

Part 8

MANUFACTURING INDUSTRY

Secondary Industry and Its Educational Requirements

Historical Background

In the second half of the nineteenth century industrial development in Australia was such as to create a demand for technical education as distinct from general education. The concept of technical education which developed in Australia largely followed the British tradition, which regarded the actual work experience on the job in any particular occupation as the fundamental training procedure and sought to enrich and supplement this in a training institution provided for the purpose.

The early courses were sought by workers anxious to improve their qualifications and hence their prospects of promotion. As the only time available for them was outside working hours, part-time courses for the student employed in a particular industry became typical of the training available.

As secondary industry came to demand competence in advanced technical processes, occupations emerged in which the vocational experience gained by the worker on his job did not provide an adequate basic training. Expanding secondary industry needed chemists, for example, but in industrial chemistry the relatively untrained worker did not derive an adequate technical training from the type of work entrusted to him. Similarly, expanding mining activities created a demand for more mining engineers, who could not acquire systematic knowledge and skills from haphazard vocational assignments.

Full-time courses, then, came to be offered by training institutions. But even with these full-time courses, the concept of supplementary education was maintained. Full-time training was followed by a probationary period of occupational experience at the completion of which competence was recognized by the award of a diploma. Alternatively, several short periods of full-time occupational experience might be interpolated at appropriate points in the training course.

The courses differed also according to the degree of specialization required in their content. Where courses were designed for workers whose study time was limited to a few hours each week for a relatively short period, they tended towards a specialized study of theory, or

shop and laboratory practice, or both. Other courses, however, were designed to provide a much broader and more comprehensive training, including most of the principles and practices that a flexible, well-equipped technician might be expected to possess.

Early Technical Colleges

In keeping with the types of courses given and the students who attended them, the training institutions which evolved were organized on lines which gave more initiative and independence to the student than did any school in the general educational system. In New South Wales the Sydney Technical College, built in 1892, proved to be the prototype for similar institutions on a smaller scale in that State. It is noteworthy that from the beginning their new status was recognized and they were called technical colleges.

In contrast to New South Wales, the college type institutions in Victoria did not acquire a common name. Those that catered for working-men who wished to improve their vocational efficiency were all, in effect, technical colleges, although in this State they were known by such various names as technical college, technical school, institute of technology, and school of mines. The first technical college, the Ballarat School of Mines, was established in 1870, and by 1954 there were in Victoria 43 institutions eligible for classification as technical colleges.

It is interesting to note that the Working Men's College established in the City of Melbourne in 1882 became the Melbourne Technical College in 1934, then the Royal Melbourne Technical College in 1954, and since 1960 has been the Royal Melbourne Institute of Technology.

Educational Requirements of Industry

In Australia, as in all industrialized countries, a common feature of growth has been the increase, both relatively and absolutely, in employment in secondary industry. In the last 30 years employment in primary industry has declined by about one quarter, whilst that in manufacturing has trebled. At the beginning of this period, primary industry employed 80 per cent. more persons than did manufacturing industry. Today, the latter employs more than twice the number engaged in primary industry.

The educational requirements of secondary industry have thus assumed an importance which could hardly have been envisaged in the 1870's. At the same time, growth in the size of individual companies and in the complexity of industrial technology has further increased this importance.

The Australian community as a whole depends on the existing education system and its product. For industry, in particular those sections of secondary industry where new technology and new processes are most important, this sometimes means that an education system conceived to meet the problems of the past tends to lag behind the needs of the present.

For this reason strenuous efforts are made by educational authorities, supplemented by the private efforts of industry, to provide tuition to meet the demands of new technology. Just as the unskilled process worker is gradually replaced by the semi-skilled, so the less skilled trades have become relatively less attractive to the young apprentice.

Training of Technicians

Increased importance is thus being placed by modern industry on a new type of worker, a man with training beyond that of the tradesman (though not to the level of the professional in abstract theory), and combining the tradesman's skills with a greater technical understanding for modern needs.

The technician, the general term for this new class of personnel, may cover fields as diverse as that of laboratory and technical assistant, detailing draughtsman, process instrument technician, scientific glassworker, technical clerk, and maintenance engineer. He has been described as a person who can carry out in a responsible manner either proven techniques which are common knowledge among those technically expert in his particular field or those specially prescribed by professional men in that occupation. He requires a background of acquired knowledge and experience in a particular occupation sufficient to enable him to understand the reasons and purposes of the operations for which he is responsible, the ability to work out the details of a job in the light of well-established practice, and the ability competently to supervise the work of skilled craftsmen.

In Australia, a considerable number of technicians has already emerged by way of apprenticeship in the skilled trades, and the technician qualification is being recognized by industry. Training courses for technicians generally have a bias towards a trade. The trainee is indentured to industry, as is the apprentice, and receives a similar training in skill, but his technical college training is far more extensive.

Victorian technical colleges now offer a range of technician training courses, and in 1961 introduced the "sandwich" type technical diploma course, in which two years' full-time study is followed by six months at college and six months in industry. "Sandwich" training is particularly favoured by industry where education in the more technical courses such as process instrumentation is required, since it allows progressive learning of both industrial practice and technical principles.

Process Workers and Trade Skills

It is not only the technician who is affected by the progressively more complex technology of modern industry. The process worker, classified today as unskilled in many industries, is faced more and more with equipment which demands a real understanding of quite complex technology ; in many industries, some recognized and formal training will soon be required for this type of employment.

There is already, for instance, a wide gap between the unskilled process worker of repetition engineering and the highly-trained member of the process team in the automated plants of the chemical industry or oil refinery.

Trade skills have increased over the years, and their technical nature has changed. The Victorian Apprenticeship Commission, established in 1928, has aided industry by proclaiming "new" trades each year. Advisory committees, drawn from industry, advise on trade and academic training, the number of proclaimed trades rising from four in 1930 to 30 in 1960 (with several of the latter comprising a number of separate apprenticeships, including 47 for the printing trade and twelve for engineering).

No trade, however, remains static. Modern communities provide less demand for trades such as coopering ; equally, new developments within each trade provide a constant "re-skilling" problem which the tradesman must face to remain in touch with modern developments. Plumbers, for example, now learn to work with a variety of modern plastics unheard of in their apprenticeships ; welding is performed with special techniques and inert atmospheres provided by gases such as argon which in the 1930's were rarely seen outside the laboratory.

Commercial Operations

Technical education alone, however, whether it produces technical or trade skills, will not supply all the needs of modern industry. Growing analytical skills are required in commercial operations, especially where the wider interests and diversified activities of the larger company are concerned.

The application of electronic computers to the solution of cost and production problems has already begun in Australia, supplementing the existing skills of highly trained accounting staff. Administrative and commercial acumen rank with technical skill in any organization, and to supply these skills, industry will progressively demand more experienced executives. For these persons, technical skills alone will not suffice ; the capacity to apply mathematics, and the knowledge of economics and history to appreciate world trends will be equally important.

Conclusion

Technical education in Victoria has changed with the continued growth of secondary industry. The trends that can clearly be discerned are the increased need for the sub-professional technician ; a greater support for "sandwich" and part-time courses for both technicians and tradesmen ; an increase in the responsibilities and training of the process worker ; and increased demand for wider training for professional workers.

Manufacturing Activity

General

Factory and Wages Board Legislation

The first Factories Act in Victoria was passed in 1873. Since then many other Acts dealing with the subject have been placed upon the statute-book. They have been consolidated in the *Labour and Industry Act 1958*. Under the Act registration of factories is compulsory and certain conditions relating to lighting, ventilation, fire escape, and sanitation must be fulfilled before registration is granted. The Act requires that departmental approval of plans be obtained before the commencement of the building of any factory premises or alteration or addition to them.

The general provisions of factory legislation, including Wages Boards, are further referred to on pages 462 to 464, 487-488, and 494-495.

Decentralization of Manufacturing Industries: Division of State Development

Since the early stages of the Second World War, successive State governments have encouraged the development of existing manufacturing facilities and the establishment of new industries in country areas.

The larger enterprises established in the country since the end of the Second World War include textile mills at Wangaratta, a roller-bearing factory at Ballarat, roller chains, wheels, and pinions at Benalla, a cement plant at Traralgon, food processing plants at Shepparton and Ballarat, various engineering works in Ballarat and Geelong, and a hardboard plant at Bacchus Marsh.

The proposed £15 mill. oil refinery to be established at Crib Point is regarded as an important step in the development of Westernport area. The decision to pipe the products of the refinery to a distribution point in Dandenong will minimize road use for deliveries to the eastern sector of the State. The legislation introduced to ratify the agreement with the Company provides for easements for the pipeline and for the construction of jetty facilities by the Government. The estimated cost of these is £2½ mill.

Further information about the activities of the Division of State Development is set out on page 419 of the Victorian Year Book 1962 and page 583 of the Victorian Year Book 1963.

Commonwealth Department of Trade

The functions of this Department include the development of secondary industries, the protection of secondary industry (including tariff protection which is administered through the Tariff Board) and as part of its policy of promoting external trade, the promotion of exports of the products of secondary industry.

Customs and Excise Tariffs and Bounties on Manufacture

The Tariff Board, appointed by the Commonwealth Government, examines proposals for amending a tariff and makes recommendations relating to the necessity for new, increased, or reduced duties and, where necessary, advises regarding the necessity for granting bounties. It takes into consideration the effect of any changes on manufacturing industry in Australia.

Bounties are paid by the Commonwealth Government to encourage local manufacture of certain products. The statutory provisions usually fix a term of operation of the bounty, provide for payment at a rate varying according to changes in the corresponding customs duty, specify the annual maximum amount of bounty payable, and require the bounty to be withheld or reduced if a manufacturer's net profit in production of the commodity exceeds a certain rate or if rates of wages and conditions of employment in production of the commodity do not conform to prescribed standards.

Scientific Research and Standardization

Commonwealth Scientific and Industrial Research Organization

The function of this Organization is to initiate and conduct research in connexion with industries in Australia, to train research workers, to establish industrial research studentships and fellowships, to make grants in aid of pure scientific research, to establish industrial research associations in various industries, to provide for testing and standardization of scientific equipment, to conduct an information service relating to scientific and industrial matters, and to act for Australia in liaison with other countries in matters of scientific research.

Standards Association of Australia

This Association acts as the national standardizing organization of Australia and issues standard specifications for materials and codes of practice. Specifications and codes are prepared and revised periodically in accordance with the needs of industry and standards are evolved and accepted by general consent.

National Association of Testing Authorities

This Association organizes national testing facilities throughout Australia to serve private and governmental needs. Laboratories may register voluntarily for tests within their competence and the Association ensures the maintenance of their standards of testing. It is expected that there will be general acceptance of certificates of tests issued in the name of the Association by the registered laboratories.

Definitions in Factory Statistics

The statistics dealing with factories have been compiled from returns supplied annually by manufacturers under the authority of the Commonwealth Census and Statistics Act and the Victorian Statistics Act. A return must be supplied for every factory, which is defined for this purpose as an establishment where four or more persons are employed or where power (other than manual) is used in any manufacturing process.

If a manufacturing business is conducted in conjunction with any other activity, particulars relating to the manufacturing section only are included in the statistics. Where two or more industries are conducted in the same establishment, a separate return is obtained for each industry, if practicable.

Manufacturers are requested to state in their returns particulars about the number, age, wages, &c., of their employees, the value of premises and equipment and of factory stocks, the horse-power of machinery, the value, and, in many cases, the quantities of raw materials and fuel used, and quantities and values of principal articles produced. The returns obtained from manufacturers are not intended to show a complete record of the income and expenditure of factories nor to show the profits or losses of factories collectively or individually.

The *average number of persons* employed is quoted on two different bases : the average during the period of operation and the average over the whole year. Of these, the former is simply the aggregate of the average number of persons employed in each factory during its period of operation (whether the whole or only part of the year). This average is used only for details dealing with the classification according to the number of persons employed. The latter, which is used in all other instances, is calculated by reducing the average number working in the factories (irrespective of period of operation) to the equivalent number working for a full year.

Working proprietors are included in all employment figures other than those dealing with monthly employment and age dissections, but salaries and wages paid in all cases exclude drawings by working proprietors.

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.

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, &c., and profit.

It is considered that, because of the duplication of materials used, (which means that the finished product of one process of manufacture often forms the raw material for another) an inaccurate impression would be obtained by using the total value of output of manufacturing industries in year to year comparisons. Woollen manufactures might be cited as an example. Greasy wool forms the raw material for the woolscouring industry, the product of which is scoured wool. This is afterwards combed into wool tops which are used in the spinning mills for the manufacture of yarn. In due course the yarn is woven into cloth, the raw material for the clothing industry. If these processes are carried out separately in different factories, it is evident that the value of the wool would be counted five times by using value of output as the basis for annual comparisons of manufacturing production.

The concept of value added prevents this double counting, gives a truer picture of the relative economic importance of industries, and also provides a good basis for estimating and comparing productive efficiency in manufacturing.

Classification of Factories

General

In the compilation of statistical data dealing with factories in Australia, a standard classification of manufacturing industries, formulated at a conference of Australian statisticians in 1902 and revised from time to time, was used until the year 1929-30. A new classification based on that used in Great Britain for census purposes was introduced in 1930-31, and this, revised and extended to a minor degree in regard to sub-classes of industry in accordance with decisions of the Statisticians' Conference, 1945, still obtains.

It should be noted that where a factory, engaged in the production of such goods as would entitle it to classification in more than one sub-class of industry, is unable to give separate production costs, &c., for such activities, it is classified to the predominant activity of such factory.

The classes and sub-classes in the current classification of factories are as follows:—

CLASSIFICATION OF FACTORIES

CLASS I.—TREATMENT OF NON-METALLIFEROUS MINE AND QUARRY PRODUCTS

- Coke Works
- Briquetting and Pulverized Coal
- Carbide
- Lime, Plaster of Paris, and Asphalt
- Fibrous Plaster and Products
- Marble, Slate, &c.
- Cement, Portland
- Asbestos Cement Sheets and Mouldings
- Other Cement Goods
- Other

CLASS II.—BRICKS, POTTERY, GLASS, ETC.

- Bricks and Tiles
- Earthenware, China, Porcelain, and Terracotta
- Glass (Other than Bottles)
- Glass Bottles
- Other

CLASS III.—CHEMICALS, DYES, EXPLOSIVES, PAINTS, OILS, GREASE

- Industrial and Heavy Chemicals and Acids
- Pharmaceutical and Toilet Preparations
- Explosives (Including Fireworks)
- White Lead, Paints, and Varnish
- Oils, Vegetable
- Oils, Mineral
- Oils, Animal
- Boiling-down, Tallow-refining
- Soap and Candles
- Chemical Fertilizers
- Inks, Polishes, &c.
- Matches
- Other

CLASS IV.—INDUSTRIAL METALS, MACHINES, CONVEYANCES

- Smelting, Converting, Refining, Rolling of Iron and Steel
- Foundries (Ferrous)
- Plant, Equipment, and Machinery, &c.
- Other Engineering
- Extracting and Refining of Other Metals; Alloys
- Electrical Machinery, Cables, and Apparatus
- Construction and Repair of Vehicles (10 groups)
- Ship and Boat Building and Repairing, Marine Engineering (Government and Other)
- Cutlery and Small Hand Tools
- Agricultural Machines and Implements

CLASS IV.—INDUSTRIAL METALS, MACHINES, CONVEYANCES—*continued.*

- Non-Ferrous Metals—
 - Rolling and Extrusion
 - Founding, Casting, &c.
- Iron and Steel Sheets
- Sheet Metal Working, Pressing, and Stamping
- Pipes, Tubes, and Fittings—Ferrous
- Wire and Wire Netting (Including Nails)
- Stoves, Ovens, and Ranges
- Gas Fittings and Meters
- Lead Mills
- Sewing Machines
- Arms and Ammunition (Excluding Explosives)
- Wireless and Amplifying Apparatus
- Other Metal Works

CLASS V.—PRECIOUS METALS, JEWELLERY, PLATE

- Jewellery
- Watches and Clocks (Including Repairs)
- Electroplating (Gold, Silver, Chromium, &c.)

CLASS VI.—TEXTILES AND TEXTILE GOODS (NOT DRESS)

- Cotton Ginning
- Cotton Spinning and Weaving
- Wool—Carding, Spinning, Weaving
- Hosiery and Other Knitted Goods
- Silk, Natural
- Rayon, Nylon, and Other Synthetic Fibres
- Flax Mills
- Rope and Cordage
- Canvas Goods, Tents, Tarpaulins, &c.
- Bags and Sacks
- Textile Dyeing, Printing, and Finishing
- Other

CLASS VII.—SKINS AND LEATHER (NOT CLOTHING OR FOOTWEAR)

- Furriers and Fur-dressing
- Woolscouring and Fellmongery
- Tanning, Currying, and Leather-dressing
- Saddlery, Harness, and Whips
- Machine Belting (Leather or Other)
- Bags, Trunks, &c.

CLASS VIII.—CLOTHING (EXCEPT KNITTED)

- Tailoring and Ready-made Clothing
- Waterproof and Oilskin Clothing
- Dressmaking, Hemstitching
- Millinery
- Shirts, Collars, and Underclothing
- Foundation Garments

CLASS VIII.—CLOTHING (EXCEPT KNITTED)—*continued.*

Handkerchiefs, Ties, and Scarves
 Hats and Caps
 Gloves
 Boots and Shoes (Not Rubber)
 Boot and Shoe Repairing
 Boot and Shoe Accessories
 Umbrellas and Walking Sticks
 Dyeworks and Cleaning, &c.
 Other

CLASS IX.—FOOD, DRINK, AND TOBACCO

Flour-milling
 Cereal Foods and Starch
 Animal and Bird Foods
 Chaffcutting and Corncrushing
 Bakeries (Including Cakes and Pastry)
 Biscuits
 Sugar-mills
 Sugar-refining
 Confectionery (Including Chocolate and Icing Sugar)
 Jam, Fruit, and Vegetable Canning
 Pickles, Sauces, and Vinegar
 Bacon Curing
 Butter Factories
 Cheese Factories
 Condensed and Dried Milk Factories
 Margarine
 Meat and Fish Preserving
 Condiments, Coffee, and Spices
 Ice and Refrigerating
 Salt
 Aerated Waters, Cordials, &c.
 Breweries
 Distilleries
 Wine-making
 Cider and Perry
 Malting
 Bottling
 Tobacco, Cigars, Cigarettes, and Snuff
 Dehydrated Fruit and Vegetables
 Ice Cream
 Sausage Casings
 Arrowroot
 Other

CLASS X.—SAWMILLS, JOINERY, BOXES, ETC., WOOD TURNING AND CARVING

Sawmills
 Plywood Mills (Including Veneers)
 Bark Mills
 Joinery
 Cooperage
 Boxes and Cases
 Woodturning, Woodcarving, &c.
 Basketware and Wickerware (Including Sea-grass and Bamboo Furniture)
 Perambulators (Including Pushers and Strollers)
 Wall or Ceiling Boards (Not Plaster or Cement)
 Other

CLASS XI.—FURNITURE OF WOOD, BEDDING, ETC.

Cabinet and Furniture Making (Including Billiard Tables and Upholstery)
 Bedding and Mattresses (Not Wire)
 Furnishing Drapery
 Picture Frames
 Blinds

CLASS XII.—PAPER, STATIONERY, PRINTING, BOOKBINDING, ETC.

