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The

Official Year Book

of

New South Wales.

1914.



J. B. TRIVETT.

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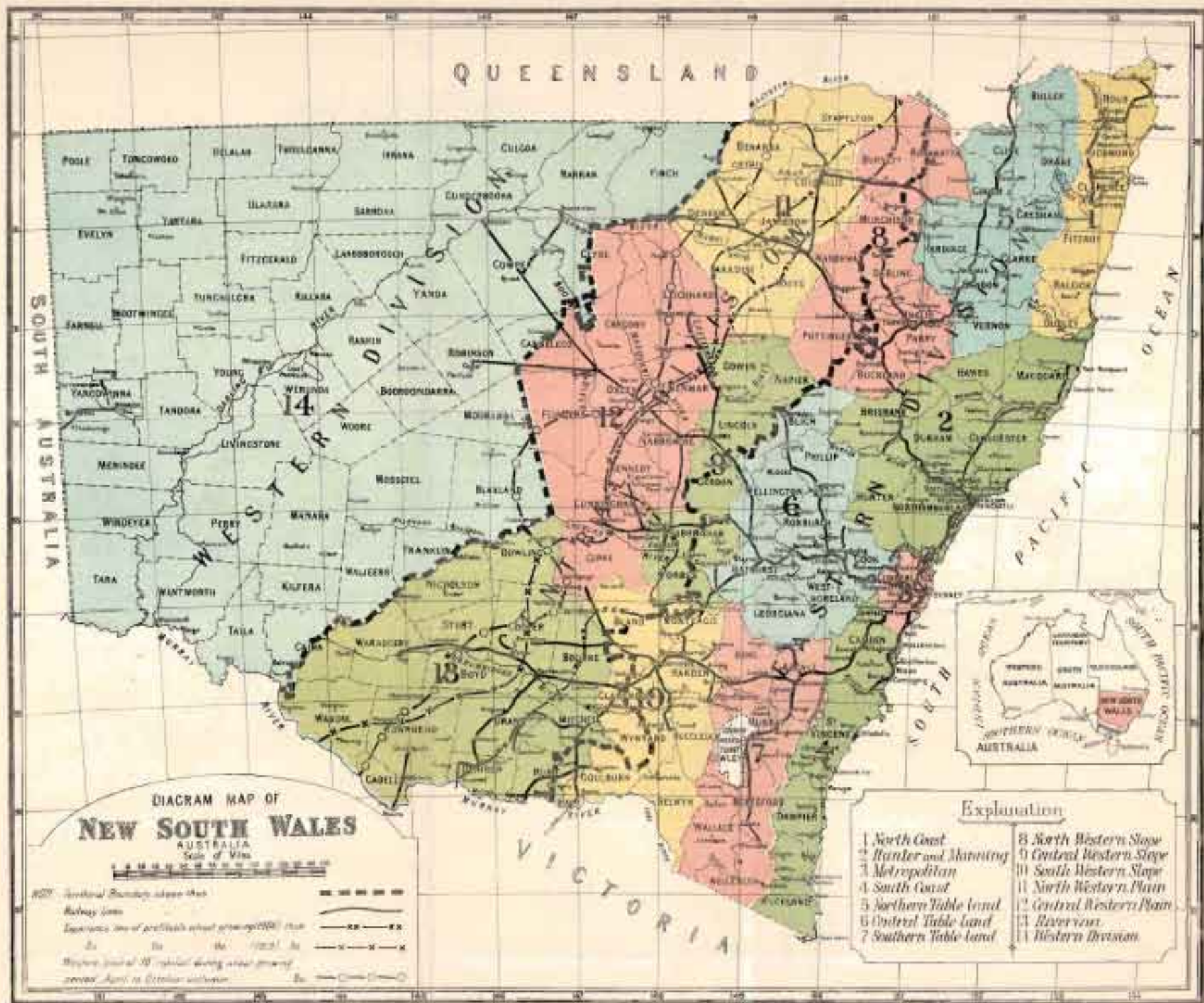


DIAGRAM MAP OF
NEW SOUTH WALES
 AUSTRALIA
 Scale of Miles



- 1000' Contour Boundary above sea level
- Railway lines
- Isotermic line of precipitation about average 2000' feet
- Isotermic line of precipitation about average 4000' feet
- Isotermic line of 10' rainfall during winter months (winter April to October inclusive)

Explanation

- | | |
|------------------------|--------------------------|
| 1 North Coast | 8 North Western Slope |
| 2 Hunter and Maneroing | 9 Central Western Slope |
| 3 Metropolitan | 10 South Western Slope |
| 4 South Coast | 11 North Western Plain |
| 5 Northern Table land | 12 Central Western Plain |
| 6 Central Table land | 13 Riverina |
| 7 Southern Table land | 14 Western Division |

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OFFICIAL YEAR BOOK
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NEW SOUTH WALES.
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JOHN B. TRIVETT, F.R.A.S., F.S.S.,
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CONTENTS.

	PAGE.
Chronological Table	1
Geography	13
Climate	33
Tourist Attractions	46
Constitution, Government	56
Defence	73
Population	85
Vital Statistics	108
Education	157
Mining Industry	223
Shipping	289
Commerce	329
Manufacturing Industry	347
Private Finance	397
Law Courts	447
Police and Prison Services	472
Land Legislation and Settlement	493
Rural Settlement	524
Agriculture	539
Water Conservation and Irrigation	591
Pastoral Industry	599
Dairying Industry	625
Forestry	637
Fisheries	643
Social Condition	649
Public Finance	715
Posts and Telegraphs	753
Railways and Tramways	773
Local Government	805
Food and Prices	855
Employment and Industrial Arbitration	893
Index	961

MAPS.

Land Divisions of the State	<i>Facing Title page.</i>
Minerals of the State	" <i>page</i> 223
Railways of the State	" " 773
City of Sydney	" " 805

PREFACE.

THE contents of the Official Year Book of New South Wales have been published already in the form of periodic chapters, which have been issued, as they became available from the printer, in order to render them of immediate service to the public.

As in previous years, the text includes the latest information concerning all the activities of the State, together with full notes as to changes in legislation. Consequently the legislator, the student, or the ordinary reader, will have at his disposal the most recent records relating to the State on all matters of public interest.

On account of the war in Europe, in which New South Wales as a portion of the British Empire is involved, much extra work has devolved upon this Bureau, and I have been associated with the Necessary Commodities Control Commission in its investigations concerning prices. Whilst opportunity has thus been afforded of collating information of great value, time does not admit of the publication of more than statements of prices in the section of this volume which relates to Food and Prices. The evidence available will prove of great value in future issues.

In the compilation of the Year Book information has of necessity been obtained from many sources. To officers of Public Departments and others who have readily complied with requests for statistical returns, I have to express my gratitude.

The "Statistical Register of New South Wales" is published annually from this Bureau; and as it contains in very full detail the results of the collected and compiled statistics of the State, it will prove of great service if studied in conjunction with this Year Book.

The "Monthly Statistical Bulletin" also is issued from this Bureau, and provides the latest available statistics, each month, upon the more important subjects of general interest.

Maps are now published with the volume to indicate the area of the State suitable for profitable cultivation of wheat, to show the localities where the mineral resources of the State abound, and to illustrate the development of Railways; a map of the City of Sydney, also, is inserted.

Bureau of Statistics,
Sydney, 24th June, 1915.

JOHN B. TRIVETT,
Government Statistician.

CHRONOLOGICAL TABLE

OF

Events in the History of British Settlement in New South Wales (Australia).

- 1770 Captain Cook landed at Botany Bay, 28th April, 1770.
- 1774 Discovery of Norfolk Island by Captain Cook.
- 1788 "First Fleet," under the command of Captain A. Phillip, anchored in Botany Bay, 18th-20th January; formal possession taken of Sydney Cove, Port Jackson, 26th January; 1,035 persons debarked—Divine Service performed by Rev. Richard Johnson, Chaplain of the Colony, 3rd February—Governor Arthur Phillip formally proclaimed the Colony, 7th February—Norfolk Island established as a dependency—French Navigator La Pérouse visited Botany Bay—Earthquake shocks—Lord Howe Island discovered by Lieutenant Ball—First settlement at Rose Hill (afterwards Parramatta)—Observatory established at Dawes' Point—First Criminal Court—First cultivation of Wheat and Barley—Settlers asked for by Governor Phillip—Pittwater, Brisbane Water, Hawkesbury River discovered.
- 1789 Hawkesbury River explored—First harvest (Wheat and Barley) reaped at Parramatta—Hurricane at Norfolk Island—Disease (small-pox) among aboriginals—Nepean River discovered—First colonial-built boat, "Rose Hill Packet," launched.
- 1790 Second Fleet arrived with New South Wales Corps, Lieutenant John Macarthur (Founder of sheep-breeding in Australia)—"Sirius" lost at Norfolk Island—First brick store erected—Scarcity of provisions—Signal Station established at South Head, Port Jackson—Population of Colony, 1,713; of Norfolk Island, 524.
- 1791 Third Fleet arrived—Lieutenant-Governor King brought Territorial Seal and Royal Authority to grant pardons—First Store at Rose Hill, now Parramatta—Settlements at Prospect Hill and The Ponds—Corps of Marines relieved by New South Wales Corps—Whaling and sealing first colonial industries—First grants of land to settlers—First Exploration Map of Australia published.
- 1792 First foreign trading vessel "Philadelphia" arrived—Population of Colony, 3,077—Governor Phillip returned to England—Military administration by Captain Francis Grose, Lieutenant-Governor.
- 1793 Governor Phillip resigned—First free immigrants arrived in the "Bellona" and settled at Liberty Plains, afterwards migrating to Hawkesbury River—Exploration of Blue Mountains attempted—First surplus of 1,200 bushels maize sold by settlers to Government at 5s. per bushel—First place of public worship built in Sydney.
- 1794 Hawkesbury River settlement—Lieutenant-Governor Captain Francis Grose left for England, succeeded by Captain William Paterson.
- 1795 Hawkesbury River agricultural settlements flooded—Governor Hunter arrived—First printing press erected—Descendants of strayed cattle found at Cowpastures, Nepean River—Cowpastures reserved for Crown cattle—Serious damage to crops by hailstorms—First important civil action at law.

- 1796 Port Hacking explored by Bass and Flinders—Duck River Bridge built—First theatre opened—Bass tried to cross Blue Mountains—Coal found at Port Stephens—Population of Colony, 4,016—First school opened at Parramatta—Coal discovered by fishermen at Newcastle.
- 1797 Coal discovered at Illawarra (Coalcliff) and near Coal (Hunter) River—Bass discovered Twofold Bay, Bass Strait, Western Port, &c.—Merino sheep imported from Cape of Good Hope—Tuggerah Lakes discovered—Granary at Sydney completed—Conflict with blacks at Parramatta.
- 1798 Town Clock set up at Sydney—First Church (Rev. Richard Johnson's) burned—Severe hailstorms—Insularity of Van Diemen's Land (Tasmania) established by Bass and Flinders—First drought recorded—Churches founded: St. John's, Parramatta, and St. Phillip's, Sydney.
- 1799 Bass and Flinders returned from Van Diemen's Land—Flinders explored North Coast—Wilson reached Lachlan River *via* Mittagong Tableland—Hawkesbury floods—Two whaling ships arrived in Port Jackson with a Spanish prize vessel which they had captured off coast of Peru—Coal shipped from Hunter River District—Population of Colony, 5,088.
- 1800 Governor Hunter recalled; superseded by Governor King—First export of coal—Customs House established at Sydney—Import duties first levied—First Volunteer Force for defence raised at Sydney—Flinders' Chart of Bass Strait and Van Diemen's Land published—Population of Colony, 5,217.
- 1801 First issue of copper coin—Hunter River coal-mines worked—First colonial manufacture of blankets and linen—First rough census muster—"Loyal Association," volunteer corps formed.
- 1802 Port Phillip discovered by Lieutenant Murray—First book (General Standing Orders) printed in Sydney.
- 1803 First sample of Australian wool taken to England by Captain Macarthur—Caley attempted to cross Blue Mountains—Battery at George's Head completed—First Roman Catholic services, Rev. W. Dixon, celebrant—First newspaper (*Sydney Gazette and New South Wales Advertiser*) published in Sydney—First settlement established at Risdon, in Van Diemen's Land, by Lieutenant Bowen—New South Wales Corps reduced to peace footing—Yarra River, Melbourne, discovered—Attempted colonisation of Port Phillip by Lieut.-Colonel David Collins—Matthew Flinders completed the circumnavigation of Australia.
- 1804 Newcastle settlement—"George III flock of merinos" arrived—Dutch merchant ship "Swift" taken prize by English whaler "Policy" in Malay Archipelago and brought to Sydney—Castle Hill insurrection.
- 1805 Captain Macarthur received a grant of 5,000 acres including part of Cowpastures reserve; began sheep-farming at Camden with imported Spanish Merinos—Population of Colony, 8,542.
- 1806 Governor King resigned; Governor Bligh arrived—"March Floods" on Hawkesbury and South Creek—Shortage of provisions; Wheat, 80s. bushel.
- 1807 Evacuation of Norfolk Island contemplated—Rum currency forbidden—First parcel of merchantable wool (245 lb.) exported to England.
- 1808 Captain Macarthur arrested and tried—Governor Bligh deposed—Major Johnston assumed Government.
- 1809 Johnston and Macarthur proceeded to England—Free school established—Street regulations—George-street, Charlotte Square, Macquarie Place, and Hyde Park named—First Post Office conducted by Isaac Nichols—Governor Macquarie arrived.
- 1810 First horse-races, Hyde Park, Sydney—Sydney streets re-named and planned—Toll-gates erected—Police Fund established—Windsor (formerly Green Hills) and Liverpool named—New South Wales Corps returned to England—Market regulations issued.
- 1811 Public Pounds established—Lieutenant-Colonel Johnston court-martialled and cashiered—Sydney Hospital foundation laid—Tank Stream bridge enlarged—Sydney Common land designated—Burial grounds consecrated—Illicit distillation prevalent—Governor Macquarie's tour of Settlements, Hawkesbury River, Tasmania, and New South Wales coastal Harbours.

- 1812 Creation of Governor's Court and Supreme Court—Sunday closing of shops—First crop of hops gathered—Select Committee of House of Commons appointed to inquire into condition of New South Wales—Great scarcity of coin; private money-orders or promissory-notes allowed to be issued—Population of Colony, 10,523.
- 1813 Blaxland, Lawson, and Wentworth crossed Blue Mountains—Camp at Mount York—Deputy-Surveyor Evans discovered Bathurst Plains and Macquarie River—Foundation-stone laid, Sydney (Macquarie) Lighthouse—Botanic Gardens commenced—"Holey Dollar" and "Dump" issued for local currency—Watermen appointed to ply in Sydney Cove—Public vehicles ordered to be numbered and named.
- 1814 Charter of Justice published—Civil Courts created—Hume explored Berfma and Goulburn Districts to Lake Bathurst—First Judge (J. H. Bent) arrived and was recalled—New road to Liverpool opened—Committee formed to promote civilisation of aborigines—Institution for Aboriginal children opened at Parramatta—Naval stores erected at Circular Quay—Name "Australia," substituted for "New Holland," on recommendation of Flinders—New Zealand proclaimed a dependency of New South Wales.
- 1815 Lapstone Hill and Mount Victoria Road to Bathurst completed—Bathurst founded by Governor Macquarie—First Wesleyan minister arrived—First steam engine erected in Sydney—First sitting of Supreme Court—Evans explored Lachlan River—Grounds allotted to sixteen aboriginal families at George's Head—First import of wheat from Tasmania.
- 1816 Conferences instituted with aboriginals—Allan Cunningham and Judge-Advocate Wyldé arrived—Sydney Hospital opened—Sydney Botanic Gardens formed—Macarthur imported French and Spanish grape vines.
- 1817 Surveyor-General Oxley's first journey inland—Meehan and Hume discovered Lakes George and Bathurst, and the Goulburn Plains—Bank of New South Wales established—Captain King's coastal explorations—Hyde Park Barracks built—New Territorial Seal—Macarthur returned to New South Wales after eight years' banishment.
- 1818 Oxley's second journey to Macquarie River; Discovered Peel, Hastings, and Manning Rivers, and Liverpool Plains—Free immigration stopped—Great Western Road completed to Emu Ford—Benevolent Society established—Rose Hill packet-boat service instituted—Port Essington discovered by Captain King.
- 1819 Commissioner Bigge's inquiry into laws and administration of Colony—St. James' Church, Sydney, commenced—First Australian Savings Bank opened at Sydney—The Governor given power to impose Customs duties on spirits, tobacco, &c.
- 1820 Murrumbidgee and Clyde Rivers discovered—Russian exploration ships arrived—Burial ground (Sydney Town Hall) closed—Sir Joseph Banks died—Campbelltown surveyed—Hunter River floods—Government row-guard boats established—Influenza epidemic—W. C. Wentworth published in England an account of Australia.
- 1821 Governor Sir Thomas Brisbane arrived—Ten ships despatched with Australian produce for England—Foundation-stone of St. Mary's (R.C.) Cathedral, Sydney—Philosophical (now Royal) Society founded—Throsby tour of discovery inland—Settlement formed at Port Macquarie—First Circuit Court at Hobart.
- 1822 (Royal) Agricultural Society of New South Wales established—First Colonial Attorney admitted—Bees introduced—St. James' Church, Sydney, opened—Sale of Australian tobacco—Road from Richmond to West Maitland opened—Settlement formed at Wellington Valley—Parramatta Observatory erected.
- 1823 First Australian Constitution Legislature—A Council of five to seven persons; first councillors (five) appointed under warrant of 1st December—Cunningham's explorations—Dr. John Dunmore Lang arrived—Oxley discovered Tweed and Brisbane Rivers—Free settlers encouraged—Squatting commenced—"Particles of gold" found at Fish River, near Bathurst, by Assistant-Surveyor McBrien—Monaro Plains discovered by Captain Currie, R.N., and Brigade Major Ovens.

- 1824 New South Wales a Crown Colony—Governor's censorship annulled and freedom of press proclaimed—First Criminal Sessions with trial by jury—First Land regulations—Hume and Hovell overland expedition to the South—Charter of Justice proclaimed—First Executive Council meeting, 25th August—Currency Act (first act of Parliament in Australia)—Sugar-cane grown on Hastings River; first manufacture of sugar—Australian Agricultural Company formed—Moreton Bay founded—Supreme Court of Criminal Jurisdiction established—Settlement at Melville Island—Bills of exchange and promissory-notes payable in dollars legalised—Court of Requests commenced—First Court of Quarter Sessions.
- 1825 Governor Darling arrived—Chamber of Commerce established—Van Diemen's Land (Tasmania) proclaimed a separate Colony—Dr. Halloran's Grammar School—Liquor licenses granted—Bushrangers at Bathurst—Attempt to colonise New Zealand from Sydney—La Pérouse monument placed at Botany Bay—First Mounted Police—Act of Parliament to regulate the postage of letters.
- 1826 Cunningham's explorations—Church and School Corporation formed—Bank of Australia established—Australian Subscription Library founded—Illawarra settlement established by Captain Bishop—Land Board appointed—Orphan School Estates vested in trustees of Church and School Lands—Darling Mills at Parramatta opened—Dollar system of currency superseded—Influenza prevalent—Commercial panic caused by extensive operations of Australian Agricultural Company—"Warspite," first line of battleship to enter Port Jackson, arrived—C. S. Rumker gazetted first Government Astronomer.
- 1827 Colony self-supporting—Land and stock speculations—*Sydney Gazette* issued daily—Sydney Water supply scheme (Botany Swamps) initiated—Hume discovered new route to Bathurst—Cunningham explored Upper Darling and pastoral district of Darling Downs—Regular mail services instituted—Petition for civil rights of trial by jury and representative legislature—Customs organised and established; naval control superseded thereby—Office of Lieutenant-Governor abolished—Western boundary of New South Wales extended.
- 1828 Second Constitution; Legislative Council enlarged to fifteen members—First Census, population 36,538—Letters of Denization—Western Plains settlers return—Clarence and Richmond Rivers discovered by Captain Rous—"Australian" newspapers under the libel law of 1827—Whooping-cough epidemic—Stirling's expedition to Western Australia—General Post-office communication established, and postage rates fixed (minimum 3d.)—Cotton first grown in Sydney Botanical Gardens—Gas first burnt in Sydney—English Criminal Law adopted—Regular Jewish religious service established in Sydney.
- 1829 Sturt's expeditions and discovery of Darling and Murray Rivers—First Land Grant to the Church and School Corporation—First Act of Council, establishing trial by jury in civil cases—Settlement established in Western Australia—Gunpowder first made in Australia—Archdeacon Broughton arrived in Sydney—First Circuit Court—"Holey Dollar" and "Dump" ceased as currency.
- 1830 Bushrangers Act passed in one day—Sturt's overland journey southward—Scarcity of labour; immigration proposed—Dr. Lang's Scotch mechanics introduced—Licensing Act—Road to Hunter River formed—Beef shipped to England, and horses to India—Water Police established in Sydney.
- 1831 Governor Bourke arrived—Lord Ripon's Land Regulations for Auction Sales—Land Grants abolished—Mitchell's explorations north of Liverpool Plains—First immigrant ship arrived—Government Domain opened—Australian Steam Conveyance Co. formed—Lang's Australian College founded—First steamer, "Sophia Jane," arrived at Sydney—First contract for conveyance of mails—First colonial-built steamer launched—*Sydney Morning Herald* published—Small-pox amongst aborigines at Port Macquarie—Busby imported grape-vine plants from France and Germany.
- 1832 First appropriation of Public Funds for Immigration—Church and School Corporation Charter revoked—King's School, Parramatta, opened—*Government Gazette* first published—Sydney Theatre opened—Savings Bank of New South Wales instituted—Legal proceedings first reported in Press.

- 1833 Sydney Mechanics' School of Arts established—Appellate jurisdiction of Privy Council extended to Colony—Census, population 60,794—Public meetings: petition for representative assembly and protest against appropriation of revenue except for local purposes—Australian Steam Navigation Company formed.
- 1834 Commercial Banking Company established—First Friendly Society formed—Trouble at Norfolk Island—Settlement at Twofold Bay—South Australia proclaimed a colony by Imperial Act.
- 1835 Mitchell established Fort Bourke Depot on the Darling River—Bank of Australasia founded—First Roman Catholic Bishop (Dr. Polding) arrived—Sydney College Grammar School opened—Public meeting petitioned for representation in Parliament—Cunningham killed by aborigines—Road to Illawarra commenced.
- 1836 Mitchell's explorations in southern New South Wales and Victoria—Squatting formally recognised—First Anglican Bishop (Dr. Broughton) consecrated—Bishopric of Australia separated from Diocese of Calcutta—Act passed for maintenance of ministers of religion—Australian Museum founded—Fall of snow in Sydney—Census, population 77,096—Permanent settlement commenced in South Australia—St. Mary's Cathedral, Sydney, dedicated.
- 1837 Select Committee on Transportation appointed in London—Heavy snowfall near Sydney—Foundation stone of St. Andrew's Cathedral, Sydney, re-laid—Australian Gaslight Company founded—Water supply, tunnel from Botany Swamps, completed—Prepayment of postage by stamped covers—Fortnightly mail, Sydney-Melbourne.
- 1838 Drought; crops failed—Assignment of Convicts system ceased—Speculation mania—Governor Gipps arrived—Botanic Gardens opened to the public—Reporters allowed in Legislative Council Chambers—Sale of Port Phillip land at Sydney—Australian Club founded—Recruiting for the army commenced.
- 1839 Squatting Act passed—Count Strzelecki found gold near Hartley—Mr. (Sir) Alfred Stephen, Judge of Supreme Court—Military juries ceased—Church Act established religious equality.
- 1840 Monetary crisis—Strzelecki's expedition to Western Port—Mt. Kosciusko named—Order-in-Council abolishing transportation of convicts—Land regulations—Revenues appropriated to public works and immigration—Viticulural industry established—Benjamin Boyd, founder of Boyd Town, Twofold Bay, arrived in Sydney—Northern boundary of Victoria determined; separation from New South Wales urged.
- 1841 Rev. W. B. Clarke found grains of alluvial gold near Bathurst—First Public (Immigration) Loan—Immigration Committee appointed—New Zealand proclaimed a separate Colony—Sydney lit with gas—Site purchased for first permanent Synagogue—Census, population 116,731—Darlinghurst Gaol opened—First outbreak of scarlatina.
- 1842 Sydney Municipal Corporation established—Insolvency Law passed—Bank crisis—Crown Land Sales Act—Richmond River discovered—Tobacco first manufactured—Moreton Bay settlement proclaimed—First public statue in Australia (Governor Bourke) unveiled at Sydney.
- 1843 First Representative Constitution Act; twelve Crown nominees and twenty-four elected members of Legislative Council—Incorporation of Suburban and City Towns—Bank of Australia Lottery—First General Election—Representative Assembly meets—First "boiling down" of sheep—First manufacture of tweed—Financial crisis—Moreton Bay granted Legislative representation.
- 1844 Exports exceeded imports—First District Court held—Pastoral Association formed—Norfolk Island annexed to Van Diemen's Land (Tasmania)—Leichhardt explored from Moreton Bay to Port Essington—Synagogue in York-street, Sydney opened.
- 1845 Mitchell explored Barcoo—Responsible Government discussed.
- 1846 Governor Fitzroy arrived—Railroad agitation—Sydney Tram and Rail Company formed—Public protests against renewal of transportation—Imperial Act giving fourteen years' lease to squatters in unsettled districts—Census, population 154,205—Meat preserving industry initiated.

- 1847 Crown Land Leases Act—Australian Agricultural Co. abandoned Coal monopoly—Proposed German immigration—First overland mail between Sydney and Adelaide—Pacific Islanders introduced—Parramatta Observatory closed—Iron smelting (Fitzroy Ironworks), opened near Berrima.
- 1848 Influx of Chinese—Kennedy's last exploring expedition—Railway Commissioner appointed—National and Denominational School Boards established—Carcoar copper-mines discovered—Leichhardt set out on last expedition—Attempted revival of transportation; Order-in-Council of 1840 revoked.
- 1849 Exodus of population to Californian gold-fields—Australian Mutual Provident Society formed—Uniform twopenny postage instituted—Contract for conveyance of English mails—Anti-transportation meetings—Last convict ships "Hashemy" and "Randolph" arrived.
- 1850 Construction of first Australian railway commenced at Sydney—University of Sydney incorporated—Anti-transportation league formed—Final abolition of transportation—Scarcity of water in Sydney; Nepean scheme proposed—Postage stamps introduced.
- 1851 Hargraves discovered payable gold near Bathurst—Gold proclaimed Crown property—Gold Commissioner appointed—Mineralogical and Geological survey of New South Wales by Surveyor Stutchbury—Colony of Victoria (Port Phillip District) separated from New South Wales—Imperial Act authorised preparation of Constitution for New South Wales—Telegraph first used—First railway contract signed—Discovery of tin in Snowy Range by Clarke—Census, population 182,424—Agitation for separation of Queensland—Sydney Chamber of Commerce established.
- 1852 Gundagai floods (77 lives lost)—Gold revenue allocated to Colonial Legislatures—First P. & O. mail steamer ("Chusan") arrived from England—Inauguration and formal opening of Sydney University—Framing of Constitution.
- 1853 Australian Joint Stock Bank incorporated—Newcastle-Maitland Railway Company formed—First steamer on the Murray—Sydney City Corporation dissolved—Australian Museum (founded 1836) incorporated—Defence works of Port Jackson commenced—First sewerage works in Sydney—Constitution Bill passed—Loan account commenced—Government House establishment removed from Parramatta to Sydney.
- 1854 Russian war scare—Volunteer Force enrolled—Fitzroy Dock commenced—University affiliated colleges established.
- 1855 Railway, Sydney to Parramatta, opened—Governor Denison arrived—Gold-fields control scheme—Royal Sydney Mint established—New Constitution inaugurated; Responsible Government—First Australian gun-boat ("Spitfire") launched at Sydney—Operative masons obtained eight-hour working-day concession.
- 1856 First elective Parliament and responsible Ministry—Civil Registration of Births, Deaths, and Marriages inaugurated—Sydney Observatory established—Pitcairn Islanders placed on Norfolk Island—Norfolk Island transferred to jurisdiction of Governor of New South Wales—Iron pillar letter receivers erected in Sydney—Census, population 252,640.
- 1857 Floods—Wrecks of "Dunbar" (119 lives lost) and "Catherine Adamson" (21 lives lost) at Sydney Heads—Select Committee on Federation—First gold register issued—Sydney Exchange opened—P. & O. mail service resumed in conjunction with Royal Mail Company's service—Gold-field regulations—Electoral lists and rolls printed—Corporation of Sydney restored—Newcastle and Maitland connected by rail—Fitzroy Dock finished.
- 1858 Manhood suffrage and vote by ballot enacted—Telegraphic communication, Sydney to Melbourne and Adelaide—Royal Charter to Sydney University—Drought—Macarthur's sheep flocks dispersed—General Election—Chinese Restriction Bill defeated by Upper House—Legislation to establish District Courts and Country Municipalities—Alpacas introduced—Murrumbidgee River navigated by steam as far as Gundagai.
- 1859 Queensland (Moreton Bay) separated from New South Wales—Parliamentary Elections—Cadell ascended Darling River in steamer for 500 miles.

- 1860 Floods, Shoalhaven and Araluen—Kiandra gold-field rush—Cumberland disease in cattle—Rifle Association formed—Glebe Abattoirs—Deaf and Dumb and Blind Institution founded—Volunteer defence force revived—Troops sent from New South Wales to New Zealand (Maori war)—Burke and Wills expedition.
- 1861 Governor Sir John Young arrived—Lambing Flat gold rush—Anti-Chinese riots at Lambing Flat and Burrangong gold-fields—Sir John Robertson's Land Act; free selection before survey—Constitutional crisis—Restriction of Chinese immigration—Emigration Commissioners, Parkes and Dalley, appointed to visit the United Kingdom—First Tramway (horse-drawn), Pitt-street, Sydney—Census, population 350,860—Sydney and Brisbane connected by telegraph.
- 1862 Drought—Lachlan (Eugowra) gold escort robbed of £14,000—State aid to religion abolished—Real Property (Torrens) Act passed—Railway opened to South Creek—Free selection of land came into operation.
- 1863 Bathurst and Canowindra "held-up" by bushrangers—Agent-General appointed—Northern Territory separated and annexed to South Australia—Money Order Office established—Volunteer Naval Brigade organised.
- 1864 Darling River floods—Freetrade Association of New South Wales formed—Bushranging.
- 1865 St. Mary's Cathedral, Sydney, burned—Border Duties Conference—Stamp Duties imposed.
- 1866 Public Schools Act; Council of Education replaced National and Denominational School Boards—General Post Office, Sydney, commenced—Sydney—Panama Ocean service commenced.
- 1867 Industrial Schools established—Municipalities Act—Diamonds found at Mudgee—First Volunteer Land Order issued.
- 1868 Governor Lord Belmore arrived—Duke of Edinburgh's visit—His attempted assassination at Clontarf—Foundation Sydney Town Hall laid—Game Act came into operation—Tidal wave in Port Jackson—First issue of bronze coin by Sydney Mint—Sydney—Panama Ocean service abandoned.
- 1869 Eskbank Iron Company established—Old Australian Subscription Library converted into Free Public Library—Foundation of Captain Cook's monument at Sydney laid by Duke of Edinburgh—Belmore Markets opened—Tender for rolling-stock (£60,000) of Australian manufacture accepted by Government—Railway to Goulburn opened—New South Wales participated in New Zealand contract mail service to San Francisco—Cable laid between Tasmania and mainland of Australia.
- 1870 Bush Fires—Intercolonial Exhibition at Sydney, celebrating Centenary of Cook's landing; monument erected at Kurnell, Botany Bay—Gold-fields Commission—Imperial troops withdrawn from New South Wales.—Regular defence force enrolled
- 1871 Forest Reserves established—Permanent military force raised—National Art Gallery founded—Census, population 503,981—Inauguration of annual celebration by four Eight-hour trade-unions—Government (Post Office) Savings Bank established.
- 1872 Governor Sir Hercules Robinson arrived—International Exhibition at Sydney—Death of William Charles Wentworth—Public Works expansion—Sydney Meat-preserving Co.'s Works established—Cable to England completed—Tin-fields opened.
- 1873 Intercolonial Conference, Sydney—First Volunteer encampment—Great activity on gold-fields—San Francisco Company contract mail service re-established—Miners' strike, Newcastle—Matrimonial Causes Act—Newspaper Postage Repeal Act and Friendly Societies Act.
- 1874 Triennial Parliaments Act—Intercolonial Conference—General Post Office opened—Volunteer Land Orders abolished—Department of Mines created.
- 1875 New Land Act, "Dummying" restricted—Postcards introduced—Sydney Town Hall opened.
- 1876 Telegraphic cable laid between New South Wales and New Zealand—Railway to Bathurst opened—Deniliquin—Moama railway opened.
- 1877 Conference of Free Selectors—Hargraves pensioned for gold-fields discovery—Rail to Orange and Cootamundra—Tolls abolished—Small-pox outbreak (4 deaths)—Precious opal discovered at Rocky Bridge Creek, Abercrombie River.

