
 cases, active, 1967–1971, 939  
 control, 534, 551–2  
 hospitals, Commonwealth payments, 1966–67 to 1970–71, 989  
 Living Allowance, introduced, 551  
 maintenance expenditure, Consolidated Fund receipts, 1966–67 to 1970–71, 990  
 of respiratory system, cause of death, 1971, 818  
 sanatoria, accommodation, etc., 1967–1971, 940  
 Tucker, Albert, artist, 512  
 Tudor, Anthony, choreographer, 530  
 Tullamarine  
 Airport *see* Melbourne Airport  
 freeway, opened, 1142  
 Tullaroop  
 Reservoir, capacity, etc., 877  
 Shire  
 area, 30 June 1971, 801  
 population, censuses 1966 and 1971, 801  
 Tuna oil field, natural gas and oil reserves, 21 May, 1971, 165  
 Tungamah Shire  
 area, 30 June 1971, 803  
 population, censuses 1966 and 1971, 803  
 Turkeys slaughtered, 1966–67 to 1970–71, 901  
 Turks naturalised, 1967–1971, 807  
 Turnbull, Campbell, M.L.A., 772  
 Turnbull, Keith, Research Station, Frankston, Vermin and Noxious Weeds Destruction Board, 710  
 Turner, Sir George, politician, 433  
 Premier, 1151  
 Turner, G. R., novelist, 522  
 Turner, Henry Gyles, historian, 524  
*Turnpike Gate, The*, play, 527  
 Twins born, 1967–1971, 816  
 Tyabb airfield, 258  
 Tyers, Charles James, surveys Portland, 172  
*Tygodnik Kalolicki*, newspaper, 603  
 Typhoid fever, control, 534  
 Ukrainians naturalised, 1967–1971, 807  
 Ulm, C. T. P., Flight Lieutenant, airmail flight, 260–1  
*Ultima Thule*, Henry Handel Richardson (Ethel Florence Lindesay Richardson), 520  
*Una*, H.M.A.S., war prize, 240  
*Unbending, The*, Judah Waten, 522  
 Unclassified roads *see* Roads, unclassified  
 Uncle Piper of Piper's Hill, Tasma (Jessie Catherine Huybers), 521  
*Underseas Minerals Resources Act* 1963, 166  
 Underwater  
 Spearfishermen's Association of Victoria, founded, 615  
 spearfishing, 615  
 Underwear manufactured, 1970–71 and 1971–72, 913  
 Unemployment *see also* Employment and employment, 391–6  
 statistics, 843–7  
 benefits  
 Commonwealth, 575  
 payments, persons, etc., 1967–68 to 1971–72, 950  
 relief  
 Consolidated Revenue Fund, expenditure, 1901–02 to 1969–70, 290  
 Minister of Labour, 449  
 tax, Consolidated Revenue Fund, revenue, 1901–02 to 1969–70, 289  
 sickness and special benefits, expenditure, National Welfare Fund, 1967–68 to 1971–72, 948  
 Uniform taxation of income, 295–8  
 Union  
 Bank of Australia Ltd  
 merger with Bank of Australasia, 339  
 opened, 337  
 superannuation, 411  
 Mortgage and Agency Co. of Australia Ltd, acquired by Australian Estates and Mortgages Co. Ltd, 355  
 Theatre  
 Repertory Company, founded, 529  
 sculpture, 514  
 Unions, trade *see* Trade unions  
 United  
 Bearing Corporation Pty Ltd, ball bearings, 331  
 Kingdom-Australia Trade Agreement, 389  
 States Gypsum Company, Chicago, technical exchange with Australian Gypsum Ltd, 715  
 Universities *see also specific universities*  
 Commonwealth payments  
 specific purpose, 1959–60 and 1969–70, 306  
 1966–67 to 1970–71, 989  
 Consolidated Fund payments, 1966–67 to 1970–71, 991  
 expenditure, 1968–69 to 1971–72, 924  
 research, scientific, 636–51  
 statistics *see* La Trobe University, Monash University, University of Melbourne  
 University *see also specific universities*  
 education, 493–7 *see also* Education, tertiary, non-university  
 enrolments, staff, degrees conferred, 1855–1971, 1104–5  
 Extension Board, 506  
 of Melbourne *see also* La Trobe University, Monash University  
 adult education, 507  
 Australian  
 and New Zealand Association for the Advancement of Science, congresses, 631  
 College of Dentistry, 544  
 Tractor Testing Station, 639  
 Botany School, Port Phillip Bay environmental study, 700  
 building construction course, 204  
 Cancer  
 Institute, undergraduate and postgraduate medical education, 687  
 research, 553  
 choirs, 525  
 Commonwealth Bureau of Dental Standards, 561, 672  
 Conservatorium of Music  
 country town concert tours, 526  
 founded, 525  
 degrees conferred in faculties, 1968–1972, 928  
 Department of Psychiatry, 550  
 work with Institute of Mental Health  
 Research and Postgraduate Training, 697  
 development, 493–7  
 engineering research, 638  
 enrolments, classified by faculties, 1968–1972, 928  
 expenditure, 1967–1971, 929  
 Faculty of  
 Agriculture, research, scientific, 636–7  
 Dental Science, research, 637  
 Education, established, 492  
 Engineering, research, 638–9