Newspapers and Periodicals
 Printing—
 Government
 General, Including Bookbinding
 Manufactured Stationery
 Stereotyping, Electrotyping
 Process and Photo Engraving
 Cardboard Boxes, Cartons, and Containers
 Paper Bags
 Paper-making
 Pencils, Penholders, Chalks, and Crayons
 Other

CLASS XIII.—RUBBER

Rubber Goods (Including Tyres Made)
 Tyre Retreading and Repairing

CLASS XIV.—MUSICAL INSTRUMENTS

Gramophones and Gramophone Records
 Pianos, Piano-Players, and Organs
 Other

CLASS XV.—MISCELLANEOUS PRODUCTS

Linoleum, Leather-cloth, Oil-cloth, &c.
 Bone, Horn, Ivory, and Shell
 Plastic Moulding and Products
 Brooms and Brushes
 Optical Instruments and Appliances
 Surgical and Other Scientific Instruments and Appliances
 Photographic Material (Including Developing and Printing)
 Toys, Games, and Sports Requisites
 Artificial Flowers
 Other

CLASS XVI.—HEAT, LIGHT, AND POWER

Electric Light and Power
 Gas Works

Summary of Factories

The table below shows, at intervals between 1901 and 1961-62, the development of manufacturing industry in Victoria:—

VICTORIA—SUMMARY OF FACTORY DEVELOPMENT

Year	Factories	Employment*	Salaries and Wages Paid†	Value of—			
				Materials and Fuel Used	Production‡	Output	Land, Buildings, Plant and Machinery
	No.		£'000				
1901	3,249	66,529	\$	\$	\$	\$	12,298
1920-21	6,532	140,743	21,377	67,585	38,423	106,008	35,493
1940-41	9,121	237,636	52,295	120,348	89,001	209,349	92,050
1950-51	13,504	316,792	163,207	399,373	275,660	675,033	207,587
1953-54	15,533	331,277	236,036	577,190	408,315	985,505	339,268
1954-55	15,861	346,648	262,750	648,433	452,223	1,100,656	412,671
1955-56	16,053	355,185	286,944	709,444	491,948	1,201,392	473,216
1956-57	16,232	355,204	296,608	748,110	528,031	1,276,141	533,584
1957-58	16,426	357,143	310,540	811,221	568,685	1,379,906	579,820
1958-59	16,527	362,979	324,336	822,094	610,969	1,433,063	646,940
1959-60	16,979	381,514	370,181	923,113	688,389	1,611,502	730,827
1960-61	17,173	387,430	387,221	946,368	703,282	1,649,650	818,669
1961-62	17,300	377,745	384,433	957,333	717,327	1,674,660	911,570

NOTE.—See also Definitions on pages 619-620.

* Average employment over whole year, including working proprietors.

† Excludes drawings of working proprietors.

‡ Value of output less value of materials, &c.

§ Not available.

A graph showing the distribution of the components of value of output for the years 1952-53 to 1961-62 is shown on page 629.

A comparison of Victorian factory activity with that in other States is shown in the following table :—

AUSTRALIA—FACTORIES, 1961-62

State	Factories	Employment*	Salaries and Wages Paid †	Materials and Fuel Used	Value of—		
					Production ‡	Output	Land, Buildings, Plant and Machinery
	No.		£'000				
New South Wales	23,629	461,087	487,553	1,317,577	968,694	2,286,271	1,314,118
Victoria	17,300	377,745	384,433	957,333	717,327	1,674,660	911,570
Queensland ..	5,824	101,637	93,345	321,069	175,298	496,367	226,885
South Australia ..	5,519	99,094	99,531	227,883	173,914	401,797	224,800
Western Australia	4,418	51,033	46,420	145,453	98,041	243,494	110,884
Tasmania	1,760	30,070	30,720	77,836	63,937	141,773	140,368
Total	58,450	1,120,666	1,142,002	3,047,151	2,197,211	5,244,362	2,928,625

* † ‡ See notes to table above.

NOTE.—Australian Capital Territory and Northern Territory factories are not included in the above table.

Factories Classified According to Class of Industry

The following table contains a summary of factories by class of industry in Victoria during the year 1961-62 :—

VICTORIA—FACTORIES BY CLASSES, 1961-62

Class of Industry	Fac-tories	Em-ploy-ment*	Salaries and Wages Paid†	Materials and Fuel Used	Value of—		
					Pro-duction ‡	Output	Land, Buildings, Plant and Machinery
		No.			£'000		
I. Treatment of Non-metal-liferous Mine and Quarry Products ..	470	6,972	8,230	23,555	18,881	42,436	34,725
II. Bricks, Pottery, Glass, &c. ..	177	6,494	7,008	9,388	11,941	21,329	12,998
III. Chemicals, Dyes, Explo-sives, Paints, Oils, Grease ..	381	15,763	19,281	116,769	59,477	176,246	112,518
IV. Industrial Metals, Machines, Con-veyances ..	6,779	151,336	163,877	271,329	260,609	531,938	278,219
V. Precious Metals, Jewel-ry, Plate ..	245	1,959	1,853	1,957	2,999	4,956	2,395
VI. Textiles and Textile Goods (Not Dress) ..	785	39,100	33,960	85,715	59,828	145,543	60,852
VII. Skins and Leather (Not Clothing or Footwear) ..	245	3,781	3,587	9,978	5,975	15,953	5,793
VIII. Clothing (Except Knitted) ..	2,514	44,712	33,805	55,326	56,605	111,931	34,149
IX. Food, Drink, and Tobacco ..	2,030	38,999	39,209	217,597	93,070	310,667	112,499
X. Sawmills, Joinery, Boxes, &c., Wood Turning and Carving ..	1,342	14,595	14,564	30,803	23,822	54,625	20,971
XI. Furniture of Wood, Bed-ding, &c. ..	626	6,126	5,531	12,168	10,103	22,271	7,014
XII. Paper, Stationery, Print-ing, Bookbinding, &c. ..	965	24,940	28,116	61,148	56,717	117,865	56,770
XIII. Rubber ..	171	6,998	7,668	20,074	15,773	35,847	14,571
XIV. Musical Instruments ..	24	183	181	171	273	444	305
XV. Miscellaneous Products ..	479	10,787	10,857	23,250	19,996	43,246	22,899
Total, Classes I. to XV. ..	17,233	372,745	377,727	939,228	696,069	1,635,297	776,678
XVI. Heat, Light, and Power ..	67	5,000	6,706	18,105	21,258	39,363	134,892
GRAND TOTAL ..	17,300	377,745	384,433	957,333	717,327	1,674,660	911,570

* † ‡ See footnotes on page 623.

“Industrial Metals, Machines, and Conveyances” with 151,336 persons or 40·1 per cent. of the total employment in factories during 1961-62, employed considerably more persons than any other class of industry. Next in order of employment was “Clothing” with 44,712 or 11·8 per cent., followed by “Textiles and Textile Goods” and “Food, Drink, and Tobacco” with 39,100 and 38,999 respectively or 10·4 per cent. and 10·3 per cent. of the total.

The total value of production (added value) in 1961-62 was £717,327,000. Of this amount the metals group contributed £260,609,000 which represented 36·3 per cent. of the total. The food group followed with £93,070,000 or 13 per cent., and next in order were textiles with £59,828,000, 8·3 per cent., chemicals, dyes, &c., £59,477,000, 8·3 per cent., paper £56,717,000, 7·9 per cent., and clothing, £56,605,000, 7·9 per cent.

The next table shows the number of factories in Victoria during the years 1957-58 to 1961-62 classified according to industry :—

VICTORIA—NUMBER OF FACTORIES IN INDUSTRIAL CLASSES

Class of Industry	1957-58	1958-59	1959-60	1960-61	1961-62
I. Treatment of Non-metalliferous Mine and Quarry Products	442	450	449	457	470
II. Bricks, Pottery, Glass, &c. ..	159	160	176	181	177
III. Chemicals, Dyes, Explosives, Paints, Oils, Grease	350	361	367	362	381
IV. Industrial Metals, Machines, Conveyances	5,971	6,018	6,414	6,522	6,779
V. Precious Metals, Jewellery, Plate ..	266	265	248	242	245
VI. Textiles and Textile Goods (Not Dress)	748	754	811	806	785
VII. Skins and Leather (Not Clothing or Footwear)	289	275	272	260	245
VIII. Clothing (Except Knitted)	2,516	2,442	2,416	2,580	2,514
IX. Food, Drink, and Tobacco	2,022	2,178	2,104	2,052	2,030
X. Sawmills, Joinery, Boxes, &c., Wood Turning and Carving	1,407	1,382	1,404	1,396	1,342
XI. Furniture of Wood, Bedding, &c. ..	704	665	664	630	626
XII. Paper, Stationery, Printing, Book-binding, &c.	884	892	948	967	965
XIII. Rubber	151	158	164	163	171
XIV. Musical Instruments	28	25	25	26	24
XV. Miscellaneous Products	411	431	446	463	479
Total, Classes I. to XV. ..	16,348	16,456	16,908	17,107	17,233
XVI. Heat, Light, and Power	78	71	71	66	67
GRAND TOTAL	16,426	16,527	16,979	17,173	17,300

The size classification of factories is based on the average number of persons employed during the period of operation (including working proprietors). The following tables show the number of factories classified on this basis for each of the years 1957-58 to 1961-62 :—

VICTORIA—FACTORIES CLASSIFIED ACCORDING TO NUMBER OF PERSONS EMPLOYED DURING PERIOD OF OPERATION

Year	Number of Factories Employing, on the Average, Persons Numbering—							
	Under 4	4	5 to 10	11 to 20	21 to 50	51 to 100	Over 100	Total
1957-58	6,077	1,254	3,862	2,268	1,721	621	623	16,426
1958-59	6,062	1,320	3,876	2,261	1,725	643	640	16,527
1959-60	6,030	1,403	4,003	2,401	1,816	659	667	16,979
1960-61	6,176	1,350	4,083	2,365	1,832	693	674	17,173
1961-62	6,262	1,387	4,109	2,369	1,817	686	670	17,300

**VICTORIA—AVERAGE NUMBER OF PERSONS EMPLOYED
ACCORDING TO SIZE OF FACTORY DURING PERIOD OF
OPERATION**

Year	Average Number Employed (Including Working Proprietors)—							
	Under 4	4	5 to 10	11 to 20	21 to 50	51 to 100	Over 100	Total
1957-58	11,748	5,016	27,252	33,341	54,254	43,358	183,921	358,890
1958-59	12,314	5,280	27,604	33,184	54,311	44,817	187,467	364,977
1959-60	12,005	5,612	27,991	35,216	57,905	45,866	198,664	383,259
1960-61	12,315	5,400	29,047	34,962	58,167	48,251	200,879	389,021
1961-62	12,450	5,548	28,781	35,072	57,664	47,988	192,116	379,619

NOTE.—The average number of persons employed in the above table (e.g., 379,619 in 1961-62) differs from the average number of persons employed shown in all other tables (e.g., 377,745 in 1961-62) because the average number of persons employed over *period of operation*—being the basis for all classifications according to size—exceeds average employment *over the whole year*.

The increase in numbers of small factories and in the persons employed in large factories is of particular interest.

The relative importance of large and small factories is illustrated in the above table. In 1961-62, 7649 factories employing four or less employees had a total employment of 17,998 persons. Expressed in terms of percentages, 44 per cent. of factories—those employing four or less persons—employed less than 5 per cent. of the persons engaged in factories. The most numerous of the factories with less than four persons were Motor Repair Workshops, Bakeries, General Engineering Workshops, and Boot Repairing.

The relative and absolute increases in the number of small factories using power other than manual, i.e., those employing less than four hands, is shown in the table which follows. In 1902, factories employing less than four persons numbered 525 and constituted 13·1 per cent. of the total. By 1961-62, this figure had increased to 6,262, i.e., 36·2 per cent. of the total. This increase is believed to be due not so much to an increase in the number of small factories as a greater use over the years of fractional horsepower electric motors in small factories, with the result that such establishments came within the statistical definition of a factory. The table also shows that in 1961-62, factories employing less than four persons accounted for only 2·4 per cent. of the total Value of Production, and that Value of Production per person employed is lowest in the smallest factories and in general rises as size increases.

VICTORIA—NUMBER OF FACTORIES : PERSONS EMPLOYED AND VALUE OF PRODUCTION ACCORDING TO SIZE OF ESTABLISHMENT, 1902 AND 1961-62

Average Number of Persons Employed during Period of Operation	1902				1961-62						
	Factories		Persons Employed*		Factories		Persons Employed*		Value of Production ‡		
	No.	%	No.	%	No.	%	No.	%	£'000	%	Per Person Employed
Under 4 ..	525	13.1	1,636	2.2	6,262	36.2	12,342	3.3	16,985	2.4	£ 1,376
4 ..	398	9.9	1,603	2.2	1,387	8.0	5,463	1.5	8,535	1.2	1,562
5-10 ..	1,629	40.7	11,303	15.5	4,109	23.8	28,529	7.5	46,871	6.5	1,654
11-20 ..	726	18.1	10,562	14.5	2,369	13.7	34,764	9.2	58,972	8.2	1,696
21-50 ..	467	11.7	14,361	19.6	1,817	10.5	57,184	15.1	102,421	14.3	1,791
51-100 ..	148	3.7	10,238	14.0	686	4.0	47,691	12.6	90,740	12.6	1,903
101-200 ..	110	2.8	23,360	32.0	389	2.2	54,932	14.5	104,743	14.6	1,907
201-500 ..					193	1.1	59,204	15.7	129,075	18.0	2,180
Over 500 ..					88	0.5	77,636	20.6	158,985	22.2	2,048
Total ..	4,003	100.0	73,063	100.0	17,300	100.0	377,745	100.0	717,327	100.0	1,899

* ‡ For footnotes see page 623.

A graph showing Number of Factories and Value of Production by size groups in 1961-62 is shown on page 629.

A general indication of the geographical disposition of factories in the State is shown in the next table where secondary industry in Victoria for 1961-62 is classified according to statistical divisions :—

VICTORIA—FACTORIES IN STATISTICAL DIVISIONS, 1961-62

Statistical Division	Factories	Employment*	Salaries and Wages Paid†	Value of—			
				Materials and Fuel Used	Production‡	Output	Land, Buildings, Plant and Machinery
	No.			£'000			
Metropolitan ..	12,099	305,560	314,559	735,409	576,057	1,311,466	630,085
Central ..	1,118	21,240	21,012	75,048	40,994	116,042	68,792
North-Central ..	388	4,617	3,964	7,253	7,633	14,886	8,723
Western ..	1,036	14,349	12,926	35,541	22,940	58,481	24,921
Wimmera ..	393	2,256	1,757	5,030	3,204	8,234	2,783
Mallee ..	315	2,457	2,053	4,154	3,173	7,327	6,183
Northern ..	851	10,897	10,051	42,462	18,199	60,661	26,385
North-Eastern ..	457	4,752	4,285	11,129	8,602	19,731	38,338
Gippsland ..	643	11,617	13,826	41,307	36,525	77,832	105,360
Total ..	17,300	377,745	384,433	957,333	717,327	1,674,660	911,570

* ‡ For footnotes see page 623.

Factories in the Metropolitan Area constituted 69·9 per cent. of the total number in Victoria in 1961-62, 80·9 per cent. of the persons employed, and 79·1 per cent. of the value of production.

For information regarding the actual location of the statistical divisions named in the table, reference should be made to the map opposite page 104.

The number of factories and persons employed therein in each statistical division is shown in the following table :—

VICTORIA—NUMBER OF FACTORIES AND PERSONS EMPLOYED IN EACH STATISTICAL DIVISION : CLASSIFIED ACCORDING TO SIZE OF FACTORY, 1961-62

Size of Factory (Persons)	Statistical Division									Total
	Metropolitan	Central	North-Central	Western	Wimmera	Mallee	Northern	North-Eastern	Gippsland	
NUMBER OF FACTORIES										
Under 5 ..	4,670	630	248	573	266	186	514	257	305	7,649
5-10 ..	2,906	248	74	261	83	80	181	105	171	4,109
11-20 ..	1,845	123	32	95	30	24	74	61	85	2,369
21-50 ..	1,530	62	19	60	11	16	44	25	50	1,817
51-100 ..	581	21	10	22	2	9	22	4	15	686
101-500 ..	495	30	4	21	1	..	14	4	13	582
501 and over..	72	4	1	4	..	..	2	1	4	88
Total ..	12,099	1,118	388	1,036	393	315	851	457	643	17,300
NUMBER OF PERSONS EMPLOYED										
Under 5 ..	11,052	1,466	533	1,345	570	448	1,129	572	715	17,830
5-10 ..	20,342	1,696	507	1,774	558	540	1,212	720	1,162	28,511
11-20 ..	27,317	1,729	477	1,313	426	343	1,056	872	1,224	34,757
21-50 ..	48,046	2,091	617	1,881	301	525	1,461	782	1,480	57,184
51-100 ..	40,587	1,384	619	1,623	*	601	1,492	*	1,006	47,691
101-500 ..	94,748	7,037	*	*	*	..	*	*	*	114,136
501 and over..	63,468	5,837	*	*	..	..	*	*	*	77,636
Total ..	305,560	21,240	4,617	14,349	2,256	2,457	10,897	4,752	11,617	377,745

* Not available for publication.

The above table shows that in 1961-62 there were 670 factories each employing more than 100 persons with a total employment of 191,772 persons in Victoria. Of these 567 (158,216 persons) were located in the Metropolitan Area and 34 (12,874 persons) in the Central Statistical Division which includes Geelong. The balance, 69 factories (20,682 persons) were distributed over the remainder of the State, principally in the Western (25 factories) and Gippsland (17 factories) Statistical Divisions.

It should be noted that Castlemaine and Maryborough are included in the North-Central Statistical Division; Ballarat and Warrnambool in the Western Statistical Division; Bendigo and Shepparton in the Northern Statistical Division; Wangaratta in the North-Eastern Statistical Division; and Morwell and Yallourn in the Gippsland Statistical Division.

VICTORIA—FACTORIES : VALUE OF OUTPUT, 1952-53 TO 1961-62

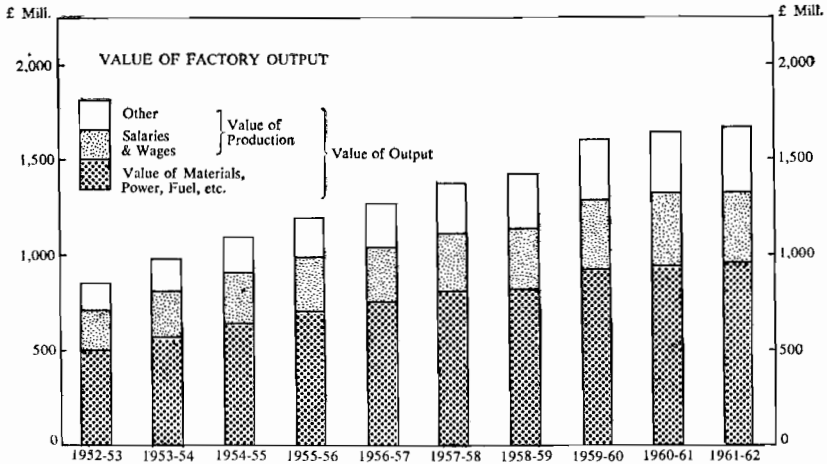


FIGURE 18. Graph showing value of output of factories.

VICTORIA—FACTORIES : NUMBER OF FACTORIES, AND VALUE OF PRODUCTION CLASSIFIED ACCORDING TO AVERAGE NUMBER OF PERSONS EMPLOYED

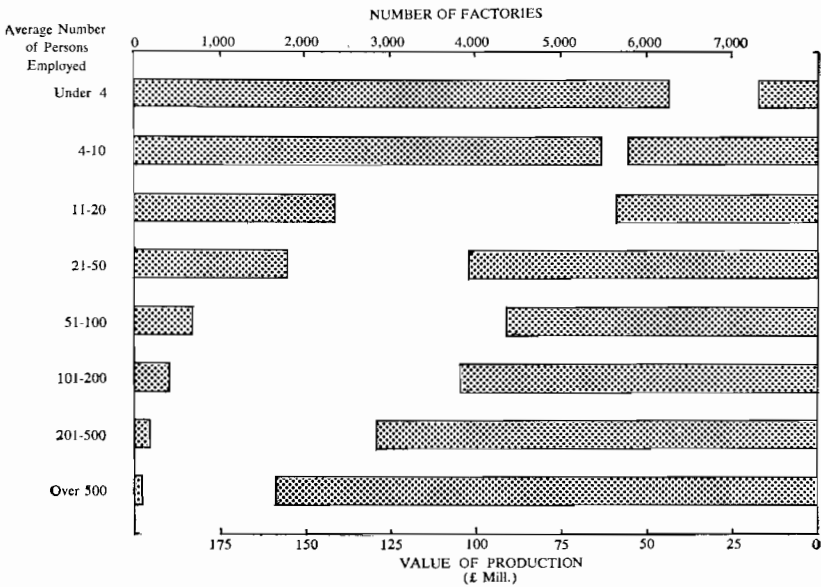


FIGURE 19. Graph showing number of factories and value of production according to average number of persons employed. The left-hand bars show the number of factories in each employment size group; the right-hand bars show the value of production in each of these size groups.