- 1878 Seamen's strike—Forestry and timber regulations—Technical College instituted in connection with Sydney Mechanics' School of Arts—Free Public Library and Museum opened on Sundays—Formation of Sydney Yacht Squadron—Rail to Wagga—Whooping-cough epidemic—Prince Alfred Hospital opened—Pioneer vessel (s.s. "Garonne") of Orient S.N. Co. arrived from London—Jewish Synagogue, Elizabeth-street, Sydney, consecrated.
- 1879 Governor Lord Augustus Loftus arrived—Royal Zoological Society founded—International Exhibition at Garden Palace, Sydney—Captain Cook's statue unveiled in Sydney—First steam tramway in Sydney—Copyright Act—National Park dedicated—Technological Museum opened—First issue silver coin from Sydney Mint—First artesian bore; water found on Kallara Run, near Paroo River.
- 1880 Public Instruction Act and Electoral Act—Temora Gold-field—Wood paving of Sydney streets—Country Towns Water Supply and Sewerage Act—Telephones established in Sydney—Solitary Island Lighthouse opened—Through railway communication established Sydney-Melbourne—Federal Conferences, Sydney and Melbourne.
- 1881 Colonial Sugar Refining Company's mill erected, Richmond River—Chinese immigration further restricted—Women admitted as students for degrees at Sydney University—Rail to Dubbo, Albury, and Darlington Point—Trade Unions Act—State Children's Relief Board established—First simultaneous census of Australia; population of New South Wales, 751,468—Prince Albert Victor and Prince George of Wales arrived in H.M.S. "Bacchante"—Small-pox in Sydney—Infectious Diseases Supervision Act, providing for constitution of Board of Health—Salvation Army established in New South Wales.
- 1882 Garden Palace destroyed by fire—Forest conservation—Clyde Engineering Works established—Licensing Act came into operation—Metropolitan Cattle Saleyards opened—Messageries Maritimes French Australian mails service established—H.M.S. "Wolverine" presented to New South Wales by Imperial Government.
- 1883 Silver discovered at Broken Hill—Broken Hill Proprietary Syndicate formed—Railway bridge across Murray River opened—Foundation-stone laid, new Town Hall, Sydney—State system of Technical Education instituted—Destruction of rabbits compulsory—Diamonds found at Bingara—Miners' strike, Newcastle—Intercolonial Federation Conference.
- 1884 Land legislation restricting sales by auction—Public Watering Places Act—Smelting furnaces, Sunny Corner and Silverton—Land Act giving fixity of tenure to pastoral lessees—Geographical Society of Australia inaugurated—Federation Bill rejected—Australian Naval Station elevated from Commodore to Rear-Admiral's Command.
- 1885 N.S.W. Military Contingent sent to Soudan—Broken Hill Silver Mines opened—Governor Lord Carrington arrived—Territorial Division of the Colony—Local Land Boards instituted—Intercolonial Trades Union Conference—Federal Council of Australasia constituted.
- 1886 Industrial depression—Wrecks of "Ly-ee-Moon," "Corangamite," "Keilawarra," and "Helen Nicol"—University Extension Lectures inaugurated—Foreign parcels post established—Dairies Supervision Act—Creation of office of Government Statistician—Norddeutscher-Lloyd Australian mail service established.
- 1887 Bulli mining disaster (83 lives lost)—Loyalist meeting in Sydney (Jubilee celebrations)—Peat's Ferry, Hawkesbury River, railway accident—*Ad valorem* duties ceased—School Savings Banks established—Scarcity of employment; Government relief works started—Australasian Conference in London—Australasian Naval Defence Force Act.
- 1888 Bush fires—Centenary Celebration of Settlement in Australia—Centennial Park dedicated—Drastic legislation against Chinese immigration (poll-tax, £100)—Coalmine's strike at Newcastle—Weekly mail service to England inaugurated—New South Wales and Queensland railway systems connected—Railway Commissioners appointed—First meeting of Australasian Association for the Advancement of Science held at Sydney—Intercolonial Conference at Sydney regarding Chinese immigration—Imperial Defence Act—Metropolitan Board of Water Supply and Sewerage established.
- 1889 Hunter River floods—Royal Naval House built at Sydney—Rail communication, Brisbane to Adelaide through Sydney and Melbourne, established by opening of Hawkesbury River Bridge—White Cliffs opal field discovered.

- 1890 Payment of Members of Parliament—Strike at Broken Hill—Maritime and shearers' strikes—Bourke (Darling River) floods—Opening of Sutherland Graving Dock—Federal Conference in Melbourne—Naval Agreement—Royal Commission on communication between Sydney and North Sydney.
- 1891 Failure of many Building Societies—Governor Lord Jersey arrived—Thirty-five Labour members returned to Legislative Assembly—Australian Auxiliary Squadron arrived—First National Australasian Convention; draft Bill adopted—Colonial Premiers' meeting—Australasian Colonies joined Postal Union—Sir John Robertson died—Cessation of assisted immigration—Census, population 1,132,234.
- 1892 Strike at Broken Hill—Run on Government Savings Bank—Council of Conciliation established—Women's College, Sydney University, opened—Hunter River District Water Supply Board—Technical College, Ultimo, opened.
- 1893 Financial crisis—Governor Sir Robert Duff arrived—Inland and Interstate Parcel Post inaugurated—Gold discovered at Wyalong—Electoral Act, "One Man One Vote"—Sydney-Vancouver mail service established—Mount Drysdale gold-field discovered—Cable communication with New Caledonia—Postal Notes issued—Married Women's Property Act—Departure of "Royal Tar" with colonists for "New Australia," South America.
- 1894 Shearers' strike—Royal Commission on Fish industry—First Offenders' Probation Act—Sir Alfred Stephen died—Railway disaster, Redfern Station—Kuring-gai Chase dedicated—Banks Exchange Settlement Office established—Sydney Hospital, new building, opened.
- 1895 Land Legislation—Death of Governor Sir Robert Duff; Viscount Hampden succeeded—Land and Income Tax Acts passed—Freetrade Tariff instituted—Federal Convention at Hobart—Standard Time Act—Crown Lands Act—"Cash basis" system of keeping public accounts introduced—New South Wales Chamber of Manufactures constituted—Hospital Saturday Fund inaugurated.
- 1896 Death of Sir Henry Parkes—Factories and shops regulations—P. N. Russell bequest to School of Engineering, Sydney University—Public Service reorganised—Enfranchisement of Police—People's Federal Convention at Bathurst—Pacific Cable Conference at Sydney—First scientific expedition (British) to Funafuti Island, Ellice Group.
- 1897 Municipalities Act—Artesian Wells Act—Pharmacy Act—Vegetation Diseases Act—Celebration of record reign of Queen Victoria; Australian troops and representatives received in London—Governor Phillip's statue unveiled in Sydney Botanic Gardens—Colonial Premiers Conference with Secretary for Colonies in London—Second scientific expedition (Australasian) to Funafuti Island—Federal Convention Sessions at Adelaide and Sydney.
- 1898 First surplus of wheat for export—Proposed Federation Constitution Bill rejected by New South Wales—Sydney and Newcastle connected by telephone—Federal Convention Sessions at Melbourne—Third scientific expedition (Australasian) to Funafuti Island—Queen Victoria Markets (Sydney) opened.
- 1899 Governor Earl Beauchamp arrived—Advances to settlers instituted—Conciliation and arbitration in industrial disputes—Australasian Federation Enabling Act Referenda; acceptance by New South Wales—Early closing of shops—Boer War; first Contingent sent to South Africa from New South Wales—Electrification of City Tramways commenced—Incorporation of Public Library—Friendly Societies Act—First gold dredge in operation.
- 1900 Governor Beauchamp's departure—Old-age Pensions instituted—Miners' Accident Relief Fund established—Federal Elections—Metropolitan Traffic Act—Inebriates Act—Naval Contingent despatched to China—Commonwealth of Australia Constitution Act received Royal assent—First Federal Ministry formed.
- 1901 Federation of Australian Colonies—Proclamation of Commonwealth of Australia—Opening of first Federal Parliament—Visit of T.R.H. the Duke and Duchess of Cornwall and York—Industrial Arbitration Act—Sydney Harbour Trust formed—Naval Contingent returned from China—Federal High Court inaugurated—Census, population 1,359,133—Closer Settlement Act—Western Lands Act—Introduction of Pacific Islanders prohibited—Postal, Customs, and Defence Departments transferred to Commonwealth—Interstate Freetrade established—Dentists Act—Woolwich Graving (Mort's) Dock completed—Mt. Boppy mine opened.

- 1902 Governor Sir H. H. Rawson arrived—Mt. Kembla Colliery Explosion (ninety-five lives lost)—Jubilee of Sydney University—Women's Franchise—Public Health Act—Pacific Cable completed—Legitimation of Children Act—Cattle Slaughtering and Diseased Animals and Meat Act—First sitting of Arbitration Court—Australian Naval Station elevated to Vice-Admiral's Command—Union of Methodist Churches—Parliamentary Select Committee *re* Greater Sydney.
- 1903 Referendum favouring reduction of number of members of Legislative Assembly from 125 to 90—High Court of Australia constituted—Commercial Causes Act—Registration of Firms—Chamber of Agriculture established—Influx of Criminals Prevention Act—Sugar Bounty (Federal) Act.
- 1904 Reduction of number of members of Parliament from 125 to 90—Redistribution of Electorates—Second P. N. Russell bequest, Sydney University—Educational Reforms commenced—Patents, Trade Marks, &c., transferred to Commonwealth—Infant Protection Act.
- 1905 Assisted Immigration reintroduced—Teachers' Training College opened—Kurnell, Botany Bay, proclaimed recreation reserve—Children's Courts instituted—Habitual Criminals Act—United Dental Hospital of Sydney established—Shires Act.
- 1906 Barren Jack (Burrinjuck) Dam authorised—Public School fees abolished—North Coast Railway authorised—Local Government Act—Sydney Central Railway Station opened—Liquor Act, with drastic provisions—Federal Elections—Dr. Danysz's experiments in rabbit destruction—Government Tourist office established.
- 1907 Invalidity and Accident Pensions—Telephone connected, Sydney-Melbourne—Opening of blast furnace for manufacture of iron and steel at Lithgow—Consolidation of small public schools commenced—Medical inspection of School Children initiated—Partial toll system of telephone charges introduced—Advances to settlers transferred to the control of Government Savings Bank—Bounties (Federal) Act.
- 1908 Department of Agriculture separated from Mines Department—Visit of United States (American) Fleet—Industrial Disputes Act—Minimum Wage Act—Industrial Wages Boards constituted—Subventions to Friendly Societies Act—Yass-Canberra Federal Capital Site selection—Coal Strike, Newcastle—Tramway Strike, Sydney—First Travelling State School—Manufactures Encouragement Act (Federal)—Crown Lands Amendment Act (Conversions)—Commonwealth Meteorological Bureau established—Departure of "Nimrod" Antarctic Expedition (Lieutenant Shackleton, leader)—Cataract Dam completed—Prisoners' Detention Act—Commonwealth Literary Fund established—Royal Commission for Improvement of City of Sydney and suburbs.
- 1909 Governor Lord Chelmsford arrived—Fisher Library (Sydney University) opened—Empire Commerce Congress at Sydney—Old-age Pensions administration taken over by Commonwealth—Botany Wool-combing Works established—Premiers' Conference on States' finance agreement with Commonwealth Government—Miners' strikes, Broken Hill and Newcastle—Sydney Municipal Library formed by transfer of Lending Branch of Public Library—Long Bay Female Penitentiary opened—Quarantine administration transferred to Commonwealth—Pure Food Act—Return of "Nimrod," Antarctic Expedition—Private Hospitals Act—Visit of Lord Kitchener—Imperial Conference on Defence of Empire.
- 1910 Newcastle Miners' strike ended—Mitchell Library opened—State and Federal Elections—Referenda favouring transfer of State Debts to Federal Government and rejecting proposed States finance agreement with Commonwealth—Australian Notes Act—Australian silver coinage issued—Parliamentary Elections (Second Ballot) Act—Saturday Half-holiday instituted in Sydney and the larger towns of N.S.W.—New mail contract with Orient Company—Workmen's Compensation Act—Federal Land Tax—First State Labour Ministry—Sydney Municipal Fish Markets opened—Invalidity and Accidents Pensions administration transferred to Commonwealth—Visit of Dutch Naval squadron—Scottish Agricultural Commission's tour—Departure of "Terra Nova" Antarctic Expedition (Captain Scott, leader)—Visit of Japanese Naval Training vessels—Visit of Admiral Henderson to inspect Naval Defence arrangements—Arrival of "Yarra" and "Parramatta," first vessels of Australian Navy—Extended toll system applied to telephones—Australian Penny Postage—Subsidised Press Cable service initiated—Agricultural Bureau established.

1911. First Australian Notes issue—Federal Referenda relating to monopolies and industrial legislation; proposals rejected—First Australian warships, "Parramatta" and "Yarra" in commission—Launch of Australian torpedo-boat destroyer "Warrego" at Cockatoo Island—Federal Capital Site at Yass-Canberra transferred to Commonwealth—Compulsory military training initiated—Detachment of cadets to England for Coronation—Radium and applicators obtained for Sydney Hospital—Commonwealth Postal Rates Act, introducing Penny Postage to all parts of British Empire—Murrumbidgee Irrigation Trust appointed—J. J. Hammond on his bi-plane with Frank Coles, mechanic, flew over Sydney and harbour—Dreadnought Farm Training Scheme initiated—First wireless station (private) licensed for transaction of public business—Congress of Australasian Association for the Advancement of Science opened at Sydney—Solar eclipse observed at Vavau by Australian party of Scientists—Premier attended Imperial Conference in London and Coronation of King George V—Royal Military College of Australia opened at Duntroon—Abolition of Nautical School Ship, "Sobraon"—Royal Commission on Decentralisation in Railway Transit—Randwick wireless station, with Australian-made apparatus, demonstrated capacity of transmitting messages over 2,000 miles—Japanese Antarctic Expedition, after replenishing stores at Sydney, resumed southward cruise—Royal Commission of Inquiry as to Food Supplies and Prices—Royal Commission on Shortage of Labour—Electoral Distribution Commission—Death of Cardinal Moran—State Brickworks and Metal Quarry established—Australasian Medical Congress at Sydney—First section of North Coast Railway opened—Census, on 2nd April, 1911; population 1,646,734—Evening Continuation Schools opened—Departure of Mawson Antarctic Expedition—First Inter-State Forestry Conference (Sydney)—Launch of H.M.A.S. "Australia"—Union Steamship Co.'s service, Sydney-New Zealand-San Francisco, inaugurated—Flight of first Australian Aviator (W. E. Hart) from Sydney to Penrith—Sydney Municipal Fruit Markets opened—Carriage of goods on tramways authorised—Royal Commission on Totalisator.
1912. Interstate Conference of Premiers and Ministers, Melbourne—Return of Amundsen's Antarctic Exploration Expedition, reporting having reached the South Pole—Captain Scott and party of explorers after reaching the South Pole perished on return journey—Bursary Endowment, Secondary Education—Second visit of Japanese Training vessels to Port Jackson—Resumption of Oceanic Steamship Co.'s Sydney San Francisco Mail Service—Destroyer "Warrego" commissioned—Federal Capital Designs selected—First International Aviation Contest, Sydney—Boys Naval Training Ship "Tingira" (late N.S.S. "Sobraon") commissioned and moored at Rose Bay, Port Jackson—Review of Universal Training Cadets (19,642) at Centennial Park, Sydney—Murray Waters Agreement—Industrial Arbitration Acts (State and Federal)—Commonwealth Small Arms Factory, Lithgow opened—Visit of Canadian Cadets—Murrumbidgee Irrigation Farms made available and irrigation commenced—Interstate Conference on Artesian Water Conservation—Income Tax (Management) Act—Criminal Appeal Act—Visit of Lieutenant-Colonel Baden-Powell in connection with Boy Scout movement—Donation of £1,000,000 by Mrs. Walter R. Hall for charitable purposes in the States of Queensland, New South Wales, and Victoria—Commonwealth Bank established—Dacey Garden Suburb planned, and buildings erected by Government—Housing Board appointed—Anti-tuberculosis Dispensary established—New Cable, Sydney-Auckland laid—Meat Industry and Abattoirs Board established—Commonwealth Maternity allowances—Height of buildings in Sydney district limited to 150 feet—dedication of Ashton Park, Sydney, as new Zoological Gardens—Sydney (Pennant Hills) Wireless Station opened—State Timber and Joinery Works, Sand-lime Brickworks, and Lime-works established—Revival of whaling—Sugar Bounty abolished—Gas Act—State Coal Mines Act.
1913. Imperial Flagship, H.M.S. "Drake," departed for England, H.M.S. "Cambrian" made Flagship—Commonwealth Postage Stamps first issued—First official encampment of Citizen Forces at La Perouse—Japanese warships "Adzuma" and "Soya," visited Port Jackson—Dungog-Taree section of North Coast Railway opened—Federal Capital City Canberra named and foundation stones laid—Admiralty survey of Port Jackson resumed—Visit of Dominions Royal Commission—British Immigration League's Receiving Depot and Labour Exchange, Glebe, opened—Gas Companies' employees strike at Sydney—Sydney Harbour Ferry employees strike—Centenary celebrations

1913
(continued).

of crossing of Blue Mountains and discovery of Bathurst Plains—March of 20,000 Universal Training Cadets in Sydney—Lithgow steel rails despatched for transcontinental railway—South Coast miners strike—British Trade Commissioners office established at Sydney—Water Conservation and Irrigation Commissioner appointed—Federal and State General elections—Nepean Junction-Lapstone Hill Railway deviation opened—First elective Senate, University of Sydney—Chelmsford Institute for Seamen, Newcastle, founded—Governor Sir Gerald Strickland arrived—Cockatoo Island Dock transferred to Commonwealth Government—Keels laid at Sydney for three warships, Cruiser "Brisbane," and Destroyers "Derwent" and "Torrens"—Medical Inspection of Children in State Schools extended—Royal Commission on Industrial Arbitration—Imperial Naval Establishments at Sydney transferred to Commonwealth—Royal Marine detachment disbanded—Land (70,000 acres) at Moorebank, locality of Liverpool, resumed by Commonwealth for military purposes—Duntroon and Yarralumla stations, 70,000 acres, taken over by Commonwealth—Small-pox epidemic of mild form in Sydney—Visit of British Parliamentary Party—Bulk handling of wheat investigation—Foundation stone of Commonwealth Offices in London laid by H.M. King George V—Arrival at Sydney (4th October) of Australian Fleet, including battle cruiser "Australia" and cruisers "Sydney" and "Melbourne"—Presentation of shield and bell by citizens of Sydney to H.M.A.S. "Sydney"—Departure of (Imperial) Admiral King-Hall—Cost of Living and Living Wage Inquiry in Industrial Arbitration Court—Report Royal Commission on Uniform Standards for Food and Drugs—Appointment of Members of Interstate Commission—Visit of Panama Exposition Commissioners—Celebration of 125th anniversary of foundation of Parramatta—State Parliament General Elections—State Government Savings Bank agencies removed from post offices—Lady Edeline Babies Hospital opened—Commonwealth Bank commenced operations in New South Wales—First playground and open schoolroom established at Victoria Park, Sydney—Amalgamation of New South Wales and Victorian immigration offices in London—Week-end cables letters—State Library of Music established—Visit of Sir M. Fitzmaurice to report on naval bases—State freestone quarry (Maroubra) established—Foundation stone of Commonwealth Bank Head Office laid in Sydney—Track, block, and automatic signalling for railway introduced—Legislation passed providing that prisoners committed under Deserted Wives and Children Act or Infant Protection Act shall work towards satisfaction of Orders for Maintenance.

1914 Department of Public Health established—Amalgamation of Savings Banks—Letter telegrams introduced—Public Trust Office established—Day baking of bread initiated—Return of Mawson Antarctic Expedition—Umberumberka (Broken Hill) dam, completed—Women's Employment State Agency opened—Visit of General Sir Ian Hamilton, Inspector-General of Overseas Forces—Congress of British Association for Advancement of Science at Sydney—Dissolution of both Houses of Federal Parliament—Federal General Elections—Arrival of Australian Submarines—Strike of butchers' employees—Travelling (School) Hospital established—Dental Clinics for schools established—State Bakery established—Automatic telephones installed at Sydney and suburban exchanges—Norfolk Island transferred to control of Commonwealth Government—Fruit Cases Act of 1912 commenced—Darlinghurst Gaol closed—First Aerial Mail, Melbourne to Sydney, carried by M. Guillaux—Direct telephone Sydney to Adelaide opened—Meat Export Trade Inquiry—Murray Waters Agreement (Premiers' Conference)—Baby Clinics, Pre-maternity, and Home-nursing Board established—First Baby Clinic opened—Monier Pipe Works purchased by State Government—Governor Macquarie's manuscripts purchased in London for Mitchell Library—Stamp Duties Act—Visit of Under Secretary of State for Colonies, Sir Hartmann Just—State advances for homes initiated—Commonwealth Aviation School established—European War; local defence forces mobilised—Expeditionary force of volunteers despatched to cooperate with Imperial forces—Australian Naval Unit transferred to direct Imperial control—Shipping entering ports of Sydney and Newcastle subject to examination—Necessary Commodities Control Act—Patriotic Funds inaugurated—Sydney Stock Exchange suspended operations for seven weeks—Australian war vessels assist in capture of German Samoa—New Britain and Kaiser Wilhelm's Land captured by Australian naval and military forces—Australian Submarine AE 1 lost at sea—Prize Court established.

GEOGRAPHY AND CLIMATE.

GEOGRAPHY.

AREA OF NEW SOUTH WALES.

THE area comprised within the limits of New South Wales, including Lord Howe Island and the Federal Capital Territory, is estimated at 310,372 square miles, or 198,638,080 acres, representing rather more than one-tenth of the total area of the Commonwealth of Australia. There was a formal surrender to the Commonwealth Government, on 1st January, 1911, of about 900 square miles at Yass-Canberra as Federal Capital Territory, and in addition, land at Jervis Bay has been transferred to the Federal Government for naval purposes. The dimensions of these areas have not yet been determined.

The length of the State, measuring directly from Point Danger on the north to Cape Howe on the south, is 683 miles. From east to west, along the 29th parallel, the breadth is 756 miles, while diagonally from the south-west corner, where the River Murray passes into South Australia, to Point Danger, the length reaches 850 miles.

Lord Howe Island, the dependency of New South Wales, is 7 miles in length, by a width ranging from half-a-mile to $1\frac{3}{4}$ miles, and has an area of 5 square miles.

The area of New South Wales in relation to the total area of the Commonwealth is shown in the following statement:—

State or Territory.	Area.	Per cent. of total area.
	sq miles.	
New South Wales	309,467*	10·40
Victoria	87,884	2·96
Queensland	670,500	22·54
South Australia	380,070	12·78
Western Australia	975,920	32·81
Tasmania	26,215	·88
Northern Territory	523,620	17·60
Federal Capital Territory	905*	·03
Total Commonwealth	2,974,581	100·00

* Approximate.

New South Wales is three and a half times as large as Victoria, nearly twelve times as large as Tasmania, and somewhat smaller than South Australia; Queensland is twice and Western Australia three times as large as New South Wales.

AREA OF THE BRITISH EMPIRE

For purposes of comparison the areas of all portions of the British Empire are given in the subjoined statement :—

Country.	Area.	Country.	Area.
Europe—	sq. mi. es.	Africa— <i>continued.</i>	sq. miles,
United Kingdom—		West Africa— <i>continued.</i>	
England and Wales ...	58,340	Sierra Leone and Protectorate.	31,000
Scotland	30,405	Gambia and Protectorate...	4,500
Ireland	32,586		
Isle of Man and Channel Islands.	302	Total, West Africa ...	451,580
Total, United Kingdom ...	121,633		
		Mauritius and Dependencies...	809
Gibraltar	2	Seychelles	156
Malta	118	Somaliland	68,000
Asia—		East Africa Protectorate ...	246,822
India—British	1,093,074	Uganda Protectorate ...	121,437
Feudatory States	709,583	Zanzibar and Pemba ...	1,020
Total, India	1,802,657	Nyasaland	39,315
		Rhodesia	439,575
Cyprus	3,584	Swaziland	6,536
Aden, Perim, Socotra ...	10,387	Basutoland	11,716
Ceylon... ..	25,331	Bechuanaland	275,000
Straits Settlements	1,630	America—	
Federated Malay States ...	27,506	Canada	3,729,665
Other Malay States	24,600	Newfoundland and Labrador	162,734
Borneo	31,106	British Honduras	8,598
Sarawak	42,000	British Guiana	90,277
Hong Kong and New Territories.	405	Bermuda	19
Wei-hai-wei	285	West Indies—	
Africa—		Bahamas	4,404
Union of South Africa—		Turks and Caicos Islands...	166
Cape of Good Hope ...	276,995	Jamaica	4,207
Natal	35,290	Cayman Islands	89
Transvaal	110,426	Windward Islands...	672
Orange Free State	50,389	Leeward Islands	715
Total Union of South Africa.	473,100	Trinidad and Tobago ...	1,868
		Total, West Indies ...	12,121
Ascension	34	Falkland Islands	7,500
St. Helena	47	Australia and the Pacific—	
West Africa—		Australia	2,974,581
Northern Nigeria	256,200	Papua	90,540
Southern Nigeria and Protectorate.	79,880	Norfolk Island	10
Gold Coast and Protectorate.	80,000	New Zealand	103,861
		Fiji	7,435
		Tonga	390
		Solomon Islands	14,800
		Gilbert Islands	166
		Total, British Empire ...	11,429,088

BOUNDARIES OF NEW SOUTH WALES.

New South Wales lies in the temperate zone, and almost entirely between the 29th and 36th parallels of south latitude and the 141st and 154th meridians of east longitude. The southern boundary dips from the 34th parallel on the west to the 37th parallel on the east. New South Wales is bordered on the north, west, and south respectively by the States of Queensland, South Australia, and Victoria, and on the east by the South Pacific Ocean. The total length of coast line is 700 miles, representing 1 mile of coast to 443

square miles of hinterland, as against an average of 1 in 261 for the continent of Australia. New South Wales has, of all the Australian States, excepting the Northern Territory, the greatest proportion of territory to coast line.

Under the original Commission, given in 1786 to Arthur Phillip, R.N., as Captain-General and Governor-in-Chief, the territory of New South Wales extended from Cape York, in the latitude of $10^{\circ} 37' S.$, to the South Cape, in latitude $43^{\circ} 39' S.$, and included all the country westward to the 135th degree of east longitude, as well as the islands of the Pacific Ocean within the latitude given. Thus, in 1787, New South Wales, comprising the whole eastern half of the continent of Australia, covered 1,454,312 square miles, exclusive of island dependencies. In 1827, the western boundary of New South Wales was extended to the 129th meridian of east longitude, adding 518,134 square miles to the continental territory of the Colony. The area was afterwards reduced, through the formation of colonies, in Tasmania and New Zealand, as well as on the mainland, viz. : South Australia, with 309,850 square miles, proclaimed in 1834, and first permanently settled in 1836; Victoria, with 87,884 square miles, in 1851; and Queensland, with 554,300 square miles, in 1859, at which date New South Wales included 310,367 square miles on the east coast, and 710,040 square miles in Central and Northern Australia. Subsequently, in 1861 and 1863, further alterations were made, till finally, by 1863, leaving to New South Wales the mainland area of only 310,367 square miles on the middle east coast of the continent of Australia, and Lord Howe Island.

TRIGONOMETRICAL SURVEY.

Numerous stations have been erected in the State in connection with the trigonometrical survey. Two base lines have been measured, one situated near Lake George, and the other near Richmond. They are $5\frac{1}{2}$ and 7 miles in length respectively. A third base line, some 20 miles in length, has been selected on the railway line, about 40 miles south-east of the town of Bourke, and the triangulation has been extended in that direction.

A list of the trigonometrical stations situated at a height of 3,000 feet or more has been shown in the previous issue of this Year Book.

MAGNETIC SURVEY.

During the year 1913, the Department of Terrestrial Magnetism of the Carnegie Institute of the United States of America commenced a magnetic survey of New South Wales. The results of the survey will be useful to shipping and surveyors, and will be given by the Carnegie Institute to the Government of New South Wales. It is interesting to note that the Carnegie Institute equipped the Dr. Mawson Expedition to the Polar regions with a series of instruments for the magnetic survey of its sphere of operations within the south polar area.

GEOGRAPHICAL FEATURES.

In the previous issue of this Year Book lists were published showing in detail the inlets, headlands, islands, rivers, lakes, &c., of New South Wales; in this issue reference is made only to the more important geographical features.

CAPEs AND HEADLANDS.

The coast of New South Wales is remarkably regular, and does not present any striking topographical features. It consists of rugged cliffs, alternating with sandy beaches and wide river estuaries. Few capes project more than a few hundred yards into the sea.

Proceeding from north to south, the principal headlands are as follow:— Point Danger is the most northerly point on the coast; Tweed Heads is a popular holiday resort; Cape Byron, 2 miles in length, is the most easterly point of Australia, and shelters Byron Bay from southerly and south-easterly gales; Evan's Head, the termination of the Richmond Range; Clarence Heads is at the mouth of the Clarence River; Smoky Cape is near Trial Bay; Tacking Point is south of Port Macquarie; Crowdy Head, north of the Manning River estuary, affords shelter to coastal vessels; Cape Hawke, near Wallis Lake; Sugarloaf Point, near Myall Lake; Point Stephens, at Port Stephens. Nobbys, which marks the entrance to Newcastle Harbour, was once a sea-cut island, owing its preservation to the action of volcanic dykes in hardening its rocks; it is now connected with the mainland by a breakwater. Redhead is between Newcastle and Lake Macquarie; Bungaree Norah, near the entrance to Tuggerah Lakes; Broken Bay Heads—Box Head and Barrenjoey—at the entrance to Broken Bay; Port Jackson Heads mark the entrance to Sydney Harbour; Capes Banks and Solander are the north and south heads of Botany Bay; Coal Cliff rises abruptly from the sea at Clifton, and marks the commencement of the Illawarra Range; Bulli and Bellambi Points shelter roadsteads used for shipping coal; Black Head, south of Gerringong, is noted for fossils and geological specimens; Point Perpendicular and St. George's Head are at the entrance to Jervis Bay, an important signal station has been established on the former; Point Upright is north of Bateman Bay; Moruya Heads are at the mouth of the Moruya River; Cape Dromedary is between Montague Island and Bermagui; Green Cape is south of Twofold Bay; and Cape Howe is the most southerly point of New South Wales.

HARBOURS AND INLETS.

The numerous inlets of the coast of New South Wales are remarkable for complexity of outline. There are some fine natural harbours, with deep water and steep rocky shores, which owe their existence to the subsidence in past ages of the coastline, which caused the submergence of the valleys of coastal rivers and converted them into spacious harbours. Numerous small ports, estuaries, and roadsteads provide shelter to shipping, and afford facilities for trade. The entrances to the estuaries are usually obstructed by sand bars, formed by the combined action of ocean currents and waves and wind. Efforts are made to control the sand movement by the construction of breakwaters and training walls. Ocean jetties have been constructed at most of the roadsteads.