- University—*continued*  
of Melbourne—*continued*  
Faculty of—*continued*  
Law, established, 475  
Medicine, research, 639–40  
Science, research, 641–3  
Veterinary Science, research, 643–5  
Fine Arts Department, 519  
foundation stone laid, 178, 1134  
founded, 627, 630, 1134  
Herald Chair of Fine Arts, established, 518  
income, 1967–1971, 929  
legal education, 475  
medical  
research, 639–40  
School  
development, 639–40,  
established, 542, 561, 1135  
Ormond Chair of Music, 525  
research  
agricultural, 636  
biochemical, 643  
botanical, 643  
dental, 637–8  
medical, 639–41  
scientific, 636–45  
Rowing Club, 616  
St Vincent's Hospital, 558  
School of Agriculture, 145–6  
social work education, 574  
students enrolled, sex and course type,  
1968–1972, 927  
Union Theatre Repertory Company, 529  
University Extension Board, 506  
veterinary  
school founded, 628  
science, research, 643–5  
women admitted, 1135  
scholarships, government, 1967–1971, 923  
Symphony Orchestra, merged with the  
Melbourne Symphony Orchestra, 525  
Unnatural offences  
higher court cases, 1969 and 1970, 974  
persons convicted  
ages, 1970, 976  
and result of hearing, 1970, 975  
*Unspoken thoughts*, Ada Cambridge, 521  
Unwin's Special Survey of Bulleen, 89  
Upper  
Murray  
Shire  
area, 30 June 1971, 803  
population, censuses 1966 and 1971, 803  
television stations, 918  
North District, rainfall variation, 766  
North-east District, rainfall variation, 766  
Yarra  
Dam, 211  
water output, 1966–67 to 1970–71, 865  
Shire  
area, 30 June 1971, 804  
population, censuses 1966 and 1971, 804  
water supply, Melbourne and Metropolitan  
Board of Works capital outlay, 1966–67  
to 1970–71, 865  
Uranium discovery, Queensland, effect on Stock  
Exchange, 350  
Urban  
and  
rural  
development  
housing, building, and services, 192–228  
land, 63–84  
use and farming, 111–51  
mining, 152–71  
settlement, 85–110  
transport and communications, 229–62  
urban and suburban development, 172–91  
population, census 1971, 44  
populations, Australia, census 1966, 266  
suburban development, 172–91 *see also*  
Settlement  
cities and towns, siting of, 172–4  
Melbourne, 175–83  
provincial urban areas, 183–6  
regional planning, 189–91  
town planning, 186–9  
areas  
masculinity, census 1971, 795  
population  
percentage, censuses 1966 and 1971, 795  
summary, censuses 1966 and 1971, 796  
provincial, development, 183–6
- Urban—*continued*  
centres  
population in groups of various sizes, number,  
censuses 1966 and 1971, 797  
populations, censuses 1966 and 1971, 797–8  
Renewal Advisory Committee appointed, 1144  
Urbanisation of the population, 44  
V.F.L. Park, Waverley, 609  
Vacuum Oil Company, Altona refinery, 170  
*Valley of the Mitta Mitta, with the Bogong Ranges*,  
painting, Eugène von Guérard, 509  
Value  
of  
buildings approved, 1967–68 to 1971–72, 980  
new buildings completed, classified by type,  
1967–68 to 1971–72, 981  
production, 908–9 *see also individual subject*  
*headings*  
retail sales, 1966–67 to 1970–71, 1037  
trade overseas by States, 1970–71, 1043  
work done on new buildings, classified by  
type, 1967–68 to 1971–72, 981  
when completed, of buildings commenced,  
classified by type, 1967–68 to 1971–72, 980  
van Gogh, Vincent, artist, 511  
Van Praagh, Peggy (later Dame Peggy), 530  
*Vanity Fair*, newspaper, 601  
Vaughan, gold mining town, Ball and Welch founded,  
367  
Vegetable oils and fats, imports and exports, 1969–70  
and 1970–71, 1039  
Vegetables, 135 *see also individual headings*  
and fruit, imports and exports, value, 1969–70 and  
1970–71, 1039  
area  
States, 1970–71, 879  
Statistical Districts, season 1970–71, 886  
yield, and gross value, 1970–71, 885, 893  
canned or bottled, 1970–71 and 1971–72, 912  
exported, State of final shipment, 1969–70, 272  
for human consumption  
area sown, 1970–71, 893  
production, 1970–71, 893  
value, gross, 1970–71, 893  
growers, Statistical Districts, season 1970–71, 885  
holdings, number, area, etc., 1968–69, 882  
mechanical harvesting, 140  
production, value, local, 1966–67 to 1970–71, 908  
Vegetation  
at time of discovery, 73–9  
forest  
closed, (rain forest), 75–6  
dry open, and woodland, 74–5  
wet open, 75  
glossary of plant names, 77–9  
grasslands and grassy woodlands, 74  
scrub, 76–7  
sub-alpine plateaux complex, 76  
before settlement, 64–8  
predominant original, map, 66  
Velazquez, Spanish painter, effect on L. Bernard Hall,  
511  
Verco, Mal, ventriloquist, 588  
Verdon, Sir George Frederick  
F.R.S., 632  
*Nelson and H.M.V.S. Cerberus* acquired, 456–7  
*Vermin and Noxious Weeds Act* 1922, 136  
Vermin and Noxious Weeds Destruction  
Board, 136  
extension services, 144  
research, 710–1  
expenditure, 1966–67 to 1970–71, 1003  
Verney, Ernest Basil, F.R.S., 633  
Vernon Report, tariffs, 390  
Vessels *see also Shipping*  
entered at Victorian ports, 1969–70 and 1970–71,  
1044  
nationalities, cargoes discharged and shipped,  
1968–69 to 1970–71, 1046  
*Vesta*, steamship, 232  
Veterinary  
College, Melbourne, foundation, 137  
Hygiene, Division of (Commonwealth Department  
of Health), animal quarantine, 137  
Parasitology Laboratory, Brisbane, C.S.I.R.O., 667  
Research Institute, established, 644  
Science  
developments, 628  
research, University of Melbourne, 643–5  
Vickers Ruwolt Pty Ltd  
beer cask fillers, 743  
research and development, 739–40

- Vickery, Norman Alfred, judge, 769
- Victoria, Queen  
 accession to throne, 1132  
 death, 1137
- Victoria  
 area, 267, 762, 799  
 Barracks  
 building, 455  
 headquarters, Commonwealth Military Forces, 458  
 Benefit and Land Building Society, 359  
 Colony of, created 1133  
 Crosses, won by Victorians 458, 459, 460  
 Dock, 235, 1136  
 Fire and Marine Insurance Co., commenced operations, 346  
 Institute of Colleges *see also individual colleges*, Colleges of advanced education colleges and enrolments, 1967-1971, 1106 enrolments  
 1967-1971, 1106  
 1970 and 1971, 934  
 established, 490, 502, 1142  
 Jockey Club, 611  
 Police *see* Police  
 Portland Cement Co. Pty Ltd, 328  
 proclaimed, 426  
 Racing Club, 611  
 Turf Club, 611  
 Yacht Club, formed, 615
- Victoria, H.M.V.S., gunboat, 456, 457
- Victoria, pilot ship, 239-40
- Victoria, survey ship, 230
- Victoria  
*and its metropolis*, South Melbourne, description, 181  
*Colonist and Western District Advocate*, newspaper, 598  
*Courier and Working Man's Advocate*, newspaper, 598  
*Deutsch Press*, foreign language newspaper, 600
- Victorian  
 Agricultural Societies' Association, education, 149  
 Amateur  
 Athletics Association, 613  
 Canoe Association, 616  
 Football Association, 609  
 Soccer Football Association, 610  
 Swimming Association, 614  
 Water Polo Association, 615  
 Weight Lifters' Association, 619  
 Wrestling Association, 619
- Annual Championships (athletics), 613
- Arts Centre  
 concert hall plan abandoned, 1145  
 development, 515-6  
 first  
 production, 529  
 stage opened, 1142  
 seating capacity, 531
- Athletic League, 613
- Badminton Association, 619
- Ballet Guild, 530
- Bowling Association, formed, 613
- Bush Nursing Association  
 formed, 555  
 hospitals and centres, receipts and expenditure, 1967-1971, 946
- Chamber of Manufacturers, 408
- College of Pharmacy, 502, 564  
 enrolments, 1970 and 1971, 934  
 first degree awarded, 502
- Council of Social  
 Service, 583, 584  
 training courses, 567, 574, 575  
 Training, 574
- Country Football League, 609
- Cricket Association, 608
- Drama League, adult education, 507
- Employers'  
 Federation, 408-9  
 immigrant language training, 583  
 Union, 408
- Exhibition, music, 525
- Football  
 Association, 609  
 League, 609
- Golf  
 Association, formed, 612  
 League, 612
- Homes for the Aged and Infirm, 565
- Horse Artillery, (Rupertwood Battery), formed, 457
- Victorian—*continued*  
 Hospitals Superannuation Fund, established, 413  
 Immigration Auxiliary, superseded, 581  
 Industrial Appeals Court, established, 1137  
 Institute  
 for the Advancement of Science, founded, 627, 630  
 of Hospital Almoners  
 established, 573  
 training responsibilities taken over, 574  
 Ladies' Golf Union, 612  
 Marriage Guidance Council, work with Institute of Mental Health Research and Postgraduate Training, 697  
 Mounted Rifles  
 formed, 457  
 sent to South African (Boer) War, 458  
 Nursing Council, 554  
 Orchestra, Frederick (later Sir Frederick) Cowen, 525  
 Pasture Improvement League, 127  
 fertiliser trials, finance, 122  
 Producers' Co-operative Co. Ltd, 356  
 established, 355  
 Railways *see* Railway, Railways  
 Rangers, 457  
 School of Speech Science, 502  
 enrolments, 1970 and 1971, 934  
 Schools Board, 487  
 Scottish Regiment, 458  
 Showmen's Guild, 409  
 Ski Association, 618  
 Soccer Federation, 610  
 Society for Crippled Children, 566  
 Soho and Union foundries, 325  
 State  
 Fund, pension unit increases, 414  
 Swimming Championships, 614  
 Swimming Association, 614  
 Symphony Orchestra, 525, 593  
 Table Tennis Association, 618  
 Telephone Exchange Co., 260  
 Universities and Schools Examinations Board, 487, 499  
 Higher School Certificate Examinations, 1967-1971, 927
- Volunteer  
 Light Horse (Hussars), 456  
 Yeomanry Corps, 456
- Water Ski Association, 615
- Wheat Commission, Wheat Certificates, 350
- Women's Cricket Association, 609
- Woollen and Cloth Manufacturing Co. Ltd, 324
- Young Farmers Movement, education, 149
- Victorian  
*Advocate and People's Vindicator*, newspaper, 600  
*Monthly Statistical Review*, Commonwealth Bureau of Census and Statistics, 10  
*Municipal Directory*, Arnall and Jackson, 604  
*Pipelines Commission Act* 1966, 167  
*Pocket Year Book*, Commonwealth Bureau of Census and Statistics, 8, 10  
*Railways Commissioners Act* 1883, 249  
*Review, The*, 621  
*Year Book*, Commonwealth Bureau of Census and Statistics, 5, 8, 10, 45, 604, 753  
*Young Farmer, The*, magazine, 149
- Victory, The, Melbourne Cup winner, 1152
- Victuallers, liquor licences. tax payments, 1966-67 to 1970-71, 995
- Vietnam, Australian Regular Army, 460
- Viewers' licences, numbers, 1971, 595
- Vigneron and Orchardist, newspaper, 601
- Vigneron liquor licences, 1967-1971, 978
- Vignerons, Statistical Districts, season 1970-71, 885
- Vilczak, Anatole, ballet dancer, 530
- Villiers, Alan, *Captain Cook: the seamen's seaman*, 524
- Vincas, oil tanker, 237
- Vincent, forester, 111
- Vine  
 fruit  
 area planted, seasons 1966-67 to 1970-71, 892  
 production, seasons 1966-67 to 1970-71, 892  
 fruits  
 dried, production, seasons 1966-67 to 1970-71, 892  
 growers, seasons 1966-67 to 1970-71, 892  
 Vines, cultivated area, Statistical Districts, season 1970-71, 886
- Vineyards  
 area  
 by States, 1970-71, 879