Employment in Factories

All persons employed in the manufacturing activities of a factory, including proprietors working in their own businesses and persons working regularly at home are counted as factory employees while those engaged in selling and distributing, such as salesmen, travellers, and carters employed on outward delivery of manufactured goods, are excluded. The grouping of occupations comprises (i) working proprietors; (ii) managerial and clerical staff including salaried managers and working directors; (iii) chemists, draftsmen, and other laboratory and research staff; (iv) workers in factories (skilled and unskilled); foremen and overseers; carters (excluding delivery only), messengers, and persons working regularly at home.

The figures showing average employment in factories represent the equivalent average number of persons employed, including working proprietors, over a full year of twelve months. This method is used for all purposes except in the table shown on pages 625-626, and the average number of persons employed is the average over the period of operation.

The following table shows the average number of persons employed in factories in each industrial class in Victoria for the year 1957-58 to 1961-62 :—

VICTORIA—PERSONS EMPLOYED IN FACTORIES*

Class of Industry	1957-58	1958-59	1959-60	1960-61	1961-62		
					Males	Females	Persons
I. Treatment of Non-metalliferous Mine and Quarry Products ..	6,341	6,522	6,564	6,977	6,599	373	6,972
II. Bricks, Pottery, Glass, &c.	5,660	5,846	6,460	6,569	5,738	756	6,494
III. Chemicals, Dyes, Explosives, Paints, Oils, Grease ..	16,996	17,392	16,231	15,443	12,571	3,192	15,763
IV. Industrial Metals, Machines, Conveyances ..	134,221	139,115	150,843	157,202	132,581	18,755	151,336
V. Precious Metals, Jewellery, Plate ..	2,469	2,150	1,980	2,087	1,587	372	1,959
VI. Textiles and Textile Goods (Not Dress) ..	38,078	37,500	41,073	40,395	16,393	22,707	39,100
VII. Skins and Leather (Not Clothing or Footwear) ..	4,649	4,559	4,413	3,992	2,679	1,102	3,781
VIII. Clothing (Except Knitted) ..	45,764	45,783	45,260	45,462	13,674	31,038	44,712
IX. Food, Drink, and Tobacco	37,310	37,383	38,830	38,361	26,958	12,041	38,999
X. Sawmills, Joinery, Boxes, &c., Wood Turning and Carving ..	14,815	15,092	15,759	15,623	13,723	872	14,595
XI. Furniture of Wood, Bedding, &c. ..	6,550	6,492	6,531	6,309	4,786	1,340	6,126
XII. Paper, Stationery, Printing, Bookbinding, &c. ..	22,113	22,846	24,305	25,228	18,461	6,479	24,940
XIII. Rubber ..	6,932	7,207	7,282	7,359	5,531	1,467	6,998
XIV. Musical Instruments ..	269	247	233	216	158	25	183
XV. Miscellaneous Products ..	10,357	9,863	10,767	11,261	7,035	3,752	10,787
Total, Classes I. to XV.	352,524	357,997	376,531	382,484	268,474	104,271	372,745
XVI. Heat, Light, and Power ..	4,619	4,982	4,983	4,946	4,961	39	5,000
GRAND TOTAL ..	357,143	362,979	381,514	387,430	273,435	104,310	377,745

* For footnote see page 623.

The dominance of four classes, namely, Class IV.—Industrial Metals, Machines, and Conveyances; Class VI.—Textiles and Textile Goods (Not Dress); Class VIII.—Clothing (Except Knitted); and Class IX.—Food, Drink, and Tobacco with a total of 72.6 per cent. of factory employment should be noted.

Female factory workers in 1961-62 were 27·6 per cent. of the total. They exceeded males in Class VI.—Textiles and Textile Goods (Not Dress) with 58·1 per cent. and in Class VIII.—Clothing (Except Knitted), with 69·4 per cent. of the Class total.

Of the total females employed, 29·8 per cent. were in Class VIII. ; 21·8 per cent. in Class VI.; 18 per cent. in Class IV.; and 11·5 per cent. in Class IX.

In the following table, the average number of persons employed in factories in Victoria is classified according to the nature of their employment for the years 1957-58 to 1961-62 :—

VICTORIA—NATURE OF EMPLOYMENT IN FACTORIES

Year	Working Proprietors	Managerial and Clerical Staff	Chemists, Draftsmen, &c.	Foremen and Overseers	Workers in Factories (Skilled and Unskilled)	Carters (Excluding Delivery Only) and Messengers, &c.	Total
1957-58.. ..	13,934	40,951	5,751	16,262	278,110	2,135	357,143
1958-59.. ..	13,704	42,960	6,152	17,264	280,772	2,127	362,979
1959-60.. ..	13,401	45,913	6,677	18,060	295,423	2,040	381,514
1960-61.. ..	13,223	48,010	7,112		319,085		387,430
1961-62.. ..	12,772	48,446	7,538		308,989		377,745

The following table shows the nature of employment in factories in 1961-62 according to the class of industry :—

VICTORIA—NATURE OF EMPLOYMENT IN FACTORIES BY CLASSES OF INDUSTRY, 1961-62

Class of Industry	Working Proprietors	Managerial and Clerical Staff	Chemists, Draftsmen, &c.	All Other Workers	Total
I. Treatment of Non-metalliferous Mine and Quarry Products ..	273	859	128	5,712	6,972
II. Bricks, Pottery, Glass, &c. ..	66	654	60	5,714	6,494
III. Chemicals, Dyes, Explosives, Paints, Oils, Grease	101	2,782	1,228	11,652	15,763
IV. Industrial Metals, Machines, Conveyances	4,846	22,598	4,183	119,709	151,336
V. Precious Metals, Jewellery, Plate ..	206	220	3	1,530	1,959
VI. Textile and Textile Goods (Not Dress)	527	3,645	280	34,648	39,100
VII. Skins and Leather (Not Clothing or Footwear)	226	350	23	3,182	3,781
VIII. Clothing (Except Knitted)	2,406	3,014	21	39,271	44,712
IX. Food, Drink, and Tobacco	1,809	5,160	615	31,415	38,999
X. Sawmills, Joinery, Boxes, &c., Wood Turning and Carving	869	1,702	33	11,991	14,595
XI. Furniture of Wood, Bedding, &c. ..	528	682	2	4,914	6,126
XII. Paper, Stationery, Printing, Book-binding, &c.	604	3,832	221	20,283	24,940
XIII. Rubber	56	1,059	219	5,664	6,998
XIV. Musical Instruments	10	27		146	183
XV. Miscellaneous Products	232	1,544	362	8,649	10,787
Total, Classes I. to XV.	12,759	48,128	7,378	304,480	372,745
XVI. Heat, Light, and Power	13	318	160	4,509	5,000
GRAND TOTAL	12,772	48,446	7,538	308,989	377,745

Although "All Other Workers" constitute 81·8 per cent. of the total numbers employed in factories, the percentage varies from 73·9 per cent. in Class III. to 88 per cent. in Class II. Class III. also has the highest percentage of managerial and clerical and research workers, 17·6 per cent., compared with the Victorian average of 12·8 per cent.

Where small factories predominate, there is usually a higher proportion of working proprietors than on the average and a smaller than average managerial and clerical staff. This is particularly evident in Class V.—Precious Metals and Jewellery, where working proprietors comprise 10·5 per cent. of the total number employed; Class X.—Sawmills, Joinery, &c., 6 per cent.; and Class XI.—Furniture of Wood, Bedding, &c., 8·6 per cent. The average for Victoria is 3·4 per cent.

The following table shows the age distribution of male and female factory employees on the last pay day in June of each of the years 1958 to 1962 :—

VICTORIA—DISTRIBUTION OF EMPLOYEES ACCORDING TO AGE

(Excluding Working Proprietors)

Last Pay Day in June—	Males				Females			
	Under 16 Years	16 and under 21 Years	21 Years and over	Total	Under 16 Years	16 and under 21 Years	21 Years and over	Total
1958 ..	2,705	21,584	223,776	248,065	2,408	14,900	77,392	94,700
1959 ..	2,595	22,203	229,285	254,083	2,535	15,774	79,213	97,522
1960 ..	2,573	23,013	242,436	268,022	2,664	16,449	87,003	106,116
1961 ..	2,707	21,948	230,989	255,644	2,586	14,531	79,069	96,186
1962 ..	2,625	24,329	239,842	266,796	3,049	16,038	85,446	104,533

The numbers of males and females employed in factories, and the proportions of the average male and female population working in factories in 1961–62 and earlier years are shown in the following tables :—

VICTORIA—EMPLOYMENT OF MALES AND FEMALES IN FACTORIES

Year	Males		Females		Total	
	Number	Average per 10,000 of Male Population	Number	Average per 10,000 of Female Population	Number	Average per 10,000 of Total Population
1918–19 ..	81,357	1,188	40,992	550	122,349	855
1928–29 ..	104,648	1,195	51,920	586	156,568	889
1938–39 ..	136,218	1,470	65,613	692	201,831	1,076
1948–49 ..	208,184	1,996	83,822	781	292,006	1,380
1957–58 ..	259,404	1,901	97,739	728	357,143	1,319
1958–59 ..	263,847	1,888	99,132	720	362,979	1,308
1959–60 ..	275,315	1,918	106,199	750	381,514	1,338
1960–61 ..	279,675	1,919	107,755	750	387,430	1,339
1961–62 ..	273,435	1,837	104,310	709	377,745	1,277

The numbers of females employed in each industrial class and in certain significant sub-classes, and the percentage that such female employment bears to total class or sub-class employment, are shown in the following table :—

VICTORIA—FEMALE EMPLOYMENT IN FACTORIES

Class of Industry	Females Employed					
	Number			Percentage of Total Employment in Each Class of Industry		
	1959-60	1960-61	1961-62	1959-60	1960-61	1961-62
I. Treatment of Non-metalliferous Mine and Quarry Products	317	345	373	4·8	4·9	5·3
II. Bricks, Pottery, Glass, &c.	699	738	756	10·8	11·2	11·6
III. Chemicals, Dyes, Explosives, Paints, Oils, Grease	3,533	3,275	3,192	21·8	21·2	20·2
IV. Industrial Metals, Machines, Conveyances—	19,328	20,270	18,755	12·8	12·9	12·4
Plant, Equipment and Machinery	3,107	3,027	2,707	11·2	11·1	10·0
Electrical Machinery, Cables, and Apparatus	3,878	3,783	3,584	25·8	25·1	24·1
Sheet Metal Working	2,290	2,176	2,089	21·2	20·2	19·8
Wireless and Amplifying Apparatus	1,545	1,340	1,184	40·3	39·1	38·1
V. Precious Metals, Jewellery, Plate ..	352	411	372	17·8	19·7	19·0
VI. Textiles and Textile Goods (Not Dress)—	23,969	23,850	22,707	58·4	59·0	58·1
Cotton Spinning and Weaving	2,053	1,970	1,982	52·7	55·9	55·3
Wool-Carding, Spinning, Weaving	6,399	5,932	5,530	54·7	54·0	53·0
Hosiery and Other Knitted Goods	12,411	12,756	12,192	73·3	74·0	74·0
VII. Skins and Leather (Not Clothing or Footwear)	1,147	1,172	1,102	26·0	29·4	29·1
VIII. Clothing (Except Knitted)—	31,756	31,588	31,038	70·2	69·5	69·4
Tailoring and Ready-Made Clothing	7,592	7,885	7,691	73·0	73·1	73·9
Dressmaking, Hemstitching	7,535	7,202	7,093	87·1	86·8	87·2
Boots and Shoes (Not Rubber)	5,896	6,182	6,219	53·4	53·4	54·0
Dyeworks and Cleaning, &c. ..	1,599	1,453	1,385	50·0	48·8	48·4
IX. Food, Drink, and Tobacco—	11,243	11,636	12,041	29·0	30·3	30·9
Bakeries (Including Cakes and Pastry)	1,510	1,539	1,547	25·1	25·7	25·7
Confectionery (Including Chocolate and Icing Sugar)	1,700	1,787	1,721	54·8	55·9	54·9
Jam, Fruit, and Vegetable Canning	1,723	1,668	1,980	42·0	40·8	42·4
Tobacco, Cigars, Cigarettes ..	976	1,171	1,123	47·4	50·9	51·7
X. Sawmills, Joinery, Boxes, &c., Wood Turning and Carving	860	905	872	5·5	5·8	6·0
XI. Furniture of Wood, Bedding, &c. ..	1,282	1,325	1,340	19·6	21·0	21·9
XII. Paper, Stationery, Printing, Book-binding, &c.	6,295	6,636	6,479	25·9	26·3	26·0
XIII. Rubber	1,528	1,501	1,467	21·0	20·4	21·0
XIV. Musical Instruments	33	34	25	14·2	15·7	13·7
XV. Miscellaneous Products	3,815	4,030	3,752	35·4	35·8	34·8
XVI. Heat, Light, and Power	42	39	39	0·8	0·8	0·8
Total Classes Only	106,199	107,755	104,310	27·8	27·8	27·6

In Class XVI.—Heat, Light, and Power, the percentage of females to total persons employed is at its lowest, 0·8 per cent. In Class VIII.—Clothing (Except Knitted), females predominate and comprise 69·4 per cent. of the total number of persons employed. Within Class VIII., in the Dressmaking sub-class, 87·2 per cent. of the total employed are females. In Class IV.—Industrial Metals, Machines, and Conveyances, females constitute 12·4 per cent. of the persons employed. In 1938-39 only 6 per cent. of the persons employed in Class IV. were females.

Child Labour in Factories

The Labour and Industry Act of Victoria debars the employment of female children under the age of fifteen years unless special permission is granted by the Chief Inspector of Factories on the grounds of poverty or hardship.

The Victorian Education Act makes daily attendance at school compulsory between the ages of six and fifteen years.

These provisos contribute to the very low incidence of child labour in this State.

Salaries, Wages, and Other Costs*Salaries and Wages*

The next table gives comprehensive information regarding salaries and wages paid in the various classes of industry in Victoria in 1961-62. Amounts paid to managers, clerical staff, chemists, and draftsmen, &c., are shown separately from those paid to foremen, overseers, workers in the factory, &c. There is also dissection within these categories of the amounts paid to male and female employees.

It should be noted that in all tables of salaries and wages paid the amounts drawn by working proprietors are excluded.

**VICTORIA—SALARIES AND WAGES PAID IN FACTORIES,
1961-62**

(Excludes Drawings of Working Proprietors)

(£'000)

Class of Industry	Managers, Clerical Staff, Chemists, Draftsmen, &c.		All Other Employees		Total		
	Males	Females	Males	Females	Males	Females	Persons
I. Treatment of Non-metalliferous Mine and Quarry Products ..	1,206	184	6,771	69	7,977	253	8,230
II. Bricks, Pottery, Glass, &c. ..	819	143	5,723	323	6,542	466	7,008
III. Chemicals, Dyes, Explosives, Paints, Oils, Grease ..	5,239	972	11,822	1,248	17,061	2,220	19,281
IV. Industrial Metals, Machines, Conveyances ..	30,972	5,526	120,061	7,318	151,033	12,844	163,877
V. Precious Metals, Jewellery, Plate ..	220	72	1,404	157	1,624	229	1,853
VI. Textiles and Textile Goods (Not Dress) ..	3,599	1,420	15,389	13,552	18,988	14,972	33,960
VII. Skins and Leather (Not Clothing or Footwear) ..	449	95	2,428	615	2,877	710	3,587
VIII. Clothing (Except Knitted)	2,658	1,288	11,038	18,821	13,696	20,109	33,805
IX. Food, Drink, and Tobacco	5,575	1,773	25,321	6,540	30,896	8,313	39,209
X. Sawmills, Joinery, Boxes, &c., Wood Turning and Carving ..	1,982	384	12,034	164	14,016	548	14,564
XI. Furniture of Wood, Bedding, &c. ..	668	223	4,065	575	4,733	798	5,531
XII. Paper, Stationery, Printing, Bookbinding, &c. ..	4,406	1,240	19,348	3,122	23,754	4,362	28,116

VICTORIA—SALARIES AND WAGES PAID IN FACTORIES,
1961-62—*continued*
(Excludes Drawings of Working Proprietors)
(£'000)

Class of Industry	Managers, Clerical Staff, Chemists, Draftsmen, &c.		All Other Employees		Total		
	Males	Females	Males	Females	Males	Females	Persons
XIII. Rubber	1,283	320	5,315	750	6,598	1,070	7,668
XIV. Musical Instruments ..	29	6	136	10	165	16	181
XV. Miscellaneous Products ..	1,848	576	6,478	1,955	8,326	2,531	10,857
Total, Classes I. to XV.	60,953	14,222	247,333	55,219	308,286	69,441	377,727
XVI. Heat, Light, and Power ..	748	19	5,925	14	6,673	33	6,706
GRAND TOTAL ..	61,701	14,241	253,258	55,233	314,959	69,474	384,433

Of the total amount of salaries and wages paid in Victoria in 1961-62—£384,433,000—the Industrial Metals, &c., group was responsible for £163,877,000 or 42.6 per cent., Food, Drink, &c., £39,209,000 or 10.2 per cent., and Clothing, &c., £33,805,000 or 8.8 per cent.

The total amount of salaries and wages paid in industry in Victoria in each of the years of 1957-58 to 1961-62 is shown below under similar headings to those in the preceding table. The average per employee is also shown.

VICTORIA—SALARIES AND WAGES PAID IN FACTORIES
(Excludes Drawings of Working Proprietors)

Year	Salaries and Wages Paid to—				Total Salaries and Wages Paid to—		
	Managers, Clerical Staff, Chemists, Draftsmen, &c.		All Other Employees		Males	Females	Persons
	Males	Females	Males	Females			
TOTAL AMOUNT PAID (£'000)							
1957-58	43,363	10,347	209,979	46,851	253,342	57,198	310,540
1958-59	46,587	11,190	219,028	47,531	265,615	58,721	324,336
1959-60	53,793	12,828	248,885	54,675	302,678	67,503	370,181
1960-61	58,727	13,699	259,180	55,615	317,907	69,314	387,221
1961-62	61,701	14,241	253,258	55,233	314,959	69,474	384,433
AVERAGE PER EMPLOYEE (£)							
1957-58	1,405	654	969	586	1,023	598	905
1958-59	1,439	668	996	593	1,053	606	929
1959-60	1,557	711	1,084	637	1,146	649	1,006
1960-61	1,610	734	1,116	640	1,183	657	1,035
1961-62	1,662	755	1,122	663	1,152	666	1,018

Power, Fuel, and Light Used

The following table shows the cost of power, fuel, light, water, and lubricating oil used during the five years 1957-58 to 1961-62 :—

VICTORIA—COST OF POWER, FUEL, LIGHT, ETC., USED IN FACTORIES

(£'000)

Class of Industry	1957-58	1958-59	1959-60	1960-61	1961-62
I. Treatment of Non-metalliferous Mine and Quarry Products	2,028	2,236	2,710	2,779	2,909
II. Bricks, Pottery, Glass, &c.	1,974	2,043	2,215	2,296	2,215
III. Chemicals, Dyes, Explosives, Paints, Oils, Grease	6,355	6,384	6,642	6,020	6,792
IV. Industrial Metals, Machines, Conveyances	6,963	7,742	8,950	9,584	9,381
V. Precious Metals, Jewellery, Plate	142	143	146	158	149
VI. Textiles and Textile Goods (Not Dress)	2,367	2,424	2,668	2,550	2,605
VII. Skins and Leather (Not Clothing or Footwear)	469	495	457	404	419
VIII. Clothing (Except Knitted)	905	967	937	953	955
IX. Food, Drink, and Tobacco	5,747	5,951	6,126	6,131	6,235
X. Sawmills, Joinery, Boxes, &c., Wood Turning and Carving	663	782	850	809	827
XI. Furniture of Wood, Bedding, &c.	121	133	136	131	125
XII. Paper, Stationery, Printing, Bookbinding, &c.	1,792	1,927	2,141	2,173	2,174
XIII. Rubber	1,088	1,166	1,265	1,267	1,228
XIV. Musical Instruments	11	11	9	8	9
XV. Miscellaneous Products	568	606	913	1,002	1,042
Total Classes I. to XV.	31,193	33,010	36,165	36,265	37,065
XVI. Heat, Light, and Power	11,569	10,368	10,975	12,936	12,464
GRAND TOTAL	42,762	43,378	47,140	49,201	49,529

The next table gives in detail for each of the years 1957-58 to 1961-62 information dealing with the cost of each type of fuel used. The costs of water and lubricating oil are also shown separately.