The most northerly port is the estuary of the Tweed River. Byron Bay provides fair shelter, the depth of water at the ocean jetty being about 19 feet at low tide. The estuary of the Richmond River and Shoal Bay, at the mouth of the Clarence River, are important ports of rich dairying districts, but on account of sandbars at the entrance are used by coastal vessels only. Woolgoolga Bay and Coff's Harbour afford safe anchorage for small vessels; it is proposed to establish a deepsea port at Coff's Harbour, which is the outlet of the Dorrigo district. The estuaries of the Bellinger and Nambucca Rivers are bar-harbours used for coastal trade.

Trial Bay, at the mouth of the Macleay River, affords safe anchorage for coastal vessels. Port Macquarie is the estuary of the Hastings River. Between Port Macquarie and Port Stephens small vessels are afforded shelter at Camden Haven, Crowdy Bay, Harrington and Farquhar Inlets (at the mouth of the Manning River), Cape Hawke Harbour, Port Forster, and Sugarloaf Bay.

Port Stephens, the estuary of the Karuah River, 21 miles north of Newcastle, in a natural harbour, as yet practically unimproved; it has a depth at the

entrance of 30 feet. The width between the headlands is three-quarters of a mile, the navigable width being a quarter of a mile. Salamander Bay, 5 miles from the entrance, offers sheltered deep water sufficient for harbour purposes, and shipping facilities could be provided at low cost. Port Stephens offers an economical and easily-equipped port, and its position is favourable for connections with the trunk railways; an anchorage known as Fly Road near the entrance to Port Stephens affords shelter for shipping in southerly weather.

Port Hunter, Newcastle Harbour, at the mouth of the Hunter River, is primarily a coal shipping port; breakwaters and training walls have been constructed at the entrance to prevent the formation of a sandbar; the wharves are extensive, and are fitted with modern appliances for loading coal and other cargoes; vessels 560 feet long and of 27 feet draught can be berthed.

Broken Bay, at the mouth of the Hawkesbury River, 15 miles north of Port Jackson, is a good natural harbour, but on account of its proximity to Sydney it has not been developed as a shipping centre. Broken Bay has three large branches—Brisbane Water, Hawkesbury Mouth, and Pittwater.

Port Jackson, the port of Sydney, ranks first in importance by reason of extent, natural facilities, and volume of trade; the entrance is about a mile wide, with a minimum depth of 80 feet. Powerful lights have been installed on the South Head, and numerous leading lights and buoys within the harbour facilitate the navigation of the port. There are two entrance channels—the eastern has a depth of 40 feet at low water, and the western is being dredged to an equal depth, in order to provide separate channels for incoming and outgoing vessels. The bottom of the entrance channels is sand, so that deeper water can be provided without difficulty if required.

As there is no effective river flowing into Port Jackson, it is remarkably free from silt, and deep water extends close to the shores. After passing through the channels, vessels can navigate in water of a depth ranging from 40 to 50 feet for a distance of 4 miles to the main wharves. The total area of water-surface in Port Jackson is 14,285 acres, or about 22 square miles, of which 3,000 acres have a depth ranging from 35 to 160 feet. The length of the foreshores is nearly 200 miles.

The Pilot Station is situated at Watson's Bay, on the western side of South Head, and the Quarantine Station at inner North Head. There are nine islands in Port Jackson—Clark, Shark, Rodd, and Schnapper Islands, which are reserved as public pleasure resorts; Garden Island, used for naval purposes; Goat Island, the residence of the Officer-in-charge of the Sydney Harbour Trust's Firefloats, and depôt of the Trust; Spectacle Island, used for the storage of explosives; Cockatoo Island, at the mouth of the Parramatta River, where the Fitzroy and Sutherland dry docks are situated. Fort Denison, near the entrance to Circular Quay, formerly a fortification, is now used as a lighthouse and for the firing of the time gun.

The wharves are situated along the southern shore of the harbour, the large mail and passenger liners being berthed close to the centre of the city. Exclusive of numerous ferry wharves and private jetties, there are 47,524 feet of wharfage in actual use, and 7,194 feet under construction. As regards docking accommodation, Port Jackson is superior to any other port in Australia; there are four large graving docks, five floating docks, and five patent slips. The principal dock for the Australian Navy is situated in Sydney Harbour.

Botany Bay is notable as the first Australian port entered by Captain Cook. On account of its proximity to Sydney, its trade is small, and it is used mainly as a fishing ground and tourist resort.

Port Hacking, a few miles to the south, is also utilised as a fishing and pleasure resort, the National Park being situated on its shores. At the roadsteads, Bulli and Bellambi, ocean jetties have been built for the shipment of coal. At Wollongong a small artificial harbour affords facilities for shipping in fair weather.

At Port Kembla, a few miles south of Wollongong, works are in progress to form a close harbour of about 334 acres suitable for ocean-going steamers. Shellharbour and Kiama Harbour are small artificial harbours. Gerringong Harbour and the mouths of the Shoalhaven and Crookhaven Rivers afford anchorage for small vessels.

Jervis Bay, 82 miles south of Sydney, is a fine expanse of water near the mouth of the Shoalhaven River. The entrance, between precipitous headlands, is $1\frac{3}{4}$ miles in width, with a depth ranging from 90 to 120 feet; the area of the bay carrying a greater depth than 24 feet, is about 38 square miles. On the southern side an area of land has been ceded to the Federal Government for use as a port for the Federal Capital, Canberra, with which it will be connected by rail.

At Ulladulla a small artificial harbour has been constructed. Bateman Bay, at the mouth of the Clyde River, the estuary of the Moruya River, Bermagui Bay, and Tathra Bay, at the mouth of the Bega River, and Merimbula Bay, are ports where small steamers load dairy produce for the Sydney market. Twofold Bay, near the southern extremity of the State, was formerly the headquarters of an extensive ocean whaling trade; there are indications of a revival of this industry.

At intervals along the coast there are several lagoons, such as Lake Macquarie, which have communication with the sea, and can be entered by small vessels; further particulars are shown subsequently in this chapter.

ISLANDS.

There are a number of islands along the coast of New South Wales; the majority are situated close to the mainland to which they were formerly attached, and are too small to be of much value. Generally, they are of granitic, schistic, basaltic, porphyritic, or doleritic formation, with meagre vegetation, and practically no timber.

The principal are Solitary Islands, between the Bellinger and Clarence Rivers—a powerful lighthouse has been erected on South Solitary; Coff's and Mutton Bird Islands, near Coff's Harbour; Broughton Island, the largest on the coast, near Port Stephens, is a centre of lobster and other fishing; Bird Island is near Tuggerah Lakes; and the Five Islands are close to Port Kembla. On Montague Island, south-east of Wagonga Inlet, a lighthouse has been erected, and excellent building granite has been obtained.

From Gabo Island, off the Victorian coast, a few miles south-west of Cape Howe, shipping intelligence is telegraphed to commercial centres.

Lord Howe Island is situated about 300 miles east of Port Macquarie, and 436 miles from Sydney, in latitude $31^{\circ} 33' 4''$ S., longitude $159^{\circ} 4' 26''$ E.; it was discovered in 1788 by Lieutenant Ball. The island is of volcanic origin, and Mount Gower, the highest point, is a volcanic ridge reaching a height of 2,840 feet above sea level. The climate is equable, and the rich soil and abundant rainfall are favourable for the growth of subtropical products; but on account of the rocky formation of the greater part of the surface only about 300 acres are suitable for cultivation. The vegetation of Lord Howe Island is luxuriant, palms and banyans being the most remarkable of the varied flora. The land has not been alienated, but is occupied rent free on sufferance, and utilised for the production of Kentia Palm Seed, the sole export of the island. In December, 1913, the population was 107 persons.

Norfolk Island, situated about 930 miles from Sydney, and formerly a Crown Colony under the administration of the Governor of New South Wales, was transferred to the Commonwealth as from 1st July, 1914.

THE SURFACE.

The surface of New South Wales is divided naturally into three main divisions—the Coast District, the Tablelands, and the Western Plains. The tablelands occupy the summit of the Great Dividing Range, which traverses the State from north to south and marks the division between the coast district and the plains.

In past ages a great part of the interior of Australia was occupied by a vast mediterranean sea, bounded by a line of highlands, which probably extended considerably to the east of the present coastline. The slope of these hills was towards the west, and rivers flowed down from them into the inland sea, carrying thither the sand and silt which now seals down the artesian basin. Later, a gradual uplift took place in the northern part of Australia, accompanied by a depression in the southern portion; thus streams which formerly flowed north-west and entered the sea by separate mouths became diverted to the south and conjoined with the Darling River.

The southern depression allowed the sea lying to the south of Australia to encroach inland and spread over the region now known as the Riverina. A subsequent uplift pushed the southern sea back to its present boundary and brought about the combination of the western rivers into one great system—the Murray-Darling.

During the upward movement in the interior a marked elevation took place in the coastal portion, the uplift being greater towards the coast. Thus an elevated plateau with a short steep slope to the eastern seaboard was produced. Rivers which then commenced to flow down this slope were able, by their great erosive power, to work their way inland and extend the coastal plain, placing the Great Dividing Range more westward.

Subsequently a submergence of the coast took place which converted valleys of the coastal rivers into harbours, such as Port Jackson, Broken Bay, Port Stephens, and others.

The coastal strip is undulating and well watered. The average width is about 30 miles; at Clifton the tableland abuts on the ocean, while the widest part (150 miles) is in the valley of the Hunter River, where the relatively soft rocks of the coal basin have offered least obstruction to river erosion. The Great Coal Basin (extending from Port Stephens to Jervis Bay) underlies the central portion of the coastal region; the seam emerges to the surface at Newcastle and Bulli, and at Sydney lies about 3,000 feet below the surface. Coal seams are found in the Clarence River district, but for the most part the northern and southern sections of the coast district are devoted to dairy farming and the cultivation of such crops as maize, lucerne, and in the extreme north, sugar-cane; the forests yield a great variety of valuable timbers.

There are two tablelands—the northern and southern—comprising an extensive plateau region, furrowed in many parts by deep, rugged valleys. Generally they present on the eastern side a steep escarpment towards the ocean, while on the west they slope gradually towards the plains. The tablelands vary in width from 30 to 100 miles. The northern tableland commences in Queensland and terminates on the northern side of the Peel River Valley; its average height is 2,500 feet. The southern tableland extends from the Victorian border, and slopes gradually to the Cudgong and Colo Rivers; its average height is slightly less than the northern tableland, although the Kosciusko Plateau, the most elevated portion of the State, is within its limits.

Level upland plains occur throughout the tableland division, such as the Dorrigo, which forms the elevated hinterland of the coastal tract round Coff's Harbour; and the Bathurst, Goulburn, Yass, and Monaro Plains on the Southern Tableland. Notable features of the Southern Tableland are the limestone belt, in which the famous Jenolan and other limestone caves occur; and numerous sunken valleys, such as those of the Blue Mountains, the Burragorang Valley, through which the Wollondilly River flows, the Kangaroo Valley, between Moss Vale and the Shoalhaven River, and the Araluen Valley further south.

The chief industries are cereal and fruit cultivation, sheep and dairy farming; gold, tin, silver, and other metalliferous mines are worked in various parts.

The Great Plain district stretches from the base of the tablelands to the western boundary of the State. The plains are not quite horizontal, but slope very gently from the bed of the Darling eastward towards the Great Dividing Range and westward towards the South Australian border. Only a few trifling elevations occur, and the plains are for the most part devoid of timber.

The plains are watered by the rivers of the Murray-Darling system; the Darling and its tributaries are liable to considerable shrinkage in periods of dry weather, but, on the other hand, in wet seasons, these streams overflow their banks and flood the surrounding country for miles, rendering it extremely fertile.

The surface of the plains consists of rich red and black soils, the former being particularly rich in plant food. The black soil formations represent the silted-up channels of old rivers which, when flooded, spread a fertile silt over the surrounding district. The black soil plains occupy large areas along the middle courses of the Castlereagh, Namoi, and Gwydir Rivers.

Several portions of the plains are distinguished by special names, such as the Liverpool Plains, between the Peel and Liverpool Ranges; and the Riverina, stretching northward from the Murray and intersected by a network of streams; the Bulloo Plain, between the Paroo River and the Grey and Barrier Ranges; the Bland, between Cootamundra and Lake Cowal; and the Pilliga Scrub, between Narrabri and Coonabarabran.

In the western portion of the Plain district, the rainfall is not adequate for successful agriculture, but the dryness of the atmosphere favours the production of wool of a quality which is unsurpassed in any other part of the world. In favourable seasons the rich natural grasses provide pasturage for millions of sheep, while in dry seasons, the saltbush, with its drought-resisting qualities, is valuable as food for stock. The northern section of the plains is within the Great Australian Artesian Basin, and numerous bores throughout the district supply water for pastoral and other purposes.

The eastern portion is admirably adapted for wheat growing, and with the development of irrigation and scientific cultivation, the area of profitable agriculture is steadily extending westward.

MOUNTAINS.

The mountains of New South Wales may be classified in three groups—the Great Dividing Range, the coastal ranges, and the ranges of the interior.

The Great Dividing Range is the name given to the portion within New South Wales of a continuous chain of mountains stretching along the whole eastern portion of Australia. The Great Dividing Range has the form of a broad plateau rising steeply from the coastal plain on the east, and sloping gently towards the plains on the west. Except for a horseshoe bend skirting the valley of the Hunter River, it runs for the most part parallel to the coast-line, and a number of lateral spurs branch off from either side.

Proceeding from north to south, the names distinguishing the various portions of the Great Dividing Range are:—Macpherson, New England, Liverpool, Main or Blue Mountain, Cullarin, Gourcock, Monaro, and the Muniang Ranges.

The Macpherson Range extends from Point Danger, along the Queensland border to the source of the Dumaresq River, after which it turns in a southerly direction to form part of the Great Dividing Range, extending as far as Bald Rock, near Tenterfield. This range serves as a watershed for the Tweed and Richmond Rivers, and by intercepting the moist north-east winds, causes the copious rainfall of the Richmond River Valley. The highest peak is Mount Lindsay, 4,064 feet. The Richmond Range branches off the Macpherson and forms the watershed between the Richmond and Clarence Rivers.

The New England Range extends from Bald Rock as far as the parallel of Port Macquarie. Its highest peak is Ben Lomond, 5,000 feet. On the east side the lateral spurs of the New England Range are the Macleay and Hastings Ranges, and on the west the Nandewar and Moonbi; the Macleay Range separates the Clarence and Macleay River basins, and the Snowy Mountain, a branch of the Macleay, forms part of the boundaries of the Bellinger and Nambucca basins. The Hastings Range leaves the New England near its southern end, runs between the Macleay and Hastings River basins, and terminates near Crescent Head on the coast. The Nandewar Range forms portion of the watershed between the Gwydir and Namoi Rivers.

The Liverpool Range, commencing at the termination of the New England Range, runs westerly between the Liverpool Plains and the Hunter-Goulburn Valley, and serves as a part of the connecting link between the Northern and Southern Tablelands. Oxley's Peak (4,500 feet) is the highest. In a spur of the Liverpool Range is Mount Wingen, where a bed of coal has been burning for centuries. The Mount Royal Range branches off the east side of the Liverpool Range; its numerous spurs penetrate the valleys of the Hunter and Manning Rivers. The Peel Range branches off the west side.

The Warrumbungle Range is practically a continuation of the Liverpool, extending in a north-easterly direction. These mountains represent the denuded stumps of a series of volcanoes, which burst into activity near the shores of the old Mediterranean Sea, not long before it became silted up. The sandstone beds of the Warrumbungle Range form part of the intake beds of the great artesian basin. The Castlereagh and its feeders rise in this range.

The Main or Blue Mountain Range extends from the Liverpool Range to the vicinity of Goulburn. Its spurs are the Hunter Range and Blue Mountains from the east side, and the Macquarie Range from the west side. The Hunter Range forms portion of the southern boundary of the Hunter River Valley, and its numerous branch ridges penetrate far into the Hunter and Hawkesbury River basins.

The Blue Mountains consist of a rugged plateau furrowed by deep gorges, such as the Grose, Kanimbla, Jamieson, and Capertee Valleys, which have been carved out of solid sandstone by the action of running water. The soil is for the most part barren, except for a few rich patches which form the capping of high hills, their fertility being due to the presence of decomposing basalt. The range contains coal seams and beds of ironstone, kerosene shale, and limestone. The highest peak is Mount Clarence, 4,000 feet. The Macquarie Range separates the upper tributaries of the Macquarie River from those of the Lachlan. The highest peak is Mount Canobolas (4,610 feet).

The Cullarin Range extends from the Liverpool Range to the southern end of Lake George; its average height is about 2,500 feet. This range rises

in places to rugged precipitous cliffs, but consist mainly of gently sloping uplands. The highest peak is Mount McAlister (3,390 feet). The Mundooran Range, branching from the west side, separates the upper basins of the Lachlan and Murrumbidgee Rivers.

The Gourock Range extends southward from Lake George, and for some distance forms the edge of the Southern Tableland.

The Monaro Range stretches from the Gourock, and turning in a westerly direction, forms the southern boundary of the Monaro Plains. The highest peak is the Head of the Kybeyan River (4,010 feet).

The Muniong Range extends from the Monaro Range into Victoria, where it is continued under the name of the Australian Alps. The most southern portion of the Muniong is sometimes known as the Snowy Mountains. The Muniong is the highest part of the Great Dividing Range, its average height being about 6,000 feet. Mount Kosciusko (7,328 feet) is the highest peak in Australia; it is almost wholly composed of gneissic granite, though belts of slate and patches of basalt also occur. Other prominent elevations are Mount Townsend, (7,238 feet), Mount Twynan (about 7,200 feet), Ram's Head (6,600 feet), and the Pilot (6,020 feet). The Kosciusko region is the coldest part of Australia, and snowdrifts are met with even in the middle of summer. The striated rock masses and accumulations of moraine matter occurring in various parts furnish evidence of the former existence of glacial ice.

The Murrumbidgee, Tumut, and Murray Ranges are spurs of the Muniong. The Murrumbidgee Range separates the upper basin of the Murrumbidgee River from its tributary, the Goodradigbee; several of its peaks approach 7,000 feet in altitude. Gold is found in many parts of the Tumut Range, which forms the watershed between the Goodradigbee and Tumut Rivers. The Murray Range is the most southern of the lateral branches of the Great Dividing Range; it separates the upper portions of the Tumut and Murray River basins.

A disconnected chain of mountains, the Mittagong Range, commences on the eastern side of the Wollondilly River, and runs transversely along the Southern Tableland till it approaches the Illawarra Range.

Four well-defined ranges lie in the coastal district, running, as a rule, parallel to the Tablelands. The North Coast Range extends from the Richmond Range to the Hastings River district; it is not a continuous chain, being intersected by the Clarence and Macleay Rivers. The Illawarra Range rises abruptly from the sea at Clifton and runs southward close to the seaboard to the valley of the Shoalhaven River. It is capped by sandstone masses and traversed by valuable coal seams. The Currockbilly Range stretches between the south bank of the Shoalhaven River and the north bank of the Moruya. The South Coast Range is a spur of the Monaro Range, and forms the eastern and southern boundaries of the upper basin of the Snowy River.

Two ranges of moderate elevation, the Barrier and Grey Ranges, lie near the extreme west and north-west of the State. They form the western boundary of a vast depression through which the Darling River and its tributaries flow.

EXTINCT VOLCANOES.

New South Wales does not lie within the zone of active volcanoes and earthquakes, though numerous indications are to be found of violent volcanic activity and earthquake disturbances in former ages. Traces exist of a series of volcanoes which extended near the shore of the old inland sea from Mount Canobolas, near Orange, northwards through the Warrumbungle and Nandewar Ranges into Queensland.

The Kiama basalt or blue metal, used largely for making roads and for ballasting railway lines, is a solidified lava ejected during the Permo-Carboniferous period. At Nobby's, Newcastle, and at many places in the neighbourhood of Sydney, extensive volcanic dykes occur. The basaltic cappings of the hills, and great sheets of basalt found on the tablelands and the slopes of the Great Dividing Range are also relics of extinct volcanoes. The fertility of the soil in many parts, and some of the most striking features of the scenery of New South Wales are the result of former volcanic action, while the flow of basic lava along old watercourses has preserved the alluvial gold from subsequent distribution.

The earthquakes now experienced in New South Wales are infrequent and barely perceptible, but evidence of past movements—uplifts and depressions, folds and fractures—is met with in many districts throughout the State. The peculiar direction of the Murray, Murrumbidgee, and Lachlan Rivers in their upper courses, and of the Wollondilly, Snowy, and other streams, and the steep escarpment on the eastern side of the Blue Mountains are attributable to earth movements.

RIVERS.

The Great Dividing Range is the main watershed of New South Wales, and divides the rivers into two groups—the coastal and the western.

The coastal rivers discharge into the Pacific, and, on account of the proximity of the mountains to the ocean, the majority are short, rapid streams; the Hunter and the Hawkesbury by reason of their winding courses are the longest. Generally, the rivers south of Sydney, where the coastal strip narrows considerably, are of less importance than those of the north.

The physical aspect of the eastern rivers is somewhat similar, their upper courses are amidst broken and mountainous country, and the lower basins consist of undulating land with rich alluvial flats; where uncultivated, the land is densely timbered.

A list of the rivers of the State and their chief tributaries was published in the previous issue of this Year Book. The principal coastal rivers are as follows:—The Tweed drains the north-east corner of the State; the Richmond has three arms—the main arm rises in Mount Lindsay, and is navigable as far as Lismore, 65 miles from the sea; the Clarence also rises in the Macpherson Range, and is the finest of the northern rivers, being about 190 miles in length, with a basin of about 8,000 square miles. For about 70 miles from the sea the Clarence has an average width of half-a-mile; it is navigable by ocean-going vessels to Grafton, 45 miles, and for smaller craft to Copmanhurst, 67 miles from Shoal Bay.

Two short streams, the Bellinger and Nambucca, rise in the North Coast Range; the latter is navigable for vessels of light draught to Bowraville, 30 miles from the sea. The Macleay discharges into Trial Bay, after a course of 160 miles; the head of navigation is Green Hills, 30 miles from the sea. The Hastings rises in the Hastings Range, and enters the sea at Port Macquarie. A proposal has been made to connect the Hastings and Macleay by a canal 6 miles long and 30 feet wide.

The Manning rises in the Mount Royal Range and has a course of 150 miles, navigable for 30 miles from the mouth. The Karuah is a small stream discharging into Port Stephens. The Hunter is one of the most important rivers of New South Wales; it rises in the Mount Royal Range and flows south-westerly till it is joined by the Goulburn, which flows in an easterly direction from the Main Range. Below the Goulburn junction, the Hunter turns eastward and enters the sea at Newcastle, after a course of 340 miles. The chief tributaries are the Goulburn, the Williams, and the Paterson.

The main stream is navigable for ocean-going vessels to Morpeth (35 miles), while small craft ascend the Paterson and Williams for short distances. The water supply of Newcastle and adjacent townships is drawn from the Hunter.

The Hawkesbury drains an area of about 8,000 square miles to the west and south-west of Sydney. Various portions of this stream are known by different names bestowed by early explorers before it was discovered that they formed parts of one river. It rises under the name of Wollondilly in the Cullarin Range and flows through the fertile Goulburn Plains and the Burragorang valley. After the junction of the Cox's River, which drains portion of the Blue Mountains, it is known as the Warragamba, till it is joined by the Nepean from the western slopes of the Illawarra Range. The united stream then retains the name of Nepean and flows along the base of the Blue Mountains. After junction with the Grose, the river is known as the Hawkesbury and discharges into Broken Bay after a course of 335 miles. The water supply of Sydney is obtained from the Upper Nepean and its tributary, the Cataract. In the neighbourhood of Sydney some small streams flow into Botany Bay, such as the Woronora and George's River.

The principal river in the South Coast district is the Shoalhaven, which drains that part of the Southern Tableland which lies between the Gourock and Currockbilly Ranges. It is connected by a canal with the Crookhaven which enters the sea 5 miles to the south. The Shoalhaven is 220 miles in length, but is navigable for a few miles only. Further south, in the narrow belt between the ranges and the sea flow the Clyde, Moruya, Tuross, Bega, and Towamba Rivers.

The Snowy River belongs to another river system; it drains the southern slopes of the Monaro Range and crosses the southern boundary into Victoria before discharging into the Tasman Sea. Of the total length (265 miles) 170 miles are in New South Wales.

The rivers of the western slope belong to one great system—the Murray-Darling. They drain an immense area, including the whole of the western portion of New South Wales and large portions of Queensland and Victoria, and discharge into the sea through a single mouth. In consequence of the gradual slope of the plain country, these rivers, unlike the coastal, are long and slow in discharge.

The Murray, the southern branch of this system, rises in the most southern portion of the Mumiong Range. It flows along the boundary between New South Wales and Victoria, and passing into South Australia discharges its waters through Lake Alexandrina into the Southern Ocean. The Murray has a total course of 1,600 miles, of which 1,200 miles are within New South Wales. Its tributaries above Albury are for the most part mountain torrents fed by the snows of the southern highlands; in its lower course it receives the waters from the extensive catchment area of the Murrumbidgee and Darling. The fall of the Murray between Albury and the Darling junction is less than 6 inches in the mile, and this circumstance, as well as the loose nature of the soil, has led to the formation of a network of anabranches which intersect the country in every direction between the Murray and Murrumbidgee, and carry into the Murray a large portion of the drainage of the Riverina. The largest is the Edwards River, which receives the united waters of Yanco Creek and the Billabong, and after a course of about 150 miles, returns to the main stream near the Murrumbidgee junction. The Murray is navigable for large river boats as far as Wentworth for about seven months of the year, and for smaller craft as far as Albury.

Of the Murray's tributaries, the Darling drains the largest area, embracing the greater portion of the western district of New South Wales and nearly all Southern Queensland. The Darling is formed by the union of several streams, and is known by various names in different parts of its course. One branch, the Macintyre, rises near Ben Lomond, and is joined by the Dumaresq, a stream which has its source near the Queensland border. At the junction of the Gwydir, the name Macintyre is changed to Barwon, and after the junction of the Bogan the river becomes known as the Darling. The total length of the river from its source to the sea is 2,310 miles; it is navigable during freshets as far as Walgett, 1,910 miles from the sea.

Its chief tributaries within New South Wales are the Gwydir, Namoi, Castlereagh, Macquarie, and Bogan; portions of the Culgoa, Warrego, and Paroo, which drain Southern Queensland, are within New South Wales territory, but the two lastnamed are not permanent tributaries, and only reach the Darling during floods.

The Gwydir rises in the New England Range, and, assisted by several small tributaries and anabranches, waters a large area of agricultural and pastoral country. The lower basin is riddled with artesian bores, some of which yield over a million gallons daily and are of immense importance to the sheep-farming industry. The Namoi, after a course of 430 miles, joins the Barwon near Walgett. The fertile Liverpool Plains and the Pilliga Scrub lie within the Namoi basin.

The Castlereagh rises in the Warrumbungle Range, and after a winding course of about 340 miles joins the Macquarie near its junction with the Darling. The Macquarie has a course of 590 miles; it flows in a north-westerly direction to Narromine, thence through wide sheep-grazing plains till it loses itself in the Macquarie marshes. The marshes in turn drain into the Barwon by various channels; the largest is called the Macquarie, and is joined by the Castlereagh.

The Bogan joins the Darling between Bourke and Brewarrina after a course of 370 miles. The catchment area is very small in comparison with its length, and in dry seasons the Bogan, like most of the rivers of the interior, becomes a mere chain of ponds.

The Murrumbidgee, 1,050 miles in length, ranks next to the Murray in regularity of flow and volume of discharge. It rises in a northerly spur of the Kosciusko Plateau; at first its course is southward, but near Cooma it curves sharply and runs in a northerly direction until it approaches the town of Yass, whence it flows westward, almost parallel to the Murray, as far as the Lachlan junction, after which it turns south-westerly and discharges into the Murray. In its upper course the Murrumbidgee receives on the right bank, the Umaralla, Molonglo, Queanbeyan, and Yass Rivers; and on the left the Cotter, Goodradigbee, and Tumut. After the confluence of the Tumut it flows through level country, and drains with numerous billabongs or shallow watercourses the fertile Riverina District. The Murrumbidgee flows through the Federal Capital Territory; Canberra is situated on the Molonglo, and the water supply for the capital will be drawn from the Cotter.

The Lachlan, 850 miles long, the chief tributary of the Murrumbidgee, rises in the Cullarin Range, and is fed, in its upper courses, by numerous minor streams—the Crookwell, Abercrombie, Belubula, and Booroowa Rivers. After receiving the Booroowa, the Lachlan flows through fertile plains without receiving any permanent tributary; the watercourses which drain the plains on each side reach the river only in times of flood.

LAKES.

The lakes of New South Wales may be classified in four groups:—The coastal lakes or lagoons, those of the tablelands, of the Western Plains, and the lakes and tarns of the Kosciusko Plateau.

The coastal lakes are partly estuarine and partly marine, and are generally due to the formation of bars and banks of river silt and the joint action of tides and winds; many of them are connected with the sea by narrow channels. The largest are as follows:—Terranora Broadwater, forming part of the estuary of the Tweed River; Burrawan or Lake Innes, near Tacking Point; Wallis Lake, near Port Forster; Myall Lake and the Broadwater—a chain of lakes lying between Cape Hawke and Port Stephens. Lake Macquarie has an area of 44 square miles; it is 8 miles south of Newcastle, and constitutes a bar harbour for coastal trade; Tuggerah Lakes are north of Broken Bay; Lake Illawarra lies between Wollongong and Kiama; and St. George's Basin is to the south of Jervis Bay.

The lakes of the Tableland owe their origin to volcanic and other geological disturbances of former ages; with few exceptions they are situated in the southern tableland. The largest is Lake George, which occupies a depression in the Cullarin Range; it is fed by several small streams but has no visible outlet, its waters being lost by evaporation and by soakage through the slate formation of its bed. When full Lake George covers an area of 60 square miles, but in average seasons a large proportion of its bed is dry and is utilised for grazing stock. Lake Bathurst lies 10 miles east of Lake George. Both these lakes are elevated over 2,000 feet above the sea level.

The lakes of the Western Plains occur usually along the courses of the western rivers; they are natural depressions which are filled during floods by the overflow of the rivers.

Along the Darling River the largest lakes on the right bank are—Narran, above Brewarrina; Cawndilla, Menindie, and Tandon, near Menindie; and, on the left bank, Gunyulka in the Wilcannia district. Like the western rivers these lakes vary with the rainfall, presenting the appearance of inland seas in wet seasons and dwindling to a succession of ponds and mud basins in continued dry weather, but they serve a useful purpose in droughty seasons by maintaining the flow of the rivers below the lakes for some months after the upper courses become dry.

Within the Lachlan basin the most important are Lake Cowal, which is situated about 40 miles from Forbes, and receives the drainage of the Bland Plain; and Lake Cudgellico in which the floodwaters of the Lachlan are conserved for irrigation. Lake Victoria is on the right bank of the Murray River, in the south-western corner of New South Wales; it is connected with the Murray by the Rufus River, and covers an area of 26,000 acres.

The Kosciusko Lakes are due to the formation of barriers of moraine material left behind by glaciers. They are situated about 6,000 feet above sea-level. The principal are the Blue Lake, Lake Albina, Cootapatamba and Club Lakes, and Hedley Tarn.

MINERAL SPRINGS.

Mineral springs of varied composition are found in many parts of the State; in some cases the waters have been marketed as table-waters, and some are of medicinal value.

Mittagong.

The Mittagong spring, near Mittagong, is the source of a large deposit of brown hematite. The water contains nearly 6 grains of bicarbonate of iron over 2 grains each of bicarbonate of magnesium and calcium, over 2 grains each of chloride of sodium and potassium, and over 1 grain of chloride of magnesium out of a total of solids, amounting to 15·765 grains per gallon.

Ballimore.