- Vineyards—*continued*  
 area—*continued*  
 yield, and gross value, 1970–71, 885  
 1842 to 1970–71, 1088–9  
 dried fruit, produced, 1858–59 to 1970–71, 1088–9  
 holdings, number, area, etc., 1968–69, 882  
 production  
 by States, 1970–71, 879  
 value, 1966–67 to 1970–71, 908  
 Protection Board, Viticultural Research Station,  
 financed, 668  
 wine made  
 by States, 1970–71, 879  
 1844 to 1970–71, 1088–9  
 1966–67 to 1970–71, 892  
 1970–71, 886
- Violet Town Shire  
 area, 30 June 1971, 803  
 population, censuses 1966 and 1971, 803
- Vision, ship, 234
- Visiting Nursing Service, Cancer Institute, 686, 687
- Vital statistics, 45–59, 808–25  
 births, 813–7  
 history since 1836, 45–7  
 cremation, 825  
 deaths, causes of, 818–22  
 history since 1853, 51–9  
 deaths, 817  
 history since 1836, 50–1  
 infant, 823–5  
 divorce, 811–3  
 infant deaths, 823–5  
 marriages, 808–11  
 history since 1837, 48–50  
 publications since 1854, 45  
 summary, 1967–1971, 808
- Vital Statistics, *Monthly Report on*, 45  
*Vital Statistics of Melbourne and Suburbs*,  
*Government Statist's Report on the*, 45
- Vitclay Pipes Pty Ltd, formed, 716
- Viticultural research  
 C.S.I.R.O., 668  
 Station, Merbein, C.S.I.R.O., 668
- Volkswagen Australasia Pty Ltd, motor vehicle  
 manufacture, 332
- Volleyball, 617
- Voluntary welfare, development, 565–8
- von Guérard, Eugène  
 artist, 509  
 National Gallery school of painting, 516
- Voting  
 compulsory, 441  
 elections, 1851, 438  
 Legislative  
 Assembly, elections, 1952–1970, 781  
 Council, elections, 1952–1970, 782  
 plural, abolished, 1137
- Voysey, C. F. A., influence on building, 201
- W. A. G. Pipeline Pty Ltd, 170
- W. S. Kimpton and Sons Pty Ltd, research and  
 development, 744–5
- Wade, Henry, surveyor, 88
- Wadham, Professor (later Sir) Samuel, Faculty of  
 Agriculture, University of Melbourne, 636
- Wage *see also* Wages  
 and salary earners  
 employed, government and private, 1947–1972,  
 1080  
 in civilian employment  
 government bodies, 1966–1972, 847  
 industry groups, 1966–1972, 846–7  
 basic, Victorian State, 1953–1967, Melbourne, 1077  
 increases, general weekly, Commonwealth awards,  
 1967–1972, 1077  
 minimum, adult males, weekly rates, Melbourne,  
 as prescribed by Commonwealth Conciliation  
 and Arbitration Commission, 1966–1972, 1076
- rates  
 basic  
 fixed by Commonwealth Conciliation and  
 Arbitration Commission, 1907–1967, 1076  
 weekly, fixed by Commonwealth Conciliation  
 and Arbitration Commission, 1923–1967,  
 833  
 minimum weekly  
 fixed by Conciliation and Arbitration  
 Commission, 1966–1972, 833  
 industry groups, 829  
 1963–1971, 828
- Wages *see also* Wage  
 and salaries  
 factories, 1880 to 1969–70, 1095–7
- Wages—*continued*  
 and salaries—*continued*  
 paid, manufacturing establishments, by States,  
 1968–69, 911
- Board  
 for kindergarten teachers appointed, 480  
 system, retention, 463
- Boards  
 Department of Labour and Industry, 400, 401,  
 402–3  
 determinations, 1967–1972, 833  
 early determinations, 398  
 established, 1136  
 powers, 400  
 total, general weekly increases, Commonwealth  
 awards, 1967–1972, 1077
- Walcott, R. H., Industrial and Technological  
 Museum, 704
- Walhalla  
 gold discovered, 157  
 goldfields, geological survey, 152  
 Shire, ceased, 454
- Walker, Fred and Company, (Kraft Foods Ltd), 745
- Wallace-Crabbe, Chris, poet, 523
- Walnut trees  
 Statistical Districts, season 1970–71, 892  
 1967–68 and 1970–71, 891
- Walnuts, production, 1966–67 to 1970–71, 891
- Walpeup  
 Shire  
 area, 30 June 1971, 802  
 population, censuses 1966 and 1971, 802  
 water supply authority, 864
- Walsh, Alan, F.R.S., 635
- Walter and Eliza Hall Institute of  
 Medical Research, 536, 640–1, 1138  
 Research in Pathology and Medicine, 628, 640
- Walton, John Malcolm, M.L.C., 770
- Wangaratta  
 adult education, 507  
 area, 30 June 1971, 803  
 Bruck (Aust.) Ltd, 331  
 City  
 area, 30 June 1971, 803  
 population, censuses 1966 and 1971, 803  
 climatic elements, means, 765  
 Continuation School, 486  
 district, settlement, 104, 186  
 King George V Memorial Garden, 110  
 newspaper, 601  
 North-Eastern Co-operative Society Ltd., 361  
 Owens River, flow, 763  
 population, censuses 1966 and 1971, 798  
 radio station, call sign, 917  
 Shire  
 area, 30 June 1971, 803  
 population, censuses 1966 and 1971, 803  
 siting, 174  
 water supply, 877  
 windmill manufacture, 325
- Wannon Shire  
 area, 30 June 1971, 802  
 population, censuses 1966 and 1971, 802
- War *see also* Armed Forces  
 First World  
 Australian involvement, 459  
 begins, 1138  
 effect  
 generally, 435, 755  
 on  
 employment, 393  
 friendly societies, 363  
 health services, 560  
 industrial development, 327  
 pastoral finance companies, 355  
 Stock Exchange, 349–50  
 surgery, 536  
 ends, 1138  
 first British shot fired, 459  
 monuments sculpted, 513  
 Korean, effect on pastoral finance companies, 355  
 pensions, amount paid, etc., 1916–17 to 1970–71,  
 1112–3
- Second World  
 Australian involvement, 460  
 begins, 1139  
 effect on  
 art, 511  
 book supplies, 605  
 employment, 394–5  
 housing, 360  
 radio, 589