VICTORIA—COST OF ITEMS OF POWER, FUEL, LIGHT, ETC., USED IN FACTORIES

(£'000)

Commodity	1957-58	1958-59	1959-60	1960-61	1961-62
Coal—					
Black	2,834	3,009	2,678	2,398	1,923
Brown	7,882	7,582	7,805	6,511	6,351
Brown Coal Briquettes	1,737	1,464	2,356	7,029	7,453
Coke	759	651	635	588	625
Wood	563	560	548	514	489
Fuel Oil	12,990	11,895	12,428	10,196	9,604
Tar (Fuel)	241	164	179	143	125
Electricity	11,970	13,910	15,827	17,067	17,679
Gas	1,082	1,120	1,307	1,316	1,427
Other (Charcoal, &c.)	356	629	708	601	653
Water	1,485	1,543	1,725	1,895	2,274
Lubricating Oils	863	851	944	943	926
Total	42,762	43,378	47,140	49,201	49,529

In 1961-62 electricity, fuel oil, briquettes, and brown coal represented 35.7, 19.4, 15, and 12.8 per cent., respectively of the total cost of power, fuel, and light.

Particulars of the quantities of the various fuels used in factories over the five-year period 1957-58 to 1961-62 are given below :—

VICTORIA—QUANTITIES OF FUELS USED IN FACTORIES

Commodity	Unit of Quantity	1957-58	1958-59	1959-60	1960-61	1961-62
Coal—						
Black	'000 tons	453	483	427	387	315
Brown	'000 tons	9,127	10,582	11,746	10,921	11,841
Brown Coal						
Briquettes	'000 tons	357	305	510	1200	1,280
Coke	'000 tons	77	57	50	47	57
Wood	'000 tons	266	275	282	274	270
Fuel Oil	'000 gall.	239,172	219,738	241,433	214,895	226,509
Tar Fuel.. ..	'000 gall.	4,550	3,018	3,412	13*	12*

* '000 tons

Cost of Materials Used

The cost of materials used in factories is shown by classes for each of the last five years in the next table. "Materials Used" includes the value of containers, &c., the cost of tools replaced, and repairs to plant.

VICTORIA—COST OF MATERIALS USED IN FACTORIES
(£'000)

Class of Industry	1957-58	1958-59	1959-60	1960-61	1961-62
I. Treatment of Non-metalliferous Mine and Quarry Products	12,370	13,800	15,671	19,765	20,646
II. Bricks, Pottery, Glass, &c.	5,102	5,254	7,055	7,369	7,173
III. Chemicals, Dyes, Explosives, Paints, Oils, Grease	98,261	100,164	105,314	101,278	109,977
IV. Industrial Metals, Machines, Conveyances	202,772	213,429	249,955	266,330	261,948
V. Precious Metals, Jewellery, Plate.. ..	2,871	1,984	1,995	1,964	1,808
VI. Textiles and Textile Goods (Not Dress)	77,985	67,531	83,004	79,844	83,110
VII. Skins and Leather (Not Clothing or Footwear)	11,129	10,649	12,089	10,079	9,559
VIII. Clothing (Except Knitted)	48,160	49,765	53,113	54,138	54,371
IX. Food, Drink, and Tobacco	183,714	182,920	194,821	203,105	211,362
X. Sawmills, Joinery, Boxes, &c., Wood Turning and Carving	26,946	27,430	31,647	31,267	29,976
XI. Furniture of Wood, Bedding, &c.	10,123	10,133	11,632	11,479	12,043
XII. Paper, Stationery, Printing, Book-binding, &c.	46,425	51,225	58,057	60,190	58,974
XIII. Rubber	17,415	17,876	22,128	21,545	18,846
XIV. Musical Instruments	251	226	199	198	162
XV. Miscellaneous Products	18,556	19,930	23,121	22,476	22,208
Total, Classes I. to XV.	762,080	772,316	869,801	891,027	902,163
XVI. Heat, Light, and Power	6,379	6,400	6,172	6,140	5,641
GRAND TOTAL	768,459	778,716	875,973	897,167	907,804

Value of Output and Production

Value of factory output by classes of industry in each of the years 1957-58 to 1961-62 is shown in the following table :—

VICTORIA—VALUE OF FACTORY OUTPUT
(£'000)

Class of Industry	1957-58	1958-59	1959-60	1960-61	1961-62
I. Treatment of Non-metalliferous Mine and Quarry Products	26,220	29,341	34,055	40,584	42,436
II. Bricks, Pottery, Glass, &c. ..	15,844	16,946	21,149	22,156	21,329
III. Chemicals, Dyes, Explosives, Paints, Oils, Grease	155,389	163,734	172,312	162,770	176,246
IV. Industrial Metals, Machines, Conveyances	408,199	435,371	511,662	541,464	531,938
V. Precious Metals, Jewellery, Plate ..	6,436	5,290	5,268	5,356	4,956
VI. Textiles and Textile Goods (Not Dress)	130,872	123,508	146,274	141,991	145,543
VII. Skins and Leather (Not Clothing or Footwear)	17,607	17,344	18,971	16,473	15,953
VIII. Clothing (Except Knitted)	97,411	100,813	106,650	109,885	111,931
IX. Food, Drink, and Tobacco	260,893	259,773	282,559	291,629	310,667
X. Sawmills, Joinery, Boxes, &c., Wood Turning and Carving	49,640	50,860	57,492	57,451	54,625
XI. Furniture of Wood, Bedding, &c. ..	19,308	19,837	21,973	21,390	22,271
XII. Paper, Stationery, Printing, Book-binding, &c.	90,058	99,012	112,965	116,519	117,865
XIII. Rubber	31,959	34,582	38,010	38,261	35,847
XIV. Musical Instruments	699	596	533	497	444
XV. Miscellaneous Products	35,107	37,440	42,699	43,201	43,246
Total, Classes I. to XV.	1,345,642	1,394,447	1,572,572	1,609,627	1,635,297
XVI. Heat, Light, and Power	34,264	38,616	38,930	40,023	39,363
GRAND TOTAL	1,379,906	1,433,063	1,611,502	1,640,650	1,674,660

In the next table the value of production in Victoria is given according to the various classes of industry for each of the years 1957-58 to 1961-62 :—

VICTORIA—VALUE OF PRODUCTION OF FACTORIES
(£'000)

Class of Industry	1957-58	1958-59	1959-60	1960-61	1961-62
I. Treatment of Non-metalliferous Mine and Quarry Products	11,822	13,305	15,674	18,040	18,881
II. Bricks, Pottery, Glass, &c. ..	8,768	9,649	11,879	12,491	11,941
III. Chemicals, Dyes, Explosives, Paints, Oils, Grease	50,772	57,186	60,355	55,471	59,477
IV. Industrial Metals, Machines, Conveyances	198,464	214,200	252,757	265,550	260,609
V. Precious Metals, Jewellery, Plate ..	3,423	3,163	3,127	3,234	2,999
VI. Textiles and Textile Goods (Not Dress)	50,520	53,553	60,602	59,597	59,828
VII. Skins and Leather (Not Clothing or Footwear)	6,009	6,200	6,425	5,990	5,975
VIII. Clothing (Except Knitted)	48,347	50,081	52,600	54,794	56,605
IX. Food, Drink, and Tobacco	71,433	70,902	81,612	82,393	93,070
X. Sawmills, Joinery, Boxes, &c., Wood Turning and Carving	22,031	22,648	24,995	25,375	23,822
XI. Furniture of Wood, Bedding, &c. ..	9,063	9,571	10,205	9,781	10,103
XII. Paper, Stationery, Printing, Book-binding, &c.	41,841	45,860	52,767	54,156	56,717
XIII. Rubber	13,457	15,540	14,617	15,449	15,773
XIV. Musical Instruments	437	359	325	291	273
XV. Miscellaneous Products	15,983	16,904	18,665	19,723	19,996
Total, Classes I. to XV.	552,370	589,121	666,605	682,335	696,069
XVI. Heat, Light, and Power	16,315	21,848	21,784	20,947	21,258
GRAND TOTAL	568,685	610,969	688,389	703,282	717,327

Value of production—the value added to raw materials by the process of manufacture—and not the value of output, is used in measuring the relative importance of various industries or the value of the manufacturing industries as a whole. A definition of “value of production” will be found on page 620.

Relation of Costs to Output and Production

Certain costs of production, the value of output, and the balance available for profit, interest, rent, taxation, and depreciation, &c., in each class of manufacturing industry during the year 1961–62 are given in the following tables :—

VICTORIA—FACTORY COSTS AND OUTPUT, 1961–62
(£'000)

Class of Industry	Costs of—			Balance between Value of Output and Specified Costs‡	Value of Output
	Materials Used*	Fuel, Light, and Power Used†	Salaries and Wages Paid		
I. Treatment of Non-metalliferous Mine and Quarry Products ..	20,646	2,909	8,230	10,651	42,436
II. Bricks, Pottery, Glass, &c. ..	7,173	2,215	7,008	4,933	21,329
III. Chemicals, Dyes, Explosives, Paints, Oils, Grease	109,977	6,792	19,281	40,196	176,246
IV. Industrial Metals, Machines, Conveyances	261,948	9,381	163,877	96,732	531,938
V. Precious Metals, Jewellery, Plate ..	1,808	149	1,853	1,146	4,956
VI. Textile and Textile Goods (Not Dress)	83,110	2,605	33,960	25,868	145,543
VII. Skins and Leather (Not Clothing or Footwear)	9,559	419	3,587	2,388	15,953
VIII. Clothing (Except Knitted) ..	54,371	955	33,805	22,800	111,931
IX. Food, Drink, and Tobacco ..	211,362	6,235	39,209	53,861	310,667
X. Sawmills, Joinery, Boxes, &c., Wood Turning and Carving	29,976	827	14,564	9,258	54,625
XI. Furniture of Wood, Bedding, &c.	12,043	125	5,531	4,572	22,271
XII. Paper, Stationery, Printing, Book-binding, &c.	58,974	2,174	28,116	28,601	117,865
XIII. Rubber.. .. .	18,846	1,228	7,668	8,105	35,847
XIV. Musical Instruments	162	9	181	92	444
XV. Miscellaneous Products	22,208	1,042	10,857	9,139	43,246
Total, Classes I. to XV. ..	902,163	37,065	377,727	318,342	1,635,297
XVI. Heat, Light, and Power	5,641	12,464	6,706	14,552	39,363
GRAND TOTAL	907,804	49,529	384,433	332,894	1,674,660

* Includes containers, tools replaced, and repairs to plant.

† Includes cost of lubricants and water.

‡ Balance available to provide for all other costs and overhead expenses such as rent, interest, insurance, pay-roll tax, income tax, depreciation, &c., as well as drawings by working proprietors and profit.

VICTORIA—PERCENTAGE OF SPECIFIED COSTS OF PRODUCTION, ETC., TO VALUE OF OUTPUT OF FACTORIES, 1961-62

(Per Cent.)

Class of Industry	Specified Costs of Production			Balance between Value of Output and Specified Costs‡	Total
	Materials Used*	Fuel, Light, and Power Used†	Salaries and Wages Paid		
I. Treatment of Non-metalliferous Mine and Quarry Products ..	48·6	6·9	19·4	25·1	100·0
II. Bricks, Pottery, Glass, &c. ..	33·6	10·4	32·8	23·2	100·0
III. Chemicals, Dyes, Explosives, Paints, Oils, Grease ..	62·3	3·9	10·9	22·9	100·0
IV. Industrial Metals, Machines, Conveyances	49·2	1·8	30·8	18·2	100·0
V. Precious Metals, Jewellery, Plate ..	36·4	3·0	37·4	23·2	100·0
VI. Textiles and Textile Goods (Not Dress)	57·1	1·7	23·4	17·8	100·0
VII. Skins and Leather (Not Clothing or Footwear)	59·9	2·6	22·5	15·0	100·0
VIII. Clothing (Except Knitted) ..	48·5	0·9	30·2	20·4	100·0
IX. Food, Drink, and Tobacco ..	68·0	2·0	12·6	17·4	100·0
X. Sawmills, Joinery, Boxes, &c., Wood Turning and Carving ..	54·8	1·5	26·7	17·0	100·0
XI. Furniture of Wood, Bedding, &c.	54·0	0·6	24·8	20·6	100·0
XII. Paper, Stationery, Printing, Book-binding, &c.	50·0	1·8	23·9	24·3	100·0
XIII. Rubber	52·5	3·4	21·4	22·7	100·0
XIV. Musical Instruments	36·4	2·1	40·7	20·8	100·0
XV. Miscellaneous Products	51·3	2·4	25·1	21·2	100·0
Total, Classes I. to XV. ..	55·1	2·3	23·1	19·5	100·0
XVI. Heat, Light, and Power	14·3	31·6	17·1	37·0	100·0
GRAND TOTAL	54·2	2·9	23·0	19·9	100·0

For footnotes see page 639.

There are considerable variations in the proportions which the cost of materials and the expenditure on wages bear to the value of the output in the different classes of industries. These are, of course, due to the difference in the treatment required to convert the materials to their final form. Thus, in Class II., the sum paid in wages represents 32·8 per cent. and the cost of raw materials 33·6 per cent. of the values of the finished articles, whilst, in Class IX., the expenditure on wages amounts to 12·6 per cent. and that on raw materials to 68 per cent. of the value of the output.

In the next table specified costs of production, the value of the output of factories and the balance available for profit and miscellaneous expenses are compared for each of the years 1957-58 to 1961-62 :—

VICTORIA—SPECIFIED COSTS OF PRODUCTION, ETC., AND VALUE OF OUTPUT OF FACTORIES

(£'000)

Year	Specified Costs of Production			Balance between Value of Output and Specified Costs‡	Total Value of Output
	Materials Used*	Fuel, Light, and Power Used†	Salaries and Wages		
1957-58	768,459	42,762	310,540	258,145	1,379,906
1958-59	778,716	43,378	324,336	286,633	1,433,063
1959-60	875,973	47,140	370,181	318,208	1,611,502
1960-61	897,167	49,201	387,221	316,061	1,649,650
1961-62	907,804	49,529	384,433	332,894	1,674,660

For footnotes see page 639.

In the following table these figures are converted to their respective percentages of the value of output :—

VICTORIA—PERCENTAGE OF SPECIFIED COSTS OF PRODUCTION, ETC., TO VALUE OF OUTPUT OF FACTORIES

(Per Cent.)

Year	Specified Costs of Production			Balance between Value of Output and Specified Costs‡	Total
	Materials Used*	Fuel, Light, and Power Used†	Salaries and Wages		
1957-58	55.7	3.1	22.5	18.7	100.0
1958-59	54.4	3.0	22.6	20.0	100.0
1959-60	54.4	2.9	23.0	19.7	100.0
1960-61	54.4	3.0	23.5	19.1	100.0
1961-62	54.2	2.9	23.0	19.9	100.0

For footnotes see page 639.

Land, Building, Plant, and Machinery

The following statement shows the value of land and buildings used in connexion with the various classes of manufacturing industries for the years 1957-58 to 1961-62 :—

VICTORIA—FACTORIES : VALUE OF LAND AND BUILDINGS (£'000)

Class of Industry	1957-58	1958-59	1959-60	1960-61	1961-62
I. Treatment of Non-metalliferous Mine and Quarry Products	4,365	5,212	9,743	10,788	12,011
II. Bricks, Pottery, Glass, &c. ..	3,603	4,051	5,018	5,824	6,994
III. Chemicals, Dyes, Explosives, Paints, Oils, Grease	28,851	29,873	28,094	30,831	36,053
IV. Industrial Metals, Machines, Conveyances	95,603	106,642	126,411	146,160	165,801
V. Precious Metals, Jewellery, Plate ..	1,721	1,581	1,551	1,781	1,842
VI. Textiles and Textile Goods (Not Dress)	22,475	26,671	28,657	31,793	34,531
VII. Skins and Leather (Not Clothing or Footwear)	2,806	3,001	3,821	3,815	4,157
VIII. Clothing (Except Knitted) ..	16,516	18,609	20,391	23,534	25,208
IX. Food, Drink, and Tobacco ..	43,318	46,878	52,057	56,590	60,918
X. Sawmills, Joinery, Boxes, &c., Wood Turning and Carving	7,590	8,379	10,482	12,717	13,043
XI. Furniture of Wood, Bedding, &c.	4,490	4,818	5,306	5,674	5,749
XII. Paper, Stationery, Printing, Book-binding, &c.	17,362	19,696	23,801	27,126	28,447
XIII. Rubber	4,680	4,979	5,171	6,664	6,922
XIV. Musical Instruments	183	229	283	248	233
XV. Miscellaneous Products	5,851	6,378	8,734	9,901	13,769
Total, Classes I. to XV. ..	259,414	286,997	329,520	373,446	415,678
XVI. Heat, Light, and Power	18,143	22,836	24,215	27,305	28,005
GRAND TOTAL	277,557	309,833	353,735	400,751	443,683

The values recorded in the above table and in the table which follows are generally the values shown in the books of the individual firms after allowance has been made for depreciation, but they include estimates of the capital value of premises and plant rented. The totals shown in the tables consequently do not represent the actual amount of capital invested in industry.

Where land and buildings, &c., and plant and machinery, &c., are rented by the occupiers of factories, their capital value has been computed by capitalizing the rent paid at fifteen years' and ten years' purchase respectively.

In the following table the depreciated book values of machinery and plant used in the various classes of manufacturing industries are shown for each of the years 1957-58 to 1961-62 :—

VICTORIA—FACTORIES : VALUE OF PLANT AND MACHINERY (£'000)

Class of Industry	1957-58	1958-59	1959-60	1960-61	1961-62
I. Treatment of Non-metalliferous Mine and Quarry Products ..	6,569	8,315	16,976	19,833	22,714
II. Bricks, Pottery, Glass, &c. ..	3,005	3,286	3,888	4,578	6,004
III. Chemicals, Dyes, Explosives, Paints, Oils, Grease ..	51,435	58,002	54,094	54,097	76,465
IV. Industrial Metals, Machines, Conveyances ..	69,561	83,490	89,797	105,563	112,418
V. Precious Metals, Jewellery, Plate ..	588	540	490	531	553
VI. Textiles and Textile Goods (Not Dress) ..	19,420	21,696	23,278	24,649	26,321
VII. Skins and Leather (Not Clothing or Footwear) ..	1,407	1,490	1,476	1,651	1,636
VIII. Clothing (Except Knitted) ..	6,850	7,501	7,840	8,694	8,941
IX. Food, Drink, and Tobacco ..	38,525	39,848	43,938	48,118	51,581
X. Sawmills, Joinery, Boxes, &c., Wood Turning and Carving ..	5,237	6,684	7,000	7,713	7,928
XI. Furniture of Wood, Bedding, &c. ..	1,189	1,271	1,276	1,220	1,265
XII. Paper, Stationery, Printing, Book-binding, &c. ..	20,925	22,064	25,146	28,082	28,323
XIII. Rubber ..	4,603	4,529	6,598	7,392	7,649
XIV. Musical Instruments ..	106	72	73	84	72
XV. Miscellaneous Products ..	5,246	5,064	6,973	8,114	9,130
Total, Classes I. to XV. ..	234,666	263,852	288,843	320,319	361,000
XVI. Heat, Light, and Power ..	67,597	73,255	88,249	97,599	106,887
GRAND TOTAL ..	302,263	337,107	377,092	417,918	467,887

Motive power classified in the tables which follow relates to the rated horse-power of engines used. Engines in reserve or idle are the subject of a separate table, but obsolete engines are completely excluded from any information shown.