The Ballimore spring is about 20 miles north-east of Dubbo. It was opened up by a diamond drill boring for coal, about 550 feet below the surface. Of the total fixed matter amounting to 225 grains per gallon, bicarbonate of soda represents 183 grains, potassium nearly 13 grains, calcium over 11 grains, magnesium over 9 grains, and chloride of sodium nearly 7 grains. Bicarbonate of lithium, strontium, and iron are present with traces of silica and alumina.

Rock Flat.

The Rock Flat is a natural spring which comes to the surface on the bank of the Creek of the same name, about 10 miles south-east of Cooma. Out of 143 grains of fixed matter per gallon, bicarbonates of calcium and sodium are responsible for 52 grains and 45 grains respectively, and bicarbonate of magnesium yields over 22 grains. Bicarbonates of potassium and strontium are also present, together with 5 grains of chloride of sodium, and traces of silica, alumina, and nitrate of soda.

Bungonia.

The spring is situated in Bungonia Creek, about a mile and a half from the town of Bungonia. Upon analysis fixed matter per gallon amounted to 207 grains, of which nearly 143 grains were bicarbonate of calcium. Bicarbonate of magnesium was present to the amount of 32 grains. The other principal constituents being chloride of sodium and bicarbonate of sodium, of nearly 13 grains each.

Jarvisville.

This is a natural mineral spring which issues from the face of a cliff of Hawkesbury sandstone, about 1 mile from Picton Railway Station. Out of 212 grains of fixed matter per gallon, chloride of sodium represents nearly 101 grains. Amongst other principal constituents are, bicarbonate of magnesium 50 grains, bicarbonate of calcium 19 grains, chloride of magnesium 26 grains, and sulphate of potash 12 grains.

Yarrangobilly Thermal Spring.

This thermal spring is situated near the Yarrangobilly Caves, and facilities are provided for bathing. Analysis of the water discloses carbonate of lime $6\frac{1}{2}$ grains per gallon; chloride of sodium, $1\frac{1}{2}$ grains; chlorine, carbonate of lime, silica, strontium, and organic ammonia also are present.

LIMESTONE CAVES.

The limestone caves of New South Wales constitute important tourist resorts, and are discussed in the section dealing with tourist attractions. The principal caves are Jenolan, Yarrangobilly, Wombeyan, Abercrombie, Wellington, Belubula, and Bungonia.

GEOLOGICAL FORMATION.

The sedimentary rock formations found in New South Wales are classified as follows :—

CAINOZOIC.	Post-Tertiary	Recent; auriferous and stanniferous soils, and alluvial deposits in the beds of existing rivers. Pleistocene; alluvial leads containing gold, tin, and gem-stones.	}	
	Cretaceous	Middle Cretaceous; auriferous alluvial leads at Mount Brown. Lower Cretaceous; Rolling Downs formation of Queensland.		
MESOZOIC.	Jurassic	Lower Cretaceous; Rolling Downs formation of Queensland. Talbragar fish-bearing shales.		
	Triassic	The Ipswich Coal Measures and the Clarence Coal Measures	}	Form the base of the artesian water-bearing basin. These Measures contain thin coal-seams, not at present worked in New South Wales. Wianamatta Shales; contain fireclays. Hawkesbury Sandstones; building stone. Narrabeen Shales.
Hawkesbury Series				
PALÆOZOIC.	Permo-Carboniferous	1. Upper or Newcastle Coal Measures	}	The productive coal-seams of New South Wales occur in these measures.
		2. Dempsey Series		
		3. Middle or Tomago Coal Measures		
		4. Upper Marine Series		
		5. Greta Coal Measures		
		6. Lower Marine Series		
Carboniferous	Rhacopteris Beds and Associated Marine Beds	}	All the metalliferous lodes and reefs occur in these formations, or in such igneous rocks as granites, quartz-porphyrries, felsites, diorites, &c.	
	Gympie Clay-stones of Queensland			
Devonian	Upper Devonian			
Silurian	Lower Devonian	}		
	Limestones and slates at Yass, Molong, Wellington, Quindong, Portland, &c.			
Ordovician	Slates and Tuffs at Mandurama, Cadia, Tomingley, Berridale, and in the counties of Auckland and Wellesley, on the Victorian border, Talwong, Tallong, Chatsbury, and in the Monaro-Albury district.			
	Cambrian	Limestones, schists, and glacial beds of Torrowangee.		

Post-Tertiary and Tertiary deposits cover approximately one-third of the area of New South Wales, embracing practically the valleys of the western river systems, except for a broad belt of pre-Silurian, Silurian, and Devonian rocks between the Bogan River and the Barrier Range. Tertiary and Post-Tertiary fluviatile deposits constitute the chief sources of alluvial gold, stream tin, and gem-stones. The Cretaceous formation was the source of supply of the first artesian water struck. Lower Cretaceous rocks occupy the greater part of the basin of the Upper Darling and its tributaries, overlying a considerable area of Triassic water-bearing formation. The Upper Cretaceous formation is opal-bearing, rich deposits being worked at White

Cliffs and Lightning Ridge. Rocks of Jurassic age are limited in occurrence to the locality of Gulgong. Triassic and Trias-Jura rocks extend over a large part of the coastal district, the Trias-Jura having a great development as conglomerates, sandstones, and shales in the Clarence River District. Wianamatta shales, Hawkesbury sandstone, and Narrabeen shales, constitute the Hawkesbury series of Triassic age. The Hawkesbury sandstone overlies the Narrabeen shales, and extends from Sydney on all sides for some 70 miles embracing practically the whole Hawkesbury River Valley. This formation extends also continuously from Sydney to the head of the Goulburn River, and has an important development in the Macquarie and Castlereagh River basins. The Wianamatta shales cover a large area in County Cumberland and outcrop in the Blue Mountains.

The Permo-Carboniferous formation extends along the coast between the Clyde and Hunter River districts and westward to the mountains and in the Central-Western Division. This formation is described in detail in the chapter relating to the Mining Industry. Carboniferous strata are developed in the Hunter and Manning River districts, and thence in a north-north-westerly direction to Warialda. They are of marine and fresh water origin, interbedded with tuffs and lavas and intersected by metalliferous lodes, but contain no workable coal seams.

Rocks of Devonian age are developed within the Blue Mountain area and in isolated localities, as in the Yass-Goulburn district, and in the Western and New England Division; they are traversed by metalliferous lodes and quartz reefs.

Upper Silurian beds occur generally west of the tablelands, on the upper courses of the Murrumbidgee and Lachlan Rivers, and extend northwards. They are developed also in the basins of the Clyde and Upper Shoalhaven, and probably also in the basins of the Upper Namoi and Macleay Rivers. In certain districts of the State sediments of this age contain commercial deposits of gold, silver, tin, copper, lead, and antimony, and the limestone beds in which the Jenolan, Wellington, Yarrangobilly, and Wombeyan Caves occur are also of this age.

Ordovician rocks have been located on the Victorian-New South Wales boundary line, and at the localities mentioned in the table of formations. Their area is not defined. Sediments of this age contain important deposits of gold, silver, and copper. Rocks of Cambrian age contain the Broken Hill lode, and probably occur also in the Cooma-Albury districts.

CITIES AND TOWNS.

Sydney, the capital city of New South Wales, and the seat of Government, is situated on the shores of Port Jackson. It is the oldest and largest of the Australian towns, and is the main commercial and industrial centre of New South Wales. The great bulk of the sea trade of the State passes through Sydney, where all the main railways converge and numerous large manufacturing establishments are conducted. The University and many other important educational establishments are situated in Sydney; other public buildings of importance are the Town Hall, Post Office, Cathedrals, Hospitals, Municipal Markets, National Art Gallery, Museums, &c. Parks, pleasure resorts, and recreation areas are extensive.

The districts surrounding the Metropolitan area are devoted mainly to the production of fruit, vegetables, poultry, butter, &c., for the city market, and include numerous thriving townships. Parramatta, 15 miles west of Sydney, is the centre of a flourishing fruit growing district; other industries are the manufacture of tweed, soap and candles, tiles and pipes. The Old Government House, used from 1788-1853, situated in Parramatta Park, is of historic

interest. Granville, at the junction of the main Southern and Western Railway lines, 13 miles from Sydney, is a manufacturing centre, large establishments being engaged in the manufacture of machinery, agricultural implements, railway carriages, pipes, tiles, bricks, and in tanning.

In the fertile district watered by the Nepean-Hawkesbury River system, fruit, maize, and lucerne-growing and dairying are the main industries. The towns are Penrith, on the Nepean, at the foot of the Blue Mountains, and Windsor, on the Hawkesbury. The principal establishment for agricultural students, the Hawkesbury Agricultural College, is at Richmond, near Windsor. To the south, on the Main Southern Railway, are Liverpool, which contains large wool-washing and tanning establishments; Campbelltown, with the adjacent township of Camden, is surrounded by rich agricultural and dairying land. To the north is Gosford, on Brisbane Water, an arm of Broken Bay, the centre of a timber and fruit producing district.

Newcastle, the port of the largest coal-fields of Australia, is situated at the mouth of the Hunter River, at a distance of 102 miles by rail and 62 by sea from Sydney. Newcastle city extends over some 1,060 acres; its suburbs cover 17,919 acres, and include busy mining townships, viz., Stockton, Hamilton, Lambton, Wallsend, Merewether, Plattsburg, Wickham, and Waratah. The total population of Newcastle and suburbs in December, 1913, was 57,650. Many large factories have been established, such as biscuit, boot, and carriage factories, shipbuilding and fellmongery yards, smelting and engineering works; extensive steel works are in course of construction. In addition to coal, the products of the Hunter River Valley—wool, frozen meat, tallow, and farm produce—are shipped at Newcastle.

East Maitland and West Maitland are situated on the Hunter River, about 20 miles above Newcastle, in rich agricultural land, which yields lucerne, maize, grapes, and potatoes. An extensive coal-field lies to the south of Maitland, where Kurri Kurri and Cessnock are important mining centres.

Morpeth, near the junction of the Paterson and Hunter Rivers; Raymond Terrace, near the Williams junction; Clarence Town and Dungog, on the Williams River, are situated in a fertile district, where lucerne, maize, millet, potatoes, dairy products, and vines are produced. At Greta, 32 miles from Newcastle, excellent gas coal is obtained. Singleton, on the Hunter, about 50 miles from Newcastle, is a rich dairying and agricultural centre; there are also a few collieries.

At Muswellbrook, higher up the river, and at Scone, on a small tributary, wheat and maize are grown and dairy farming is advancing. The burning mountain, Mount Wingen, is 10 miles from Scone.

The towns of Murrurundi, at the foot of the Liverpool Range, and Merriwa, in the Goulburn Valley, are in pastoral country. The Merriwa district is noted for merino sheep and timber; cereals and grapes are grown. Stroud is situated near the Karuah River; the chief industries are saw-milling, dairy farming, and stock raising. Gloucester lies further north.

Dairy farming is the chief industry of the population of the northern coastal districts, the output being treated locally in butter and bacon factories. The rich alluvial flats along the lower courses of the rivers are specially suitable for the production of maize, lucerne, potatoes, and, in the extreme north, sugar cane; timber-getting is an important industry, and large supplies of fish are obtainable on the seaboard.

The principal towns are Taree and Wingham, on the Manning River; Port Macquarie, one of the oldest towns of the State, at the mouth of the Hastings; Kempsey on the Macleay; and Bellingen on the Bellinger River. Settlement round Coff's Harbour is advancing rapidly with the opening up of the rich Dorrigo district.

Grafton, on the Clarence, is an important trade centre, where saw-mills, tanneries, soap and candle works, butter and bacon factories, and meat preserving works are established. The Cangai copper-mines are near Grafton, and several gold-mines are worked in the Upper Clarence Valley. Other important towns in the Clarence district are Ulmarra, to the north-east of Grafton, and Maclean, 18 miles from the mouth of the river.

Settlement in the Richmond and Tweed districts is extending rapidly with the expansion of the dairy industry. Of the numerous thriving townships, the largest is Lismore, on the Richmond River, where coastal vessels load dairy products and timber. Coraki, Casino, and Kyogle are higher up the stream; Ballina is at the mouth. Murwillumbah, the most important town on the Tweed, is connected by rail with Grafton; Tweed Heads is a flourishing watering-place. Byron Bay is the port of the Tweed District.

On the south Coast the collieries and coke works of the Illawarra District give employment to a large industrial population, while the sandy beaches and adjacent mountain passes attract tourists and holiday makers. Coal and coke are shipped at Wollongong, the most important town, and at Port Kembla, where smelting works have been established. Helensburgh, Bulli, and Corralia are busy mining townships north of Wollongong.

Dairy farming is the main industry of the districts south of Wollongong, supplies for the metropolitan market being obtained largely from this source. The chief centres of population are Kiama, on Kiama Harbour; Nowra, on the Shoalhaven; and further south Milton, near Ulladulla Harbour; Moruya, on the Moruya River; Bodalla, the chief centre of the cheese industry; and Bega, on the Bega River, where dairy factories, saw-mills, and tanneries are in operation.

The district round Eden, on Twofold Bay, is devoted to stock-raising, and a whaling station has been maintained there for many years.

On the tablelands the established industries are agriculture and sheep farming, but dairying is coming into prominence, and mining is of importance in several localities. Tin is mined extensively in the New England Range, and gold and silver also are obtained. The principal towns on the northern tablelands are Tenterfield, near the Queensland border; Emmaville, the centre of the Vegetable Creek tin-mining field; Glen Innes, on the Main Northern Railway Line; Inverell, in a flourishing agricultural and pastoral district. At Inverell and at Bingara, on the Gwydir River, diamond mines are worked. Tingha, on a tributary of the Gwydir, is a tin-mining centre. Armidale is the most important trade centre of the northern tableland. Gold and antimony are worked at Hillgrove. Dorrigo, on the extreme eastern edge of the tableland, is a newly-established township in a dairying and fruit growing district, which has an outlet for its products at Coff's Harbour or Woolgoolga. Other centres of population on the northern tableland are Uralla, Walcha, and Werris Creek.

The central section of the tableland division consists mainly of agricultural, dairying, and pastoral lands, except the Blue Mountains region, which is unsuitable for farming; the western portion contains coal-fields and shale-beds; the eastern is known chiefly as tourist and health resorts.

On the central tableland the important towns are Bathurst on the Macquarie River, one of the oldest and largest of the inland towns; it was founded by Governor Macquarie in 1815. Bathurst, with Orange to the west, are important trading centres, and contain several large manufacturing establishments. Cowra is on the Lachlan River, in a wheat, fruit, and dairying district. Mudgee and Gulgong are situated in a district noted for stud sheep, wheat, and fruits. Blayney is an important railway junction, where a connecting line from the Main Southern Railway joins the Main Western.

Lithgow, on the western side of the Blue Mountains, is the centre of the western coal-field, and contains extensive ironworks, the Commonwealth small arms factory, also pottery and pipeworks. Kerosene shale works have been erected at Newnes, in the Wolgan Valley, and large cement works are in operation at Portland. Of the numerous tourist and health resorts of the Blue Mountains, the largest are Katoomba, Leura, and Blackheath.

On the Southern Tableland, Goulburn, on the Wollondilly River, is the most important town; the cultivation of cereals and fruit and dairy farming are the principal industries, while several factories are in operation. Moss Vale, Bowral, and Mittagong are on the railway line between Sydney and Goulburn, in good dairying and fruit-growing districts. Syenite for building purposes is obtained near Bowral. Yass, on the Yass River, is an important township; the mammoth Burrinjuck storage reservoir, on the Murrumbidgee River, is about 30 miles distant. To the south-east are Queanbeyan, about 8 miles from Canberra, the Federal Capital site, and Braidwood, on a tributary of the Shoalhaven River, where agriculture, sheep-farming, and gold-mining are important industries. Cooma and Bombala are trading centres in the rich Monaro district.

On the western slopes of the Great Dividing Range and the eastern edge of the western plains and Riverina, the soil and climate are eminently suitable for wheat growing, and the rapid extension of the cultivation of this cereal, in combination with sheep-farming, has promoted settlement in many thriving townships in areas occupied formerly by large pastoral holdings.

On the North-western Slope, in the districts watered by the Namoi and its tributaries, and devoted mainly to wheat and sheep, fruit and dairying, are:—Tanworth, an important town on the Main Northern Railway; Quirindi, Gunnedah, Boggabri, and Narrabri. Moree and Wyallda, on small tributaries of the Gwydir, and Walgett, at the junction of the Namoi and Barwon Rivers, are important towns of a pastoral district pierced by artesian bores.

On the Central-western Slope are Wellington and Dubbo, on the Macquarie River, flourishing towns in districts where wheat farms are steadily replacing large sheep runs. Beyond Dubbo are Narromine and Warren, also on the Macquarie, and Nyngan, on the Bogan River, surrounded by pastoral holdings. Coonamble is situated on the Castlereagh River in a sheep and wheat district, where large supplies of water are obtained from artesian bores.

Peak Hill, on the Bogan, and Forbes, on the Lachlan River, were formerly mining settlements, but now owe their prosperity to wool and wheat-growing. The district surrounding Forbes and the adjacent town of Parkes is particularly suitable for the breeding of horses. From Condobolin, on the Lachlan River, an extension of the railway to Broken Hill is projected.

In the southern portion of this division, comprising the south-western slope and the Riverina, settlement is extending rapidly with the promotion of closer settlement and the share-farming system. The principal towns are as follows:—Albury, where the New South Wales Railway system connects with the Victorian, situated on the Murray River in a rich agricultural and pastoral district. Wine is produced in large quantities at Albury and at Corowa, lower down the river; Wagga Wagga, on the Murrumbidgee River, is one of the largest towns on the Main Southern Railway. Cootamundra is an important railway junction, from which lines branch to Temora and Wyalong, in the wheat-growing, and gold mining districts, to the north-west, and to Gundagai on the Murrumbidgee, and Tumut, on the Tumut River, to the south, where fruit and maize are extensively cultivated. Young, a prosperous township in a wheat, wool, and fruit district, was formerly Lambing Flat, a settlement notable in the early history of gold-mining in New South Wales.

From Juneë, between Cootamundra and Wagga Wagga, on the Main Southern Railway, a branch line extends through Coolamon to Narrandera and Hay, on the Murrumbidgee River; with improved methods of cultivation, wheat-growing has become a profitable industry in the Narrandera district. Yanco and Leeton are townships in the Murrumbidgee Irrigation Area, situated on the north bank of the river, below Narrandera. During some periods of the year boats trade from the mouth of the Murray as far as Hay, and carry large cargoes of wool from the surrounding pastoral districts. Deniliquin, in the southern Riverina, is connected by a private line with the Victorian railways.

In the Western Division, where the rainfall is insufficient for permanent cultivation, wool-growing is the main industry, and there are no large townships except in the mining districts of Broken Hill and Cobar.

Cobar is the principal centre of copper and gold mining, and is connected by rail with the Main Western Line. Brewarrina is on the Barwon River, surrounded by an extensive pastoral district. Bourke on the Darling River, is the terminus of the Main Western Railway Line; during favourable seasons river barges ascend the Darling as far as Bourke. Wilcannia is a river port on the Darling, about midway between Bourke and the Murray-Darling junction. Wentworth is an irrigation settlement near the junction of the Murray and Darling Rivers. Broken Hill, near the western boundary of New South Wales, is the centre of the silver, lead, and zinc mining district of the Barrier Range, and, after Sydney and Newcastle, is the largest town in the State.

CLIMATE.

Under the Commonwealth of Australia Constitution Act the function of making and administering laws in regard to astronomical and meteorological observations throughout Australia vests in the Federal Government. Accordingly, with the enactment of the Commonwealth Meteorological Act, 1906, the Commonwealth Meteorologist became empowered to take and record meteorological observations, to forecast weather, issue storm warnings, display weather, flood, frost, and cold wave signals, distribute meteorological information, and to further the public interests which are dependent on a knowledge of meteorological conditions. The meteorological services, previously controlled by the State, were transferred to the Commonwealth. A special climatological station is maintained at Sydney—as the centre of a subdivision, which includes the greater part of New South Wales.

WEATHER.

The weather is determined chiefly by anticyclones, or areas of high barometric pressure, with their attending tropical and antarctic depressions, in which the winds blow spirally outward from the centre or maximum. These anticyclones pass almost continuously across the face of the continent of Australia from west to east, and the explanation of the existence of such high-pressure belts lies probably in the fact that this area is within the zone in which polar and equatorial currents meet and for some time circulate before flowing north and south. The easterly movement depends on the revolution of the earth.

A general surging movement occasionally takes place in the atmosphere, sometimes towards, and sometimes from, the equator. The movement causes sudden changes in the weather—heat when the surge is to the south, and very cold weather when it moves towards the equator. Probably, these

sudden displacements of the air systems are due to thermal action, resulting in expansion or contraction in the atmospheric belts to the north and south of Australia.

New South Wales is peculiarly free from cyclonic disturbances, although occasionally a cyclone may reach the State from the north-east tropics or the Antarctic low pressure belt which lies to the south of Australia, or may result from monsoonal disturbances.

Flag signals to indicate weather forecasts are displayed from the Customs House, Sydney, one class indicating storm warnings and a second, general forecasts as to fair weather, rain, cold, or heat waves. Storm signals are hoisted on the flagstaff at the General Post Office to denote the approach of southerly squalls from Wollongong, Jervis Bay, and Eden reporting stations.

For the purpose of making weather forecasts for Australia the Continent is classified according to the distinctive type of climate characterising the area: the northern area, including Queensland, is characterised by a moist, warm climate, with a well-defined maximum of rainfall at mid-summer; the central arid area is hot and dry, the rainfall irregular, chiefly occurring in summer and accompanied by electrical disturbances; in the southern area the climate is generally warm and temperate, rain falling in winter and spring, chiefly following the northern path of westerly winds at those periods. Over a long belt stretching from Peak Hill, in Western Australia, through Oodnadatta and across to Sydney, the rainfall is chiefly autumnal, due to the interaction of cyclones and anticyclones. It is evident that such diversity of climate over the continent precludes a general drought, while it also accentuates the difficulty of long distance forecasting. Given that coastal and continental regions have opposite weather cycles, it can be understood that the above conditions apply particularly to New South Wales with its distinctive coastal, tableland, and inland regions.

THE SEASONS.

The seasons depending on the annual march of temperature occur as follows:—Summer—December, January, and February; autumn—March, April, and May; winter—June, July, and August; spring—September, October, and November.

January is the hottest and July the coldest month, and the temperatures of autumn and spring are approximately the mean of the whole year.

The comparatively low latitudes offer a remarkable variety of temperate climates. From Kiandra, on the Southern Tableland, to Bourke, on the Great Western Plain, the climate may be compared with that of the part of Europe from Edinburgh to Messina; but more generally it resembles that of Southern France and Italy.

WINDS.

In the summer months the prevailing winds blow from the north on the coast of New South Wales, with an easterly tendency which extends to, and in parts beyond, the highlands; in the western districts the winds usually have a westerly tendency.

In winter, the prevailing direction is westerly. Off the southern areas of the State the winds are almost due west, but proceeding northwards a southerly tendency is assumed, while on reaching latitudes north of Sydney the direction is almost due south. When they reach the north-eastern parts of the State, these winds are deflected in a westerly direction and become merged in the south-east trade winds north of latitude 30°. During the cold months of the year, Australia lies directly in the great high-pressure stream

referred to previously, and the high pressure when passing over the continent tends to break up into individual anticyclonic circulations moving counter-clockwise in the southern hemisphere.

The highest barometric reading, and the deepest anticyclonic area, extend over the centre of Australia. From such a high-pressure area the currents of wind begin to flow by force of gravity to the surrounding regions of lesser pressure, commencing at first with very light breezes flowing almost parallel to the trend of the isobar; but as they gather momentum they become more and more deflected, until on reaching the limit of the propelling force they blow nearly at right-angles to their isobars. This is more especially noticeable when the south-eastern and south-western parts of the continent are reached, for in those regions the well-known V-shaped depressions of the Antarctic low-pressure belt add their attractive inner force to the outward repelling force of the high-pressure areas. The velocity of the wind at these points is thus considerably accelerated, hence storms and heavy seas prevailing during the winter months off the Leeuwin, in Western Australia, and on the coast of Victoria.

Following the path of a current of wind from the centre of a high pressure to its destined goal, the centre of a low pressure, it will be found to describe an evolute curve, or to circulate spirally outwards in its early stages, while the reverse is the case in the wind-path of low-pressure or cyclonic systems, the final stages being in the form of an involute curve. In addition to these phenomena of the wind in high and low pressure areas, there is also a tripping motion or deflection earthwards.

As winter merges into spring, and spring into summer, the passing of the sun to the south of the equator causes the tropical low-pressure belt to descend polewards, and within close touch of Australia. The high-pressure belt which influences the weather in the winter months is likewise forced southwards, and travels over the Southern Ocean, an occasional anticyclone reaching the mainland in the latter end of the spring, but seldom in summer.

With the southward trend of this low-pressure belt, the weather is controlled during the summer months by sub-tropical conditions. The barometers on the mainland being relatively low as compared with the prevailing readings over the western, southern, and eastern ocean surrounding, a reversal of direction in wind currents takes place as compared with that experienced in winter. The depression then ensuing on the mainland (instead of a high pressure) is still further intensified by the action of the sun on the central plains of Australia; the winds immediately begin to respond to the low-pressure attractive force, and flow in from the surrounding ocean with a spiral motion. This movement must be duly regarded, or the cause of the prevailing north-east winds, as well as the "southerly bursters" on the coastal districts of New South Wales, will not be clearly understood.

With a high-pressure system over the Tasman Sea, another to the west of the Great Australian Bight, monsoonal or tropical low depressions covering the greater part of the mainland, and an Antarctic V-depression to the west of the Tasman Sea, the wind conditions will be as follows:—

In the first place, the high pressure lying to the east of New South Wales, conforming to the laws of wind circulation in the southern hemisphere, has a northerly circulation on its western limits. As this boundary lies almost parallel to the trend of the coast-line, northerly winds are found to prevail some distance off the shore; but the circulation is weak, owing to the depleted energy in anticyclones at this time of the year (summer), and it is, therefore, necessary to look elsewhere for some other cause for the strength which prevails in the seasonal north-easters.

Continued observation at Sydney shows that these winds are barely perceptible during the morning hours ; in fact, up to noon the air is hot and muggy, owing to a listless veering to the north-west bringing back the reflected heat in the air from the country lying between the seaboard and the mountains. But at noon, or shortly afterwards, a decided freshening takes place, until at about 3 p.m. a moderate to fresh breeze is blowing along the seaboard. Later in the day the force of the wind relaxes, until at sundown it ceases entirely.

These characteristics may occur day after day ; and if such be the case, there is a tendency for the wind to commence earlier, and die away later. If no break occurs in the weather in the shape of a "southerly burster" or a thunderstorm, the north-easter, after blowing continuously for several days, may eventually blow throughout the night. In the early morning there will be a lull, followed by a fog—the precursor of a hot day. The fog is soon dissipated by light westerly winds and blown away to sea, and the wind then veers to the N.W., gradually increases in force, and is accompanied by a rapid rise in the temperature. The thermometer may, indeed, rise as much as 10 or 20 degrees in the course of a few hours, occasionally reaching a maximum of 100 degrees and over. During the evening a thunderstorm may bring temporary relief, only to be followed by a sweltering night and a return of the north-west wind on the succeeding day. The heat conditions will probably be dissipated then by a "southerly burster," lasting possibly till morning. The "southerly burster" rarely persists for any lengthened period after sunrise during the midsummer months ; but in late spring or early autumn it may last for several days.

The cause of the initial direction of the north-easters has been stated above ; but it is in the low-pressure conditions prevailing over the interior that an explanation of their velocity is to be sought. In the early morning the barometers in that region are uniformly level ; but with the rising of the sun the air becomes heated, expands, and ascends. A fall in the barometric pressure is the result, while to fill the partial void occasioned by the rising of the heated air, a current sets in from the coastal regions. This indraft to the interior gathers strength in proportion to the increase of the sun's power there, while it diminishes with the declining sun according as the inflow is sufficient to raise the inland pressure to uniformity.

While this low pressure is fairly constant over the mainland, the anti-cyclone in the Great Bight is moving steadily eastward over the Southern Ocean, with its accompanying Antarctic depression in advance. When this low pressure has passed to the east of Tasmania, its vortical power is also exercised upon the northerly current blowing off the coast, with the result that the north-easter is deflected into a north-wester, and the winds are drawn from the interior across the coastal regions in response to this new attractive force. The V-depression, impinging on the high pressure to the east of it, and at the same time being compressed by the still advancing high pressure to the west, loses its former obtuse-angular formation, which finally becomes acute. A line bisecting this angle divides the northerly circulation in the fore-angle from the southerly circulation in that of the rear. At the same time the entire system is sucked northwards by the continental depression. Hence it follows that in succession to the extremely hot north-westerly winds we experience after a very short lull a burst from the south of even greater velocity than that of the preceding currents. The thunderstorms that frequently precede or accompany the change are probably caused by the violent intermixing of these opposing currents, with their extremes of dryness and humidity, assisted in no small measure by the dust particles pervading the air generally.

RAINFALL.

The rainfall is variable. Generally, the wet season extends over the first six months of the year, although occasionally the most serviceable rains come in the spring. The coastal districts are subject to the heaviest falls, ranging from 30 inches in the south to 70 inches in the north. Despite their proximity to the sea, the mountain chains are not of sufficient elevation to cause any great condensation; so that, with slight irregularities, the average rainfall gradually diminishes towards the western limits of the State, the figures ranging from a mean of about 50 inches on the seaboard to 10 or 20 inches on the Western Plains.

The distribution of rainfall is dependent on three factors—(1) the energy present in the atmospheric systems, (2) the rate of travel of the atmospheric stream, and (3) the prevailing latitudes in which the anticyclones are moving.

The chief agencies for precipitating rainfall are also three in number, viz., Antarctic depressions, monsoonal depressions, and anticyclonic systems. Antarctic depressions are mainly responsible for the good winter rains in the Riverina and on the South-western Slope. A seasonal prevalence of this type of weather would cause a low rainfall on the coast and tablelands, and over that portion of the inland district north of the Lachlan River. A monsoonal prevalence ensures a good season inland north of the Lachlan, but not necessarily in eastern and southern areas. An anticyclonic prevalence results in good rains over coastal and tableland districts, but causes dryness west of the mountains. Equal representation of all these agencies, in conjunction with the main governing features previously stated, result in a good season throughout the State.

Generally, June is the wettest month in all southern districts west of the highlands; in other parts of the interior the month of greatest humidity is January, February, or March. On the Northern Tablelands, the Central Western Slope, and Central Western Plains, the highest monthly average is recorded in January. February is the wettest month, on the North-western Plains and over the country to the north of the Darling and east of the Paroo; and March in the far north-west quarter and over the central Darling country between Tilpa and Pooncarie. In the coastal districts, every month, except November, is represented in some part as the wettest.

No systematic study has yet been made of the possible effects or of the influence direct or indirect upon climate, especially as regards rainfall and evaporation, which may be exerted by surface alterations, e.g., the removal of forest growth to permit of the extension of pastoral and agricultural industries or the extension of water conservation and irrigation and intensive cultivation; but an example of the influence of such surface alteration may be traced on the north coast of New South Wales, where, conterminously with the clearing of the land for rural industries, the area liable to frosts has been extended.

The following table shows the variation in rainfall in the inland portions of New South Wales during the period, 1904-13. It bears out the statement that a universal shortage of rain is not probable. For instance, in 1904 the Western Plains suffered from low rainfall, but the North-west Slope had more than the average. In 1905-6 the conditions were reversed, and better conditions prevailed in the west. The Riverina and Southern Highlands usually experience opposite conditions. The latter district was in the better position in 1905, but was dry in 1910, when the Riverina rainfall was above the average.

WET AND DRY REGIONS IN NEW SOUTH WALES.