- War—*continued*  
 Second World—*continued*  
 effect on—*continued*  
 society, 435  
 Stock Exchange, 350  
 ends, 1140  
 Service Homes  
 Commission, established, 360  
 Scheme, operations, 1966–67 to 1970–71, 983  
*War Cry*, newspaper, 601  
 Waranga  
 Reservoir, 118  
 capacity, etc., 877  
 Shire  
 area, 30 June 1971, 803  
 population, censuses 1966 and 1971, 803  
 Warburton, population, censuses 1966 and 1971, 798  
 Ward, Hector Roy, M.L.C., 770  
 Wardell, William, architect, St Patrick's Cathedral, 194  
 Wardrop, C. Y., Yarra Sculptors Society, 513  
 Wards of State *see also* Child welfare  
 children admitted, reasons, 1970–71 and 1971–72, 954  
 discharged from  
 Family Welfare Division, Ministry of Social Welfare, 1970–71 and 1971–72, 954  
 Youth Welfare Division, Ministry of Social Welfare, 1970–71 and 1971–72, 955  
 foster care, 569–70  
 placed with Family Welfare Division, Ministry of Social Welfare, location, 1968–1972, 955  
 young persons admitted, reasons, 1970–71 and 1971–72, 956  
 Wark, Dr J. W. (later Sir Ian), *Principles of flotation*, 730  
 Warracknabeal  
 population, censuses 1966 and 1971, 798  
 Shire  
 area, 30 June 1971, 802  
 population, censuses 1966 and 1971, 802  
 water supply, 218  
 Warragul  
 adult education, 507  
 population, censuses 1966 and 1971, 798  
 radio station, call sign, 917  
 Shire  
 area, 30 June 1971, 804  
 population, censuses 1966 and 1971, 804  
 Warrandyte  
 Caledonian goldfields, discovery, 152  
 gold discovery, 155, 1134  
 population, censuses 1966 and 1971, 798  
 Yarra River, flow, 763  
 Warrego, H.M.A.S., survey ship, 232  
 Warrior, Melbourne Cup winner, 1152  
 Warrnambool  
 Airport, passenger movements, 1971, 1063  
 area, 30 June 1971, 802  
 Botanic Gardens, 109, 110  
 climatic elements, means, 764  
 Continuation School, 486  
 hospital built, 557  
 Institute of Advanced Education, 502  
 enrolments, 1970 and 1971, 934  
 population, censuses 1966 and 1971, 798, 802  
 —Port Fairy, television translator stations, 917  
 radio station, call sign, 917  
 rifle company, 456  
 Shire  
 area, 30 June 1971, 802  
 population, censuses 1966 and 1971, 802  
 water supply, 217  
 authority, 864  
*Warrnambool Examiner*, Richard Osborne, 596–7  
 Wars, Britain's, participation of colonies, 455  
 Wartook Reservoir, 218  
 Warung, Price (William Astley), novelist, 522  
 Waste Lands Occupation Act of 1846, 95  
*Watcher on the cast-iron balcony*, *The*, Hal Porter, 522  
 Waten, Judah, novelist, 522  
 Water  
 catchments, area, 30 June 1971, 874  
 conservation, 67  
 expenditure, State net loan, aggregate to 30 June 1969, 282  
 consumption, Melbourne and Metropolitan Board of Works, 1966–67 to 1970–71, 865  
 gas/Reformed gas made, 1968–69 to 1971–72, 916  
 legislation, 464  
 mains, research, 698  
 Police, established, 470  
*Water—continued*  
 polo, 614–5  
 properties supplied, Melbourne and Metropolitan Board of Works, 1966–67 to 1970–71, 865  
 rate, Melbourne and Metropolitan Board of Works, 1970–71, 866  
 resources  
 Commonwealth payments, 1966–67 to 1970–71, 989  
 investigations, Commonwealth grants, Consolidated Fund receipts, 1966–67 to 1970–71, 990  
 skiing, 615  
 supply *see also* Irrigation  
 authorities, 1971, 864  
 catchments, research by Soil Conservation Authority, 705  
 Commission, State Rivers and, establishment and effects on irrigation, 117  
 Consolidated Revenue Fund, revenue, 1852 to 1899–1900, 285  
 country  
 authorities, income, expenditure, etc., 1970, 868  
 Consolidated Revenue Fund, expenditure 1852 to 1899–1900, 286  
 1901–02 to 1969–70, 290  
 towns, 215–9  
 Department *see* State Rivers and Water Supply Commission  
 expenditure  
 Melbourne and Metropolitan Board of Works, 1966–67 to 1970–71, 867  
 State net loan, aggregate to 30 June 1969, 282  
 1966–67 to 1970–71, 1003  
 local government  
 authorities, revenue and expenditure, 1970, 855  
 responsibilities, 208  
 Melbourne and Metropolitan Board of Works, 210–2  
 reservoirs, rural, 118  
 responsibility passed to State Rivers and Water Supply Commission, 449  
 revenue  
 Consolidated Revenue Fund, 1901–02 to 1969–70, 289  
 Melbourne and Metropolitan Board of Works, 1966–67 to 1970–71, 867  
 rural, research, State Rivers and Water Supply Commission, 708–10  
 sewerage, Consolidated Fund payments, 1966–67 to 1970–71, 991  
 receipts, 1966–67 to 1970–71, 990  
 statistics, 877–8  
 surface, original resources, map, 65  
*Water Act* 1905, 216, 464  
*Water Conservation Act* 1881, 216  
*Waterpool at Coleraine*, painting, Louis Buvelot, 509  
 Waterworks  
 country, public debt at 30 June 1900, 288  
 trusts, administering Act of Parliament, 864  
 Watson, reached Hopkins River, 103  
 Watt, William Alexander, politician, 433  
 Premier, 1151  
 Wattle Gully Gold Mines NL, closure and re-opening, 154  
 Waverley  
 area, 30 June 1971, 800  
 population, censuses 1966 and 1971, 798, 800  
*Way home*, *The*, Henry Handel Richardson (Ethel Florence Lindesay Richardson), 520  
 Waygood, Richard, lift manufactured, 735  
 Weapons production, Department of Supply, 681–2  
 Weather *see* Climate, Commonwealth Bureau of Meteorology  
 Webb, Charles, Alfred Hospital, architect, 197  
 Webster, James Joseph, Senator, 783  
 Wedge brothers, settlers in Western District, 173  
 Weeds, control, 136, 711  
 Weekly  
 earnings, average, full-time  
 employees (other than managerial, etc, staff), October 1969–1971, 832  
 managerial, executive, etc., staff, October 1969–1971, 832  
 hours of work *see* Hours of work  
 wage rates, minimum *see* Wage rates  
*Weekly Free Press and Port Phillip Commercial Advertiser*, newspaper, 598  
*Weekly Times*, newspaper, 601  
*Weeroona*, paddle steamer, 233