VICTORIA—TOTAL RATED HORSE-POWER OF ENGINES AND ELECTRIC MOTORS ORDINARILY IN USE IN FACTORIES*, 1961-62

Class of Industry	Steam		Internal Combustion		Water	Motor Driven by Electricity		Total without Duplication
	Reciprocating	Turbine	Gas	Petrol or Other Light Oils		Purchased	Own Generation	
I. Treatment of Non-metalliferous Mine and Quarry Products ..	1,231	25,500	..	3,268	..	64,847	14,894	94,846
II. Bricks, Pottery, Glass, &c. ..	1,045	..	..	326	..	40,570	10	41,941
III. Chemicals, Dyes, Explosives, Paints, Oils, Grease ..	7,227	31,930	1,680	2,190	50	128,111	10,394	171,188
IV. Industrial Metals, Machines, Conveyances ..	1,685	12	..	7,003	..	514,823	1,279	523,523
V. Precious Metals, Jewellery, Plate ..	30	..	..	..	..	3,832	..	3,862
VI. Textiles and Textile Goods (Not Dress) ..	26	..	..	481	..	107,822	1	108,329

* Includes gas works, but excludes central electric stations.

VICTORIA—TOTAL RATED HORSE-POWER OF ENGINES AND ELECTRIC MOTORS ORDINARILY IN USE IN FACTORIES*, 1961-62—*continued*

Class of Industry	Steam		Internal Combustion		Water	Motor Driven by Electricity		Total without Duplication
	Reciprocating	Turbine	Gas	Petrol or Other Light Oils		Purchased	Own Generation	
VII. Skins and Leather (Not Clothing or Footwear) ..	770	95	..	302	..	15,669	598	16,836
VIII. Clothing (Except Knitted) ..	117	..	..	185	..	27,648	2	27,950
IX. Food, Drink, and Tobacco ..	3,395	1,581	..	3,716	830	204,604	2,587	214,126
X. Sawmills, Joinery, Boxes, &c. Wood Turning and Carving	4,452	..	81	23,897	10	97,647	2,704	126,087
XI. Furniture of Wood, Bedding, &c. .. .. .	..	..	..	10	..	14,204	..	14,214
XII. Paper Stationery, Printing, Bookbinding, &c.	600	23,500	..	319	..	84,804	24,527	109,223
XIII. Rubber .. .. .	..	..	..	438	..	66,343	30	66,781
XIV. Musical Instruments .. .. .	..	..	..	..	..	316	..	316
XV. Miscellaneous Products .. .. .	..	..	..	317	..	32,904	130	33,221
Total, Classes I. to XV.	20,578	82,618	1,761	42,452	890	1,404,144	57,156	1,552,443
XVI. Gas Works	2,594	894	10	1,176	..	17,152	..	21,826
GRAND TOTAL	23,172	83,512	1,771	43,628	890	1,421,296	57,156	1,574,269

* Includes gas works, but excludes central electric stations

The total rated horse-power in reserve or idle during 1961-62 and not included above was 196,970.

Motors driven by purchased electricity comprised approximately 90·2 per cent. of the total horse-power used in factories other than central electric stations in 1961-62, while steam turbines were next in demand with 5·3 per cent.

A comparison over the five year period 1957-58 to 1961-62 of the total rated horse-power used to drive engines and electric motors ordinarily in use in factories is given in the table which follows :—

VICTORIA—TOTAL RATED HORSE-POWER OF ENGINES AND ELECTRIC MOTORS ORDINARILY IN USE IN FACTORIES*

Year	Steam		Internal Combustion			Water	Motors Driven by Electricity		Total without Duplication
	Reciprocating	Turbine	Gas	Petrol or Other Light Oils	Heavy Oils		Purchased	Own Generation	
1957-58 ..	21,749	60,317	3,508	30,453	12,721	1,118	1,195,521	67,246	1,325,387
1958-59 ..	21,332	71,394	2,857	31,677	9,627	919	1,251,303	53,810	1,389,109
1959-60 ..	27,100	64,060	1,756	42,654	..	890	1,323,214	52,746	1,459,674
1960-61 ..	25,307	64,332	1,758	42,053	..	890	1,374,133	56,139	1,508,473
1961-62 ..	23,172	83,512	1,771	43,628	..	890	1,421,296	57,156	1,574,269

* Includes gas works, but excludes central electric stations.

The following table shows the total rated horse-power for each year from 1957-58 to 1961-62 for engines and electric motors in reserve or idle. It includes engines which are used only occasionally, or during periods of breakdown to own engines or power supply.

VICTORIA—TOTAL RATED HORSE-POWER OF ENGINES AND ELECTRIC MOTORS IN RESERVE OR IDLE IN FACTORIES*

Year	Rated Horse-power of Engines, &c., in Reserve or Idle		
	Purchased Electricity	All Other Types	Total
1957-58	117,976	59,414	177,390
1958-59	123,644	58,707	182,351
1959-60	115,721	56,364	172,085
1960-61	130,431	55,104	185,535
1961-62	139,854	57,116	196,970

* Without duplication; includes gas works, but excludes central electric stations.

Particulars of the type and capacity of engines and generators installed in central electric stations in Victoria during 1961-62 are given in the following table :—

VICTORIA—POWER EQUIPMENT INSTALLED IN CENTRAL ELECTRIC STATIONS, 1961-62

Particulars	Capacity of Engines and Generators					
	Steam Turbine	Internal Combustion			Water	Total
		Gas	Petrol or Other Light Oils	Heavy Oils		
Engines Installed Rated H.P.	1,744,745	236	16,575	35,540	445,700	2,242,796
Generators Installed—						
Kilowatt Capacity—						
Total Installed .. kW.	1,289,725	155	11,579	26,307	332,515	1,660,281
Effective Capacity kW.	1,280,600	135	10,578	24,822	349,915	1,666,050
Horse-power Equivalent—						
Total Installed .. H.P.	1,728,854	208	15,521	35,264	445,731	2,225,578
Effective Capacity .. H.P.	1,716,622	181	14,180	33,273	469,055	2,233,311

Similar information to that shown in the preceding table, but giving a comparison over the years 1957-58 to 1961-62 is shown below :—

VICTORIA—POWER EQUIPMENT INSTALLED IN CENTRAL ELECTRIC STATIONS

Particulars	1957-58	1958-59	1959-60	1960-61	1961-62
Central Electric Stations.. .. No.	51	44	44	41	41
Engines Installed Rated H.P.	1,565,409	1,786,817	1,832,183	2,090,023	2,242,796
Generators Installed—					
Kilowatt Capacity—					
Total Installed kW.	1,160,196	1,309,751	1,366,355	1,546,370	1,660,281
Effective Capacity kW.	1,087,053	1,276,788	1,320,441	1,492,677	1,666,050
Horse-power Equivalent—					
Total Installed H.P.	1,554,663	1,755,066	1,830,916	2,072,882	2,225,578
Effective Capacity H.P.	1,456,651	1,710,896	1,770,028	2,000,907	2,233,311

Principal Factory Products

Annual Quantity and Value

The next table lists the principal articles of manufacture in Victoria during 1961-62, irrespective of the sub-class of industry in which production took place. Due to the limited number of producers it is not permissible under statute to publish particulars regarding some articles of manufacture which would otherwise appear below.

VICTORIA—PRINCIPAL ARTICLES MANUFACTURED, 1961-62

Article	Unit of Quantity	Quantity	Value
Acid—Sulphuric	ton	324,287	£'000 *
Aerated and Carbonated Waters	'000 gall.	22,143	5,747
Biscuits	'000 lb.	58,644	6,675
Blankets	pair	414,062	2,478
Bolts and Nuts .. ..	..	..	3,767
Boxes and Cases—Wooden .. ..	..	..	1,887
Bread—2 lb. Loaves	'000	202,052	14,387
Bricks—Clay	'000	264,420	5,438
Briquettes—Brown Coal	ton	1,819,937	6,267
Butter	ton	95,649	37,224
Cakes, Pastry, Pies, &c. .. ..	..	..	10,262
Cans, Canisters, Containers—			
Metal .. ..	..	..	17,722
Plastic .. ..	..	..	857
Cheese	ton	23,919	5,339
Cigarettes	mill.	10,018	24,800

For footnotes see page 648.

VICTORIA—PRINCIPAL ARTICLES MANUFACTURED,
1961-62—continued

Article	Unit of Quantity	Quantity	Value
			£'000
Cloth Piece Goods Woven—			
Woollen or Predominantly			
Woollen	'000 sq. yd.	7,803	5,161
Worsted or Predominantly			
Worsted	'000 sq. yd.	5,555	*
Confectionery—			
Chocolate Base	'000 lb.	29,765	6,938
Other without Chocolate	'000 lb.	37,436	4,669
Containers—Paperboard† .. .. .	..	..	17,367
Domestic Electrical Appliances—			
Clothes Washing Machines	No.	31,355	2,490
Radiators and Electric Fires .. .. .	..	413,517	1,931
Radios and Radiograms .. .. .	..	82,106	1,744
Toasters .. .. .	..	120,287	202
Electric Motors .. .. .	..	380,882	*
Electricity Generated	mill. kWh.	6,739	*
Fibrous Plaster Sheets	'000 sq. yd.	6,942	2,371
Flour, Plain—Wheaten (Including Sharps)	short ton	446,803	*
Footwear: Boots, Shoes, and Sandals†—			
Men's and Youths'	'000 pair	3,013	8,231
Women's and Maids'	'000 pair	8,549	17,783
Children's	'000 pair	2,179	2,028
Slippers	'000 pair	7,541	4,570
Fruit: Preserved—			
Peaches	'000 lb.	80,867	4,545
Pears	'000 lb.	124,937	7,275
Furniture and Office Equipment—			
Metal .. .. .	..	..	5,841
Wooden .. .. .	..	..	11,930
Gas—Town's	mill. cu. ft.	18,363	*
Ice	ton	78,039	339
Ice Cream	'000 gall.	4,481	2,694
Jams, Fruit Spreads, Fruit Butters, &c.	'000 lb.	46,788	3,160
Leather—			
Dressed and Upper from Hides .. .. .	..	..	4,081
Sole .. .. .	..	..	1,819
Leathercloth	'000 sq. yd.	5,609	3,052
Machinery: Industrial—			
Conveyor (and Appliances) .. .. .	..	..	2,291
Hoists, Cranes, Lifting .. .. .	..	..	2,537
Food Processing and Canning .. .. .	..	..	2,551
Metal Working .. .. .	..	..	4,213
Mining .. .. .	..	..	1,889
Pumping (Including Pumps) .. .. .	..	..	4,227
Malt—Barley	'000 bush.	7,624	*
Mattresses—All Types	No.	411,744	2,725
Meat—Canned	'000 lb.	59,120	6,852

For footnotes see next page.

VICTORIA—PRINCIPAL ARTICLES MANUFACTURED,
1961-62—continued

Article	Unit of Quantity	Quantity	Value
Milk—			
Condensed	'000 lb.	88,763	6,175
Powdered : Full Cream	'000 lb.	23,745	*
Paints (Not Water) and Enamels	'000 gall.	3,908	7,399
Pharmaceutical Products For Human Use .. ..	..	..	7,515
Pipe Fittings, Ferrous .. ..	..	..	2,180
Pipes—Concrete (Excluding Agricultural)	ton	176,503	2,597
Plastic, Unsupported Film, P.V.C.	'000 lb.	1,930	1,918
Pollard	short ton	94,578	*
Ropes and Cables (Excluding Wire)	cwt.	69,866	1,046
Sauce—Tomato	'000 pint	14,494	1,689
Sausage Casings—Sheep and Lamb	cwt.	2,297	1,838
Shirts (Men's and Boys')	doz.	768,293	*
Sinks—Stainless Steel	No.	68,176	892
Soap and Detergents—			
Household and General Washing and Cleaning	cwt.	842,780	7,360
Personal Toilet	cwt.	99,796	1,348
Socks and Stockings—Men's and Children's	'000 doz. pair	2,002	*
Stockings—Women's	'000 doz. pair	2,276	7,792
Soup—Tomato	'000 pint	20,530	1,407
Steam, Gas, and Water Fittings, Valves, &c. (Non-Ferrous) .. ..	..	..	6,526
Steel, Structural—Fabricated	ton	103,761	12,297
Tiles, Roofing—			
Cement	'000	16,977	648
Terra Cotta	'000	14,627	757
Timber Produced from Logs—			
Australian	'000 sup. ft.	299,289	*
Trailers and Semi-trailers	No.	2,261	1,210
Transformers, Chokes, &c. .. ..	..	..	3,363
Tyres Retreaded and Recapped	No.	821,553	4,018
Underwear—			
Men's and Boys'	'000 doz.	925	*
Women's and Girls'	'000 doz.	1,794	*
Vegetables Canned or Bottled§	'000 lb.	47,602	3,426
Window Frames—Metal .. ..	..	..	4,032
Wool—Scoured or Carbonized	'000 lb.	57,217	*
Wool Tops	'000 lb.	19,478	*

* Quantity only available.

† Includes composite wood and paperboard butter boxes.

‡ Excluding wholly of rubber.

§ Including pickled vegetables.

Monthly Production Statistics

Statistics of monthly production had their origin in the wartime controls of rationed goods when details of piece goods, footwear, and foodstuffs were collected by the Departments immediately concerned

with the war effort. In 1948, the Commonwealth Bureau of Census and Statistics opened a permanent Branch Office in Melbourne. Many new collections were then undertaken and those previously administered by other Departments were transferred to this Office. Since then the range of commodities for which monthly production statistics are available has been expanded to provide statistics of value to government as indicators of business activity. The various monthly production series derived from the collections were also found to be of value to the business community and requests were made for dissections of existing collections and the introduction of new items. The forms used are subject to annual review to keep abreast of technical developments and new demands.

At present, although the list of items published includes only a small proportion of all the items produced in factories, it nevertheless relates directly to items accounting for possibly up to 40 per cent. of the total value of factory output.

A service is provided to persons who complete monthly production returns and to others interested in monthly production. Australian totals of commodities which they produce are made available to them within a few weeks of the month to which they relate. A list of the subjects included in these "Production Summaries" follows:—

AUSTRALIA—PRODUCTION SUMMARIES

Ref. No.	Subject	Ref. No.	Subject
2	Chemicals, &c.	24	Men's, Youths', and Boys' Outer Clothing
3	Plastics and Synthetic Resins and Plasticisers	25	Foundation Garments
4	Paints and Pigments	27	Gloves (Other than Rubber) and Felt Hats
6	Soap, Detergents, and Glycerine	28	Footwear (Excluding Sandshoes, Goloshes, and Gum, &c., Boots of Rubber)
7	Internal Combustion Engines	29	Biscuits, Ice Cream, and Confectionery
8	Lawn Mowers	32	Perambulators (Including Pushers and Strollers)
8A	Storage Batteries	34	Radios, Television, and Cabinets
9	Electric Motors, Electrical Appliances, Wireless, Television, &c.	35	Mattresses
10	Motor Bodies and Trailers	36	Preserved Milk Products
10A	Assembly of Motor Vehicle Chassis	38	Canned Fish
11	Pedal Cycles	39	Jams and Preserved Fruit and Vegetables
12	Meters	40	Cereal Breakfast Foods, Other Cereal Products, and Flour Milling
13	Building Fittings	41	Margarine
14	Cotton Goods	42	Malt and Beer
15	Woolscouring, Carbonizing, and Felling-mongering	43	Stock and Poultry Meals (Other than Cereal)
16	Woolen and Worsted Carding, Combing, and Spinning	45	Gramophone Records
17	Wool Weaving	47	Aerated Waters, Cordials and Syrups, and Concentrated Cordial Extract
18	Hosiery	48	Sports Goods
19	Men's and Youths', Boys', Women's and Maids', Girls', Infants' and Babies' Wear, Shirts, Cardigans, Pyjamas, Underclothing, &c.	49	Building Materials
20	Rayon and Synthetic Fibre Woven Fabrics	51	Hides and Skins Used in Tanneries
21	Paper and Paper Board	54	Flour Milling
22	Floor Coverings	55	Butter and Cheese
		56	Canned Meat
		58	Steel Wire and Wire Products

In addition, Statistical Bulletins for the Meat and Dairying Industries are issued each month. Australian totals for a greater range of commodities than that contained in the Bulletins and Production Summaries are published monthly in the Bulletin of Production Statistics. Victorian figures are published in the Victorian Monthly Production Bulletin.

*Individual Industries***Introductory**

Particulars on pages 625 to 628 give a general view of the size of industries in the sixteen groups adopted by the Conference of Statisticians in 1930. While it is not possible, within the limits of this book, to give a detailed account of each industry, particular industries dealt with are of special importance because of the employment they provide for labour and capital or for other features of special interest. Where there are only one or two establishments in a particular industry in the State, details of activities are not published, but are combined with some other factory group so that operations of individual concerns will not be disclosed.

Petrochemical Industry in Victoria*Introduction*

Twenty per cent. of the Australian population lives within 50 miles of Melbourne. The secondary and tertiary industries in this populated area are well developed and, since the chemical industry is mainly a supplier of chemical materials required by other industries (e.g., caustic soda for soap and detergents, and synthetic rubber for automobile tyres), it is not surprising that a large chemical industry is centred on that city.

Almost every chemical can be manufactured from any one of a number of raw materials; the selection is made mainly on the basis of availability, cost, and by-product disposal. For instance, polyvinyl chloride plastic may be made from ethylene which, in turn, may be produced from molasses or from petroleum. It will be readily appreciated, therefore, that the "petrochemical industry" is that part of the chemical industry which has found petroleum to be the best material for the manufacture of the particular chemicals and chemical materials in which it is interested: it does not mean that these chemicals can be made only from petroleum. Speaking broadly, all organic chemicals and several basic inorganic chemicals (sulphur, carbon black, and ammonia) may be made from petroleum.

There is a recognized world-wide trend towards the use of petroleum materials for the manufacture of chemicals and Australia is no exception to this. Prior to the Second World War the production of organic chemicals from petroleum was small, but since then it has increased considerably. The main reasons for this general trend are:—

(1) Strategically placed refineries, which refine large quantities of crude oil by highly efficient processes, yield a range of products which are eminently suitable for the chemical industry.

(2) The advantages accruing from the use of such products in the chemical industry are of great technical and economic importance. For instance, the products are easily and cheaply handled for they are either liquids or gases. It is also noteworthy that raw material prices are stable.