Year.	Above the Average.	Below the Average.
1904	North-west Slope Hunter Valley Illawarra	Trans-Darling. Northern Rivers. Southern Tableland. Western Plains.
1905	Western Plains Kosciusko area	North-west Slope. Trans-Darling. Other Highlands and Coast.
1906	Trans-Darling Western Plains. Riverina, etc. Kosciusko.	Other Highlands and Coast.
1907	North-west Plains North-west Slope	Trans-Darling. Western Plains. Highlands and Coast.
1908	North Coast and N.E. generally	Remainder of State.
1909	Highlands and Western Slopes	Far West. Western Plains. Coastal regions.
1910	Far West West Riverina North-west Slope Blue Mountains.	Western Plains. North Coast. Hunter and Macquarie.
1911	Western Plains Whole State, except N.E.	North-west Slope. North Coast.
1912	Riverina	Western Districts. North and South Coastal Areas. Central and Southern Tablelands.
1913	Upper Bogan Lower Macquarie East and West Gwydir Liverpool Plains Hunter, Manning and Nepean South Coast Upper Murrumbidgee	Trans-Darling. New England. Clarence. Cudgong. Central Plateau. Illawarra. Jugiong. Tumut. Riverina.

CLIMATIC DIVISIONS.

The territory of New South Wales may be divided into four climatic divisions—The Coast, the Tablelands, the Western Slopes of the Dividing Range, and the Western Plains.

Coast.

In the Coastal division, which lies between the Pacific Ocean and the Great Dividing Range, the rainfall average is comparatively high.

Sydney is situated halfway between the extreme northern and southern limits of the State, in latitude $33^{\circ} 51' 41''$ S, longitude $151^{\circ} 12' 23''$ E. Its mean annual temperature is 63° Fahrenheit, corresponding with that of Barcelona in Spain, in latitude $41^{\circ} 22'$ N., and Toulon in France, in latitude $43^{\circ} 7'$ N. The range is only 17° , calculated over a period of fifty-five years, the mean summer temperature being about 71° , and the mean winter temperature 54° . At Naples, which has about the same mean temperature as Sydney, the range is 27° , between the means 74° and 47° .

The following table shows the average meteorological conditions of Sydney based on the experience of the fifty-five years ended 1913:—

Month.	Hourly Average Reading of Standard Barometer corrected to 32° Fah.; Standard Gravity and Mean Sea Level.	Temperature (in shade).			Rainfall.			
		Mean Standard.	Average Reading of Maximum Thermometer.	Average Reading of Minimum Thermometer.	Average.	Greatest.	Least.	Average number of days' Rain.
January	29.905	71.6	78.3	64.9	3.570	15.257	0.419	14.2
February..	29.950	71.1	77.3	64.8	4.673	18.556	0.344	14.2
March	30.021	69.2	75.4	63.0	5.208	18.700	0.419	15.2
April	30.077	64.6	70.9	58.1	5.319	24.492	0.060	13.3
May	30.036	58.5	65.0	52.0	4.913	20.868	0.214	15.6
June	30.067	54.3	60.4	48.2	5.245	16.296	0.190	13.1
July	30.083	52.4	58.9	45.7	4.844	13.208	0.119	12.5
August	30.076	54.3	62.3	47.5	3.205	14.886	0.040	11.4
September	30.012	59.0	66.4	51.4	2.820	14.045	0.083	12.2
October	29.972	63.5	71.1	55.8	2.755	10.810	0.209	12.6
November	29.951	67.0	74.3	59.6	2.871	9.877	0.193	12.5
December	29.886	70.1	77.3	62.8	2.549	8.469	0.453	12.8
Annual	30.007	63.0	69.8	56.2	47.972	82.763	23.014	159.6

The North Coast districts are favoured with warm, moist climate, the rainfall averaging from 40 to 70 inches annually. The mean temperature for the year is from about 66° to 69° , the summer mean being 75° to 78° , and the winter mean 56° to 58° . On the South Coast the rainfall varies from 30 to 60 inches, and the mean temperature ranges between 57° and 63° , the summer mean being from 66° at the foot of the ranges to 70° on the sea coast, and the winter from 48° to 54° over the same area.

Coastal rains come from the sea with both south-east and north-east winds, being further augmented in the latter part of the year by thunder-storms from the north-west. The principal precipitating agencies are the Antarctic depressions, the anticyclones when travelling in high latitudes, and in the extreme north-east reliable rains are precipitated by the south-east trades.

The following table shows the meteorological conditions of the principal stations in the Coastal Division, arranged in the order of their latitude. These stations are representative of the whole division, and the figures are the average of a large number of years :—

Station.	Least Distance from East Coast.	Altitude.	Temperature (in Shade).						Rainfall— Mean Annual.
			Mean Annual.	Mean Summer.	Mean Winter.	Mean Daily Range.	Highest.	Lowest.	
	miles.	feet.	°	°	°	°	°	°	inches.
Casino	28	82	67·0	75·5	57·3	24·7	116·4	21·0	43·95
Lismore	13	52	66·6	75·0	56·3	22·2	116·2	23·0	52·16
Clarence Heads	0	99	67·9	74·9	59·5	15·1	110·0	36·4	55·19
Grafton	22	40	67·2	77·1	57·6	26·3	118·0	20·9	35·04
Port Macquarie	0	44	63·3	70·8	54·9	17·0	105·4	24·8	60·87
Singleton	40	135	64·2	76·1	52·1	20·3	113·9	22·0	29·48
Morpeth... ..	15	20	63·8	73·9	54·3	18·1	108·7	26·0	39·11
West Maitland... ..	18	40	64·2	74·8	52·7	20·8	115·0	24·0	34·10
Port Stephens	0	30	64·1	72·6	53·1	20·8	111·2	30·2	53·48
Newcastle	1	112	64·6	72·3	55·4	15·4	110·5	31·0	47·32
Pitt Town	26	40	64·0	76·1	52·6	20·0	113·0	27·2	31·59
Emu	36	87	62·7	73·2	50·4	16·2	107·6	26·8	29·88
Sydney	5	146	63·0	70·9	53·8	13·6	108·5	35·9	47·99
Wollongong	0	33	63·0	70·1	54·8	17·0	113·4	31·9	42·92
Nowra	6	50	61·6	71·0	53·4	19·0	109·5	34·5	37·39
Point Perpendicular	0	257	61·5	68·3	53·7	12·3	105·2	25·5	55·55
Moruya Heads	0	55	60·9	68·0	52·8	13·8	114·8	26·3	35·21
Bodalla	7	40	59·9	69·1	50·5	27·7	114·1	18·6	36·32
Bega	0	50	59·7	69·6	48·9	24·9	115·6	16·6	32·08
Eden	0	107	60·0	67·7	51·8	14·2	106·0	29·3	34·40

Taking the coast as a whole, the difference between the mean summer and mean winter temperature is not much over 20°—a range so small as to be rarely found in other countries.

Tablelands.

On the Northern Tableland the rainfall is consistent, ranging from 30 inches in the western parts to 40 inches in the eastern. The temperature is cool and bracing, the average for the year being between 54° and 60°; the mean summer temperature lies between 65° and 70°, and the mean winter between 43° and 45°. The Southern Tableland is the coldest part of the State, the mean annual temperature being only about 56°. In summer the mean ranges from 57° to 68°, and in winter from 34° to 44°. At Kiandra, the elevation of which is 4,640 feet, the mean annual temperature is 44·5°. Near the southern extremity of the tableland, on the Snowy and Muniang Ranges, the snow is present generally throughout the year.

The statement below shows, for the Tablelands, similar particulars to those already given for the Coastal Division :—

Station.	Least Distance from East Coast.	Altitude.	Temperature (in Shade).						Rainfall — Mean Annual.
			Mean Annual.	Mean Summer.	Mean Winter.	Mean Daily Range.	Highest.	Lowest.	
	miles.	feet.	°	°	°	°	°	°	inches.
Tenterfield	80	2,827	58·3	68·6	46·8	24·2	107·1	9·9	32·65
Inverell	124	1,980	59·6	71·3	47·2	29·4	110·6	13·4	30·31
Glen Innes	90	3,518	55·6	66·4	43·8	25·7	107·3	14·4	31·71
Bundarra	113	2,000	60·8	72·3	48·8	25·2	101·0	17·5	29·94
Armidale	81	3,333	56·2	67·4	41·0	24·5	105·2	11·2	31·94
Walcha	83	3,386	54·5	66·3	47·4	23·4	104·1	10·0	30·74
Murrurundi	94	1,545	60·9	73·7	49·7	19·8	107·3	19·0	31·38
Cassilis	120	1,500	60·8	73·6	45·3	21·7	111·7	15·8	23·79
Scoue	78	680	62·6	74·3	50·4	29·7	114·4	19·0	23·67
Muswellbrook	63	475	63·8	75·2	49·4	25·4	117·6	19·0	23·58
Mudgee	121	1,635	59·2	72·4	46·8	32·1	114·9	15·0	25·31
Bathurst	96	2,206	57·1	69·8	44·1	28·0	112·9	13·0	23·60
Kurrajong Heights	35	1,870	53·3	61·7	43·9	13·3	99·5	25·5	50·03
Mount Victoria	61	3,490	54·4	65·2	42·6	19·6	106·0	11·9	37·16
Katoomba	53	3,349	53·2	62·5	42·8	15·4	100·0	25·9	56·62
Carcoar	111	2,380	58·0	71·4	44·2	25·9	105·0	15·4	29·44
Springwood	42	1,216	61·1	70·8	47·2	17·4	104·8	32·5	40·99
Cowra	126	987	63·1	78·8	48·5	23·5	116·1	21·0	23·82
Pieton	22	549	61·2	71·8	49·9	27·6	114·0	19·7	30·00
Crookwell	81	2,000	52·0	64·7	39·4	23·7	100·8	12·1	31·81
Moss Vale	31	2,205	55·2	65·6	44·4	21·5	106·0	18·9	38·38
Gonburn	54	2,097	56·0	67·5	44·1	24·1	111·0	13·0	25·21
Yass	92	1,616	57·0	70·1	44·6	24·3	108·0	21·0	23·71
Queanbeyan	60	1,899	57·1	67·3	44·2	29·2	109·4	15·8	22·25
Kiandra	88	4,640	44·1	55·5	32·0	20·6	91·0	⁴ below zero	64·11
Cooma	52	2,617	54·1	65·8	41·9	27·8	112·0	11·0	19·13
Bombala	37	3,000	53·4	64·4	42·8	24·2	104·1	15·5	22·91

Western Slopes.

On the Western Slopes the rainfall is distributed uniformly, varying from 20 inches in the western parts to 30 inches in the eastern; the greater part of the wheat growing area of the State is situated on these slopes, where the average rainfall is about 25 inches. The mean annual temperature ranges from 69° in the north to 60° in the south; in the summer from 81° to 74°, and in the winter from 53° to 47°.

North of the Lachlan River, good rains are expected from the monsoonal disturbances during February and March, although these may come as late as May, and incidentally during the remainder of the year. These monsoonal or seasonal rains are caused by radiation in the interior of Australia during the summer months, when the heat suspends the moisture accumulated chiefly from the Southern Ocean.

In the Riverina district, south of the Murrumbidgee generally, and on the South-western Slopes, fairly reliable rains, light but frequent, are experienced during the winter and spring months.

The next statement gives, for the principal stations on the Western Slopes, information similar to that shown for Coast and Tablelands:—

Station.	Least Distance from East Coast.		Altitude.	Temperature (in Shade).						Rainfall— Mean Annual.
	miles.	feet.		Mean Annual.	Mean Summer.	Mean Winter.	Mean Daily Range.	Highest.	Lowest.	
Moree	204	680	67.3	80.4	53.2	30.2	117.3	18.0	23.46	
Warialda	162	1,106	61.6	74.0	47.9	34.0	117.7	16.0	28.27	
Bingara	153	1,200	64.0	76.2	49.8	29.4	116.6	15.5	31.18	
Narrabri	193	697	66.8	80.7	51.9	28.4	119.9	18.4	25.88	
Gumedah	156	874	64.8	79.6	51.2	29.1	120.6	16.7	24.64	
Coonabarabran ..	185	1,710	59.8	72.7	46.3	32.4	111.9	11.4	29.18	
Quirindi	115	1,278	63.9	76.5	48.5	27.1	113.6	17.0	27.83	
Dubbo	177	870	63.4	77.4	49.3	28.0	115.4	16.9	22.26	
Forbes	176	789	63.0	76.8	48.3	24.3	118.4	24.0	19.81	
Young	140	1,416	58.8	72.4	45.8	25.9	113.9	20.3	25.18	
Marsdens	187	700	64.8	76.8	49.2	25.0	119.7	19.0	19.71	
Murrumburrah ...	126	1,268	61.1	72.7	46.9	27.1	114.9	20.0	23.82	
Wagga Wagga ...	158	612	62.0	75.5	48.6	25.7	119.0	18.4	21.35	
Urana	213	400	62.3	76.2	48.1	22.6	117.0	18.4	16.98	
Albury	175	542	60.7	74.4	47.5	27.4	117.3	19.9	27.67	

Western Plains.

The Western District consists of a vast plain, the continuity of which is broken only by the Grey and Barrier Ranges. Owing to the absence of mountains in the interior, the annual rainfall over a great part of this division, which lies in the zone of perpetual high pressure, does not exceed 10 inches. It increases from 8 inches on the western boundary to 10 and 15 inches along the Darling River, and 20 inches on the eastern limits. The mean annual temperature ranges from 69° in the north to 62° in the south; in the summer from 83° to 74°, and in the winter from 53° to 45°.

Although the summer readings of the thermometer in this district may be from 10° to 20° higher than those on the coast, the heat is not distressing, and is, in fact, preferred by many people to the moisture and more enervating heat of the coastal regions. Excessive heat is experienced occasionally, and with many summers intervening, its occurrence being in all probability due to a temporary stagnation in the easterly atmospheric drift. Under normal conditions, air entering Western Australia with a temperature from 70° to 80° would only accumulate 20° to 25° by contact with the radiation from the soil during its passage across the continent.

Where there is stagnation, however, the air resting over the sandy soils of the interior of Australia becomes superheated, and on reaching the western districts of the eastern States shows a temperature sometimes as much as 40° above the normal. Extensive bush fires also cause a local rise in temperature, and this is due, not only to the actual heat generated, but also to the

liberation of combustible matter into the atmosphere; and it has further been affirmed that the presence of a small excess of carbonic acid gas above the normal quantity in air raises the temperature several degrees. The winter, with an average temperature of over 50°, accompanied by clear skies and an absence of snow, leaves little to be desired from the standpoint of health; while, also owing chiefly to the dryness of the climate, these inland regions produce the best merino wool in the world.

The meteorological conditions of the Western Plains will be seen from the following statement, corresponding to those given already for the other divisions of the State:—

Station.	Least Distance from East Coast.	Altitude.	Temperature (in Shade).						Rainfall— Mean Annual
			Mean Annual.	Mean Summer.	Mean Winter.	Mean Daily Range.	Highest.	Lowest.	
	miles.	feet.	°	°	°	°	°	°	inches.
Brewarrina	345	430	69·3	84·0	52·9	26·3	122·3	24·8	16·26
Walgett... ..	286	436	67·9	82·0	52·8	25·8	122·2	23·2	18·78
Bourke	386	361	69·2	83·6	54·0	27·5	127·0	25·0	14·47
Wilcannia	473	267	66·4	80·2	52·0	26·0	120·8	21·8	10·32
Cobar	345	803	67·0	80·9	52·3	24·1	118·7	25·0	14·39
Broken Hill	555	1,030	64·6	77·6	51·0	23·7	115·9	28·5	9·72
Mount Hope	296	600	64·4	78·6	50·0	22·4	123·6	24·6	15·34
Condobolin	227	700	64·8	78·2	50·9	27·1	122·2	20·5	17·46
Wentworth	478	123	64·0	76·7	51·1	26·7	119·0	21·0	12·15
Hay	309	291	63·2	76·1	50·3	27·6	117·3	22·9	14·26
Euston	422	188	62·4	74·8	50·0	26·3	124·8	17·1	12·25
Deniliquin	287	312	61·3	74·2	48·9	24·2	121·1	18·0	16·26

TIDES AND WINDS.

A self-recording tide-gauge was set up at Fort Denison, in Port Jackson, in 1867. The average range of ordinary tides is 3 feet 4½ inches; of spring tides the average is 5 feet 1½ inches. On 5th January, 1912, and in December, 1910, the tide gauge at Fort Denison recorded 6 feet 9 inches, which is practically the highest tide registered. The Sydney Harbour Trust, in 1911, installed a tide-gauge of the most modern type at Fort Denison, at Watson's Bay, and at Spectacle Island.

At Port Hunter, the average rise and fall of ordinary tides is 3 feet 4⁷/₁₂ inches, and of spring tides 5 feet 5¹/₆ inches; the greatest range being 6 feet 6½ inches. The highest tide registered was 7 feet 4 inches in May, 1898.

For the coast the average rise of spring tides may be taken as 5 feet 6 inches.

The accumulation of sand at projecting points, and the shoaling of river and harbour entrances are caused frequently by winds which retard or even reverse the surface flow of the littoral current, the prevailing direction of which is southward.

The river bars where shoaling is most frequent and most pronounced are those where the sandy beach is on the southern side, such as the Tweed, Richmond, and Manning Rivers.

STANDARD TIME.

The mean time of the 150th meridian of east longitude, or 10 hours east of Greenwich, England, has been adopted as the standard time throughout New South Wales, with the exception of the mining area of Broken Hill, where South Australian standard time has been adopted, viz., $142\frac{1}{2}^{\circ}$ of east longitude, or 9 hours 30 minutes east of Greenwich. In Western Australia the standard is the 120° of east longitude, or 8 hours east of Greenwich; in the States of Queensland, Victoria, and Tasmania the standard is the same as in New South Wales.

OBSERVATORY RECORDS.

Sydney Observatory, lat. $33^{\circ} 51' 41.1''$ south, long. $151^{\circ} 12' 23.1''$ east, established in the year 1856, is an institution of a scientific and educational character maintained by the State. The immense growth of Sydney, radiating in every direction, has caused such adverse atmospheric conditions, that the site, which at one time was considered good, is now altogether unfavourable for satisfactory work, and the Government is contemplating its removal to a new site some little distance from the city.

Daily time-ball services are maintained at Sydney and Newcastle, and the Post and Telegraph Department, and several watch-making establishments, are regularly advised as to the correct time. Arrangements have been made whereby any telephone subscriber may obtain correct time directly from the Observatory.

During 1913, 77 earth tremors were recorded on a Milne seismograph. The observations taken comprised 445 clock stars, 84 azimuth stars, and 52 determinations of collimation and azimuth.

There are a number of private observatories in the State doing good astronomical work. The most important of these is that of Mr. John Tebbutt, at Windsor, where a number of very fine observations, principally of comets, have at various times been contributed to the scientific world. Mr. Tebbutt, however, has recently retired from active service. Another is that of Mr. E. H. Beattie, of Mosman. This is at present in active operation, and a number of very good observations have been taken.

Mention must also be made of Riverview College, Lane Cove River, where there is the finest seismological installation in Australia under the control of the Rev. Father Pigott.

METEOROLOGICAL BUREAU.

Meteorological observations are directed by a special Meteorological Bureau situated at the Sydney Observatory, under the administration of the Commonwealth Government. Two bulletins and one weather chart are published daily by the Bureau. They contain reports from 358 stations. During the year many bulletins, weather charts, and rain maps of New South Wales are issued. The rain-maps show daily, monthly, annual and storm distribution of rainfalls, together with departures from average. An isobaric chart, depicting also by symbols at a number of stations, the direction of wind, rain-areas, thunderstorms, and conditions of sea, together with a concise note on the resulting weather since the previous day, has been regularly prepared in the Bureau for publication in the Sydney newspapers.

SCIENTIFIC EXPEDITIONS TO THE ANTARCTIC.

During recent years there have been four British expeditions to the Antarctic, namely, "The Discovery," "Nimrod," "Terra Nova," and "Aurora."

With the expedition led by Lieutenant Shackleton, who sailed in the "Nimrod" in 1908, were included representatives from New South Wales. A party from this expedition found the South Magnetic Pole, and on 9th January, 1909, came within 97 geographical miles or 112 statute miles of the South Pole. Having acquired much valuable information, the expedition returned to Sydney early in the year 1909.

The State was represented also in the Antarctic Expedition, under Captain Robert Scott, of the "Terra Nova," which left Sydney in November, 1910. The geological party of this expedition discovered bituminous coal of economic value, and many plant fossils. Continuous meteorological, magnetic, and other observations, were taken.

Captain Scott, with Captain Oates, Lieutenant Bowers, Dr. Wilson, and Petty Officer Evans reached the South Pole on 17th January, 1912, and found the records of Captain Amundsen of the Norwegian Expedition; whilst returning, Captain Scott and his party perished. The surviving members of the expedition returned to Australia early in the year 1913.

The first Australasian Expedition, subsidised to the extent of £7,000 by the New South Wales Government, was under the leadership of Dr. Douglas Mawson, and started south in December, 1911, in the steamer "Aurora." The main objects of this expedition were to explore and chart the coast between Cape Adair and Gaussberg (roughly, a distance of 2,500 miles), to investigate its geology and mineralogy; to study glaciers and ice formation; to make systematic magnetic observations, chiefly in the neighbourhood of the Magnetic Pole; to obtain meteorological records whereby to test the advisableness of establishing a permanent meteorological observatory in those parts; and to investigate the abounding fauna of the sea. Whilst proceeding to Antarctica, the "Aurora" called at Macquarie Island, upon which a wireless telegraph station was erected.

In February, 1913, a wireless message was received in Sydney announcing the deaths of two scientists of the expedition—Lieutenant Ninnis and Dr. Mertz—whilst exploring with Dr. Mawson a considerable distance from the base in Adelie Land. After a difficult journey, Dr. Mawson succeeded in reaching the base, but too late to join the "Aurora," which had sailed for Australia, leaving a party of six to await the leader's return. In February, 1914, Dr. Mawson returned to Australia, having secured scientific data of considerable value.

In August, 1914, an expedition organised by Sir Ernest Shackleton sailed from England in the "Endurance." The plan of the expedition is to land at Weddell Sea, and proceed across the continent. A party under the charge of Captain A. E. Mackintosh, R.N.R., will sail in the "Aurora" from Hobart and land at Ross Sea to co-operate with the main expedition.

The Japanese Antarctic exploration ship, "Kainan Maru," conveying Lieutenant Shirase's Antarctic Exploration Expedition, left Japan in December, 1910, reached New Zealand, and, finding the vessel unsuitable for navigating the Polar seas at that period of the year, the leader was compelled to abandon the attempt. The exploration party wintered at Sydney, and resumed its voyage south on 18th November, 1911. After landing coast-exploring parties at Whale Inlet and King Edward VII Land unknown parts of the sea were explored and many scientific specimens were collected. The vessel then returned to Japan.

A Norwegian Expedition, under Captain Raoul Amundsen, returned to Australia early in 1912, and reported having reached the South Pole.

TOURIST ATTRACTIONS.

GOVERNMENT TOURIST BUREAU.

THE Government Tourist Bureau of New South Wales, administered in connection with the Immigration Department, was established for the purpose of advertising the scenic and health resorts of the State, to supply information to tourists, and to improve transport facilities and accommodation in tourist districts. Information is supplied at the Bureau free of charge, itineraries are prepared, guide books published, and tours organised, with the object of unfolding the natural beauties and displaying the advantages to all parts of the State to the inquiring traveller and prospective citizen.

Traffic in the various tourist districts has grown rapidly since the establishment of the Bureau, and, apart from the advantages accruing from the movements of local and interstate visitors, the increase in the number of travellers from oversea countries is especially satisfactory, since such tourists are valuable media for disseminating information concerning the resources of a State which is most desirous of attracting settlers.

The Tourist Bureau co-operates with similar offices in the adjacent States in furnishing particulars regarding other places of interest in Australia.

TOURIST DISTRICTS.

The tourist districts of New South Wales are situated in the coastal and tableland divisions, and are not yet extended to the Great Western Plain, with its rich mineral areas and fine pastoral lands, watered in many places by artesian bores; nor to fertile Riverina, in the south, where the Murrumbidgee Irrigation Area will prove a source of material interest to visitors from other lands.

The main tourist districts are:—

- Sydney and its surroundings.
- Illawarra and South Coast districts.
- Blue Mountains and Central Tableland.
- Jenolan and other Caves.
- Kosciusko and the Alpine snowfields.
- Southern Highlands.
- Hawkesbury River.
- Northern Lakes.
- New England Highlands.
- North Coast district.

SYDNEY AND ITS SURROUNDINGS.

Sydney Harbour, Port Jackson, is one of the principal attractions of New South Wales, on account of the beauty of its scenery, its ample anchorage, and its advantages for shipping, which render it one of the finest harbours of the world. The great navigator, Captain Cook, misled by its comparatively narrow entrance, concluded that the inlet was unimportant, but the error of this impression was manifest to Governor Phillip when, seeking a favourable situation for the foundation of the first settlement, he entered the harbour in 1788. Within the bluff headlands which mark the entrance a magnificent panorama is presented, the blue waters of the harbour spreading out into several lake-like expanses, while the united streams of the Lane Cove and Parramatta Rivers enter it from the west; wooded slopes offer charming landscape effects, while curving stretches of sandy beach occur

at intervals along the shores. At the entrance the white tower of the Macquarie Lighthouse is situated on the outer South Head, a prominent landmark; the light is amongst the most powerful in the world.

Opposite the harbour entrance stands a bold, rugged promontory, called **Middle Head**, and its position, as seen by Captain Cook from the deck of the "Endeavour," doubtless gave the great navigator the impression that the port was of insignificant dimensions. To the south, within the entrance, there is a succession of crescent-shaped bays—Watson's and Vaucluse Bays, where ocean and harbour views are obtainable; Rose Bay, Double Bay, with Point Piper on its eastern and Darling Point on its western side; Rushcutters' Bay and Elizabeth Bay. Round these shores some of the finest residences and gardens in Sydney are situated. Woolloomooloo Bay is used for oversea commerce, and contains extensive wharves, with modern shipping appliances. Next in order are Farm Cove, a beautiful horseshoe-shaped inlet, reserved exclusively as an anchorage for the warships, and Circular Quay, where the large mail steamers are berthed; from this Quay the wharves extend continuously along the foreshores round Miller's Point to Darling Harbour and adjacent bays, where large graving docks are situated.

The foreshores between Woolloomooloo Bay and Circular Quay have been reserved for public recreation, and contain the Public Domain (where the National Art Gallery and Mitchell Library are situated), the Botanic Gardens, and the historic Government House, where a Conservatorium of Arts and Music is in course of erection. The Botanic Gardens are delightfully situated on the shores of Farm Cove; a substantial sandstone wall forms the edge of a fine promenade round the inlet, and on the bright days which are characteristic of New South Wales the well-kept lawns and flower beds, the handsome avenues of decorative trees, and, in the foreground, the deep blue waters of the bay, on which yachts and sailing craft are seen, constitute a charming landscape. A collection of Australian flora and fauna forms a special feature of the Gardens.

The picturesque Lane Cove and Parramatta Rivers are practically prolongations of the harbour, the fresh-water portions being comparatively insignificant. There are many popular holiday resorts along the banks of these rivers; the Parramatta is notable as the scene of many contests for the sculling championship of the world. Fast and commodious steamers touch at the chief points of interest at regular intervals daily.

Along the northern side of the harbour are the undulating residential suburbs of North Sydney, Neutral Bay, Cremorne, and Mosman. A railway from Milson's Point, connecting with the Main Northern line at Hornsby, passes through a suburban area containing many beauty spots.

The Middle Harbour branch of Port Jackson contains an area of about 8 square miles; the natural beauty of its surroundings has not been marred by the progress of settlement, and it is one of the most popular resorts in the harbour. A few days may well be spent in exploring the beauties of its bays and of its rugged well-wooded shores. Steamers enter this arm of the harbour round the north of Middle Head, the channel being very narrow owing to the presence of a long sand-bar, called "The Spit."

At the head of North Harbour, and distant about 6 miles from Circular Quay, lies the marine suburb of Manly, situated on a narrow tongue of land between the harbour and the ocean. The hills on each side of the town rise to a considerable height, and their slopes are covered by numerous residences. Manly is a favourite holiday resort, and is reached from Sydney by a constant service of ferry steamers; an alternative route affording lovely ocean and harbour views, is by electric tram from North Sydney, Cremorne, or Mosman. There are fine enclosed baths on the harbour side of the township, but the popularity of this suburb is due mainly to its ocean beaches, where surf-bathing forms a great attraction; a fine promenade over a mile

in length extends along the main beach, and commodious buildings have been provided for surf bathers. Throughout the year the climate of Manly is equable, the heat in summer being tempered by the cool sea breezes, while the winter season is mild and enjoyable.

The district along the coast between Manly and Broken Bay is notable for its scenery; a ridge of rugged hills, where boronia, flannel flowers, and other varieties of native flora bloom in profusion, forms a background for numerous sandy beaches, each with its rapidly extending cluster of camps for visitors. Excellent fishing, shooting, and boating are available at Narrabeen Lake, 6 miles from Manly. In the more populous districts south of the harbour entrance the ocean beaches, Bondi, Coogee, and Maroubra, attract large numbers of tourists for surf bathing.

As Sydney is favoured with a temperate climate, and a harbour of such noble proportions, it is only natural that sailing, rowing, and other marine recreations should be popular pastimes amongst its inhabitants. There are numerous yacht and other sailing clubs; and in the summer season the waters of the port present an animated and beautiful sight.

There are excellent fishing grounds in the harbour, where black and red bream, trevally, mackerel, &c., are found; and in the neighbouring ocean waters are schnapper, groper, red and black rock cod, jewfish, rainbow fish, parrot fish, and many others. Many schnapper fishing grounds are convenient to the city, and more distant grounds along the coast are visited by steamers, regular trips being made in the winter season.

Surrounding the city there are many public buildings and places of interest to tourists, such as the National Art Gallery, Public Libraries and Museums, the Cathedrals, the University, Zoological Gardens, Observatory, Centennial Park, and numerous sports grounds.

THE ILLAWARRA AND SOUTH COAST DISTRICTS.

The Illawarra and South Coast districts, extending from Sydney to the Victorian border, embrace some of the most picturesque country in Australia. Here the Southern Tableland approaches very closely to the sea coast, and at Clifton the mountains rise almost sheer from the water's edge. Beyond this point, however, the tableland retreats inland, but even so far south as the Shoalhaven River, it is within 8 miles of the sea. From Clifton southward practically the whole of this strip of country is of great fertility, while rich coal-seams occur throughout the entire extent of the seaward face of the tableland. The district is traversed by the South Coast railway as far as Nowra, and contains excellent dairying land, its fertile meadows being intersected by numerous fern-fringed creeks hurrying to the sea. On the edge of the tableland there are numerous view-points of mountain, lake, and ocean scenery. At each of the little villages along the railway line the tourist may vary the pleasures of sea-bathing with hill-climbing; and in the lakes off the coast excellent fishing abounds, while the sportsman may enjoy some fair shooting. During the daytime the summer heat is modified by the cool breeze from the wide expanse of the Pacific Ocean, and after sundown the welcome scents from the bush are wafted down from the mountains.

At La Perouse, on the northern headland of Botany Bay, a column has been erected to the memory of La Perouse, the celebrated French navigator, who entered the Bay shortly after the arrival of Governor Phillip; there is also a camp and reserve for aboriginals. Kurnell, on the southern headland, is notable as the landing-place of Captain Cook.

The railway line from Sydney passes at the head of Botany Bay, and crosses George's River at Como, a favourite fishing resort. From Sutherland tourists may proceed to Cronulla, a beautiful watering place possessing a fine surfing beach, and Port Hacking, a well-known fishing ground. The National Park, a pleasure ground of 33,700 acres, with a frontage of

7½ miles to the Pacific Ocean, extends from the shore of Port Hacking into the mountainous Illawarra district to the south. The reserve consists mostly of high tablelands intersected by deep glens and gorges; ferns, shrubs, and wild flowers abound along the banks of the numerous streams.

At Stanwell Park there are beautiful views of ocean and mountain, and the amateur photographer may find many charming subjects for his camera, the steep mountain sides forming an effective background to the palms and other vegetation of the seaward slopes. Endless attractions also are offered to the botanist by the profusion of ferns and wild flowers of remarkable variety and beauty, and fishing is obtainable from the rocks of the sea coast. Passing Clifton and Scarborough, the line runs along the edge of the cliffs hundreds of feet above the sea, to Thirroul and Bulli, within 3 miles of the famous Bulli Pass. From the top of the Pass there are magnificent views of the underlying country and ocean, the landscape taking in 30 or 40 miles of coastline. Leaving Bulli the line proceeds southward, still in close proximity to the coast, through Wollongong, a town of considerable size, surrounded by fine scenery. Many pleasant excursions can be made to Mount Keira and other view-points; the long stretches of sandy beach, the golf links, and fishing grounds attract large numbers of tourists.