- Weight lifting, 619  
*Weights and Measures (National Standards) Act*  
 1960-1964, 676  
 Welding equipment, E.M.F. Electric Company Pty  
 Ltd, 721  
 Welfare *see also* Social services, Social welfare  
 child, 547-8  
 Fund, national *see* National Welfare Fund  
 maternal, 547-8  
*Wells of Beersheba, The*, Frank Dalby Davison, 521  
 Werder, Felix, composer, 527  
 Werribee  
 —Bacchus Marsh, irrigation, area of system, lands  
 irrigated, water delivered, 1969-70, 878  
 Hydraulic Experimental Station, State Rivers and  
 Water Supply Commission, 708-9  
 population, censuses 1966 and 1971, 798  
 River  
 flow, annual, 763  
 irrigation storage, 877  
 Shire  
 area, 30 June 1971, 800  
 population, censuses 1966 and 1971, 800  
 State Research Farm, 130, 689  
 Veterinary Clinical Centre, University of  
 Melbourne, 644  
 water supply, 219, 877  
 authority, 864  
 Wesley  
 Church, voluntary welfare, 566  
 College, founded, 485  
 Wesleyan Chapel  
 opened, 1132  
 school, T. H. Braim, 485  
 West, Morris, novelist, 522  
 West  
 Central  
 District, rainfall variation, 766  
 Statistical Division  
 area  
 by municipality, 30 June 1971, 801  
 percentage of State, 30 June, 1971, 795  
 30 June 1971, 804  
 manufacturing establishments, 1968-69, 911  
 map, inside back cover  
 population  
 by municipality, censuses 1966 and 1971,  
 801  
 census 1971, 795  
 censuses  
 intercensal changes, 1961-1971, 787  
 1947-1971, 787  
 1966 and 1971, 804  
 Coast District, rainfall variation, 766  
 Gate Bridge  
 collapse, 1142  
 work resumed after collapse, 1147  
 Gippsland District, rainfall variation, 766  
 Melbourne gas works, ceased production, 169  
 Moorabool Water Board, 219  
 administering Act of Parliament, 864  
 Westcourt, Melbourne Cup winner, 1152  
 Western  
 Australia  
 area, 762, 799  
 birth rates, 1967-1971, 814  
 births  
 ex-nuptial, and percentage of total births,  
 1967-1971, 816  
 1967-1971, 813  
 census populations, 1947-1971, 784  
 customs and excise duty collected, 1970-71,  
 1043  
 deaths and death rate, 1967-1971, 817  
 farm activity, principal items, 1970-71, 879  
 infant deaths and death rate, 1967-1971, 823  
 instalment credit for retail sales, 1970-71, 1035  
 marriages and marriage rate, 1967-1971, 808  
 natural increase, annual  
 averages, 1931-40 to 1961-70, 785  
 totals, 1967-1971, 785  
 overseas arrivals and departures, 1967-1971, 806  
 population  
 density, 31 December 1971, estimated, 799  
 increase, intercensal periods, 1947-54 to  
 1966-1971, 785  
 percentage, 31 December 1971, estimated, 799  
 31 December 1971, estimated, 799  
 trade overseas, value, and duty collected,  
 1970-71, 1043  
 District  
 coastal shipping, 233  
 Western—*continued*  
 District—*continued*  
 exploration by Mitchell, 87  
 fires, 83-4  
 grazing, 123  
 introduction of subterranean clover, 126  
 land selection, 96  
 railways, 246  
 rainfall, 1962-1971, 766  
 Road Districts, 452  
 settlement, 103, 173  
 Front, Australian Imperial Forces, 459  
 Market, development, 365-6  
 Mining Corporation Ltd, 335  
 Plains District, rainfall variation, 766  
 Port, 237-8  
 cargoes discharged and shipped, 1969-70 and  
 1970-71, 1045  
 customs and excise revenue collected, 1970-71,  
 1042  
 entered, 1131  
 Regional Planning Authority refused  
 permission to build a refinery near  
 Hastings, 1143  
 settlement by Captain S. Wright, 1132  
 survey by Nicholas Baudin, 1131  
 vessels entered, 1969-70 and 1970-71, 1044  
 Statistical  
 District  
 crops, yield, season 1970-71, 886  
 ensilage  
 made 1970-71, 889  
 stocks, 31 March 1971, 889  
 fruit trees, plants, etc., season 1970-71, 892  
 growers of certain crops, season 1970-71, 885  
 hay stocks, 31 March 1971, 889  
 lambing  
 forecast, 1971, 899  
 season, 1970-71, 898  
 land occupied, area, etc., season 1970-71, 881  
 livestock, distribution, 31 March 1971, 894  
 map, 880  
 pigs and pig keepers, 31 March 1971, 895  
 rams according to breed, 31 March 1971, 897  
 sheep  
 and lambs  
 shorn, season 1970-71, 899  
 31 March 1971, 898  
 breeds, 31 March 1971, 896  
 Division  
 area  
 by municipality, 30 June 1971, 801-2  
 of State, percentage, census 1971, 795  
 30 June 1971, 804  
 manufacturing establishments, 1968-69, 911  
 map, inside back cover  
 population  
 by municipality, censuses 1966 and 1971,  
 801-2  
 census 1971, 795  
 censuses  
 1947-1971, 787  
 1966 and 1971, 804  
 intercensal changes, 1961-1971, 787  
*Western, ship*, 233  
*Western Port and its early settlers*, Dr K. M.  
 Bowden, 524  
*Western Port (Steel Works) Act* 1970, 238  
*Westernport Development Act* 1967, 238  
*Westernport Development Act* 1970, 238  
*Westernport (Oil Refinery) Act* 1963, 237  
 Wet days, Melbourne, 767  
 Wheat, 129-31  
 area  
 by States, 1970-71, 879  
 yield, and gross value, 1970-71, 884  
 1836 to 1970-71, 1084-5  
 1966-67 to 1970-71, 887  
 breeding, 130  
 Certificates, traded on Stock Exchange, 350  
 cultivated area, Statistical Districts, season  
 1970-71, 886  
 development, 312-6  
 Federation, introduction, 105  
 for grain, 1966-67 to 1970-71, 887  
 growers, Statistical Districts, season 1970-71, 885  
 holdings, number  
 1966-67 to 1970-71, 887  
 1968-69, 882  
 Insignia, introduction, 106  
 Mallic District, area and yield, season 1970-71,  
 873