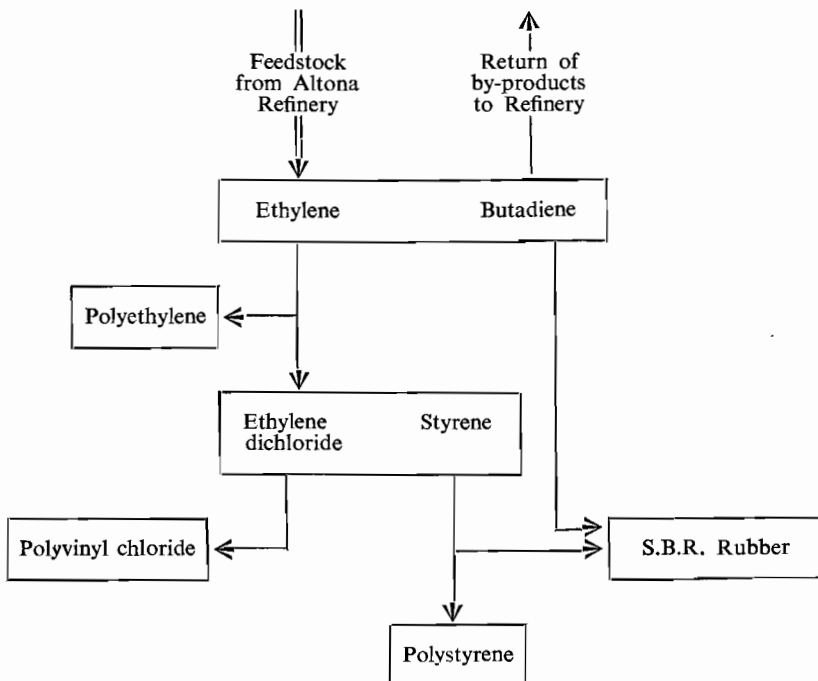
(3) Processes for converting these products into chemicals, and for converting the resulting chemicals into useful consumer products, have been brought to a high state of development. In Victoria, "satellite" petrochemical works have become established around the refineries at Altona and Geelong.

Location in Victoria

The first petrochemical plant to be erected in Australia was the sulphuric acid plant built at Geelong in 1958, operating on hydrogen sulphide gas obtained by hydro-desulphurising diesel fuels. Shortly after this, a plant was installed at Altona to convert hydrogen sulphide to elemental sulphur. This sulphur, and also certain other refinery residues, is converted into sulphuric acid by an acid manufacturer nearby. These two projects have greatly reduced the dependence of Victoria on imported sulphur which has not always been in free supply.

A factory at Altona to produce carbon black for automobile tyres and for other rubber goods, was established next and, after only a few years' operation, has been expanded. This factory operates on locally produced feedstock, thereby increasing the independence of the local rubber-fabricating industry.

To take advantage of feedstock availability, a further venture was launched when plans were announced for a "petrochemical complex" to operate at Altona from 1961. The individual plants derive an advantage by using "chemical building blocks" produced in a large central unit. The complex, which involved a capital outlay of some £27 mill. and which is capable of making products worth approximately £13 mill. annually, is depicted in the diagram below :—



Plastic Products

The complex supplies the major thermoplastic materials upon which the plastics processing industry can be further extended and expanded.

Consumer products being produced from these materials are listed below:

Polyethylene—

- Film and sheet
- Piping
- Containers

Polystyrene—

- Radio, T.V., and air-conditioning cabinets
- Refrigerator linings
- Toys and kitchen ware

Polyvinyl chloride—

- Film and sheet
- Piping, tubing and garden hose
- Coated wires and cables
- Gramophone records, floor tiles, &c.

S.B.R. synthetic rubber—

- Tyres
- Footwear
- Mechanical goods

Detergents

In recent years, synthetic detergents have been gaining rapid acceptance because of their particular advantages. Whereas soaps are made from fats, the principal synthetic detergents are made from detergent alkylate which is synthesized from petrochemicals, in Victoria, at the Geelong refinery. This material must be sulphonated before it can be formulated into a finished detergent ready for use. Sulphonation is already carried out at several centres, and sulphonated detergent alkylate is now produced at Geelong, using sulphur trioxide gas from the adjacent sulphuric acid plant; the material will thus be based entirely on petroleum.

In addition to synthetic detergents derived from detergent alkylate, nonionic detergents are also being used in increasing quantities. One important use of this type of detergent is in wool-scouring; the wool so scoured is superior to that scoured by the conventional methods. Nonionic detergents will be made locally from 1964 using ethylene oxide produced in New South Wales from "petroleum" ethylene.

Solvents

A further range of products—soon to be produced—are hydrocarbon solvents. These solvents are now used in large quantities in the paint and dry-cleaning industries and have many other established uses in both chemical and non-chemical industries.

Conclusion

To introduce a sense of perspective, it should be appreciated that the chemical and petrochemical industries of Victoria and New South Wales are of a similar size and nature. Many of the chemicals made in one State are also made in the other. The chemical industries in the remaining States are comparatively small, with the exception of the fertilizer industry which is well dispersed and decentralized.

Victoria now provides a substantial part of the chemicals and chemical materials required in Australia : and a large and increasing part of this is derived from raw materials from local petroleum refineries.

The petrochemical industry is included in the Industrial and Heavy Chemicals and Acids sub-class and based on the petroleum refining industry, which is included in the Mineral Oils sub-class, details of which follow.

Mineral oil treatment has now become a most important industry in Victoria particularly in relation to the refining of petroleum. Details of the industry for years 1957-58 to 1961-62 are shown below :—

VICTORIA—MINERAL OILS

Particulars	1957-58	1958-59	1959-60	1960-61	1961-62
Number of Factories	18	18	17	19	20
Number of Persons Employed ..	1,443	1,459	1,476	1,397	1,341
Salaries and Wages Paid £'000	1,799	1,863	2,099	2,055	2,044
Value of Power, Fuel, &c., Used £'000	4,058	3,476	3,776	3,230	2,756
Value of Materials Used £'000	46,129	45,732	51,482	49,632	50,589
Value of Production .. £'000	17,444	19,275	19,888	16,250	15,682
Value of Output .. £'000	67,631	68,483	75,146	69,112	69,027
Value of Land and Buildings £'000	7,263	7,635	5,576	5,356	5,116
Value of Plant and Machinery £'000	28,999	32,691	31,717	29,474	27,882
Horse-power of Engines Ordinarily in Use .. H.P.	49,029	44,799	47,233	48,130	48,241

The growth of this industry can be gauged from the fact that in 1938-39 it gave employment to only 164 persons and the total horse-power of engines used was 817, while 1,341 persons were employed in 1961-62 and the horse-power of engines used totalled 48,241.

The industrial and heavy chemical industry expanded considerably during the five year period 1957-58 to 1961-62 as the particulars below indicate :—

VICTORIA—INDUSTRIAL AND HEAVY CHEMICALS AND ACIDS

Particulars	1957-58	1958-59	1959-60	1960-61	1961-62
Number of Factories	74	79	83	83	84
Number of Persons Employed ..	2,723	3,035	3,276	3,188	3,703
Salaries and Wages Paid £'000	3,171	3,554	4,105	4,194	5,187
Value of Power, Fuel, &c., Used £'000	706	826	949	791	2,156
Value of Materials Used £'000	10,104	10,115	11,119	10,439	15,535
Value of Production .. £'000	6,873	9,269	11,948	10,884	14,453
Value of Output .. £'000	17,683	20,210	24,016	22,114	32,144
Value of Land and Buildings £'000	4,333	4,679	4,848	5,870	9,871
Value of Plant and Machinery £'000	6,344	7,103	7,794	9,623	32,292
Horse-power of Engines Ordinarily in Use .. H.P.	22,531	26,834	26,596	26,130	61,527

Particulars of another major industry included in Class III.—Chemicals, &c., namely, those of the pharmaceutical and toilet preparation industry, are given below :—

VICTORIA—PHARMACEUTICAL AND TOILET PREPARATIONS

Particulars	1957-58	1958-59	1959-60	1960-61	1961-62
Number of Factories	59	57	58	56	63
Number of Persons Employed ..	2,665	2,748	3,026	3,002	3,066
Salaries and Wages Paid £'000	2,376	2,577	3,058	3,118	3,295
Value of Power, Fuel, &c., Used £'000	241	601	606	616	556
Value of Materials Used £'000	6,499	6,591	7,912	7,336	7,758
Value of Production .. £'000	5,945	6,786	7,722	7,554	8,299
Value of Output .. £'000	12,685	13,978	16,240	15,506	16,613
Value of Land and Buildings £'000	5,224	4,780	5,457	5,828	6,671
Value of Plant and Machinery £'000	1,706	2,811	2,999	3,330	3,124
Horse-power of Engines Ordinarily in Use .. H.P.	8,738	9,504	9,863	10,522	11,375

Production in this sub-class of industry includes proprietary medicines, cosmetics, creams and lotions, hair preparations, &c.

Details of Industries*

Outstanding expansion has taken place in Industrial Metals, Machines, and Conveyances, &c., which is by far the largest of the sixteen classes into which secondary industry is divided. This development was accelerated by the necessity of meeting war requirements. Victoria now produces a very wide range of goods including motor vehicles, construction and earth-moving equipment, precision instruments, aircraft, &c., and many other types of manufactures which in earlier years were not attempted.

The relative importance of the principal sub-classes within this industry is shown in the following table :—

VICTORIA—CLASS IV : INDUSTRIAL METALS, MACHINES, AND CONVEYANCES : INDIVIDUAL INDUSTRIES, 1961–62

Particulars	Factories	Persons Employed	Salaries and Wages Paid	Value of—						Horse-power of Engines Ordinarily in Use
				Power, Fuel, and Light	Materials Used	Production	Output	Land and Buildings	Plant and Machinery	
	No.			(£'000)						
Foundries (Ferrous) ..	95	2,278	2,672	365	2,233	3,835	6,433	1,906	1,276	9,800
Plant, Equipment and Machinery, &c. ..	829	27,023	30,574	1,301	48,463	50,680	100,444	29,122	18,077	102,631
Other Engineering ..	990	11,400	12,347	485	15,374	20,079	35,938	12,077	7,305	39,808
Electrical Machinery, Cables, and Apparatus ..	382	14,844	15,954	863	33,791	26,607	61,261	14,404	8,923	40,321
Tramcars and Railway Rolling Stock	22	7,206	7,325	206	5,998	9,474	15,678	3,446	1,574	23,964
Motor Vehicle Construction and Assembly	16	11,497	14,879	1,404	16,507	26,701	44,612	18,874	15,634	51,875
Motor Repairs	2,546	17,884	15,778	521	15,865	24,129	40,515	25,078	4,479	19,161
Motor Bodies ..	537	7,494	7,825	316	11,078	10,257	21,651	9,113	5,928	14,594
Motor Accessories ..	101	5,678	5,900	424	9,349	10,201	19,974	5,331	7,199	20,793
Aircraft ..	16	6,262	7,697	245	5,443	8,542	14,230	5,438	3,382	18,441
Agricultural Machines and Implements ..	125	5,569	5,906	473	10,736	8,554	19,763	4,715	3,093	20,199
Non-ferrous Metals—Founding, Casting, &c... ..	168	3,595	3,870	290	6,499	6,731	13,520	3,726	2,398	11,948
Sheet Metal Working—Pressing and Stamping ..	436	10,532	11,228	620	27,735	20,941	49,296	11,374	7,558	30,850
Wire and Wire Working (Including Nails)	70	2,740	2,900	202	9,307	5,125	14,634	3,238	2,115	9,053
Wireless and Amplifying Apparatus ..	79	3,106	3,274	109	8,667	5,283	14,059	2,624	1,690	2,571
Other Sub-classes	367	14,228	15,748	1,557	34,903	23,470	59,930	15,335	21,787	108,793
Total Class IV.	6,779	151,336	163,877	9,381	261,948	260,609	531,938	165,801	112,418	524,802

Further particulars of certain of the industries listed in the table above are given on pages 656 to 658.

* Other than the Chemical Industry for which see pp. 650 to 654.

As production in some factories in this class is variable, the classification may change from year to year, since each factory is classified according to the predominant item of production. Under these circumstances comparability may be disturbed.

The table which follows combines particulars for two sub-classes of manufacture : Electrical Machinery, Cables, &c., and Wireless and Amplifying Apparatus, respectively :—

VICTORIA—ELECTRICAL MACHINERY, CABLES, AND APPARATUS

Particulars	1957-58	1958-59	1959-60	1960-61	1961-62
Number of Factories	409	439	498	457	461
Number of Persons Employed ..	15,394	17,361	18,862	18,531	17,950
Salaries and Wages Paid £'000	13,639	16,239	18,832	19,383	19,228
Value of Power, Fuel, &c., Used					
£'000	672	903	984	976	972
Value of Materials Used £'000	31,765	37,696	41,476	40,872	42,458
Value of Production .. £'000	20,827	24,432	28,608	30,413	31,890
Value of Output .. £'000	53,264	63,031	71,068	72,261	75,320
Value of Land and Buildings £'000	10,084	12,543	15,096	16,207	17,028
Value of Plant and Machinery £'000	7,326	9,612	12,233	10,211	10,613
Horse-power of Engines Ordinarily in Use .. H.P.	30,993	40,213	40,339	40,337	42,892

The principal items of production in these industries were : electric and telephone cables, electric apparatus and equipment, and domestic appliances such as refrigerators, washing machines, wireless and television sets, and parts for these.

The next table shows the activities of government controlled railways and tramways workshops :—

VICTORIA—TRAMCARS AND RAILWAY ROLLING STOCK

Particulars	1957-58	1958-59	1959-60	1960-61	1961-62
Number of Factories	22	22	22	22	22
Number of Persons Employed ..	7,554	7,391	7,214	6,989	7,206
Salaries and Wages Paid £'000	6,487	6,429	6,862	7,011	7,325
Value of Power, Fuel, &c., Used					
£'000	229	222	221	220	206
Value of Materials Used £'000	5,168	5,479	6,136	6,250	5,998
Value of Production .. £'000	8,603	8,683	8,706	9,477	9,474
Value of Output .. £'000	14,000	14,384	15,063	15,947	15,678
Value of Land and Buildings £'000	2,064	2,138	2,215	2,351	3,446
Value of Plant and Machinery £'000	1,108	1,429	1,426	1,465	1,574
Horse-power of Engines Ordinarily in Use .. H.P.	23,416	22,881	24,104	24,369	23,964

The work performed in this sub-class of industry was for the most part in maintenance and replacement of rolling stock.

In the following table the particulars of the motor industry as a whole have been presented by aggregating the following sub-classes : Motor Vehicle Construction and Assembly, Motor Repairs, Motor Bodies, and Motor Accessories. It should be noted, however, that the manufacture of particular parts may be included in other sub-classes of industry.

VICTORIA—MOTOR VEHICLES

Particulars	1957-58	1958-59	1959-60	1960-61	1961-62
Number of Factories	2,751	2,756	2,899	3,044	3,200
Number of Persons Employed ..	37,080	38,212	40,548	45,421	42,553
Salaries and Wages Paid £'000	32,502	34,762	41,245	47,541	44,382
Value of Power, Fuel, &c., Used £'000	1,744	1,920	2,095	2,708	2,665
Value of Materials Used £'000	43,829	42,450	44,692	55,345	52,799
Value of Production .. £'000	52,454	59,182	67,070	73,305	71,288
Value of Output .. £'000	98,027	103,552	113,857	131,358	126,752
Value of Land and Buildings £'000	31,851	36,325	42,146	48,500	58,396
Value of Plant and Machinery £'000	17,222	17,311	18,793	30,979	33,240
Horse-power of Engines Ordinarily in Use .. H.P.	79,776	87,777	81,936	101,655	106,423

The relative importance of each sub-class of the motor vehicle industry is shown on page 655.

Agricultural Machinery and Implements are the subject of the next table :—

VICTORIA—AGRICULTURAL MACHINERY AND IMPLEMENTS

Particulars	1957-58	1958-59	1959-60	1960-61	1961-62
Number of Factories	100	91	108	117	125
Number of Persons Employed ..	5,299	5,761	5,910	5,749	5,569
Salaries and Wages Paid £'000	5,085	5,802	6,246	6,106	5,906
Value of Power, Fuel, &c., Used £'000	385	422	437	452	473
Value of Materials Used £'000	7,742	8,892	10,596	9,818	10,736
Value of Production .. £'000	8,672	8,992	8,851	8,606	8,554
Value of Output .. £'000	16,799	18,306	19,884	18,876	19,763
Value of Land and Buildings £'000	2,731	2,709	2,869	3,554	4,715
Value of Plant and Machinery £'000	2,649	2,525	2,797	3,057	3,093
Horse-power of Engines Ordinarily in Use .. H.P.	20,821	20,399	20,537	19,891	20,199

Information in the next table deals with industries associated with the manufacture of clothing, except waterproof clothing, knitted goods, and boots and shoes. The figures shown represent for each of the past five years the sum of the statistical sub-classes of industry mentioned below—tailoring and ready-made clothing, dressmaking, millinery, shirts, underclothing, foundation garments, handkerchiefs, ties, scarves, hats and caps, and gloves.

VICTORIA—CLOTHING (DRESS), EXCLUDING WATERPROOF CLOTHING, KNITTED GOODS, AND BOOTS AND SHOES

Particulars	1957-58	1958-59	1959-60	1960-61	1961-62
Number of Factories	1,569	1,481	1,455	1,379	1,308
Number of Persons Employed ..	28,496	28,310	28,456	28,012	27,089
Salaries and Wages Paid £'000	18,002	18,127	19,664	19,859	19,639
Value of Power, Fuel, &c., Used £'000	362	389	392	396	389
Value of Materials Used £'000	32,084	31,257	32,712	31,289	30,941
Value of Production .. £'000	29,058	29,472	31,416	31,582	32,107
Value of Output .. £'000	61,504	61,118	64,520	63,267	63,437
Value of Land and Buildings £'000	10,515	11,769	13,072	14,542	15,053
Value of Plant and Machinery £'000	2,791	2,906	2,752	2,829	2,871
Horse-power of Engines Ordinarily in Use .. H.P.	11,008	11,599	10,629	11,560	10,794

In the following table the industries combined in the preceding table are shown in detail for 1961-62 :—

VICTORIA—CLOTHING (DRESS), EXCLUDING WATERPROOF CLOTHING, KNITTED GOODS, AND BOOTS AND SHOES :
INDIVIDUAL INDUSTRIES, 1961-62

Particulars	Tailoring and Ready-made Clothing	Dress-making	Millinery, Hats and Caps	Shirts, Underclothing	Foundation Garments	Handkerchiefs, Ties, and Gloves	Total
Number of Factories	545	495	67	139	30	32	1,308
Number of Persons Employed ..	10,411	8,134	885	5,192	1,985	482	27,089
Salaries and Wages Paid £'000	7,916	5,697	620	3,686	1,361	359	19,639
Value of Power, Fuel, &c., Used £'000	168	106	17	64	27	7	389
Value of Materials Used £'000	13,309	7,098	824	6,766	2,120	824	30,941
Value of Production .. £'000	12,730	8,980	980	6,603	2,255	559	32,107
Value of Output .. £'000	26,207	16,184	1,821	13,433	4,402	1,390	63,437
Value of Land and Buildings £'000	5,777	4,929	735	1,962	1,343	307	15,053
Value of Plant and Machinery £'000	1,305	656	80	564	225	41	2,871
Horse-power of Engines Ordinarily in Use H.P.	4,031	2,519	253	2,746	1,074	171	10,794

Tailoring and ready-made clothing, and dressmaking together represented 79·5 per cent. of the factories, 68·5 per cent. of employment, and 60·7 per cent. of the horse-power in use; shirts and underclothing contributed 10·6 per cent., 19·2 per cent., and 25·4 per cent. respectively.

Manufacture of boots and shoes (not rubber) is the subject of the next table :—

VICTORIA—BOOTS AND SHOES (NOT RUBBER)

Particulars	1957-58	1958-59	1959-60	1960-61	1961-62
Number of Factories	221	215	196	205	201
Number of Persons Employed ..	11,092	11,231	11,040	11,569	11,510
Salaries and Wages Paid .. £'000	8,005	8,328	8,911	9,501	9,694
Value of Power, Fuel, &c., Used .. £'000	143	156	167	183	190
Value of Materials Used .. £'000	12,641	14,786	16,385	17,996	18,309
Value of Production £'000	11,935	12,731	13,691	15,430	15,944
Value of Output £'000	24,719	27,673	30,243	33,609	34,443
Value of Land and Buildings .. £'000	2,276	2,915	3,035	3,437	3,840
Value of Plant and Machinery .. £'000	2,281	2,684	2,914	3,581	3,579
Horse-power of Engines Ordinarily in Use .. H.P.	7,072	7,433	7,883	7,338	7,624

A feature of this industry is the large proportion of females employed. Numbering 6,219, they represented 54 per cent. of the total employed in 1961-62.