Between Dapto and Albion Park the railway skirts the shores of Lake Illawarra, where good fishing and shooting are obtainable; several of the islands in the lake are noted for beauty and variety of vegetation. Shell-harbour and Kiama are attractive seaside resorts. Kiama, 71 miles from Sydney, is picturesquely situated on the gently undulating slopes of a hill; one of the principal attractions is the "Blowhole," an extensive subterranean channel in the volcanic rocks, on the southern side of the harbour. At the landward extremity the opening bends abruptly upwards, and during heavy weather the waves are forced through the vent and break forth in geyser-like clouds of spray and foam, which rise to a considerable height. Between Kiama and the terminus of the South Coast railway at Nowra the line passes through rich dairy lands.

The railway ends close to the north bank of the Shoalhaven; in its lower course this river passes through alluvial flats of great fertility, and the scenery is in marked contrast to the ruggedness of the upper reaches, where at times the stream flows through gorges over 1,000 feet deep. A few miles to the south of the Shoalhaven entrance lies the splendid inlet called Jervis Bay, which has been selected as the site of the Naval College. Jervis Bay and the adjacent St. George's Basin are favourite fishing and camping grounds; some of the smaller streams in the district have been stocked with trout.

One of the finest views in the State can be obtained from the summit of Cambewarra Pass, on the road from Nowra to Kangaroo Valley and Moss Vale. The outlook takes in a large portion of the course of the Shoalhaven River and Broughton Creek, and the wild mountain ranges in which they have their sources; also Jervis Bay and St. George's Basin, and the deep blue waters of the Pacific Ocean. The vegetation on the Cambewarra Mountains shows a great variety and beauty of foliage and flower. Many important species of native timber are found in the Shoalhaven district, such as the cedar, the tamarind, the pencil, and the sassafras.

South of Jervis Bay the numerous inlets, with their sandy beaches and the mountain ranges which break the continuity of the coastal plain, afford excellent facilities for surf bathing, fishing, shooting, boating, motoring, and other pastimes.

THE BLUE MOUNTAINS.

The Blue Mountains are famous for grandeur of scenery, as well as salubrity of climate, and being within convenient distance of the metropolis, have become the most important tourist district of the State.

The mountains are traversed by the Main Western railway, which reaches the foothills about 40 miles from Sydney after passing the historic town of Parramatta, at the head of the navigable part of the Parramatta River, and Penrith, a busy township on the eastern bank of the Nepean River.

Immediately after crossing this river the line begins to ascend, and an extensive panoramic view may be obtained of the Emu Plains and the Nepean River. The first mountain station is Glenbrook; thence the line passes through a number of splendid health and holiday resorts, where the bracing atmosphere provides a beneficial change from the climate of the coastal plains. From Glenbrook to Lawson, 17 miles, the beauty spots consist mainly of rustic walks leading to ferny glades, gullies, and waterfalls, but further west the scenery assumes the more impressive grandeur of precipitous gorges and ravines, with numerous view-points overlooking the Jamieson, Megalong, and Kanimbla Valleys.

Wentworth Falls, the next village, Leura, an important resort noted for its fine scenery, Medlow, and Blackheath, attract a large number of tourists; but the town of Katoomba, 66 miles from Sydney, is the most populous tourist centre on the Blue Mountains. This town occupies a splendid position on the eastern slope of the mountains, and is notable for its magnificent and comprehensive views.

A vantage-ground such as the head of Leura Falls overlooks a scene of wondrous beauty; at first sight the Tableland appears to have been rent into immense chasms by some mighty convulsive force, but geological examination shows that the action of running water has carved the huge gorges out of the sandstone in past ages. From the edge of the lookout the spectator gazes down to the floor of the gorge 2,000 feet below; the sandstone precipices rise steeply on either side, and the waters of the Falls spread out in a silvery mist, through which the rocks behind them gleam in lovely tints. The tops of the giant forest trees deep down in Kanimbla Valley stretch away in a carpet of green as far as the eye can reach, and on clear days the distances are softened by a curtain of blue haze, from which the Blue Mountains take their name. An easy descent is possible into the forest at the bottom of this wonderful chasm, where the Federal Pass leads through avenues of spreading tree-ferns, sassafras, and giant eucalypts, to the foot of Katoomba Falls. At all beauty spots care has been taken to preserve the typical Australian ferns and wild flowers and the natural scenery.

Only a passing reference may be made to the numerous other interesting and beautiful views in this district, such as Echo Point, which commands a comprehensive view of the Jamieson Valley; Narrow Neck, a remarkable isthmus dividing the Jamieson and Megalong Valleys; the Explorers' Tree, marked by Blaxland, Lawson, and Wentworth on their historic journey in 1813 across the mountains; the picturesque Minne-ha-ha Falls, about 3 miles to the north of Katoomba. At Wentworth Falls the principal places of interest are the Falls, the National Pass, and the beautiful Valley of the Waters. Blackheath is situated on a neck of land between the Megalong and Grose Valleys. An exceptionally fine view is obtained at Govett's Leap, 2 miles from Blackheath, where the waters of a creek flow over the edge of a precipice on to a ledge 520 feet below. Deep down in the gorge, the bottom of which is 1,200 feet from the summit of the surrounding cliffs, a line of brighter green in the foliage of the trees marks the course of the Grose River. Mount York, 4 miles from Mount Victoria, is a magnificent view-point of historic interest, from which the explorers in 1813 obtained their first glimpse of the western plains; an obelisk has been erected to commemorate the first crossing of the mountains.

The foregoing brief description by no means exhausts the list of the beauty spots on the Blue Mountains. Near all the stations on the Western line, from Glenbrook to Mount Victoria and across the range to Lithgow, there are numerous attractive views.

JENOLAN AND OTHER LIMESTONE CAVES.

The limestone caves are situated in the Southern Tableland district, in an extensive limestone belt, which is an old coral reef of Palæozoic age. The best known are the Jenolan Caves, which have become world renowned, and are superior in beauty and variety of formation to those of any other country. The visitor has a choice of routes to the Caves, as motor-cars ply regularly from several stations on the Blue Mountains, but the most convenient is by way of Mount Victoria, distant about 36 miles. The trip through the clear mountain air is most exhilarating, and at several points superb views are obtained. Before reaching the Caves House—a comfortable building erected by the Government for the accommodation of tourists—the road passes through the Grand Arch, an irregular tunnel about 200 feet broad and 70 feet high, which pierces portion of the limestone belt in which the caves are situated. The caves were discovered by a bushranger, who used one of the small caves as a hiding-place. His retreat was discovered in 1841, and then the caves began to attract public attention, being called the Bindo Caves. The present name, Jenolan (high mountain), was given to them in 1884. Large sums of money have been spent in improving the approaches, making paths, and providing electric light and other appliances, whereby the great natural beauties of the caves can be seen to most advantage. Space will not permit any lengthened reference to the marvellously beautiful stalactites, stalagmites, shawls, cascades, jewel caskets, &c., which abound in the various caves, and, moreover, any written description would fail to convey an adequate idea of the many and varied beauties.

Some very pleasant excursions may be made in the district immediately surrounding the Caves, where the Government has set apart about 6,000 acres as a reserve, and the wallabies and other native animals are allowed to roam unmolested.

Yarrangobilly Caves.

The Yarrangobilly caves, which are located in the wild Talbingo Ranges, near the southern border of the State, rival in beauty those at Jenolan; they are easily accessible from Cooma or Tumut, and are generally included with Mount Kosciusko in an interesting motor trip starting from either of these towns. The entrances are in the side of a hill, commanding a splendid view over a fine, well-watered valley. Formations may be seen in the caves of great variety of shape and hue, and fresh beauties are being unveiled by further explorations; near the caves there is a thermal spring, with facilities for bathing, and splendid trout fishing may be obtained in the rivers in this locality.

Wombeyan Caves.

The Wombeyan Caves are situated in a picturesque valley in the Southern Highlands, about 40 miles from Bowral and other adjacent stations on the Main Southern railway. The caves are extensive, and are remarkable for the magnificence and delicacy of their wonderful formations. Good shooting is obtainable in the district surrounding the caves.

Other Caves.

There are other limestone caves of less importance, such as the Abercrombie, about 30 miles from Newbridge, on the Main Western railway; the Wellington, near the town of the same name; the Belubula, within easy reach of the railway town of Carcoar; and the Bungonia, in the southern

district. By reason of distance from the main tourist routes, these caves do not attract many tourists, and are visited mainly by residents of the surrounding districts. At Abercrombie there is a very fine natural arch; and near Bungonia there is a natural mineral spring, from which an excellent aerated table water is obtained.

KOSCIUSKO AND THE ALPINE SNOWFIELDS.

Mount Kosciusko, which was named by Count Strzelecki, in 1840, reaches an altitude of 7,328 feet, and is the highest mountain in Australia. Geologists state that the Kosciusko plateau is one of the oldest land surfaces in the world, and is probably the remnant of an ancient peak denuded by the action of glaciers. Snow lies on the topmost points of the Muniong Ranges for six months of the year, and, although Kosciusko's rounded summit is 700 feet below the line of perpetual snow, snowdrifts may be found in its sheltered hollows even in the height of summer. Several lakelets or tarns are situated on the highest slopes, and in their icy waters a species of trout is found. From the top of Kosciusko there is a view of marvellous panoramic grandeur; to the eastward the rich Monaro Plains and the far-distant coastal ranges may be seen; westward, the outlook takes in the Upper Murray Valley; to the north, the wild, rugged grandeur of the Snowy River Valley; and southward the landscape embraces the mountain ranges on the boundary of the State, as well as a considerable area of the Gippsland district in Victoria.

About 17 miles from the summit of the mountain the Government has established a commodious hotel for the accommodation of tourists. In the winter season ski-running, ice skating, and other Alpine sports attract large numbers of tourists, and a series of Alpine carnivals is held annually; trout-fishing and golfing, riding and motoring provide diversion for summer visitors.

The journey to Kosciusko is by motor from Cooma through Jindabyne, on the Snowy River; many fine views of the rich fertile valleys of the Snowy, Eucumbene, and Thredbo Rivers may be obtained from the hilltops. The Creel on the Thredbo River, at the foot of the Kosciusko ridge, is a popular resort for anglers, all the streams in the neighbourhood being heavily stocked with trout. Kiandra, situated about 14 miles from Yarrangobilly Caves, at an altitude of 4,640 feet above sea-level, is the highest township in New South Wales; its splendid snowfields have for many years proved a source of attraction to ski-runners.

THE SOUTHERN HIGHLANDS.

Many of the holiday and tourist resorts of the Southern highlands are famed for salubrity, as well as for beauty of scenery. Thirty-four miles from Sydney lies the old-fashioned town of Campbelltown, the centre of a rich dairying district. A very pleasant trip can be made from this point through the quaint little village of Appin to the Loddon Falls, and thence over the Bulli Pass to the South Coast Railway Line. About 8 miles westward from Campbelltown, and close to the placid waters of the Upper Nepean, the beautiful little township of Camden is situated. The surrounding district, which is remarkably bracing, possesses historic interest because the first Australian attempts, at wool-growing and viticulture were made there; good shooting may be had within easy distance of the town.

Picton, 53 miles from Sydney, is charmingly situated in a basin formed by the surrounding hills. One of the most interesting sights of this district is the famous "sunken" Burragorang Valley, hollowed out by the agency of running water to a depth of over 2,000 feet. The Wollondilly flows through the valley, which contains also the Yerranderie silver field; the road from Picton or Camden passes through wild, magnificent scenery. Thirlmerc, Mittagong, Bowral, and Moss Vale are popular health resorts, noted for

a pleasant climate. At Thirlmere and Mittagong there are chalybeate springs of medicinal value. The surrounding country does not possess the ruggedness of the Blue Mountains, but there is some very beautiful scenery. From these towns it is possible to reach the South Coast Railway at Kiama, by way of Robertson and Jamberoo, or at Albion Park and Dapto, by traversing the picturesque Macquarie Pass.

The following places of interest, all well worthy of a visit, may be reached by good roads from Moss Vale:—Fitzroy and Meryla Falls, 10 miles; Belmore Falls, 22 miles; Carrington Falls, 21 miles; Macquarie Pass, 19 miles; Kangaroo Valley, 22 miles. The road from Moss Vale to Nowra, a distance of 38 miles, passes through splendid mountain scenery, and fine panoramic views are obtainable of the ocean and the fertile coastal districts.

Bundanoon, 95 miles from Sydney, is another much-favoured health resort, its climate being particularly favourable for convalescents. There is some very fine scenery in the Bundanoon gullies, within a short distance of the railway station. Marulan is a quiet spot 114 miles from Sydney, and not far from the wild and picturesque gorges of the Upper Shoalhaven; there are good roads for motoring, cycling, and driving, and excellent shooting may be obtained. At Goondah, 66 miles beyond Goulburn, on the Main Southern Railway, a narrow-gauge line runs to Burrinjuck, the site of the huge storage dam which supplies the Murrumbidgee Irrigation Area; the scenery along the route is very fine.

The tourist who wishes to see the fine pastoral land of the rich Monaro district proceeds by branch line from Goulburn to Cooma. On the way, Lake Bathurst is passed near Tarago, and between Fairy Meadow and Bungendore a glimpse may be obtained of Lake George—the largest lake in the State. In favourable seasons the lake shores are excellent camping-grounds, and there is good shooting on its waters and in the surrounding country.

Canberra, the Federal Capital, is situated about 8 miles from Queanbeyan on this line, and 40 miles from Yass. It has an altitude varying from 1,800 to 2,000 feet; Mount Ainslie, 2,762 feet, and Black Mountain, 2,658 feet, are in the locality, and the Molonglo River runs through the city site. The Royal Military College at Duntroon, on the eastern boundary, provides training for 150 cadets. Cooma, 3,000 feet above sea-level, possesses a delightful summer climate, but the winter season is severe. From Mount Gladstone, 3 miles away, a fine comprehensive view embraces a large portion of the Southern Tableland and the snow-clad summit of Mount Kosciusko. Several interesting tourist trips may be made from Cooma, the Yarrangobilly Caves, elsewhere mentioned, are 65 miles distant by a road passing north-west through Adaminaby and Kiandra.

HAWKESBURY RIVER.

The Hawkesbury River affords numerous facilities and attractions for the tourist seeking health, sport, or beautiful scenery. Under the name of Nepean, this river flows along the base of the Blue Mountains; but the wild grandeur of the scenery on the Lower Hawkesbury is in marked contrast to the calm, peaceful beauty of the reaches on the Nepean.

The Main Northern Railway crosses the Hawkesbury River about 36 miles from Sydney, and 7 miles from the mouth—Broken Bay. Probably the best way for the tourist to enjoy the scenic beauties of this stream is to hire a boat, take a light camping outfit, and spend a few days in exploration. By doing so he will be able to visit many places of interest out of the ordinary track, such as the numerous rock caverns, some of which are decorated with ancient aboriginal drawings. Then, the botanist will find on the ridges near the river, wild flowers of wonderful form and hue; for the

sportsman there is plenty of game of various kinds. As regards fishing, the Hawkesbury and its tributaries offer exceptional facilities, and constitute one of the finest fishing-grounds within easy reach of the metropolis.

Some of the creeks running into the Hawkesbury are of great beauty, their bright blue waters and golden beaches standing out in marked contrast to the dark green of the wooded hills surrounding them. Berowra Creek winds amongst rugged sandstone hills, and affords charming views of water and woodland; the picturesque Cowan Creek is a most popular resort; its gigantic basin between the hills affords shelter for yachts, skiffs, and house-boats; it is reached most easily from Berowra railway station, 28 miles from Sydney.

On the southern shore of the Hawkesbury River, intersected by the Cowan Creek, is Kuring-gai Chase, a national park of 35,300 acres reserved to provide a pleasure-ground convenient to the metropolis, and to preserve the natural flora and fauna. The Chase embraces many arms of Broken Bay, and contains picturesque gullies, with many varieties of wild flowers and ferns, and numerous sandy beaches. The waters of Kuring-gai Chase abound with fish, and there are some fine oyster-beds.

Pittwater, the southern arm of Broken Bay, is admirably adapted for marine recreations; on its shores Bayview and Newport are popular resorts. Palm Beach, near Barrenjoey, affords capital surfing.

Brisbane Water, the northern branch of the Hawkesbury estuary, with its affluents, forms a most picturesque locality; its extensive facilities for shooting and fishing attract many tourists. Woy Woy, Point Clare, and Gosford, well-known fishing resorts, are situated on its shores.

In the Central Hawkesbury district two interesting townships are Windsor, one of the oldest settlements; and Richmond, where the Hawkesbury Agricultural College is situated. This district is served by a railway branching from the Main Western line at Blacktown.

NORTHERN LAKES.

Along the coast to the north of Broken Bay stretches a chain of lakes which have communication with the sea by narrow channels; these lakes, with the intervening beaches, provide most beautiful effects. The dense jungles round their shores are the haunts of lyre-birds, wonga and other pigeons, bower-birds, parrots, and gill-birds; tree-ferns, staghorns, waratahs, and orchids flourish in profusion; and water-fowl and fish are plentiful at the lakes. Terrigal is a seaside resort, with a beautiful beach extending between the outlets of the Terrigal and Wamberal Lakes. The Tuggerah Lakes consist of a chain of three, connected by narrow channels; there are ideal spots for camping on the shores, and fine fishing is obtainable in the lakes as well as in the Wyong River, which flows into them.

Lake Macquarie, about 8 miles south of Newcastle, offers a variety of attractions to the tourist. The lake has 200 miles of shore line, and, unlike the Tuggerah, has a navigable entrance to the ocean. Its numerous bays and promontories, with their grassy banks, are strikingly beautiful, and excellent facilities for fishing, shooting, and sailing are available. The principal settlement on its shores is Toronto. The tourist who wishes to visit Lake Macquarie leaves the train at Fassifern, 88 miles from Sydney, whence a tram runs to the lake shore.

To the north of Newcastle a trip which is rapidly gaining popularity is the Great Lakes Tour along an extensive chain of lakes and rivers lying between the valleys of the Hunter and Hastings Rivers. The itinerary includes Port Stephens, with its branching waterways, the Karuah and Myall Rivers, the Broadwater, the Myall Lakes, Smith's Lake, Lake Wallis, and the Manning River. The Myall Lakes are a series of lagoons extending through rugged country for 30 miles along the course of the Myall River. The scenic charm of the

district is enhanced by the diversions of excellent fishing and shooting, and the comfort of the tourist is assured by good accommodation and an efficient service of steamers and launches. The North Coast Railway has been opened to Taree, on the Manning River, and from this point its construction is rapidly progressing.

NEW ENGLAND HIGHLANDS.

The New England highlands, which embrace practically the whole of the Northern Tableland, are notable for a cool, invigorating climate.

The first portion of the railway line from Newcastle traverses the Hunter River Valley, which contains one of the richest and most extensive coal-fields in the world, while the broad alluvial flats of the Hunter Basin produce prolific crops of lucerne, maize, potatoes, grapes, and fruit.

In a spur of the Liverpool Range, which forms the boundary of the Hunter Valley, the line passes Mount Wingen, one of the natural curiosities of Australia, which obtains considerable attention. It is a burning mountain, whose fires are attributed to the ignition of a thick bed of coal some distance underground; it is estimated that they have been alight for at least 800 years.

In the highlands, Armidale is a popular centre; the surrounding scenery consists of rugged mountains and picturesque waterfalls. The Apsley and Tia Falls are near Walcha, and other places of interest are at Uralla and Guyra.

NORTH COAST DISTRICT.

The North Coast district, extending from the valley of the Hunter to the Queensland border, is a vast expanse of wonderfully fertile country, with an ideal winter climate. The lower portion embraces the chain of coastal lakes already mentioned; the region lying to the north of the Hastings River presents a wealth of wonderful scenery, with facilities for boating, fishing, shooting, surf-bathing, and mountaineering. From Point Danger, at the northern extremity, the coast-line sweeps boldly southward, its rocky promontories alternating with sandy beaches, and the land-locked estuaries of numerous streams flowing from the rugged slopes of the Great Dividing Range. Characteristic of the North Coast district is its luxuriant vegetation, and in the forests there is a great variety of timbers—teak, pine, cedar, ironbark, tallow-wood, beech, rosewood, and many others. The river basins are occupied by thriving dairy-farms and fields of maize and sugarcane.

The Tweed River waters a fertile district with fine landscapes; Mount Warning, near the head of the river, commands a magnificent panoramic view, and is a well-known landmark for coasting vessels. Tweed Heads, the Brunswick River, and Byron Bay are favourite watering places. On the Richmond River are Ballina, an attractive resort, and Lismore, noted for its business activity.

The Clarence is the finest of the Northern rivers; its broad expanse is dotted with numerous islands, and the fields of sugarcane and maize, together with dense subtropical vegetation along the banks, present scenery of wonderful beauty. In the neighbourhood of Grafton, the principal town, there are many good camping grounds, with facilities for fishing, shooting, and swimming. Coff's Harbour is the port of access to the fertile Dorrigo district.

The Macleay River rivals the Clarence in beauty, and has many attractions for tourists. Trial Bay, at the mouth of the Macleay, and Port Macquarie, at the mouth of the Hastings, are popular watering places, the latter being one of the oldest country towns in New South Wales. Throughout the North Coast district there are many other beauty spots which, being difficult of access, are as yet little known, but with the rapid advance of settlement they should develop into popular resorts.

CONSTITUTION, GOVERNMENT, AND DEFENCE.

DEVELOPMENT OF REPRESENTATIVE GOVERNMENT.

EARLY CONSTITUTIONS OF NEW SOUTH WALES.

ON the foundation of New South Wales as a British Colony the Governor was empowered, under his Commission and Letters Patent, to make ordinances for the good government of the settlement; subsequently he was authorised to impose a limited local taxation by customs duties upon goods imported, and during the first thirty-five years of the colony's existence the Governor was possessed virtually of absolute administrative power.

In 1823 an Act was passed in the Imperial Parliament, providing "for the better administration of justice in New South Wales and Van Diemen's Land" by the creation in New South Wales of a Legislative Council, with a minimum of five and a maximum of seven members, to be nominated by the Governor. This Council was to act as an advisory body to the Governor, and to have power and authority to assist him in making laws and ordinances. Five members were appointed under His Majesty's warrant of 1st December, 1823, viz.:—Wm. Stewart, Lieutenant-Governor; Francis Forbes, Chief Justice; Fred. Goulburn, Colonial Secretary; Jas. Bowman, Principal Surgeon; John Oxley, Surveyor-General.

All laws or ordinances had to be submitted to a summoned meeting of this Council, and any action of the Governor contrary to the advice of the Council was referable to England for final decision. The first meeting of the Council was held on 25th August, 1824. Practically coincident with the institution of this Legislative Council, which embodied the first form of constitutional government, a Charter of Justice was proclaimed, and the system of trial by jury inaugurated.

The Legislative Council, as constituted in 1823, was subsequently increased in membership in 1828 to fifteen members, and its functions were extended; but twenty years of its existence demonstrated the inefficacy of such a limited measure of constitutional government in the face of expanding commercial and agricultural interests of a rapidly developing population.

REPRESENTATIVE GOVERNMENT.

In 1843 a measure of direct representation in the Legislative Council was given to the people of the Colony by means of an Imperial enactment of the previous year which, while defining the functions of the Council and the conditions under which Royal Assent was to be accorded to bills passed by it, extended its membership to thirty-six, namely, twelve nominees of the Crown and twenty-four members elected by the people.

Eight years' experience of partly representative government evidenced the necessity for extension of popular representation. In 1851 the Australian Colonies Government Act of the Imperial Parliament gave authority to the existing Legislative Council to prepare a democratic Constitution for the colonies. At the same time, provision was made for the establishment of Port Phillip District as a separate colony. In 1853 a select committee of the Council, which then numbered fifty-four, namely, thirty-six elective and eighteen nominee members, adopted a draft Constitution for a Legislature of two Houses, which, with minor amendments, was accepted by the Imperial Parliament in 1855. The New South Wales Constitution Act, 1855, imposed a fully responsible system of government, entire control of Crown

lands devolving upon the New South Wales Parliament, which was empowered also, subject to the provisions of the Act, to devise laws amending its Constitution.

The first elective Parliament was opened by Governor Denison, on 22nd May, 1856. Subsequently the Constitution was amended by Acts passed in 1857, 1884, and 1890, which were consolidated in the Constitution Act, 1902. A further amendment was made in 1908, but the essential form of the original Legislature remains intact, though its functions have from time to time been enlarged by Imperial enactments, such as those which empowered the State Parliament to deal with matters relating to coinage, copyright, extradition, naturalisation, shipping, &c. Since 1901, when the Commonwealth of Australia was inaugurated, legislative power is shared between the Parliaments of the Commonwealth and of the State.

INAUGURATION OF THE COMMONWEALTH.

The question of establishing a Federal Legislature, to deal with the common interests of the colonies, was considered when arrangements were being made for the separation of Victoria and New South Wales and for the self-government of the Australian colonies in 1850; and for forty years the problems of federation were discussed at conferences and in Parliamentary Committees, but the most practical and definite step towards the achievement of federation was taken in 1890, when a conference of representatives from the seven Australasian colonies was held in Melbourne; arrangements were then made for a Federal Convention of members, appointed by the various Parliaments, to draft an adequate scheme for a Federal Constitution. The Draft Bill produced by this Convention in 1891 was intended for discussion in the State Parliaments, but lapsed for lack of popular enthusiasm. In the financial and commercial depression of succeeding years the necessity for federation was felt keenly, and another conference was held in Hobart in 1895; as a result a Constitution was drawn up by elected representatives of New South Wales, Victoria, South Australia, Western Australia, and Tasmania, and submitted to the electors by means of a referendum in 1898. The Bill was accepted in Victoria, South Australia, and Tasmania; in New South Wales the majority of votes secured was insufficient; and in Western Australia the referendum was deferred, as the Enabling Bill of that State made the acceptance of the Constitution by New South Wales a necessary condition.

The Constitution Bill, as amended at a conference in 1899, was subsequently accepted by each of the six States of Australia, and received the Royal Assent on 9th July, 1900. The formal inauguration of the Commonwealth took place on 1st January, 1901, coinciding with the opening of the twentieth century. The first Parliament of the Commonwealth was opened on 9th May, 1901, by H.R.H. the Duke of Cornwall and York.

FUNCTIONS.

Under the Commonwealth of Australia Constitution Act, the Parliament of the Commonwealth is empowered to make laws on matters affecting the peace, order, and good government of the Commonwealth, particularly with respect to the following:—Trade and commerce with other countries and among States, taxation, bounties on production, borrowing money on public credit, postal, telegraphic and telephonic services, defence, lighthouses, astronomical and meteorological observations, quarantine, fisheries, census and statistics, currency, banking, insurance, weights and measures, bills of exchange, and promissory notes, bankruptcy, copyright, patents and trade marks, naturalisation and aliens, foreign corporations and trading, or financial corporations formed within the Commonwealth, marriage, divorce, invalid and old-age pensions, migration, external affairs, railway control in relation to defence

and railway acquisition or construction, subject to the consent of the State, conciliation and arbitration in regard to disputes extending beyond the limits of one State.

To alter the Constitution, the law for the proposed alteration must be submitted to a referendum of electors not less than two nor more than six months after its passage through both Houses of Parliament, and must be approved by a majority of electors voting, in a majority of the States, as well as in the whole Commonwealth. The Constitution has been altered by the Constitution Alteration (Senate Elections) Act, 1906, and the Constitution Alteration (State Debts) Act, 1909.

The Parliament of the Commonwealth is empowered specifically to legislate on any matter referred to it by the Parliament or Parliaments of any State or States, but so that the law made shall extend only to the States which are parties to the reference.

Outside the specific functions of the Commonwealth the Constitution of each State continues as at the establishment of the Commonwealth, and the Parliament of New South Wales has legislative power in all matters not specifically within the functions of the Commonwealth. In recent years the Parliament of the State has insured a degree of decentralisation by delegating to Local Government Councils functions of administration and regulation in matters of local concern.

EXECUTIVE GOVERNMENT.

In the Commonwealth and in the State executive government rests with a Governor representing the Crown, who acts on the advice of an Executive Council responsible to Parliament.

THE COMMONWEALTH.

The Crown is represented by the Governor-General of Australia, who is appointed by the King. The Senate and the House of Representatives are elective Chambers, being the Upper and Lower Houses respectively. As representative of the King the Governor-General is Commander-in-Chief of the Naval and Military Forces. His office carries a salary of £10,000 per annum, and the amount is not alterable during his occupancy of office. The present Governor-General and Commander-in-Chief is the Right Hon. Sir Ronald Craufurd Munro Ferguson, P.C., G.C.M.G.

The Governor-General's powers and functions are assigned to him under his Commission, subject to the Constitution; as head of the Legislature he appoints the times for holding sessions of Parliament, prorogues Parliament, and dissolves the House of Representatives. In his Executive Government he is advised by the Executive Council, which is composed of members summoned by the Governor-General, being Ministers of the Crown administering Commonwealth Departments. Subject to special provision of Parliament, the Ministry number seven, the maximum amount specified for their joint salaries being £12,000.

THE STATE.

THE GOVERNOR AND THE EXECUTIVE COUNCIL.

The Governor is the representative of the British Sovereign; he is appointed by the King, and his functions and powers are defined by his Commission and the Royal Instructions accompanying it. He assents to Bills as passed by Parliament, or he may withhold his assent pending reference of a Bill to the Imperial Government, bills of certain classes being reserved for Royal Assent. In his Executive capacity, the Governor summons, and acts under advice of the Executive Council, of which the mem-

bers are Ministers of the Crown controlling administrative departments of the State. The Governor appoints Ministers and members of the Legislative Council, Judges, Justices of the Peace, Commissioners, and other officers, and he may summon, prorogue, or dissolve any Parliament. In the exercise of these functions, he is in general guided by the advice of the Executive Council, but in special circumstances acts at his own discretion, especially with regard to dissolution of Parliament. The prerogative of mercy vested in him is exercised only with the advice of the Executive Council.

The term of office for which the Governor is appointed is five years, and his salary (£5,000 per annum), with certain allowances for his staff, is provided by the Constitution out of the revenues of the State.

SUCCESSION OF GOVERNORS.

The succession of Governors from the foundation of New South Wales to the present time is given in the following statement:—

	From	To
Captain A. Phillip, R.N.	26 Jan., 1788	10 Dec., 1792
Major F. Grose (Lieutenant-Governor)	11 Dec., 1792	12 Dec., 1794
Captain W. Paterson, N.S.W. Corps (Lieutenant-Governor)	13 Dec., 1794	1 Sept., 1795
Captain J. Hunter, R.N.	7 Sept., 1795	27 Sept., 1800
Captain P. G. King, R.N.	28 Sept., 1800	12 Aug., 1806
Captain W. Bligh, R.N.	13 Aug., 1806	26 Jan., 1808
During Governor Bligh's suspension—		
Major G. Johnston, N.S.W. Corps	} 26 Jan., 1808	28 Dec., 1809
Lieutenant-Colonel J. Foveaux, N.S.W. Corps		
Colonel W. Paterson, N.S.W. Corps		
Major-General L. Macquarie	1 Jan., 1810	30 Nov., 1821
Major-General Sir T. Brisbane, K.C.B.	1 Dec., 1821	30 Nov., 1825
Lieutenant-General Ralph Darling	19 Dec., 1825	21 Oct., 1831
Major-General Sir Richard Bourke, K.C.B.	3 Dec., 1831	5 Dec., 1837
Sir George Gipps, Kpt.	24 Feb., 1838	11 July, 1846
Sir Charles A. Fitzroy, K.C.B., K.H.	2 Aug., 1846	17 Jan., 1855
Sir William Thomas Denison, K.C.B.	20 Jan., 1855	22 Jan., 1861
The Right Honorable Sir John Young, K.C.B., G.C.M.G.	22 Mar., 1861	24 Dec., 1867
The Right Honorable the Earl of Belmore, P.C.	8 Jan., 1868	22 Feb., 1872
Sir Hercules George Robert Robinson, G.C.M.G.	3 June, 1872	19 Mar., 1879
The Right Honorable Sir Augustus William Frederick Spencer Loftus, P.C., G.C.B.	4 Aug., 1879	9 Nov., 1885
The Right Honorable Baron Carrington, P.C., G.C.M.G.	12 Dec., 1885	1 Nov., 1890
The Right Honorable the Earl of Jersey, P.C., G.C.M.G.	15 Jan., 1891	28 Feb., 1893
The Right Honorable Sir Robert William Duff, P.C., G.C.M.G.	29 May, 1893	15 Mar., 1895
The Right Honorable Viscount Hampden, G.C.M.G.	21 Nov., 1895	5 Mar., 1899
The Right Honorable Earl Beauchamp, K.C.M.G.	18 May, 1899	30 April, 1901
Admiral Sir H. H. Rawson, R.N., G.C.B.	27 May, 1902	27 May, 1909
The Right Honorable Baron Chelmsford, K.C.M.G.	28 May 1909	11 Mar., 1913
Sir Gerald Strickland, G.C.M.G., Count della Catena	14 Mar., 1913	Still in office.