- Wheat—*continued*  
 marketing, 312–6  
 Northern District, area and yield, season 1970–71, 873  
 production  
   by States, 1970–71, 879  
   per cent, by States season 1969–70, 268  
   Statistical Districts, season 1970–71, 886  
   value, local, 1966–67 to 1970–71, 908  
   1839 to 1970–71, 1084–5  
   1966–67 to 1970–71, 887  
   railway traffic, 1966–67 to 1970–71, 1052  
   stripper, John Ridley, 105  
   superphosphate, use of, 130–1  
   value, gross, 1966–67 to 1970–71, 887  
   varieties, 130  
   sown, area, seasons 1968–69 to 1970–71, 888  
   weight of bushel, f.a.q., 1966–67 to 1970–71, 887  
 Wimmera District, area and yield, season 1970–71, 873  
 yield per acre  
   1839 to 1970–71, 1084–5  
   1966–67 to 1970–71, 887  
 Wheaten hay, area, yield, gross value, 1970–71, 884  
 Wheeler, Kenneth Henry, M.L.A., 772  
 When blackbirds sing, Martin Boyd, 520  
 Whitcombe and Tombs, publishers, 605  
 White, E. R., surveyor, 88  
 White, Dr (later Sir) Frederick William George  
   chairman, C.S.I.R.O., 658  
   F.R.S., 635  
 White, H. L., bird skins donated to National  
   Museum of Victoria, 505  
 White, Michael James Denham, F.R.S., 635  
 White Nose, Melbourne Cup winner, 1152  
 White thorn tree, *The*, Frank Dalby Davison, 521  
 Whitfield, experimental farm, 688  
 Whiting, Milton Stanley, M.L.A., 772  
 Whiting  
   King George, catch, 1966–67 to 1970–71, 905  
   school, catch, 1966–67 to 1970–71, 905  
 Whitlam, E. G., sworn in as Prime Minister,  
   1148  
 Whitley College, 495  
 Whittlesea  
   airfield, 258  
   area, 30 June 1971, 800  
   population, censuses 1966 and 1971, 798, 800  
 Whittorn, R. H., M.H.R., 783  
 Wholemilk *see* Milk  
 Wholesale  
   and retail trade, 365–71  
   liquor merchant licences, 1967–1971, 978  
   markets, development, 365–7  
   price indexes, building materials, 1967–68 to  
   1970–71, 849  
 Wickliffe, Hopkins River flow, 763  
 Widow pensioners and payments, 1967–68 to  
   1971–72, 949  
 Widowed persons, censuses 1966 and 1971, 792  
 Widowers, marriages, 1967–1971 and 1940–1949 to  
   1971, 810  
 Widows  
   marriages, 1967–1971 and 1940–49 to 1971, 810  
   pensions  
     Commonwealth, 575  
     expenditure, National Welfare Fund, 1967–68  
     to 1971–72, 948  
     number and amount paid, 1942–43 to 1970–71,  
     1111–2  
     payments and pensioners, 1967–68 to 1971–72,  
     949  
*Widow's Victim, The*, play, 527  
 Wilcox, Vernon Francis, M.L.A., 768, 772  
 Wild, Heinrich, theodolite design, 692  
 Wildlife, 79–81  
   conservation, 79–81  
   reserves, area, 30 June 1971, 874 *see also* National  
   parks  
 Wilful damage, Children's Court, cases, 1970, 970  
 Wilkes, Frank Noel, M.L.A., 772  
 Wilkes, G. H., *Australian literature : a conspectus*, 519  
 Wilkie, Allan, actor, 528  
 Wilkie's, piano retailers, hire purchase begun, 356  
 Wilkinson, Dr F. C.  
   Australian College of Dentistry, 637  
   Professor of Dental Science, University of  
   Melbourne, 544, 637  
 Wilkinson, Dr J. F., insulin, 535  
 William IV, death, 1132  
 William Street, Melbourne, naming of, 176  
 Williams, E. E., barrister, 473  
 Williams, Fred, artist, 512  
 Williams, G. K., lead desilverising, 730  
 Williams, ship, 232  
 Williamson, James Cassius  
   brought to Australia, 528  
   death, 529  
   Italian opera companies, 531  
   organisation taken over by J. and N. Tait, 529  
   partnership with George Musgrove and Arthur  
   Garner, 528  
 Williamson  
   Pty Ltd, J. C., Australian Ballet Foundation, 530  
   Theatres Ltd, J. C., ballet introduced, 530  
 Williamstown  
   area, 30 June 1971, 800  
   artillery batteries built, 455  
   astronomical observatory, 629  
   Gas Company, 226  
   Grammar School, 486  
   land sales, 94  
   naming, 88, 175  
   naval  
   dockyard, 334  
   volunteers, 456  
   newspapers, 600  
   population, censuses 1966 and 1971, 798, 800  
   prisoners refused to make roads, 572  
   quarantine station, 552  
   railway workshops, 325  
   telegraphic communication established with  
   Melbourne, 1134  
*Williamstown Chronicle*, newspaper, 600  
*Williamstown Independent*, newspaper, 600  
 Willis, Judge, labelled by George Arden, 596  
 Willis, R., M.H.R., 783  
 Wills *see* Burke and Wills  
 Wills, T. W., Australian Rules Football devised, 609  
 Wills  
   law governing, 463  
   lodged for custody by Public Trustee, 1966–67  
   to 1970–71, 1026  
 Wilmot, Frank (Furnley Maurice), poet, 523  
 Wilson, Braebridge, sponges and polyzoa donated  
   to National Museum of Victoria, 505  
 Wilson, David, dairying, 106, 143  
 Wilson, Edward, newspaper publisher, 599  
 Wilson, I. P., Professor of Mathematics, University  
   of Melbourne, 494  
 Wilson and Mackinnon, printers, 604  
 Wilson Hall, University of Melbourne, opened, 494  
 Wilsons Promontory  
   National Park, 108  
   expenditure, 1966–67 to 1970–71, 919  
   recreational area, 623  
   shipping destroyed, Second World War, 460  
 Wilton, John Thomas, M.L.A., 772  
 Wiltshire, Raymond John, M.L.A., 772  
 Wimmera  
   District  
   cereal crops, area and yield, season 1970–71, 873  
   rainfall, 1962–1971, 766  
   —Mallee Domestic and Stock Water Supply  
   System, 82, 218  
   North District, rainfall variation, 766  
   River, flow, annual, 763  
   Shire  
   area, 30 June 1971, 802  
   population, censuses 1966 and 1971, 802  
   South District, rainfall variation, 766  
   Statistical  
   District  
   crops, yield, season 1970–71, 886  
   ensilage  
   made, 1970–71, 889  
   stocks, 31 March 1971, 889  
   fruit trees, plants, etc., season 1970–71, 892  
   growers of certain crops, season 1970–71, 885  
   hay stocks, 31 March 1971, 889  
   lambling  
   forecast, etc., 1971, 899  
   season 1970–71, 898  
   land occupied, area, season 1970–71, 881  
   livestock, distribution, 31 March 1971, 894  
   map, 880  
   pigs and pig keepers, 31 March 1971, 895  
   rams according to breed, 31 March 1971, 897  
   sheep  
   and lambs  
   shorn, etc., season 1970–71, 899  
   31 March 1971, 898  
   breeds, 31 March 1971, 896