The details shown above relate generally to footwear made of leather. They are exclusive of the operation of boot repairers. Footwear is also produced in the rubber and plastic moulding industries.

The second most important industrial class in Victoria is Class IX.—Food, Drink, and Tobacco. The relative importance of its principal sub-classes is shown in the following table. Victoria leads other States in the production of butter, condensary products, cheese, canned meat, confectionery, jams and preserved fruit. It also produces a third of Australia's flour and biscuits and a quarter of its bacon and ham.

VICTORIA—CLASS IX. : FOOD, DRINK, AND TOBACCO :
INDIVIDUAL INDUSTRIES, 1961-62

Particulars	Factories	Persons Employed	Salaries and Wages Paid	Value of—						Horsepower of Engines Ordinarily in Use
				Power, Fuel and Light	Materials Used	Production	Output	Land and Buildings	Plant and Machinery	
	No.			£'000						
Flour Milling	32	1,306	1,426	250	19,597	3,534	23,381	2,149	1,599	15,468
Cereal Foods and Starch	24	1,370	1,338	255	6,098	2,765	9,118	1,760	2,241	11,255
Bakeries	1,117	6,080	4,739	766	14,105	10,303	25,174	9,053	5,049	9,969
Biscuits	23	1,982	1,842	177	3,761	3,140	7,078	1,613	1,295	4,631
Confectionery	76	3,134	2,742	281	7,832	4,573	12,686	2,541	2,851	15,708
Jam, Fruit, and Vegetable Canning ..	35	4,665	4,807	482	21,672	12,750	34,904	8,401	6,468	20,103
Butter Factories	92	3,120	3,603	897	35,166	7,639	43,702	4,153	5,919	28,655
Cheese Factories	18	885	1,081	148	9,886	2,444	12,478	2,391	2,140	5,263
Condensed and Dried Milk Factories	17	1,676	1,829	522	12,297	4,051	16,870	1,639	1,722	11,583
Condiments, Coffee, Spices	61	1,295	1,203	125	5,558	2,915	8,598	2,766	1,079	4,946
Ice and Refrigerating ..	117	1,119	1,363	501	419	2,608	3,528	3,955	1,853	26,211
Aerated Waters, Cordials, &c. ..	97	1,132	1,068	98	3,055	3,165	6,318	2,452	1,727	2,980
Tobacco, Cigars	7	2,173	2,323	116	18,791	9,358	28,265	2,675	3,370	5,508
Cigarettes, Snuff	314	9,062	9,845	1,617	53,125	23,825	78,567	15,370	14,268	54,433
Other Sub-classes										
Total, Class IX.	2,030	38,999	39,209	6,235	211,362	93,070	310,667	60,918	51,581	216,713

Bakeries which make bread, pastry, and cakes, &c., are the subject of the table which follows :—

VICTORIA—BAKERIES (INCLUDING CAKES AND PASTRY)

Particulars	1957-58	1958-59	1959-60	1960-61	1961-62
Number of Factories	1,075	1,253	1,146	1,118	1,117
Number of Persons Employed ..	5,472	6,043	6,006	5,989	6,080
Salaries and Wages Paid £'000	3,605	3,820	4,238	4,483	4,739
Value of Power, Fuel, &c., Used					
£'000	668	745	779	785	766
Value of Materials Used £'000	10,884	12,081	12,919	13,436	14,105
Value of Production .. £'000	7,845	9,032	10,110	9,698	10,303
Value of Output .. £'000	19,397	21,858	23,808	23,919	25,174
Value of Land and Buildings £'000	5,923	7,041	7,706	8,323	9,053
Value of Plant and Machinery £'000	3,470	3,753	4,189	4,841	5,049
Horse-power of Engines Ordinarily in Use .. H.P.	8,001	8,030	8,677	11,928	9,969

From 1958-59 the figures include operations of a number of smaller bakehouses which had not been included previously in the statistical collection.

In the following table two sub-classes of industry are combined, namely, Jam, Fruit, and Vegetable Canning ; and Pickles, Sauces, and Vinegar :—

VICTORIA—JAM, FRUIT, AND VEGETABLE CANNING ;
PICKLES, SAUCES, AND VINEGAR

Particulars	1957-58	1958-59	1959-60	1960-61	1961-62
Number of Factories	63	60	56	55	55
Number of Persons Employed ..	4,903	4,425	4,748	4,755	5,314
Salaries and Wages Paid £'000	4,462	4,002	4,609	4,657	5,490
Value of Power, Fuel, &c., Used					
£'000	472	468	485	502	569
Value of Materials Used £'000	22,054	19,829	21,270	21,177	24,507
Value of Production .. £'000	10,407	8,440	10,069	10,269	13,767
Value of Output .. £'000	32,933	28,737	31,824	31,948	38,843
Value of Land and Buildings £'000	6,085	6,858	7,249	8,005	9,140
Value of Plant and Machinery £'000	5,617	5,451	6,025	6,299	7,003
Horse-power of Engines Ordinarily in Use .. H.P.	*	*	20,513	21,466	22,197

* Comparable figures not available.

Female employment is strongly represented in the canning industry which, to a great extent, operates in country areas near the orchards and gardens from which fruit and vegetables used for processing are gathered. Seasonal conditions influence greatly the number of persons employed and the quantity of goods produced.

Three sub-classes of industry, namely, butter, cheese, condensed and processed milk have been combined in the figures shown below, as

some factories producing butter are also engaged in the production of cheese and condensed products and are unable to render separate returns in respect of these activities.

VICTORIA—BUTTER, CHEESE, CONDENSED AND PROCESSED MILK FACTORIES

Particulars	1957-58	1958-59	1959-60	1960-61	1961-62
Number of Factories	131	127	131	130	127
Number of Persons Employed ..	5,417	5,452	5,677	5,581	5,681
Salaries and Wages Paid £'000	5,345	5,465	5,906	6,106	6,513
Value of Power, Fuel, &c., Used					
£'000	1,532	1,528	1,604	1,540	1,567
Value of Materials Used £'000	50,558	51,382	55,757	56,175	57,349
Value of Production .. £'000	11,617	11,799	13,681	13,277	14,134
Value of Output .. £'000	63,707	64,709	71,042	70,992	73,050
Value of Land and Buildings £'000	6,233	6,763	7,185	7,659	8,183
Value of Plant and Machinery £'000	7,524	7,995	8,351	9,004	9,781
Horse-power of Engines Ordinarily in Use .. H.P.	42,537	39,310	43,287	44,895	45,501

Almost all of this industry is to be found in country areas. The particulars in the above table relate only to factory production. There is also a comparatively small amount of butter and cheese made on farms. Further reference to the Dairying Industry will be found on pages 576 to 586.

Details of the operation of the following sub-classes of industry are given below, namely, Sawmills, Joinery, Boxes and Cases, Wood Turning and Carving, and Cabinet and Furniture Making :—

VICTORIA—SAWMILLS, WOODWORKING, FURNITURE, ETC.

Particulars	1957-58	1958-59	1959-60	1960-61	1961-62
Number of Factories	1,874	1,816	1,843	1,814	1,758
Number of Persons Employed ..	18,819	18,991	19,558	19,218	17,979
Salaries and Wages Paid £'000	15,664	16,158	17,904	18,434	17,722
Value of Power, Fuel, &c., Used					
£'000	724	794	900	839	788
Value of Materials Used £'000	31,340	31,715	36,693	36,459	35,055
Value of Production .. £'000	27,339	28,170	30,644	30,606	28,922
Value of Output .. £'000	59,403	60,679	68,237	67,904	64,765
Value of Land and Buildings £'000	10,107	11,009	13,377	15,039	15,297
Value of Plant and Machinery £'000	5,782	5,892	6,121	6,566	6,456
Horse-power of Engines Ordinarily in Use .. H.P.	132,941	133,058	138,532	138,805	132,480

The following table shows the particulars of the individual industries combined in the preceding table, for 1961-62 :—

VICTORIA—SAWMILLS, WOODWORKING, FURNITURE, ETC.:
INDIVIDUAL INDUSTRIES, 1961-62

Particulars	Sawmills	Joinery	Boxes and Cases	Wood Turning and Wood Carving	Furniture Making, &c.	Total
Number of Factories	463	654	70	95	476	1,758
Number of Persons Employed	6,286	5,926	702	788	4,277	17,979
Salaries and Wages Paid £'000	6,286	6,031	658	702	4,045	17,722
Value of Power, Fuel, &c., Used £'000	493	153	21	27	94	788
Value of Materials Used £'000	15,324	10,311	1,291	954	7,175	35,055
Value of Production £'000	10,770	9,194	1,056	1,197	6,705	28,922
Value of Output £'000	26,587	19,658	2,368	2,178	13,974	64,765
Value of Land and Buildings £'000	4,527	5,371	584	717	4,098	15,297
Value of Plant and Machinery £'000	3,365	1,748	285	229	829	6,456
Horse-power of Engines Ordinarily in Use H.P.	80,487	28,437	7,048	4,795	11,713	132,480

The activities combined in the above table embrace general milling, re-sawing, moulding and planing, turning, the manufacture of floorboards, weatherboards, boxes and cases, tool handles, toys, &c.

The newspaper and periodicals industry is the subject of the following table :—

VICTORIA—NEWSPAPERS AND PERIODICALS

Particulars	1957-58	1958-59	1959-60	1960-61	1961-62
Number of Factories	106	128	133	128	128
Number of Persons Employed	2,924	3,317	3,633	3,765	3,765
Salaries and Wages Paid £'000	2,951	3,471	4,063	4,652	4,563
Value of Power, Fuel, &c., Used £'000	115	135	144	159	161
Value of Materials Used £'000	7,268	8,660	9,549	9,672	9,144
Value of Production £'000	5,224	6,173	6,922	7,656	8,136
Value of Output £'000	12,607	14,968	16,615	17,487	17,441
Value of Land and Buildings £'000	1,517	2,350	2,955	3,124	3,272
Value of Plant and Machinery £'000	1,791	2,212	2,750	3,122	3,645
Horse-power of Engines Ordinarily in Use H.P.	9,862	10,020	11,171	12,018	12,152

Some "job" printing is included in this industry, but where newspapers, periodicals, &c., are printed for the proprietor by an outside firm, such particulars are included under "Printing, General" below.

General printing (including bookbinding) is the subject of the following table :—

VICTORIA—PRINTING, GENERAL (INCLUDING BOOKBINDING)

Particulars	1957-58	1958-59	1959-60	1960-61	1961-62
Number of Factories	549	539	563	581	600
Number of Persons Employed ..	8,381	8,515	8,619	9,034	9,452
Salaries and Wages Paid £'000	7,461	7,718	8,520	9,378	9,932
Value of Power, Fuel, &c., Used					
£'000	228	247	268	300	310
Value of Materials Used £'000	10,436	11,180	11,590	12,483	11,930
Value of Production .. £'000	13,304	14,217	15,445	16,754	18,217
Value of Output .. £'000	23,968	25,644	27,303	29,537	30,457
Value of Land and Buildings £'000	5,982	6,433	7,789	8,937	10,024
Value of Plant and Machinery £'000	6,109	6,155	6,653	7,384	7,734
Horse-power of Engines Ordinarily in Use .. H.P.	13,108	13,357	14,825	15,289	15,810

The above table does not include particulars of the operations of Government printing establishments.

Particulars relating to the manufacture of cardboard boxes, cartons, and containers are detailed in the next table :—

VICTORIA—CARDBOARD BOXES, CARTONS, AND CONTAINERS

Particulars	1957-58	1958-59	1959-60	1960-61	1961-62
Number of Factories	52	51	57	62	60
Number of Persons Employed ..	2,125	2,297	2,820	3,029	3,056
Salaries and Wages Paid £'000	1,748	2,024	2,616	2,876	3,118
Value of Power, Fuel, &c., Used					
£'000	81	93	115	117	136
Value of Materials Used £'000	6,138	7,214	9,080	9,814	10,660
Value of Production .. £'000	4,318	4,660	6,131	6,502	6,874
Value of Output .. £'000	10,537	11,967	15,326	16,433	17,670
Value of Land and Buildings £'000	1,784	2,414	2,875	3,830	3,811
Value of Plant and Machinery £'000	1,676	1,744	2,250	2,844	2,924
Horse-power of Engines Ordinarily in Use .. H.P.	4,358	4,643	6,140	6,329	6,602

The following table gives particulars of rubber goods manufacture:—

VICTORIA—RUBBER GOODS (INCLUDING TYRES MADE)

Particulars	1957-58	1958-59	1959-60	1960-61	1961-62
Number of Factories	54	56	52	49	48
Number of Persons Employed ..	6,254	6,529	6,566	6,632	6,193
Salaries and Wages Paid £'000	6,280	6,669	7,433	7,318	6,879
Value of Power, Fuel, &c., Used £'000	991	1,056	1,153	1,152	1,106
Value of Materials Used £'000	15,910	16,418	20,557	19,877	17,088
Value of Production .. £'000	12,001	14,066	12,974	13,666	13,639
Value of Output .. £'000	28,902	31,540	34,684	34,695	31,833
Value of Land and Buildings £'000	3,735	3,759	3,834	5,057	5,165
Value of Plant and Machinery £'000	4,028	3,855	5,966	6,676	6,939
Horse-power of Engines Or- dinarily in Use .. H.P.	55,214	60,379	61,154	61,676	63,656

Tyres and tubes, shoes, soles and heels, hose, toys, belting, sponge and foam rubber are amongst the wide range of articles produced in the above mentioned industry.

Plastic moulding and products are the subject of the next table :—

VICTORIA—PLASTIC MOULDING AND PRODUCTS

Particulars	1957-58	1958-59	1959-60	1960-61	1961-62
Number of Factories	145	152	154	157	165
Number of Persons Employed ..	5,006	5,267	5,567	5,754	5,415
Salaries and Wages Paid £'000	4,342	4,934	5,726	5,890	5,511
Value of Power, Fuel, &c., Used £'000	353	440	492	482	487
Value of Materials Used £'000	10,876	13,797	16,310	14,386	13,778
Value of Production .. £'000	8,819	10,653	10,922	11,298	10,901
Value of Output .. £'000	20,048	24,890	27,724	26,166	25,166
Value of Land and Buildings £'000	2,958	3,261	4,388	4,905	5,469
Value of Plant and Machinery £'000	3,381	3,740	4,449	5,397	5,645
Horse-power of Engines Or- dinarily in Use .. H.P.	20,694	20,781	22,412	24,070	25,277

Introduced as a new sub-class in 1945-46, plastic moulding now contributes substantially to the secondary production of the State. A wide variety of articles is produced, including plastic film and sheet, household accessories, containers, piping and tubing, toys, &c.

The following table shows particulars of the operations of electricity generating stations :—

VICTORIA—ELECTRIC LIGHT AND POWER

Particulars	1957-58	1958-59	1959-60	1960-61	1961-62
Number of Factories	51	44	44	41	41
Number of Persons Employed ..	3,247	3,398	3,470	3,476	3,541
Salaries and Wages Paid £'000	3,599	3,851	4,218	4,261	4,791
Value of Power, Fuel, &c., Used					
£'000	11,153	9,971	10,472	12,412	11,903
Value of Materials Used £'000	677	600	700	817	767
Value of Production .. £'000	13,706	18,529	17,977	16,784	16,508
Value of Output .. £'000	25,536	29,100	29,149	30,013	29,178
Value of Land and Buildings £'000	17,444	22,949	21,184	23,336	23,813
Value of Plant and Machinery £'000	63,659	70,244	74,548	83,969	92,713
Total Installed Horse-power of Engines Used to Drive Generators*	H.P. 1,565,409	1,786,817	1,832,183	2,090,023	2,242,796

* Excludes engines using electricity generated in own works.

Because of the extension of services by the State Electricity Commission to areas previously served by other authorities or individual suppliers, the number of electric light and power factories has decreased considerably in recent years.

The above particulars refer only to electric light and power generation by central electric stations in Victoria and do not include details of distribution, &c. They are compiled from factory returns submitted in accordance with the Commonwealth Census and Statistics Act and the Victorian Statistics Act.

Included in the above figures are those of the State Electricity Commission of Victoria which supplies practically all of the electricity generated.

State Electricity Commission of Victoria
Powers

By the 1918 Act and subsequent amending Acts this authority—known since 1921 as the State Electricity Commission of Victoria—is vested with power to erect, own, and operate electrical undertakings; acquire existing electricity undertakings; supply electricity retail to individual consumers or in bulk to any corporation or public institution; establish brown coal open cuts; own and operate briquette works; and develop the State's water-power resources for electricity generation. Incidental to its main operations, the Commission owns and operates the tramway systems in Ballarat and Bendigo.

The Commission is the controlling authority for all electricity undertakings in Victoria. It is responsible for the registration of electrical contractors, the licensing of electrical mechanics, the control of installation methods and material, and the testing and approval of electrical equipment and appliances.

Consumers Served

At 30th June, 1962, the State system served 941,433 consumers in Victoria (743,234 retail and the remainder—198,199—through eleven metropolitan councils which buy electricity in bulk). In addition, bulk

supply was given to several New South Wales municipalities and irrigation settlements bordering the River Murray. The State system supplies all the Melbourne Metropolitan Area and over 1,700 other centres of population. Rural electrification is now more than four-fifths completed and 49,506 farms were supplied at the end of the year by the State Electricity Commission. Outside the State system there were 15,052 other consumers served by local country undertakings.

State Generating System

The State system provides 99 per cent. of all the electricity produced in Victoria for public supply. The system serves about 97 per cent. of the population. Extensions into the remaining regions outside the system—most of them sparsely populated—are progressing continuously. Electricity generated in, and purchased for this system totalled 6,853 million kilowatt-hours in 1961-62, over four-fifths of Victoria's electricity being generated from brown coal used either in its raw state or in the form of briquettes. During 1961-62, hydro-stations produced over 12 per cent. of the State's electricity for public supply.

The following table shows the predominant part taken by the State Electricity Commission in the generation of electric power in Victoria, the amount of power generated by water power and other sources and the relative importance of the main power stations :—

VICTORIA—ELECTRICITY GENERATED, POWER STATIONS, AND SOURCE OF POWER, 1961-62

Source	Source T = Thermal* H = Hydro	Production Million kWh.
State Electricity Commission—		
Yallourn Power Station and Briquette Factory ..	T	3,646
Morwell Power and Briquette Undertaking ..	T	810
Newport Power Station ..	T	1,119
Spencer-street Power Station (M.C.C.) ..	T	155
Richmond Power Station ..	T	21
Provincial Thermal Power Stations ..	T	203
Total S.E.C. Thermal Generation ..	T	5,954
Eildon—Rubicon	H	276
Kiewa	H	258
Cairn Curran	H	3
Total S.E.C. Hydro Generation ..	H	537
Interstate Sources—		
Snowy Mountains Scheme	H	266
Hume	H	69
Interchange with New South Wales ..	H	27
Total Interstate Sources	H	362
Total Available to S.E.C.	T and H	6,853
Other Public Supply		
Total Public Supply	T and H	6,893
Electricity Generated in Factories	T	204
Cumulative Total	T and H	7,097

* Includes Internal Combustion.

Inclusive of generator capacity available to the Victorian system from outside the State, the total installed capacity of the State generating system at 30th June, 1962, was 1,879,233 kilowatts. All power stations are interconnected. The largest power station in this interconnected system is Yallourn, which alone generates over half Victoria's electricity. The transmission and distribution system at the same date comprised 36,949 miles of high and low voltage power lines, including 1,046 miles of underground cables, seventeen terminal stations, and over 30,300 distribution sub-stations.