During the absence of the Governor from the State, and in the intervals between the departure of the Governor and the arrival of his successor, the duties are performed by the Chief Justice of the State, acting as Lieutenant-Governor.

PARLIAMENTS.

THE COMMONWEALTH.

The Senate.

A session of the Parliament must be held once at least in every year, with a maximum interval between sessions of twelve months.

The Senate consists of thirty-six members, six of whom are elected for each State, the people in each State voting as in one electorate. The term of service of a Senator is six years; but, in accordance with the Constitution Act, the seats of half the number chosen at an election of a new Senate become vacant at the expiration of three years. An election is held triennially to fill the vacancies then occurring by effluxion of time.

House of Representatives.

The House of Representatives, as far as practicable, contains twice as many members as the Senate, the number elected for the several States being in proportion to the respective populations, but with a specified minimum of five each. There are seventy-five members in this House, the number from New South Wales being twenty-seven.

The House of Representatives is liable to dissolution at the discretion of the Governor-General if the Ministry loses its majority, otherwise it exists for three years. In the event of the failure of the Senate and House of Representatives to agree on the subject of any proposed law, the Governor-General may dissolve both Chambers simultaneously, and if the new Houses disagree, the Governor-General may convene a joint sitting of the members of the Houses to deliberate and vote upon the proposed law, the resolutions to be carried by an absolute majority of all the members. This furnishes the first example within the British Empire of a provision for joint session to overcome a dead-lock.

Qualifications and Allowances.

The qualifications of members of the Commonwealth Parliament are the same for both Houses, and are identical with the qualifications of electors. The allowance attaching to the office of member was originally £400 per annum, but was raised by Parliament in 1907 to £600 per annum. The seat of a member becomes vacant if he is absent without leave for two consecutive months of any session.

Franchise.

The qualifications of electors are the same for both Federal Houses. Electors must be adult British subjects, natural-born or naturalised for five years, and resident in Australia for three years.

Aboriginal natives of Australia, Asiatics, Africans, and Pacific Islanders, except natives of New Zealand, are disqualified unless entitled to vote at the election of a State Legislative Assembly.

FEDERAL ELECTIONS.

Senate.

The following table shows the votes polled at the Senate Elections in the State of New South Wales. The last Federal Elections took place on 5th September, 1914, both Houses of the Parliament having been dissolved on 30th July as a result of a deadlock between the Senate and the House of Representatives:—

Election.	Electors Enrolled.		Electors to whom Ballot Papers were issued.		Informal Ballot Papers.	Percentage of Electors to whom Ballot Papers were issued to Electors Enrolled.		
	Males.	Females.	Males.	Females.		Males.	Females.	Total.
1901	329,093	...	220,573	...	38,674	67·02	...	67·02
1903	360,285	326,764	189,877	134,487	15,796	52·70	41·16	47·21
1906	392,077	345,522	229,654	151,682	28,016	58·57	43·90	51·70
1910	444,269	390,393	301,167	211,635	24,213	67·79	54·21	61·44
1913	554,028	482,159	405,152	312,703	48,195	73·13	64·85	69·28
1914	576,309	506,820	407,464	294,939	34,984	70·70	58·19	64·85

House of Representatives.

The votes recorded in the State of New South Wales at the elections of members of the House of Representatives were as follow:--

Election.	Electors Enrolled (Contested Divisions only).		Electors to whom Ballot Papers were issued.		Informal Ballot Papers.	Percentage of Electors to whom Ballot Papers were issued to Electors Enrolled.		
	Year.	Males.	Females.	Males.		Females.	Males.	Females.	Total.
1901	315,962	...	215,105	...	4,070	68.08	...	68.08
1903	303,254	274,763	164,133	118,381	7,834	54.12	43.08	48.88
1906	363,723	314,777	216,150	141,227	11,705	59.43	44.87	52.67
1910	431,702	379,927	294,049	207,868	8,002	68.11	54.71	61.84
1913	554,028	482,159	405,152	312,703	22,262	73.13	64.85	69.28
1914	491,086	429,906	351,172	257,581	14,816	71.51	59.92	66.10

The percentage of voters increased steadily at the elections during the period 1903-1913, but the improvement was not continued in 1914, when the contest was modified in consequence of the outbreak of war in Europe.

REFERENDA.

The following statement shows the votes recorded in the State of New South Wales and in the Commonwealth at the various referenda which have been taken in relation to the Federal Constitution:—

Date.	Referendum.	State of New South Wales			Commonwealth of Australia.			
		For.	Against.	Majority.	For.	Against.	Result.	Majority.
1898	Federation	71,595	66,228	5,367	219,712	108,363	.....	111,349
1899	Federation	107,420	82,741	24,679	422,788	161,077	A	261,711
1906	Constitution Alteration (Senate Elections).	286,888	55,261	231,627	774,011	162,470	A	611,541
1910	Financial Agreement	227,650	253,107	25,457	645,514	670,838	R	25,324
1910	State Debts	159,277	318,412	159,135	715,053	586,271	A	128,782
1911	Legislative Powers	135,968	240,605	104,637	483,356	742,704	R	259,348
1911	Monopolies	133,237	238,177	99,940	488,668	736,392	R	247,724
1913	Trade and Commerce	317,848	359,418	41,570	958,419	982,615	R	24,196
1913	Corporations	317,663	361,255	43,587	960,711	986,824	R	26,113
1913	Industrial Matters	318,622	361,644	42,422	961,601	987,611	R	26,010
1913	Railway Disputes	316,928	361,743	44,815	956,358	990,046	R	33,688
1913	Trusts	319,150	358,155	39,005	967,331	975,943	R	8,612
1913	Nationalisation of Monopolies	301,192	341,724	40,532	917,165	941,947	R	24,782

A. Accepted. R. Rejected.

In 1898 the question of federation was put to the people in the States of New South Wales, Victoria, South Australia, and Tasmania. In the three last-named it was passed; but in New South Wales it failed to obtain the majority of 80,000 votes required by the Enabling Bill of that year. At the second referendum for federation, in 1899, the vote was taken in Queensland, in addition to the States concerned in the 1898 referendum, and the figures for Australia shown above included the votes in Western Australia, where the referendum did not take place until 1900.

The referendum in 1906 related to the extension to 30th June, 1910, of the services of Senators whose places would have become vacant in December, 1909, and also that the term of service of a Senator should begin on the first day of July. The fact of this referendum being taken on the same day as the Commonwealth General Election no doubt accounts for the large number of votes recorded.

Two proposals for altering the Constitution, referred in 1910, relate to financial arrangements between the States and the Commonwealth;

the one, to give effect to an agreement regarding the amount of revenue which should be returned to the States, was rejected, and the other, to enable the Commonwealth to take over all the debts of the States, was passed by a majority in the Commonwealth as a whole, and in all the States except New South Wales. Previous to this alteration the Commonwealth was empowered to take over only such debts as had been incurred prior to federation.

The referenda of 1911 were for the purpose of (1) extending the legislative powers of the Federal Government regarding trade and commerce, corporations, industrial matters, and trusts and monopolies; and (2) to empower the Commonwealth to take control of industries subject to monopolies.

These proposals were rejected in each State except Western Australia, and consequently in the Commonwealth as a whole. The majority of votes recorded against the proposals in each State is shown below:—

State.	Majority against proposed alterations in 1910.	
	Legislative powers.	Monopolies.
New South Wales... ..	104,637	99,940
Victoria	100,102	97,290
Queensland... ..	19,868	18,213
South Australia	31,546	30,644
Western Australia	*5,858	*7,031
Tasmania	9,053	8,668
Commonwealth	259,348	247,724

* Majority in favour of alteration.

At the general elections in 1913, these proposed alterations were submitted again to the electors with an additional proposal to enable the Commonwealth to legislate regarding conditions of employment and the settlement of disputes relating thereto in the State railway services. All the proposals were rejected, as the majority of voters in three States only—Queensland, South Australia, and Western Australia—approved of the alterations, the majority in the other States, and in the Commonwealth as a whole, being against the proposals:—

State.	Majority of votes against proposed alterations, 1913.					
	Trade and Commerce.	Corporations.	Industrial matters.	Railway disputes.	Trusts.	Nationalisation of Monopolies.
New South Wales..	41,570	43,587	42,422	44,815	39,005	40,532
Victoria	10,685	10,436	11,912	14,666	3,539	10,947
Queensland	*23,374	*23,304	*23,617	*22,662	*25,783	*21,410
South Australia	*4,941	*5,036	*5,265	*4,810	*6,215	*4,496
Western Australia	*7,168	*7,150	*6,839	*5,992	*9,030	*7,804
Tasmania	7,424	7,580	7,397	7,671	7,096	7,013
Commonwealth	24,196	26,113	26,010	33,688	8,612	24,782

* Majority in favour of proposed alterations.

SEAT OF FEDERAL GOVERNMENT—ORDINANCE.

The agreement under section 125 of the Commonwealth Constitution Act, between the State of New South Wales and the Commonwealth, for the surrender and acceptance of territory in the Canberra district for the

seat of Federal Government has been ratified, and an ordinance issued on 22nd December, 1910, for the Provisional Government of the Territory. All laws hitherto in force in the Territory (except those imposing duties on estates of deceased persons) will remain in force, and continue to be administered by the State authorities. All revenue, except Public Instruction fees, will belong to the Commonwealth. The authority of State magistrates, gaolers, and police will continue, and all offenders will be tried in the Courts of the State. Licenses to sell intoxicating liquors will not be granted, and existing licenses may be renewed for the same premises only.

COMMONWEALTH PUBLIC WORKS COMMITTEE.

An Act was passed in 1913 to provide for the establishment of a Parliamentary Standing Committee of nine members of Parliament, three being appointed by the Senate and six by the House of Representatives, to report upon proposed public works of an estimated cost exceeding £25,000.

THE STATE.

The Legislative Council.

Under the Constitution Act, 1902, the Governor may summon to the Legislative Council any person he thinks fit, provided such person is of the full age of 21 years, and is a natural-born or naturalised subject of His Majesty in Great Britain or in New South Wales. At least four-fifths of the members summoned to this Council must be persons not holding any office of emolument under the Crown; the members have a life tenure of office, subject to certain qualifications; but are not entitled to remuneration for their services. As a matter of privilege, members of the Council are allowed to travel free on the State railways and tramways. The presence of one-fourth of the members, exclusive of the President, is necessary to form a quorum for the despatch of business. The Constitution Act contains no proviso as to the number of members, in October, 1914, there were 54. The President receives an annual salary of £750, and the Chairman of Committees £470.

The Legislative Assembly.

The Legislative Assembly consists of ninety elected members, each being an adult male British subject, and entitled to a vote at the Parliamentary elections. Members of the Federal Legislature and of the Legislative Council are disqualified for membership, as well as persons holding non-political offices of profit under the Crown. Each member receives the sum of £500 per annum by way of reimbursement for expenses incurred in the discharge of Parliamentary duties, is allowed to travel free on the State railways and tramways, and has free transmission of correspondence.

The seat of a member becomes vacant if the member be absent without permission for a whole session of the Legislature, becomes bankrupt, a subject of a foreign power, or convicted of a crime. The Speaker of the Legislative Assembly receives a salary of £1,000 per annum, and the Chairman of Committees £740 per annum. The Leader of the Opposition receives £250 per annum in addition to his remuneration as a Member of Parliament.

Parliament may be dissolved at the discretion of the Governor, if the Government is defeated in the Assembly, otherwise it exists for three years; before the passing of the Triennial Parliaments Act, 1874, the limit of duration was five years.

The Constitution Act makes no distinction between the powers and privileges of the two Houses of Parliament, but it is tacitly agreed that the procedure in each House shall be conducted according to that of its prototype in the Imperial Parliament.

STATE ELECTIONS.

The first Legislative Assembly of New South Wales met in 1856, and consisted of 54 members elected under the Constitution Act. Votes were allowed to all male adult British subjects, who, at the time of registration of electors and for six months previously to that date, owned freehold estate valued at £100, or occupied building or lodging, or land under lease for three years, valued at £10 per annum. Holders of Government pastoral licenses and persons who had a yearly salary of £100, or paid £40 per annum for board and lodging, were also entitled to vote. Electors were allowed a vote in each electorate in which they possessed the necessary qualifications. In 1859 the membership of the Assembly was increased to 72, and the franchise was given to every male adult British subject who for six months previously to the collection of the rolls had resided in the district and held property of the clear value of £100 or annual value of £10, or occupied a building valued at £10 per annum, or held Crown lease or license for pastoral purposes. Holders of miners' rights were allowed to vote in "goldfields" electorates. Officers of military or police services were disqualified, as well as persons in receipt of public charity.

Under the Electoral Act, 1880, by which 108 members were elected for 72 electorates, provision was made for automatically increased representation, so that the number of members in 1891 had increased to 141, elected for 74 districts. Under the Parliamentary Electorates and Elections Act, 1893, an important change was made in the system of Parliamentary representation, the State being then divided into 125 electorates, each represented by one member. The franchise was remodelled by the introduction of universal manhood suffrage, and the principle of allowing each elector to vote only in one electorate equalised the rights of citizenship. A vote was given to every male adult who had resided continuously for one year in the State, provided that he was a British subject and became enrolled in the electoral district, in which he had resided for three months previously to the election. The disqualification of the police was removed in 1896, and in 1902 the franchise was extended to women, thus establishing adult suffrage. Under the Electorates Redistribution Act, 1904, the number of electorates and of representatives elected was reduced to 90, which number was determined by referendum of the electors, to whom the question of reduction was submitted by an Act passed in 1903.

The Parliamentary Elections Act, 1911, provided for a residential qualification of six months in the Commonwealth, three months in the State, and one month in the electoral district, and for the extension of the franchise to the Military and Naval services. The hours of polling were specified as from 8 a.m. to 7 p.m., the polling-day being a public holiday from 12 o'clock noon; and further, under the Liquor Amendment Act, 1905, a close day for hotels. The introduction of the absent voter principle enabled electors absent from their districts, to record a vote for the electorate for which they were enrolled, at any polling-place within the State, on making a declaration. Provision was made also for an annual Police collection and revision of rolls, the occupiers of dwelling-houses being required to prepare schedules showing the persons living in the houses.

The Parliamentary Elections (Second Ballot) Act, 1910, provided that the elected candidate must receive an absolute majority—that is, more than half the number of valid votes recorded. If, as a result of the ballot, a candidate has not received an absolute majority a second ballot must be taken between the first two candidates on the list. This principle was introduced at the general election in October, 1910, and second ballots were taken in three electorates; in 1913 second ballots were

held in twelve electorates. The enactments relating to Parliamentary elections were consolidated by the Parliamentary Electorates and Elections Act of 1912.

The votes recorded at the first ballots in districts in which second ballots were taken have been excluded from the following table which shows the voting of the elections held in New South Wales since plural voting was abolished:—

Year of Election.	Voters on Roll.	Electors per Member.	Total Members returned.	Members unopposed.	Contested Electorates.				
					Electors on Roll.	Votes recorded.	Percentage of Votes recorded.	Informal Votes.	Percentage of Informal Votes.
1894	298,817	2,390	125	1	254,105	204,246	80·38	3,310	1·62
1895	267,458	2,139	125	8	238,233	153,034	64·24	1,354	·88
1898	324,339	2,595	125	3	294,481	178,717	60·69	1,638	·92
1901	346,184	2,769	125	13	270,861	195,359	72·13	1,534	·79
1904 { Males	363,062	7,661	90	2	304,396	226,057	74·26	3,973	·59
Females	326,428				262,433	174,538	66·51		
1907 { Males	392,845	8,288	90	5	370,715	267,301	72·10	13,543	2·87
Females	353,055				336,680	204,650	60·78		
1910 { Males	458,626	9,641	90	3	444,242	322,199	72·53	10,393	1·78
Females	409,069				400,139	262,154	65·52		
1913 { Males	553,633	11,533	90	3	534,379	335,833	72·20	14,439	2·10
Females	484,366				468,437	302,359	64·55		

10 02 916 228 000

Making due allowance for obstacles to voting, especially in sparsely-settled districts, the figures quoted above indicate abstention on the part of a large percentage of the electors, and particularly in the case of the women. At the first election after enfranchisement, 66·5 per cent. of women recorded their votes; in 1907, 60·8 per cent., and at the elections of 1910 and 1913 about 65 per cent. voted, so that 35 per cent. failed to take advantage of their franchise. In the case of men, the highest proportion of votes, 80·4 per cent., was recorded at the first election shown in the table above, when popular interest was excited by a strenuous contest on the question of fiscal reform; at the next two elections there was no definite issue at stake, as negotiations were in progress with the other States for federation. At subsequent elections the percentage of votes increased; the proportion at the last three elections being about 72 per cent. of men enrolled; but although facilities for voting had been greatly improved, there were still more than one-fourth of the male electors who did not vote.

The number of informal votes was high at the election in 1907, being 3 per cent. of the total votes recorded; at the 1910 election a change made in the method of marking the ballot-papers no doubt accounted for the percentage of informal votes being reduced to 1·78 per cent. The percentage rose to 2·1 in 1913; this was the first election at which the absent voting was in operation, and many informalities occurred through the non-compliance by election-officers with the special conditions regarding the issue of ballot-papers to electors outside the districts in which they were enrolled. Exclusive of the figures relating to the first ballots in electorates where second ballots were held, 22,384 absent votes were recorded, 5,893 being informal.

DISTRIBUTION OF ELECTORATES.

After federation of the Australian States the question of reducing the membership of the Legislative Assembly of New South Wales was submitted to a referendum of the electors in 1904, and, as a result, the

Handwritten notes:
 1,931,716
 actual
 56.06 =
 96
 E. in Roll
 54.75
 97.66
 1,021,700
 96
 98.14

number of representatives was reduced to 90. The following table shows the average number of persons represented by each member of the Assembly and the proportion of the population enrolled on the electoral lists at various dates on which the membership or franchise has been altered since the opening of the first Parliament and at each year of election since 1901:—

Year of Election.	Number of Members.	Population per Member.	Percentage of Population Enrolled.
1856	54	5,200	15·8
1858	72	4,500	22·3
1880	108	6,900	25·2
1885	122	7,800	24·5
1891	141	8,100	26·7
1894	125	9,800	24·3
1901	125	10,900	25·3
1904	90	16,100	39·0
1907	90	17,300	45·6
1910	90	18,200	51·5
1913	90	20,400	56·6

The number of distinct electors cannot be ascertained for any period prior to the year 1894, and the figures in the last column have been calculated on the total number of votes to which the electors on the roll were entitled; they are, therefore, somewhat in excess of the actual proportions. At the census of 1901 the percentage of adult males in the total population was about 28, and of adults, males and females, 51·7. At the election in 1901 the proportion of the population enrolled was 25 per cent., and after the Women's Franchise Act, 1902, was passed it rose to 39 per cent. In 1910 the proportion was 52 per cent.; while at the Census date, 2nd April, 1911, the adult population represented 55·8 per cent. of the total. In December, 1913, the electors on the roll represented 56·6 per cent. of the total population.

A list of the Parliaments since Responsible Government was established is shown below:—

Number of Parliament.	Opened.		Dissolved.		Duration.			No. of Sessions.
					yrs.	mths.	dys.	
1	22 May	1856	19 Dec.	1857	1	6	28	2
2	23 March	1858	11 April	1859	1	0	19	2
3	30 Aug.	1859	10 Nov.	1860	1	2	11	2
4	10 Jan.	1861	10 Nov.	1864	3	10	0	5
5	24 Jan.	1865	15 Nov.	1869	4	9	22	6
6	27 Jan.	1870	3 Feb.	1872	2	0	7	3
7	30 April	1872	28 Nov.	1874	2	6	28	4
8	27 Jan.	1875	12 Oct.	1877	2	8	16	3
9	27 Nov.	1877	9 Nov.	1880	2	11	12	3
10	15 Dec.	1880	23 Nov.	1882	1	11	8	3
11	3 Jan.	1883	7 Oct.	1885	2	9	4	6
12	17 Nov.	1885	26 Jan.	1887	1	2	9	2
13	8 March	1887	19 Jan.	1889	1	10	11	3
14	27 Feb.	1889	6 June	1891	2	3	7	4
15	14 July	1891	25 June	1894	2	11	11	4
16	7 Aug.	1894	5 July	1895	0	10	29	1
17	13 Aug.	1895	8 July	1898	2	10	26	4
18	16 Aug.	1898	11 June	1901	2	9	26	5
19	23 July	1901	16 July	1904	2	11	24	4
20	23 Aug.	1904	12 July	1907	2	10	20	4
21	2 Oct.	1907	14 Sept.	1910	2	11	12	5
22	15 Nov.	1910	6 Nov.	1913	2	11	21	5
23	23 Dec.	1913	Still sitting.		.....			.....

MINISTRIES.

The various Ministries which have held office since the establishment of Responsible Government, together with the duration in office of each, are shown below:—

Ministry.		From—	To—	Duration.	
Number.	Name.			months.	days.
1	Donaldson	6 June 1856	25 Aug. 1856	2	20
2	Cowper	26 Aug. 1856	2 Oct. 1856	1	8
3	Parker	3 Oct. 1856	6 Sept. 1857	11	4
4	Cowper	7 Sept. 1857	26 Oct. 1859	25	20
5	Forster	27 Oct. 1859	8 Mar. 1860	4	13
6	Robertson	9 Mar. 1860	9 Jan. 1861	10	1
7	Cowper	10 Jan. 1861	15 Oct. 1863	33	6
8	Martin	16 Oct. 1863	2 Feb. 1865	15	18
9	Cowper	3 Feb. 1865	21 Jan. 1866	11	19
10	Martin	22 Jan. 1866	26 Oct. 1868	33	5
11	Robertson	27 Oct. 1868	12 Jan. 1870	14	17
12	Cowper	13 Jan. 1870	15 Dec. 1870	11	3
13	Martin	16 Dec. 1870	13 May 1872	16	29
14	Parkes	14 May 1872	8 Feb. 1875	32	26
15	Robertson	9 Feb. 1875	21 Mar. 1877	25	13
16	Parkes	22 Mar. 1877	16 Aug. 1877	4	26
17	Robertson	17 Aug. 1877	17 Dec. 1877	4	1
18	Farnell	18 Dec. 1877	20 Dec. 1878	12	3
19	Parkes	21 Dec. 1878	4 Jan. 1883	48	15
20	Stuart	5 Jan. 1883	6 Oct. 1885	33	2
21	Dibbs	7 Oct. 1885	21 Dec. 1885	2	15
22	Robertson	22 Dec. 1885	25 Feb. 1886	2	4
23	Jennings	26 Feb. 1886	19 Jan. 1887	10	22
24	Parkes	20 Jan. 1887	16 Jan. 1889	23	28
25	Dibbs	17 Jan. 1889	7 Mar. 1889	1	19
26	Parkes	8 Mar. 1889	22 Oct. 1891	31	15
27	Dibbs	23 Oct. 1891	2 Aug. 1894	33	11
28	Reid	3 Aug. 1894	13 Sept. 1899	51	11
29	Lyne	14 Sept. 1899	27 Mar. 1901	18	14
30	See	28 Mar. 1901	14 June 1904	38	18
31	Waddell	15 June 1904	29 Aug. 1904	2	15
32	Carruthers	30 Aug. 1904	1 Oct. 1907	37	3
33	Wade	2 Oct. 1907	20 Oct. 1910	36	19
34	McGowen	21 Oct. 1910	29 June 1913	32	9
35	Holman	30 June, 1913	Still in office.	.....

The Helman Ministry, which is in office, consists of the following members:—

Premier, and Colonial Treasurer	Hon. W. A. HOLMAN.
Colonial Secretary and Secretary for Mines... ..	Hon. J. H. CANN.
Secretary for Lands	Hon. J. L. TRUFFLE.
Minister for Public Works	Hon. A. GRIFFITH.
Attorney-General and Minister of Justice	Hon. D. R. HALL.
Minister of Public Instruction... ..	Hon. A. C. CARMICHAEL.
Minister for Agriculture	Hon. W. G. ASHFORD.
Minister for Labour and Industry	Hon. J. ESTELL.
Vice-President of the Executive Council and Minister for Public Health.	Hon. F. FLOWERS, M.L.C.
Member of Executive Council without portfolio ... } (charged with the business of Colonial Treasurer.)	Hon. H. C. HOYLE.

COST OF PARLIAMENT—NEW SOUTH WALES.

The following statement shows the cost of Parliamentary Government in New South Wales during the five financial years 1910–1914.

Head of Expenditure.	1910.	1911.	1912.	1913.	1914.
Governor—	£	£	£	£	£
Governor's salary	5,000	5,000	5,000	5,000	5,000
Official Secretary	335	335	375	400	400
Private Secretary	376	350	350	350	350
Aide-de-Camp	324	300	350	350	350
Orderlies	505	728	730	803	883
Additions, Repairs and maintenance of					
Residences	972	8,183	1,144	1,180	1,266
Miscellaneous	1,135	1,231	1,114	1,263	2,285
Total	£ 8,647	16,177	9,063	9,346	10,534
Executive Council—					
Salaries of Officers	270	279	257	108	...
Other Expenses ... ..	...	25	25	...	...
Total	£ 270	304	282	108	...
Ministry—					
Salaries of Ministers	11,040	11,040	10,969	11,040	11,040
Other expenses	1,006	1,445	1,471	2,777	1,150
Total	£ 12,146	12,485	12,440	13,817	12,190
Parliament—					
The Legislative Council—					
Railway passes	6,675	5,810	5,472	5,855	5,883
Other expenses	125	...	...	...	...
Total	6,800	5,810	5,472	5,855	5,883
The Legislative Assembly—					
Allowances to Members	24,122	22,423	24,205	38,887	37,354
Railway passes	10,099	10,860	11,006	9,699	10,332
Other expenses (Postage Stamps, &c.)	1,622	1,583	1,651	1,816	1,732
Total	35,843	34,866	36,862	50,402	49,468
Miscellaneous—					
Fees and expenses of Parliamentary					
Standing Committee on Public Works	5,926	5,529	6,095	5,980	3,310
Salaries of Officers and Staff	20,224	18,903	21,263	21,882	22,652
Printing	7,001	7,687	7,398	10,823	12,005
Hansard (including Salaries)	4,683	5,663	5,958	7,378	6,775
Library	666	795	670	684	567
Refreshment Rooms	400	465	299	106	208
Water, power, light, and heat	673	504	766	682	561
Postage, stores, and stationery	723	887	1,174	696	1,002
Miscellaneous	680	564	694	2,005	2,461
Total	40,976	41,002	44,317	50,236	49,544
Total Parliament	£ 83,619	81,678	86,651	106,493	104,895
Electoral Office and Elections—					
Salaries	773	788	918	995	813
Printing of Electoral Rolls, expenses of					
Electoral Registrars, and contingencies	16,184	35,291	23,989	34,867	53,040
Total	£ 16,957	36,079	24,907	35,862	53,853
Royal Commissions and Select Committees—					
Fees, &c. ... ..	...	2,627	6,721	3,492	4,578
Miscellaneous	1,477	1,165	4,197	2,170	840
Total	£ 1,477	3,792	10,918	5,662	5,418
GRAND TOTAL	£ 123,116	150,515	144,261	171,288	186,890

ACTS OF PARLIAMENT, 1913.

The Public Acts passed by the Parliament of New South Wales during the Session of 1913 were as follows :—

- No. 1. Friendly Societies (Amendment).
2. Supply.
3. Supply (No. 2).
4. Metropolitan Traffic (Amendment).
5. Liquor (Local Option) Amendment.
6. Council of the Municipality of Ashfield Loan Authorisation.
7. Crown Lands Consolidation.
8. Newcastle Hospital.
9. Deserted Wives and Children Amendment.
10. Coff's Harbour Improvement.
11. Coal Mines Regulation (Amending).
12. Coonabarabran to Burren Junction Railway.
13. Government Savings Bank Amendment.
14. Friendly Societies (Amendment).
15. Newcastle Floating Dock.
16. Sydenham to Botany Railway.
17. Abattoir (Saleyards) Construction.
18. Dubbo to Werris Creek Railway.
19. Public Trustee Act.
20. Loan (Railways) Act.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

As soon as practicable after the commencement of the first session of every Parliament, a joint committee of members of the Legislative Council and Legislative Assembly, called the Parliamentary Standing Committee on Public Works, is appointed by ballot. Three members of this Committee must be members of the Legislative Council, and four members of the Legislative Assembly.

The Committee has full power, under the Public Works Act, to prosecute inquiries, to summons witnesses, and to compel the production of books, &c.

The Chairman receives by way of remuneration £3 3s. for each sitting of the Committee, and every other member £2 2s.; the maximum amount payable as fees in any one year is £5,000.

Proposals for public works of an estimated cost exceeding £20,000 must be submitted and explained by a Minister in the Legislative Assembly, and then referred to the Works Committee for report.

The record of inquiries made by the several Committees regarding proposed public works, from the date of the first sitting of the first Committee, on 27th August, 1888, to 5th November, 1913, shows that the total expenditure proposed by the Government was £65,317,010, and the expenditure recommended by the Committee was £37,859,829.

LOCAL GOVERNMENT.

Subsidiary to the Parliamentary and Administrative Government of the State, a system of Local Government is in operation in New South Wales, it is discussed in a subsequent chapter of this Year Book. For administrative purposes, the more populous eastern and central divisions of the State are subdivided in areas incorporated as shires and municipalities, while the more sparsely-settled western division remains under the jurisdiction of the Western Land Board.

In addition to Local Government Councils, various Boards and Trusts have been appointed to administer special services.

ADMINISTRATIVE GOVERNMENT OF THE STATE.

Functions.

In New South Wales the various Departments of the Public Service, controlled by Ministers of the Government, as previously enumerated, are charged with the administration of Acts of Parliament, the conduct of public

business, and the performance of functions incidental to the good government of the State. Following is a summary of the general administrative arrangements:—

The Premier:—

Departmental business connected with the State Governor's Office establishments and with the two Houses of Parliament, including official publication of Debates, foreign correspondence, correspondence with— (a) the Commonwealth, State, and Colonial Governments, (b) the President of the Legislative Council and the Speaker of the Legislative Assembly, (c) Foreign Consuls; the State Executive Council; the Agency-General in London; and the Immigration and Tourist Bureau.

Chief Secretary:—

Public Seal and registration of commissioners thereunder; execution of capital sentences; appointment of magistrates; business relating to ecclesiastical establishments; correspondence with the heads of the several churches; Master-in-Lunacy's Office; protection of aborigines; Police Department; Department of Audit; Board of the Fire Commissioners; Registry of Friendly Societies and Trade Unions; Bureau of Statistics; Parliamentary elections; State Fisheries; Departmental business connected with Lord Howe Island Board of Control; licensing of racecourses; and all matters not expressly assigned to any other Minister.