- Wimmera—*continued*  
 Statistical—*continued*  
 Division  
 area  
 by municipality, 30 June 1971, 802  
 of State, percentage, census 1971, 795  
 30 June 1971, 804  
 manufacturing establishments, 1968–69, 911  
 map, inside back cover  
 population  
 by municipality, censuses 1966 and 1971, 802  
 census 1971, 795  
 censuses  
 1947–1971, 787  
 1966 and 1971, 804  
 intercensal changes, 1961–1971, 787  
 wheat decrease, 313
- Winchelsea  
 Barwon River, flow, 763
- Shire  
 area, 30 June 1971, 802  
 population, censuses 1966 and 1971, 802
- Wind  
 measurement, by balloon, 674  
 speed and gusts, Melbourne, 767
- Windbag, Melbourne Cup winner, 1152
- Windmills  
 manufacture, Wangaratta, 325  
 rural use, 138
- Windsor Hotel  
 (Grand Hotel), completion, 180  
 sculptures by J. S. Mackennal, 512
- Wine *see also* Grapes  
 Australian, liquor licences, 1967–1971, 978  
 beer, and spirits, retail sales, value, 1966–67 to 1970–71, 1037  
 made  
 by States, 1970–71, 879  
 1844 to 1970–71, 1088–9  
 1966–67 to 1970–71, 892  
 1970–71, 886
- Wingan Inlet National Park, 108
- Winneke, Sir Henry Arthur  
 Chief Justice, 769  
 Lieutenant-Governor, 768, 1148
- Wireless *see* Broadcasting, Radio
- Wise, Captain, killed at Eureka Stockade, 455
- Witnesses of Spring*, Shaw Neilson, 522
- Wodalla, Melbourne Cup winner, 1152
- Wodonga  
 -Albury, population, censuses 1966 and 1971, 798  
 development, 186  
 pet food cannery, 333  
 Rocla pipe factory, 718
- Shire  
 area, 30 June 1971, 803  
 population, censuses 1966 and 1971, 803
- Wollamai, Melbourne Cup winner, 1152
- Wolseley, F. Y., shearing mechanised, 139
- Woman in Red, The*, play, 528
- Woman's News*, newspaper, 601
- Women  
 admitted to University of Melbourne, 494  
 cricketers, 609  
 police, 471
- Women's College, opened, 495
- Wonthaggi  
 Borough  
 area, 30 June 1971, 804  
 population, censuses 1966 and 1971, 804  
 coal mine, 153, 155, 1139, 1142  
 population, censuses 1966 and 1971, 798  
 water supply, 218
- Wood *see also* Timber milling, Forestry  
 and cork manufactures, imports and exports,  
 1969–70 and 1970–71, 1040  
 imports and exports, value, 1969–70 and 1970–71,  
 1039
- Woodchopping, 617–8
- Woodend, population, censuses 1966 and 1971, 798
- Woodfull, W. M., Australian cricket captain, 588
- Woods Point, newspaper, 601
- Woodside  
 oil discovered, 163  
 Oil N. L., oil well drilling, 164, 165
- Wool *see also* Sheep  
 clip  
 seasons 1966–67 to 1970–71, 899, 900  
 Statistical Districts, season 1970–71, 899  
 dumping press, Johns and Waygood Ltd, 736  
 Export Price Index, 1961–62 to 1970–71, 849
- Wool—*continued*  
 greasy, production, 1882–83 to 1970–71, 1090–1  
 growers, finance, 353–6  
 liens, 1967–1971, 1030  
 marketing, development, 309–11  
 price, average, per pound, seasons 1966–67 to 1970–71, 900  
 prices, 311  
 production  
 by States, 1969–70 and 1970–71, 879  
 seasons 1966–67 to 1970–71, 900  
 value, local, 1966–67 to 1970–71, 908  
 rail traffic, 1966–67 to 1970–71, 1052  
 research  
 Australian Wool Testing Authority, 670–1  
 C.S.I.R.O., 659–60  
 Textile College, Gordon Institute of Technology,  
 654  
 scoured or carbonised, manufactured, 1970–71  
 and 1971–72, 912  
 Scourers, Carbonizers and Fellmongers Federation  
 of Australia, 670  
 shearing mechanised, 139  
 Textile Manufacturers of Australia, Australian  
 Wool Testing Authority, 670  
 tops, pure and mixed, manufactured, 1970–71 and  
 1971–72, 912  
 value, gross, seasons 1966–67 to 1970–71, 900
- Wool Industry Act* 1962, 670
- Woolen mills, establishment, 324
- Woorayl Shire  
 area, 30 June 1971, 804  
 population, censuses 1966 and 1971, 804
- Work *see also* Hours of work  
 force, in industry groups, by States, census 1966,  
 266 *see also* Employment
- Worker*, newspaper, 601
- Workers  
 compensation, 835–6  
 business  
 premiums, claims, etc., 1952–53 to 1970–71,  
 1078  
 State Accident Insurance Office, 1966–67 to  
 1970–71, 1021  
 1966–67 to 1970–71, 835  
 claims  
 amounts paid, 1965–66 to 1970–71, 836  
 industrial accidents, 1957–58 to 1970–71, 1079  
 journey, recess, and other disease cases,  
 1957–58 to 1970–71, 1079  
 insurance, 346  
 Legal Aid Committee, applications, 1971, 966  
 payments, Melbourne and Metropolitan  
 Tramways Board 1967–68 to 1970–71, 1055  
 State Accident Insurance Office, premiums  
 received, claims paid, etc., 1966–67 to  
 1970–71, 1021
- Workers' Educational Association, Albert  
 Mansbridge, 507
- Working Men's College (R.M.I.T.), 489, 501, 653,  
 1136
- Works  
 grant, Commonwealth payments, Consolidated  
 Fund receipts, 1966–67 to 1970–71, 990  
 public *see* Public works  
 services, etc., expenditure, gross, 1966–67 to  
 1970–71, 1003
- World  
 Cup (golf), held in Melbourne, 608  
 Surf Board Championships, Torquay, 616  
 War *see* War, First World ; War, Second World  
 Weather Watch, 675
- Worley, gold discoverer, 156
- Wormbete, International Harvester proving ground,  
 735
- Wotan, Melbourne Cup winner, 1152
- Wrestling, 619
- Wright, Captain S., settlement at Western Port, 87, 93,  
 455, 1132
- Wright, Frank Lloyd, architect, 195
- Wright, Judith, edition of poetry by Shaw Neilson,  
 522
- Wright, Robert John Davern, judge, 769
- Wright, Orr and Co., dry docks, 334
- Writing *see* Literature
- Writs received by the Sheriff, 1967–1971, 967
- Wycheproof Shire  
 area, 30 June 1971, 802  
 population, censuses 1966 and 1971, 802
- Wyperfeld National Park, 108  
 expenditure, 1966–67 to 1970–71, 919
- Wyuna, experimental farm, 688
- Wyuna*, pilot ship, 240