Victoria's State generating system is a complex of interconnected thermal and hydro-stations feeding electricity into a common power "pool" for distribution through a supply network which now extends from Mildura in the extreme north-west to Orbost in eastern Gippsland and from the upper reaches of the River Murray to Casterton near the South Australian border.

Operation is based on a system of 220,000 volt power lines which not only connect all main generating centres, but also provide bulk transmission of supply. Generation and transmission to the main distribution sub-stations are directed from the System Control Centre in Melbourne. The 220,000 volt transmission ring around central Victoria was completed early in 1962. The final section (Colac-Terang) of a 220,000 volt spur line from Geelong (temporarily operating at 66,000 volts) was also completed early in 1962, and another 220,000 volt spur line from Bendigo to Red Cliffs (near Mildura) was completed in the latter months of 1962.

Sources of power available to the State system in 1962 totalled 1,879 megawatts. This included plant within the Victorian interconnected system proper and also Victoria's share, by inter-state agreement, of hydro-power from beyond its borders. Production from all sources in 1961-62, including 362 mill. kWh. from interstate sources and purchases, totalled 6,853 mill. kWh.

Approximately 87 per cent. of this production (5,954 mill. kWh.) was generated in thermal stations; and of the thermal production, 5,780 mill. kWh. (84 per cent. of the State Electricity Commission's total electricity production) were derived from brown coal used in its raw state in base load power stations on the coal fields of the Latrobe Valley, or used in its processed form of briquettes in power stations located away from the coal fields in Melbourne, Geelong, Ballarat, and Redcliffs.

Latrobe Valley

Of the two base load power stations, Yallourn, with a capacity of 642.5 megawatts (including generating plant in the briquette works), in 1961-62 generated more than half Victoria's electricity. In the

same period, Morwell, the other base load power station was the third largest producer of electricity in the Victorian system. Commissioning of an additional 60 megawatt generator at the beginning of 1963 increased its total installed capacity to 170 megawatts.

Electricity production is to be further concentrated in the Latrobe Valley and work is now in progress a short distance south of Morwell on the 1,200 megawatt Hazelwood Power Station which is designed, like the Yallourn and Morwell stations, to operate on raw brown coal. On completion of the Hazelwood Power Station in 1971, about 85 per cent. of Victoria's annual kilowatt-hour production will be generated in base load power stations on the Latrobe Valley coal fields.

Hazelwood is being built in three stages each of 400 megawatts capacity. Orders have been placed for the first two stages totalling 800 megawatts, and site work is in progress. The plant will comprise four immense generating sets (each of 200 megawatts capacity) which are scheduled to come into service progressively in 1964, 1965, 1967, and 1968. Generators in the third and final stage are due to be commissioned in 1970 and 1971.

Thermal power stations located outside the Latrobe Valley are peak load power stations. Chief among them is Newport Power Station (311 megawatts). One of the three power stations in the Metropolitan Area, Newport, was in 1962 the second largest producer in the Victorian system.

Hydro-electric Power

Hydro-electric developments are now contributing about one-eighth of the State's annual kWh. requirements. In contrast to its wealth of brown coal, Victoria's own water power resources are limited and subject to wide seasonal variation and sporadic drought. Hence, brown coal thermal stations carry base load, and hydro-stations are used for peak load operations, due to the ease and speed with which they can be brought on load or shut down to meet the fluctuations in electricity demand.

Three main sources of hydro-electric power are available to the Victorian supply system, namely:—

- (1) The Commission's Kiewa undertaking located in the Australian Alps in north-eastern Victoria ;
- (2) stations operating on the release of irrigation water at Eildon Reservoir on the Goulburn River in central Victoria, and at the Hume Reservoir, the main River Murray storage near Albury; and

- (3) the large Commonwealth-owned Snowy Mountains scheme which, although located in south-eastern New South Wales, also serves Victoria.

The Kiewa scheme, largest of the hydro undertakings within Victoria, has been developed solely for electricity production. It comprises three power stations with a total installed capacity of 184 megawatts and an average annual production of 340 million kilowatt-hours. The scheme could be enlarged by building a fourth station some time in the future to utilize the remaining available head.

Eildon Power Station (main plant 120 megawatts) is located immediately below the State Rivers and Water Supply Commission's Eildon Dam and generates most of its annual production during the summer release of irrigation water. Provision is made, however, for some release of water during the winter to permit of limited operation of the power station when electricity requirements are at their heaviest and there is no irrigation demand for water.

The 50 megawatt Hume Power Station built below Hume Dam on the River Murray is owned and operated by the Electricity Commission of New South Wales, but the output is shared equally with Victoria.

Victoria's largest source of hydro-electric power is the Snowy Mountains scheme, now partly completed, in south-eastern New South Wales. The scheme is designed for an ultimate capacity of 2,500 to 3,000 megawatts and an average annual production of 5,000 million kilowatt-hours.

By agreement between the Commonwealth, Victoria, and New South Wales, Victoria is entitled to one-third of the electricity from the scheme and New South Wales to two-thirds—after the Commonwealth has taken its relatively small requirement for the Australian Capital Territory. The respective entitlements are expressed in kilowatt-hours annually available, and the agreement provides that the kilowatt demand shall be allocated in the same proportion.

Victoria's present share of Snowy output is approximately 200 megawatts. The next increase will be between 1966 and 1970, when two large new power stations—Murray 1 of 760 megawatts and Murray 2 of 440 megawatts capacity—come progressively into service. These additions will increase Victoria's over-all share of Snowy power to about 540 megawatts.

The Victorian supply system is linked with the Snowy scheme by a 330,000 volt transmission line which also permits of large-scale interchange of electricity between Victoria and New South Wales.

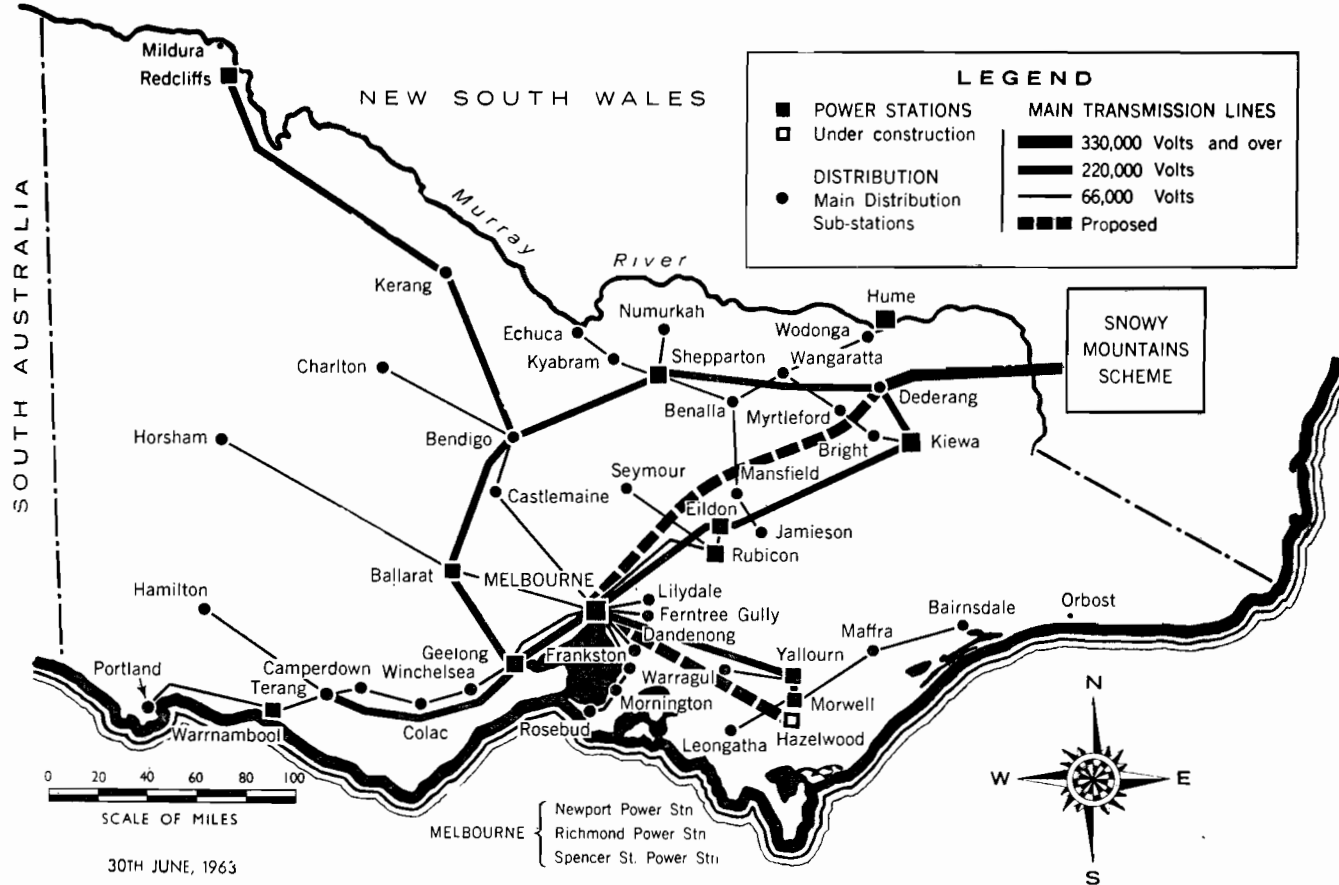


FIGURE 20. High Voltage Transmission of Electricity in Victoria.

Other plant in the Victorian interconnected generating system includes, in addition to steam plant in the Metropolitan Area and provincial centres, internal combustion plant (as well as steam plant) at Redcliffs; internal combustion stations at Shepparton and Warrnambool; a group of four small hydro-stations operating on the natural flow of the Rubicon and Royston Rivers; and a small hydro-station operating on release of irrigation water at Cairn Curran Reservoir in central Victoria.

VICTORIA—STATE ELECTRICITY COMMISSION: INCOME,
EXPENDITURE, SURPLUS, ETC.
(£'000)

Particulars	1959-60	1960-61	1961-62
INCOME			
Electricity Sales—			
Domestic	14,439	15,871	16,309
Commercial	6,471	7,282	7,646
Industrial	11,841	12,597	13,032
Bulk Supplies	11,058	11,704	11,983
Traction	1,980	1,971	1,958
Public Lighting	547	552	654
Unread Meters and Miscellaneous	268	280	396
Total Electricity Sales	46,604	50,297	51,978
Briquette Sales	2,975	4,386	4,447
Brown Coal Sales (Yallourn North)	747	557	403
Tramways	100	101	98
Miscellaneous	28	39	25
Total Income	50,454	55,380	56,951
EXPENDITURE			
Operation and Maintenance (Including Fuel)	21,392	22,966	24,441
Administrative and General Expenses	3,778	4,194	4,531
General Services, &c.	2,217	2,531	2,742
Depreciation	7,668	10,403	10,630
Interest	11,854	12,974	14,474
Loan Flotation Expense	400	400	380
Deferred Interest, &c., Written Off	2,250	1,250	..
Miscellaneous Expenditure	435	442	491
Total Expenditure	49,994	55,160	57,689
Surplus	460	220	(—)738*
Fixed Assets (Depreciated) at 30th June	263,318	286,356	305,806
Capital Liabilities at 30th June	265,001	282,256	301,844

*Loss

Further References

An outline of the history of the State Electricity Commission of Victoria will be found on pages 580 to 583 of the Victorian Year Book 1961, an article on Brown Coal Production on pages 606 to 611 of the Victorian Year Book 1962, and an article on Briquette Manufacture on pages 636 to 640 of the Victorian Year Book 1963.

In the next table particulars relating to gas works are shown :—

VICTORIA—GAS WORKS

Particulars	1957-58	1958-59	1959-60	1960-61	1961-62
Number of Factories	27	27	27	25	26
Number of Persons Employed ..	1,372	1,584	1,513	1,470	1,459
Salaries and Wages Paid £'000	1,738	1,796	1,789	1,896	1,915
Value of Power, Fuel, &c., Used £'000	416	397	503	524	561
Value of Materials Used £'000	5,702	5,800	5,471	5,323	4,875
Value of Production .. £'000	2,609	3,319	3,807	4,163	4,749
Value of Output .. £'000	8,727	9,516	9,781	10,010	10,185
Value of Land and Buildings £'000	3,349	3,284	3,031	3,969	4,192
Value of Plant and Machinery £'000	12,554	13,332	13,701	13,630	14,175
Horse-power of Engines Ordinarily in Use .. H.P.	16,106	17,048	16,797	17,856	21,826

The particulars appearing in the above table are compiled from factory returns received under the authority of the Commonwealth Census and Statistics Act and the Victorian Statistics Act. They relate to production and are exclusive of particulars of distribution, &c.

Appropriate details relating to the Gas and Fuel Corporation of Victoria are included in the table on page 677. The following is a brief review of the activities of the Corporation.

*Gas and Fuel Corporation of Victoria**Formation*

The Gas and Fuel Corporation of Victoria came into being by Act of Parliament in 1950. It was formed by the merger of the Metropolitan and Brighton Gas companies, which supplied gas to adjoining areas. The privately held shares of the two companies were exchanged for fully paid up preference shares in the Gas and Fuel Corporation.

The State Government of Victoria invested £4 mill. which were held as ordinary shares in the Corporation. Three directors were appointed by the preference shareholders and the Chairman and three other directors were appointed by the Government. Capital requirements for expansion were to be raised by means of loans on which the Government guaranteed the interest payments and loan redemptions.

Reasons for Formation

The main reason for the formation of the Corporation was to provide finance to make possible the use of the vast resources of brown coal in the Latrobe Valley for town gas production. It was considered essential, both from an economic and national viewpoint, to change from the conventional method of producing gas from black coal, imported from New South Wales, to the new and revolutionary method of high pressure gasification of brown coal.

The Lurgi High Pressure Gasification Plant was erected between 1951 and 1956 on the brown coal field at Morwell and came into operation in the spring of 1956. It was officially opened by H.R.H. the Duke of Edinburgh on 5th December of that year. This plant was connected to the metropolitan reticulation by a 103-mile 18-in. welded steel pipeline.

Expansion

Since its inception, and particularly after the commencement of brown coal gasification, the Corporation's activities have expanded rapidly. In 1956, the areas of Dandenong and Frankston were acquired from the Colonial Gas Association and connected to the main Morwell-Melbourne pipeline for supply. This supply was then further extended to embrace the Mornington area. Subsequently, the towns along the pipeline route, Traralgon, Morwell, Trafalgar, and Warragul were connected to the brown coal gas supply.

In 1960, the rapidly expanding area of the Lower Dandenongs extending from Lower Fern Tree Gully to Lilydale was supplied with brown coal gas by a branch from the pipeline at Dandenong.

A striking change has taken place in the nature of the Corporation's gas production. In 1950, 71·4 per cent. of the therms made came from black coal carbonization, but by 1962 this had dropped to 31 per cent. In 1956, petroleum products contributed 4 per cent. of the town's gas produced, but six years later, this figure had risen to 34 per cent.

After the Altona oil refinery was established, provision was made by the Corporation to pipe the tail gases from the refinery to the West Melbourne works for blending to a town's gas of constant characteristics. The Corporation also erected, near the refinery, a substantial storage for liquefied petroleum gas (propane). If, for any reason, the pressure in the refinery tail gas main falls below a specified minimum, the propane is automatically released into this main. This reserve has now been supplemented. At Derrimut, a few miles from the refinery, a large refrigerated storage for propane and butane has been established at a cost of approximately £1½ mill. to cope with the fluctuating works demand for additional gases between winter and summer.

The two refrigerated storage tanks—the first of their kind in the Southern Hemisphere—have a total capacity of 3 mill. gall. and these will eliminate the need to spend many times their capital value on reserve production plant.

At West Melbourne a new plant—Onia Gegi oil gasification—is now in operation. The plant has a capacity of 10 mill. cubic ft. of gas per day made from heavy oil. Apart from being able to use heavy oil as a feedstock, the plant has been designed to handle a range of refinery gases as well as liquefied petroleum gas, in which latter case its capacity would rise to 15 mill. cubic ft. per day. The Corporation plans to install two similar units in 1964-65, which would double the output from this works.

It is also planned to double the output of brown coal gas at Morwell. This is possible without appreciable capital expenditure if the existing generating equipment is operated to full capacity as a base load plant.

To bring an amenity which is enjoyed in the city to every country home, however remote, the Corporation markets a gas which is sold in steel bottles. The gas is liquefied under pressure.

The following table shows details of revenue, expenditure, etc., of the Gas and Fuel Corporation :—

VICTORIA—GAS AND FUEL CORPORATION : REVENUE,
EXPENDITURE, ETC.

(£'000)

Particulars	1957-58	1958-59	1959-60	1960-61	1961-62
REVENUE					
Sales—					
Gas	8,244	9,361	10,065	10,459	11,007
Residual Products and Appliances	*1,206	*1,166	4,138	4,191	3,849
Income from General Investments	3	1	..	..	..
Profit on Sale of Freeholds ..	..	..	..	29	..
Total Revenue	9,453	10,528	14,203	14,679	14,856
EXPENDITURE					
Gas—					
Manufacture	6,256	6,534	6,444	6,446	6,448
Transmission	134	163	207	205	215
Distribution	2,515	2,792	2,938	3,223	3,316
Residual Products, Appliances, and Gas Promotional Expenses ..	..	..	3,322	3,594	3,420
Management	253	307	376	474	444
Planning, Research and Develop- ment	68	181	243	308	259
Superannuation and Retiring Al- lowances	96	129	184	210	235
Long Service Leave	68	78	48	79	116
Contingency Reserve .. .. .	..	25	25	..	25
Other Costs	46	99	80	71	169
Total Expenditure	9,446	10,308	13,867	14,610	14,647
Net Surplus	7	220	336	69	209
Fixed Assets less Depreciation and Amortization at 30th June ..	30,213	31,537	33,146	37,432	41,239
Capital Liabilities at 30th June—					
State Government	11,959	12,040	12,099	12,147	12,184
Other	21,316	23,696	26,050	28,053	32,169

* Profit on Sales of Residual Products, Appliances, &c. only.

Government Factories

In 1938-39, Government factories numbered 127 and employed 12,958 persons. These factories expanded considerably as a result of war activities and reached their peak of employment in 1942-43 when

50,831 persons were working in 158 factories. Comparative particulars for the last five years are shown in the following table :—

VICTORIA—GOVERNMENT FACTORIES AND WORKSHOPS

Particulars	1957-58	1958-59	1959-60	1960-61	1961-62*
Number of Factories	143	147	157	168	285
Number of Persons Employed ..	28,482	28,988	29,326	30,542	32,290
Salaries and Wages Paid £'000	26,910	28,035	31,172	33,910	36,913
Value of Power, Fuel, &c., Used £'000	12,469	11,704	12,577	14,543	14,194
Value of Materials Used £'000	29,076	27,517	30,468	32,416	32,680
Value of Production	£'000 44,176	51,466	51,528	54,517	57,377
Value of Output	£'000 85,721	90,687	94,573	101,476	104,251
Value of Land and Buildings £'000	39,238	45,983	49,693	57,719	61,429
Value of Plant and Machinery £'000	93,831	107,209	121,011	133,110	143,762

* A special investigation into repair and manufacturing activities carried out by local and semi-governmental authorities resulted in a number of returns being supplied for the first time in 1961-62.

The above table embraces establishments under the control of the Commonwealth Government in Victoria, State Government, and local government authorities. Such activities as railway and tramway workshops, electric light and gas works, dockyards, printing works and clothing, aircraft and munitions factories, &c., are included.

In relation to the whole of Victorian factories during 1961-62, Government factories absorbed 8·5 per cent. of employment; expended 9·6 per cent. of salaries and wages ; and accumulated 8·0 per cent. of per cent. of the value of production.