- X-rays *see also* Commonwealth Radiation Laboratory, Radiology  
 use in  
   ophthalmology, 539  
   otorhinolaryngology, 539  
 Xavier College, Kew, founded, 486
- Y.M.C.A., adult education, 507  
 Y.W.C.A., adult education, 507  
 Yachting, 615  
 Yackandandah Shire  
   area, 30 June 1971, 803  
   population, censuses 1966 and 1971, 803  
 Yallourn  
   adult education, 507  
   climatic elements, means, 765  
   electricity and brown coal production, 221-4  
   -Moe  
     population, censuses 1966 and 1971, 798  
     urban area, population summary, censuses 1966 and 1971, 796  
   Power Station and briquette factory, electricity generated, power source, etc., 1971-72, 915  
   siting, 174  
   technical school established, 501  
   Works Area  
     area, 30 June 1971, 804  
     population, censuses 1966 and 1971, 796, 804  
 Yan Yean  
   Reservoir, 210  
     commenced, 1134  
     water output, 1966-67 to 1970-71, 865  
     water supply system, M.M.B.W. capital outlay, 1966-67 to 1970-71, 865  
   waterworks  
     begun, 545  
     public debt at 30 June 1900, 288  
 Yarn spinning, research, Repco Ltd, 739  
 Yarra  
   Bend  
     golf course, 612  
     mental institution, 549  
     Reserve, Queen's Memorial Infectious Diseases Hospital, 552  
   Junction, population, censuses 1966 and 1971, 798  
   River  
     dredging lower reaches, 235, 236, 375  
     flow, annual, 763  
     Murray Cod and lobsters introduced by Acclimatization Society of Victoria, 631  
     Sculptors Society, formed, 513  
   *Yarra*, torpedo boat destroyer, 459  
   Yarram, population, censuses 1966 and 1971, 798  
   Yarraville, fertiliser plant, 333  
 Yarrawonga  
   -Mulwala, population, censuses 1966 and 1971, 798  
 Shire  
   area, 30 June 1971, 803  
   population, censuses 1966 and 1971, 803  
 Weir Pool, reservoir, 118  
 Yea  
   population, censuses 1966 and 1971, 798  
   Shire  
     area, 30 June 1971, 801  
     population, censuses 1966 and 1971, 801  
*Year Book, Victorian see Victorian Year Book*  
 Yooralla School and Hospital, 566  
 York, Duke and Duchess of, inauguration of Commonwealth Parliament, 182  
 Young Farmers Movement, Victorian, education, 149  
*Young wife, The*, David Martin, 522
- Youngberries  
 acres grown  
   Statistical Districts, season 1970-71, 892  
   1967-68 and 1970-71, 891  
   production, 1966-67 to 1970-71, 891  
 Younghusband  
 and Co. Ltd, Messrs Chenery and Co. acquired, 355  
 Ltd, merger with Elder Smith and Co. Ltd, 356  
 Youth  
   Advisory Council, Social Welfare Department, 571  
   Council, formed, 584  
   Employment Training Scheme, 501  
   Parole Board  
     parolees, 1962-1971, 1117  
     Social Welfare Department, 571  
   Training Centres  
     offences for which sentences imposed, 1970-71 and 1971-72, 956  
     sentences, length, 1970-71 and 1971-72, 957  
   Welfare Division  
     Ministry of Social Welfare, persons controlled, location, 30 June 1971 and 1972, 961  
     Social Welfare Department, 571  
 Yugoslavians  
   censuses 1966 and 1971, 791  
   naturalised, 1967-1971, 807
- Zelman, Alberto  
 children's concert, 526  
 Melbourne Symphony Orchestra, The, founded, 525  
 Zenith sheep  
 distribution in Statistical Districts, 31 March 1971, 896-7  
 numbers, etc., 1968, 1970, and 1971, 898  
 Zikaras, Teisutis, sculptor, 514, 515  
 Zinc Corporation Ltd, 335  
 Zoological  
   and Acclimatization Society, becomes Royal Zoological and Acclimatization Society, 630  
   Board of Victoria, appointed, 631  
   Gardens, Royal Park, 631  
   Society of Victoria  
     founded, 630, 1134  
     incorporated into Acclimatization Society of Victoria, 630  
*Zoological Gardens Act* 1936, 631  
 Zoology, research  
   La Trobe University, 650  
   University of Melbourne, Faculty of Science, 643  
 Zulu, Melbourne Cup winner, 1152
- 2BL Sydney, radio station, 585  
 2FC Sydney, radio station, 585  
 2SB (now 2BL) Sydney, radio station, 585  
 3AR Melbourne  
   broadcasting station, 260  
   first broadcasting station, 585  
   opened, 1138  
 3BA Ballarat, radio station, 588  
 3DB Melbourne  
   licence granted, 586  
   radio station, acquired by The Herald and Weekly Times Ltd, 586  
 3LO Melbourne, radio station, 585  
 3UZ Melbourne, radio station, began operating, 586  
 4QG Brisbane, radio station, 585  
 5CL Adelaide, radio station, 585  
 6WF Perth, radio station, 585  
 7ZL Hobart, radio station, 585  
 40 hour week introduced, 1140

## CORRIGENDA

---

- Page 54* paragraph 4 line 6: "in 1862 . . ." should read "in 1852 . . ."
- Page 103* paragraph 3 line 5: ". . . producing some 300" should read ". . . producing some 400".
- Page 153* paragraph 4 line 2: ". . . Palaentological . . ." should read ". . . Palaeontological . . ."
- Page 220* paragraph 2 line 5: ". . . in 1869 . . ." should read ". . . in 1867 . . ."
- Page 335* paragraph 2 line 11: ". . . Associated Paper and Pulp Mills Ltd . . ." should read ". . . Associated Pulp and Paper Mills Ltd . . ."
- Page 338* paragraph 2 line 5: ". . . During 1852" should read ". . . Later, in 1865".
- Page 384* paragraph 2 line 16: "1856 . . ." should read "1852 . . ."
- Page 455* line 4: ". . . Colonel . . ." should read ". . . Lieutenant-Colonel . . ."
- Page 459* paragraph 2 line 12: ". . . grant . . ." should read ". . . granted . . ."
- Page 524* line 10: ". . . Villier's . . ." should read ". . . Villiers' . . ."
- Page 552* paragraph 2 line 20: ". . . in 1802 . . ." should read ". . . in 1852 . . ."
- Page 596* paragraph 4 line 3: ". . . *Corio Chronical* . . ." should read ". . . *Corio Chronicle* . . ."
- Page 630* paragraph 2 line 8: ". . . Natural History . . ." should read ". . . Natural Science . . ."
- Page 644* paragraph 4 line 2: "recommended . . ." should read "recommenced . . ."
- Page 788* second table title: ". . . 1947 TO 1966" should read ". . . 1954 TO 1971".
- Page 816* first table, multiple cases per 1,000 total confinements: 1969 "11.34" should read "10.68" and 1971 "11.37" should read "10.61".
- Page 875* second table title: "VICTORIA—LAND . . ." should read "VICTORIA—SOLDIER SETTLEMENT ACT: LAND . . ."
- Page 884* second table, gross value of tobacco: "16,807" should read "16,087".

# SUMMARY OF CONTENTS

## PART ONE: DEMOGRAPHIC DEVELOPMENT

- 1 Statistical recording
- 2 Censuses
- 3 Aborigines
- 4 Immigration
- 5 Population
- 6 Vital statistics

## PART TWO: RURAL AND URBAN DEVELOPMENT

- 1 The land
- 2 Settlement
- 3 Land use and farming
- 4 Mining
- 5 Urban and suburban development
- 6 Housing, building, and services
- 7 Transport and communications

## PART THREE: ECONOMIC DEVELOPMENT

- 1 The Victorian economy
- 2 Financial relations with the Commonwealth
- 3 Rural industry
- 4 Manufacturing industry
- 5 Private finance
- 6 Wholesale and retail trade
- 7 Transport
- 8 Maritime trade
- 9 Employment and industrial relations
- 10 Superannuation

## PART FOUR: SOCIAL AND POLITICAL DEVELOPMENT

- 1 Constitutional and administrative development
- 2 Law and justice
- 3 Education
- 4 The arts
- 5 Health services
- 6 Social services and welfare
- 7 Mass media
- 8 Recreation

## PART FIVE: SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENT

- 1 Science in Victoria
- 2 Universities and institutes of advanced education
- 3 C.S.I.R.O.
- 4 Commonwealth research facilities
- 5 State research facilities
- 6 Industrial research and development facilities

## EPILOGUE

Victoria, Federation, and beyond

## STATISTICS

- 1 Physical environment
- 2 Government and administration
- 3 Demography
- 4 Industrial conditions, employment, and prices
- 5 Local government
- 6 Primary production
- 7 Manufacturing industry
- 8 Social conditions
- 9 Finance
- 10 Trade, transport, and communications

## HISTORICAL STATISTICS

## APPENDICES

- A Chronologies
- B Select bibliography of books about Victoria
- C List of Victorian statistical publications
- D Index of special articles in the *Victorian Year Book* 1961-1972
- E Index of maps in the *Victorian Year Book* 1961-1972

## INDEX



COMMONWEALTH BUREAU OF CENSUS AND STATISTICS  
VICTORIAN OFFICE