The Minister for Public Health:—

Department of Public Health; bureau of microbiology; hospitals; registration of medical practitioners; appointment of Government medical officers and public vaccinators; Dental Board; institutions for the care and treatment of inebriates and of the insane; State charities; charitable institutions aided from Consolidated Revenue; Meat Industry and Abattoir's Board; licensing of public entertainments; and closed cemeteries and exhumation of bodies for the purpose of re-interment, &c.

The Colonial Treasurer:—

The management of the Consolidated Revenue, Loan, and other public funds; the receipt of collections by accounting officers and of taxes and other revenues of the Crown; payment of claims against the Crown; public banking arrangements; management and regulation of public debt; floating of loans; sale, inscription, and management of stocks on Sydney Register; periodical inspection of accounts of official assignees, and the Registrar of Bankruptcy and of the Public Trustee; the exercise of powers conferred upon him by the Government Railways Act, 1912, the Sydney Harbour Trust Act, 1900, and the Housing Act, 1912, the business of public printing; the publication of the *Government Gazette*; supervision of the engagement and discharge of seamen; storage of gunpowder; registration of guarantees under Pure Food Act, 1908; payment of pensions and allowances for Imperial Government, and for Crown and other Colonies; the purchase and distribution of stores, stationery, and furniture for the public service; the Colonial Treasurer's Fire Insurance Fund, and the issue of the following licenses:—Auctioneers', publicans', booth, billiard, bagatelle, brewers', spirit merchants', packet, tobacco, &c., colonial wine, railway refreshment room, oyster vendors', fishermen's, and fishing boat; and correspondence with the banking institutions transacting business on behalf of the Government and with all Government Departments and officers on the subject of collecting, expending, and accounting for public revenues.

The Attorney-General :—

Business relating to the office of Chief Justice and the Puisne Judges, the Industrial Court and District Courts, the office of Chairman of Quarter Sessions, and the appointment of sittings of the Supreme Court at circuit towns, and District Courts and Courts of Quarter Sessions; advising the Government on all legal questions; the offices of the Crown Solicitor, Parliamentary Draftsman, Crown Prosecutor's, and Clerk of the Peace; Statute Law Consolidation; the Public Service Board; and correspondence with other Ministers on questions requiring legal opinion, and with Judges with regard to matters coming under Ministerial control.

Minister of Justice :—

Business relating to the Equity, Bankruptcy, Sheriff's, Probate, and Intestate Estates, and Registrar-General's offices; Courts of Petty Sessions; Police Magistrates, Clerks of Petty Sessions, and Registrars of District Courts; Coroners; Gaol and penal establishments (exclusive of Industrial or Reformatory Schools); matters relating to the commutation or remission of sentences, or of fines, and forfeitures, and estreats; control of Court-houses.

Secretary for Lands :—

The administration of all Acts relating to the alienation, occupation (otherwise than for mining), or management of Crown lands (other than lands within State Forests and Timber Reserves), and of lands held under the Church and School Lands Acts; the compilation, lithography, publication, and sale of maps of State, county, parish, or town, and environs; survey of public lands for purposes of alienation, lease (other than mineral), or dedication for public purposes; topographical surveys for purposes of compilation of maps; Land Appeal Court; Local Land Boards; Closer Settlement Advisory Boards; licensing of Crown Land Surveyors; proclamation of towns and villages; reserves, dedications, and resumptions for public purposes; recreation reserves; subsidies for parks and cemeteries; alignment of streets; brickmaking and quarry licenses; trespasses on Crown lands; the administration of the Irrigation Act.

Secretary for Mines :—

All business relating to mining generally; geological and mining surveys and assays; examination of coalfields; inspection of collieries and mines; Prospecting Vote; Miner's Accident Relief; State Coal Mines.

The Minister for Public Works :—

The construction of railways and tramways and works and buildings connected therewith, and of water supply, sewerage, and drainage works; the construction and repair of wharves, basins, and breakwaters, and the dredging and improvement of harbours and rivers (except those vested in the Sydney Harbour Trust), and of lighthouses and signal stations, and, when requested by the Commonwealth Authorities, of buildings, &c., in the State of New South Wales for the Commonwealth Government; the construction and maintenance of Government docks, engineering establishments, works of drainage and flood prevention, and roads and bridges not controlled by local authorities; the conduct and management of State industrial undertakings; the management of public watering places and of ferries not controlled by local authorities; the erection, repair, and maintenance of public buildings; the resumption of land for public purposes; the detail survey of Sydney and suburbs, and the administration of the Local Government Acts and all Acts authorising the carrying out of public works.

Minister for Agriculture :—

The administration of all matters relating to agriculture, including the Agricultural College and experiment and demonstration farms, viticultural stations and nurseries; forestry; commons; Botanic Gardens, Centennial Park, and Domain; stock, and supervision of dairies for instructional purposes.

Minister for Public Instruction :—

Matters relating to education generally; technical education; kindergarten schools; State scholarships and bursaries; the University and affiliated colleges; public library; Observatory; Australian Museum; National Art Gallery; scholastic, literary, and scientific institutions and charitable schools aided from Consolidated Revenue; State Children's Relief Board; shelters, industrial schools, and homes for children; medical inspection of schools and pupils.

Minister for Labour and Industry :—

The administration of Acts relating to Industrial Arbitration, Workmen's Compensation, Factories and Shops, Apprenticeship, &c.; and business connected with the State Labour Branch.

Commissions and Trusts.

In addition to the Ministerial Departments, various public services are administered by Commissions, Boards and Trusts; the more important of these are—

- Railway and Tramway Commissioners.
- Metropolitan Board of Water Supply and Sewerage.
- Hunter District Water Supply and Sewerage Board.
- Sydney Harbour Trust.
- Commissioner for Irrigation and Water Conservation.
- Housing Board.
- Commissioners of Government Savings Bank.
- Board of Fire Commissioners.

In each case the authority controls a specific service, and administers the statute law in relation to it.

ROYAL COMMISSIONS OF INQUIRY.

The important Royal Commissions which have been reported to the Parliament of New South Wales since the year 1856 have been shown in the previous issue of this Year Book.

The following Royal Commissions were appointed from 1st January, 1912, to 30th September, 1914.

- Inquiry as to treatment of neglected and delinquent children in Great Britain, Europe, and America.
- Suspension of Principal Shorthand Writer, Parliamentary Reporting Staff.
- Consolidation of Statute Law in New South Wales.
- Congestion of Goods Traffic in Country Centres, and Delays in Transit of Inward and Outward Produce.
- Standardisation of Australian Manufactured Food Products.
- Adequacy of Supply of Locomotives for traffic purposes, and Manufacture of Locomotives at Eveleigh Works.
- Investigation regarding Cattle Tick.
- Kentia Palm Seed Industry.

- Inquiry as to alleged Corrupt Practices by the Minister for Public Works, Dismissal of J. Russell from Mount Kembla Coal Mine.
- Inquiry regarding Drainage Pipes used by the Metropolitan Board of Water Supply and Sewerage.
- Inquiry regarding the Administration of the Mental Hospital and the Reception House for Insane, at Darlinghurst.
- Inquiry regarding the Administration of the Industrial Arbitration Act, 1912.
- Constitution of a Greater Sydney.
- Inquiry as to the standards and cost of living, &c., in Great Britain, Europe, United States, and Canada.
- Inquiry in Great Britain into the prospects of continued loan operations by the State of New South Wales upon the London Money Market.
- Inquiry as to the probable effect of the limitation of nightwork in the collieries in the Northern District of New South Wales.
- Inquiry as to the safe working, &c., of the various mines in the Broken Hill district.
- Inquiry into the methods of fishing &c., in Great Britain, Europe, and America.
- Appointment of Executive Commissioner, Samarang (Java), Colonial Exhibition, 1914.
- Statute Law Consolidation.
- Inquiry into the purchase by the Government of the Boorabil Estate.
- Inquiry in Great Britain into the matter of apprenticeship as affected by the introduction of machinery, with special reference to footwear industry.
- Inquiry into the prices of necessary commodities, &c., under the Necessary Commodities Control Act, 1914.

DEFENCE.

Prior to 1870, small garrisons of British troops constituted the main defences of Australia. In that year, the Imperial troops were withdrawn from New South Wales, as from the other Colonies, and defence became a matter of Colonial administration. The defence forces of New South Wales were established chiefly on a volunteer basis; the Military and Naval Forces Regulation Act, 1871, provided for the raising and maintenance of a standing force, but the permanent soldiery were limited to a small force, as the establishment of forts and defence works. A militia or partially paid system was introduced subsequently, and the military training of volunteer cadets was a feature of the education system of the State. The Governor was Captain-General, and at 31st December, 1900, till which date each Colony maintained its separate military establishment, the strength of the force of New South Wales was greatest with 505 officers, and 8,833 men in the ranks—practically the whole establishment, as in the other Colonies, consisting of militia or partially paid and of volunteer forces.

The urgent need for a comprehensive and united defence arrangement was a powerful factor in securing cohesion among the Australian Colonies in the early stages of the federal movement, and with the achievement of union in a Federation, the duty of providing adequately for the defence of Australia devolved upon the Government of the Commonwealth.

The Commonwealth of Australia Constitution Act, 1900, empowered the Commonwealth Parliament to legislate for the naval and military defence of the Commonwealth, and of the several States, and for the control of the forces to execute and maintain the laws of the Commonwealth; the Governor-

General, as Commander-in-Chief, authorised the transfer of the defence arrangements of each State to the Commonwealth in March, 1901. Statutes in relation to defence were enacted in 1903, 1904, 1909, 1910, 1911, and 1912, particular provision in regard to naval defence being contained in the Naval Agreement Act, 1903, and in the Naval Defence Acts, 1910 and 1911. In 1905 a Council of Defence was created to deal with matters of policy, its functions being chiefly to establish and maintain continuity in defence policy, to act as advisors to Parliament and Minister, to secure standard of efficiency, and to ensure a measure of decentralisation. Military and Naval Boards were established to supervise administration.

The earlier enactments of the Commonwealth Government in regard to defence provided machinery to systematise the defence forces, and to secure efficient administration. The divisions of militia and volunteer were retained, the permanent forces consisting of persons bound for a term of continuous services, and the citizen forces being at the call of the Commander-in-Chief in time of war. In the Defence Act, 1909, an innovation was made, in that universal obligation to military and naval training was imposed, and arrangements were made for registration and enrolment for training, also for the establishment of a military training college. Under the Defence Act, 1910, provision was made for the establishment of horse depôts and farms, so as to supplement and ultimately obviate the impress system in regard to remounts. The period of liability for compulsory training in the citizen forces was extended from two to seven years; and generally, the system was made more effective. In 1911 a reduction was effected in the duration of drills for senior cadets, but penalties were assured for evasion of service by cadets.

Amongst other provisions, the Act passed in 1912 authorises officers of the Senior Cadets, on becoming liable for service in the citizen forces, to continue to serve as officers in the Senior Cadets for periods and under conditions as prescribed, such to be in lieu of service in the citizen forces. In time of war aerial machines may be impressed. The method of prosecution for offences was much simplified by the Act, and the period of training of Junior Cadets reduced from 120 hours to 90 hours per annum.

The Commonwealth is organised for Defence purposes into six military districts, corresponding as far as practicable with the political divisions into States. The second military district represents the State of New South Wales, excepting the North Coast district, the Barrier district, and the Riverina, which are attached to Queensland, South Australia, and Victoria respectively.

The organisation is territorial, the basis being the battalion areas, which are grouped to form brigade areas. For the purposes of administration and for the training of Senior Cadets, the battalion areas are subdivided into training areas, each administered by an area officer :—

Military District.	Brigade Area.	Battalion Areas.	Training Areas.
	No.	No.	No.
1st Queensland	3	12	31
2nd New South Wales	8	32	72
3rd Victoria	7	29	65
4th South Australia	2	9	23
5th Western Australia	1	6	15
6th Tasmania	1	4	11
Commonwealth	22	92	217

LIABILITY FOR SERVICE IN TIME OF WAR.

The Defence Acts, 1903-1912, provide that all male persons—unless specifically exempted—who have resided in Australia for six months, and who are British subjects between the ages 18 and 60 years, may be called upon to serve in the Citizen forces in time of war. The order in which they may be called upon is as follows :—

1. From 18 to 35 years of age—All unmarried men or widowers without children.
2. From 35 to 45 years of age—All unmarried men or widowers without children.
3. From 18 to 35 years of age—All married men or widowers with children.
4. From 35 to 45 years of age—All married men or widowers with children.
5. All men aged 45 to 60 years.

The specific exemptions are as follows :—(a) Persons reported unfit by medical authorities; (b) Members and officers of Parliament; (c) Judges and police, stipendiary or special magistrates; (d) Ministers of religion; (e) Police or prison employees; (f) Persons employed in lighthouses; (g) Medical practitioners or nurses in public hospitals; (h) Persons not substantially of European origin or descent; (i) Persons whose conscientious beliefs do not allow them to bear arms. As regards persons in the three last classes, the exemptions do not extend to duties of a non-combatant nature.

Service in the military forces beyond Commonwealth territory is not obligatory, but in time of war contingents of volunteers are sent from Australia to co-operate with the Imperial Forces. The first contingent was despatched from New South Wales to the Soudan Campaign in 1885; large numbers of troops were sent from Australia to the South African war in 1899, and a naval contingent proceeded to China at the time of the Boxer rebellion in 1900. On the outbreak of the present European war in August, 1914, an offer of troops was accepted by the Imperial Authorities, and arrangements are being made for the despatch of large expeditionary forces from Australia.

UNIVERSAL TRAINING.

Universal training was established by the Defence Act of 1910, which came into force on 1st January, 1911; persons who reached the age of 18 years in or before the year 1911 were exempted from this obligation.

The prescribed training is as follows :—

Rank.	Age.	Service.	Annual Training.
	years.	years.	
Junior Cadets	12-14	2	90 hours.
Senior Cadets	14-18	4	4 whole-day, 12 half-day, and 2 night drills, or their equivalent (64 hours).
Citizen Forces—			
Artillery, Engineers, and Naval.	18-25	7	Drills equivalent to 25 whole days, of which, at least, 17 days must be in camps of continuous training.
Other	18-25	7	Drills equivalent to 16 whole days, of which, at least, 8 days must be in camps of continuous training.
Citizen Forces	25-26	1	One registration or one muster parade.

The Governor-General may grant temporary exemption to persons residing outside the training areas into which the State is divided, or at a great distance from places appointed for training.

Junior Cadets.

The training of Junior Cadets embraces physical training, elementary marching drill, and the attainment of a certain standard of efficiency in not less than one of the following subjects:—Miniature rifle shooting, swimming, running in organised games, first aid. The training is commenced on 1st July of the year in which the cadet reaches the age of 12 years and is conducted by school teachers, who are instructed for this purpose by a staff of instructors maintained by the Defence Department.

In response to requests by the Education Departments of the several States who were desirous of extending the system of physical training to girls, a special course of instruction for women teachers was held in 1913. In addition to physical training, lectures on anatomy and first aid were given by medical officers.

From 1st October, 1911, to 31st December, 1913, 169 courses of instruction for teachers were held by the Defence Department, and 4,103 male and female teachers qualified. At the end of the year 1913 training was in operation at 8,044 schools throughout the Commonwealth, and 55,850 Junior Cadets were in training. Junior Cadets are not required to register, but are examined medically. Particulars regarding the Medical Examinations during the year ended 30th June, 1914, are given in the subjoined table:—

Military District.	Total number medically examined.	Medically fit.		Unfit and temporarily unfit.	
		Number.	Percentage of medically examined.	Number.	Percentage of medically examined.
1st Queensland	9,680	9,375	96·8	305	3·2
2nd New South Wales	27,415	26,668	97·3	747	2·7
3rd Victoria	22,688	22,406	98·8	282	1·2
4th South Australia	6,110	5,952	97·4	158	2·6
5th Western Australia	4,494	4,379	97·5	115	2·5
6th Tasmania	2,000	1,958	97·9	42	2·1
Commonwealth	72,387	70,738	97·7	1,649	2·3

Auxiliary Organisations.

Boys' Scouts, Boys' Brigades, and similar organisations exist which are not under Governmental control nor in receipt of subsidies from the Government. The instruction or training offered includes physical and elementary drill, signalling, first aid, &c. Boys belonging to these organisations must also undergo the training of cadets prescribed in the Defence Act.

Senior Cadets.

Boys are required to register for military training as Senior Cadets in January and February, and to commence training on 1st July of the year in which they reach the age of 14 years. After medical examination they are organised in military or naval units and trained in elementary exercises

or in musketry on open ranges, but are not required to attend camp. The following return shows the total registrations of Senior Cadets during the year ended 30th June, 1914 :—

Military District.	Total Registrations.	Medically examined.	Medically fit.		Exemptions granted.*	Number actually in Training.†
			Number.	Percentage of medically examined.		
1st Queensland	29,231	17,120	14,706	85·9	13,875	11,622
2nd New South Wales	63,528	44,327	39,580	89·3	23,569	30,514
3rd Victoria	55,648	39,131	34,843	89·0	20,332	27,319
4th South Australia	17,068	12,166	10,806	88·8	5,663	8,512
5th Western Australia	9,883	6,491	5,738	88·0	3,763	4,276
6th Tasmania	7,645	4,234	3,647	86·1	3,812	2,867
Commonwealth	183,063	123,469	109,320	88·5	71,014	85,110

* Chiefly on account of distance from training places.

† Exclusive of those born in 1903, registered but not liable for training till 1st July, 1914.

It will be seen that only a very small percentage failed to pass the medical examination, and that percentage would be further reduced by the exclusion of lads deemed only temporarily unfit.

Citizen Forces.

On 1st July of the year in which the Senior Cadets reach the age of 18 years they are transferred, after medical examination, to the Citizen Forces; 6,038 were transferred in New South Wales district in 1912, and 6,055 in 1913. In the allotment to the various arms the wishes of the individuals are considered as far as practicable; only specially selected men are accepted for service with the Artillery, Engineers, and Army Service and Medical Corps. Service in the Light Horse is voluntary, the recruit being required to provide his own horse. In other arms voluntary enlistment ceased on 1st July, 1912, when the first batch of trainees completed their term as Senior Cadets; volunteers serving on that date were allowed to continue their service until the expiration of their period of enlistment, officers and non-commissioned officers only being eligible to re-enlist for further periods. On completion of their period of compulsory service, men may be enrolled in the Reserve Forces.

The rates of pay for the Citizen Forces are as follows :—

	per day.				per day.		
	£	s.	d.		s.	d.	
Colonel or Brigadier ..	2	5	0	Regimental Serg.-Major	12	0	
Lieutenant-Colonel ..	1	17	6	Company Sergt.-Major	11	0	
Major	1	10	0	Sergeant	10	0	
Captain	1	2	6	Corporal	9	0	
Lieutenant, 2nd Lieut.	0	15	0	Private	4	0	
				Recruit (1st year)	3	0	

For half-day parades half the above rates are paid, and for night drills, one quarter. Members of Light Horse units are granted horse allowances at the rate of 5s. per day up to a maximum of £4 per annum.

Rifle Clubs.

Members of Rifle Clubs constitute the reserves for the militia; they do not undergo military training, but a course of musketry is held annually, and the clubs are subsidised by the Defence Department. A scheme has been formulated to attach efficient members of rifle clubs to definite military units in order to facilitate mobilisation. At the end of the year 1913, there were 302 rifle clubs in New South Wales, with 14,060 members.

• CLASSIFICATION OF MILITARY FORCES.

The military forces of Australia consist of—(1) Permanent Forces, which include the administrative and instructional staff, a regiment of garrison artillery, three batteries of field artillery, and small detachments of engineers army service and medical corps, &c.; (2) Citizen Forces undergoing training, as prescribed by the Defence Acts; (3) Reserve Forces, which consist of persons retired from active service and members of rifle clubs.

The subjoined table contains information regarding the military force in New South Wales on 31st December of each year since 1911; the figures represent the number attached to the Second Military District of the Commonwealth:—

Classification.	1911.	1912.	1913.	Classification.	1911.	1912.	1913.
Permanent—				Volunteer—			
Headquarters Staff ...	17	22	33	Automobile Corps ...	16	10	9
Artillery ...	349	355	371	Army Nursing Service	26	26	26
Engineers ...	52	71	89				
Army Service Corps ..	15	41	49	Total Volunteer ...	42	36	35
Army Medical Corps	11	11	11				
Ordnance Department	42	57	78	Total Permanent, Militia, and Volunteer ..	8,557	12,517	17,067
Instructional Staff ...	161	157	179				
Other ...	28	31	53				
Total Permanent...	675	745	863				
Militia—				Area Officers ...	75	72	72
Staff ...	2	2	...	Area Medical Officers...	46	20	21
Light Horse ...	1,906	1,753	1,900	Engineer and Railway Staff Corps ...	...	10	10
Artillery ...	957	1,049	1,170	Chaplains ...	41	45	45
Engineers ...	427	507	732	Cadets, Senior (Uni- versal Training) ..	33,536	32,519	31,780
Infantry ...	3,966	7,743	11,183	Rifle Clubs ...	13,902	12,894	14,060
University Scouts ...	99	134	373	Unattached List of Officers ...	67	72	66
Intelligence Corps ...	12	15	12	Reserve of Officers ...	188	246	221
Signallers ...	68	...	...	Medical Corps Reserve	53	...	57
Army Service Corps...	151	181	276				
Army Medical Corps	246	345	516	Grand Total ...	56,465	53,395	63,399
Army Veterinary Corps ...	6	7	7				
Total Militia ...	7,840	11,736	16,169				

Figures for each military district in Australia are given in the following return for the year ended 30th June, 1913 :—

Classification.	1st. Queensland.	2nd. New South Wales.	3rd. Victoria.	4th. South Australia.	5th. Western Australia.	6th. Tasmania.	Total.
Permanently employed ...	429	806	751	172	207	135	2,774*
Citizen Soldiers ...	4,135	11,183	9,984	3,009	1,443	1,615	31,369
Engineer and Railway Staff Corps ...	10	10	10	5	8	5	51†
Volunteers ...	20	34	32	19	12	11	128
Area Officers ...	31	72	63	23	15	11	215
Rifle Clubs ...	9,705	13,408	15,621	5,408	3,809	1,629	49,580
Senior Cadets ...	12,111	32,496	28,028	8,849	4,285	2,938	88,708
Unattached List of Officers ...	36	72	82	29	27	22	268
Reserve of Officers ...	201	238	280	71	63	61	914
Chaplains ...	33	45	55	7	25	11	176
Total ...	26,711	58,364	54,906	17,592	9,895	6,438	174,183‡

* Includes 274 attached to the Central Administration, and cadets at Duntroon Military College.

† " 5 " " "

‡ " 279 " " "

LAND DEFENCE.

At the end of the year 1909 Field-Marshal Lord Kitchener visited Australia to inspect the military forces, and forts and defence works, and to give the Government the benefit of his experience and advice in the development of a land defence scheme. His report advised the provision of an annual expenditure of £1,884,000 and a force of 80,000 men, of whom half would be engaged in the defence of the larger cities and ports, and the other half would form a mobile striking force.

In 1914, General Sir Ian Hamilton, Inspector-General of the Oversea Forces, conducted an inspection of the Australian Military Forces. His report was generally favourable to the system of training; and he strongly urged the necessity for the organisation of all national resources on a war basis. Important recommendations were made regarding the re-organisation of military areas, co-ordination of cadet and militia training, the formation of adequate reserves, decentralisation of control, and the establishment of a military business department.

War Railway Council.

A War Railway Council was established in 1911 for the administration of the railways for defence requirements; the council consists of military and railway officers of the several States. An Engineer and Railway Staff Corps has been formed also.

Aviation School.

The Defence Department has established an Aviation School; for the present it is proposed to instruct a limited number of officers and mechanics annually.

Royal Military College.

The Royal Military College of Australia was opened at Duntroon, near Queanbeyan, New South Wales, on 27th June, 1911, with 41 boys in residence, of whom 10 were from New Zealand. There are now 112 cadets in residence, including 17 from New Zealand. The College course extends over four years, the first two years being devoted primarily to civil subjects, the latter to military subjects; physical training, drills, musketry, signalling, and military exercises will be continuous during the whole four years, after which the

young officers will be attached for a short period to Imperial Forces in England or India. At the expiration of five years from the establishment of the Military College, only men who are graduates of the College will be appointed as officers of the permanent forces.

No fees are charged for maintenance and instruction, and each cadet receives 5s. 6d. per diem while in residence. Admission is by open competitive examination.

NAVAL DEFENCE.

In 1885 Australia, previously attached to the China and East Indies Naval Station, was constituted as a separate naval command. As an Imperial Naval base, New South Wales was accorded a large measure of naval protection, and prior to the Federation of the Australian Colonies, supplemented the Imperial Naval Forces by local organisations, such as the Naval Brigade and Naval Artillery Volunteers. Under agreement between the Australian Colonies and the Imperial Government, in 1891 and subsequent years, the Imperial vessels on the Australian Naval Station were reinforced by an auxiliary squadron of five third-class cruisers and two torpedo gunboats to assure protection to trade in Australasian waters. The agreement was renewed by the Commonwealth Government, in 1903, for a period of ten years, and by a subsequent arrangement it was agreed that the squadron provided by the Imperial Government for the Australian Station should consist of one first-class armoured cruiser, three second-class, and five third-class cruisers. The Australian Government contributed—to a maximum of £200,000 per annum—five-twelfths of the annual cost of maintenance, and the Government of New Zealand paid one-twelfth up to a maximum of £40,000 per annum.

Though connected immediately with the ports of Australia and New Zealand, the sphere of operations of this fleet extended to the Australian, China, and East Indies stations. One ship was kept in reserve, and three others, partly manned, were used as drill ships for training the Royal Naval Reserve, the remainder being kept in commission fully manned. The drill ships and one other vessel were manned by Australians and New Zealanders, paid at special rates, and controlled by officers of the Royal Navy and Royal Naval Reserve.

In 1908 the Commonwealth Government decided to raise an Australian naval force, and to build submarines and torpedo-boat destroyers for the protection of the Australian coast, and to replace the squadron of Imperial vessels maintained under the Naval Agreement; in pursuance of this policy contracts were made for the construction of three destroyers. Subsequently, at the Imperial Defence Conference in 1909, the Commonwealth Government undertook to provide a fleet unit consisting of one armoured cruiser, three second-class protected cruisers, three additional destroyers, and two submarines.

The destroyers, "Parramatta" and "Yarra," the first vessels of the Australian Navy, were built in Great Britain, and arrived in Australian waters during the latter part of the year 1910; the parts of the "Warrego" were imported and put together at Fitzroy Dock, Sydney, the vessel being launched on 4th April, 1911, and put into commission on 1st June, 1912.

The battle cruiser "Australia" and the light cruisers "Sydney" and "Melbourne" were completed and put into commission in 1913, and two submarines in 1914. The construction of the cruiser "Brisbane" and the destroyers "Torrens," "Swan," and "Derwent" is proceeding at the Commonwealth Government Dockyard at Cockatoo Island, Sydney, which was transferred from the New South Wales Government in February, 1913. Pending the completion of the "Brisbane," the cruiser "Encounter,"

of the Imperial Navy, was lent to the Commonwealth Government on 1st July, 1912. The following vessels also are attached to the Australian Navy :— The cruiser “Pioneer,” presented by the Imperial Government in 1913; two gunboats and two torpedo-boats commissioned in Australia for local defence prior to the naval agreement of 1890; and the boys’ naval training ship “Tingira.”

The Imperial naval establishments at Sydney were transferred to the Commonwealth on 1st July, 1913, and after the arrival in Sydney of the battle cruiser “Australia,” on 4th October, 1913, the Imperial war vessels on the Australian Station were transferred to New Zealand.

The boundaries of the Royal Australian Naval Station are :—On the north from 95° E. longitude by the parallel of 13° S. latitude to 120° E. longitude; thence north to 11° S. latitude; thence to the boundary with Dutch New Guinea on the south coast in about longitude 141° E.; thence along the coast of British New Guinea (Papua) to the boundary with German New Guinea in 8° S. latitude; thence east to 155° E. longitude; on the east by the meridian of 155° E. longitude to 15° S. latitude; thence to 28° S. latitude on the meridian of 170° E. longitude; thence south to 32° S. latitude; thence west to the meridian of 160° E. longitude; thence south; on the south, by the Antarctic Circle; on the west, by the meridian of 95° E. longitude.

Particulars regarding the vessels of the Royal Australian Navy are given in the following statement :—

Name.	Load Displacement.	Mean Draught.	Length.	Beam.	Indicated horse-power.	Measur d mile spec.d.	Armament.
	tons.	ft. in.	feet.	ft. in.		knots.	
Battle Cruiser— Australia ..	19,200	26 6	578	60 0	43,000	25	8 12-in. B.L., 16 4-in. Q.F., 4 Max., 5 Torpedo tubes.
Light Cruisers— Sydney ..	5,600	15 9	430	49 6	22,000	25.5	8 6 in. Q.F., 4 3-pr. Q.F., 4 Max., 2 21-in. Torpedo tubes.
Melbourne							
Brisbane* Encounter ..							
Pioneer ..	5,800	21 0	355	56 0	12,500	18	11 6-in. B.L., 9 12-pr., 2 18-in. Torpedo tubes.
Torpedo-boat Destroyers— Parramatta Yarra ..	2,300	13 0	305	37 0	7,000	18	8 4-in. B.L., 11 3-pr., 2 Torpedo tubes.
Warrego							
Derwent* Torrens* Swan* ..							
Gunboats— Protector ..							
Gayundah	700	8 6	245	24 3	9,500	27	1 4-in. B.L., 3 12-pr. Q.F., 3 18-in. Torpedo tubes.
Torpedo Boats— Countess of Hope- toun ..	920	..	180	30 0	1,641	14	1 6-in. B.L., 4 4-in. B.L., 2 12-pr. Q.F. 2 3-pr.
Childers ..	300	..	115	25 0	400	10.5	1 4-in. B.L., 2 12-pr. Q.F.
Submarines— A.E. 1‡ ..	75	..	..	..	..	..	3 Torpedo tubes
A.E. 2 ..							
Training Ship— Tingira† ..	47	..	..	..	..	..	2 Torpedo tubes
	800	..	176	23 3	..	17‡	4 21-in. Torpedo tubes
	1,800	..	..	..	..	..	.....

* In course of construction.

† Moored at Rose Bay, Port Jackson.

‡ Surface speed.

‡ Lost at sea September, 1914

In 1911 Admiral Sir Reginald Henderson visited Australia to advise the Commonwealth Government in the matter of naval defence. His recommendations involve the gradual acquisition of a fleet of fifty-two vessels, requiring a complement of some 15,000 men; the construction of docks; and the establishment of six naval bases and eleven sub-bases.

Towards the end of 1913, Sir Maurice Fitzmaurice, an engineering expert, visited Australia to advise the Commonwealth Government in the matter of naval bases.

On 1st March, 1911, under the provisions of the Naval Defence Act, 1910, a Naval Board was constituted, consisting of the Minister for Defence as President, three naval members, and a finance and civil member. This Board is charged with the administration of all matters relating to the Naval Forces of the Commonwealth, and subject to it is a separate Administrative and Instructional Staff, established under the orders of the Director of Naval Reserves, and including District Naval Officers, Sub-District Naval Officers, Instructors, &c., with District Headquarters at the Port of each State Capital, and Sub-District Headquarters at other Ports.

The District Naval Officer for New South Wales is responsible for the organisation and training of naval cadets, and has control of naval services within the State.

Appointments to the Administrative and Instructional Staff are made usually from the Permanent or Reserve Naval Forces of the Commonwealth.

Classification of Naval Forces.

The naval forces of the Commonwealth consist of the permanent naval forces; the partially-paid naval reserves (M), previously the naval militia; and the naval reserve (O), which includes the trainees under the universal training system. The permanent forces are those who engage for continuous service afloat and the Administrative and Instructional Staff.

The strength of the naval forces in New South Wales at the end of the last three years is shown below :—

Classification.	1911.	1912.	1913.
Permanent Forces—Administrative and Instructional	20	16	23
Naval Reserve (M)	289	280	177
Naval Reserve (O)—Adults	909	192	383
Cadets		911	896
Total	1,218	1,399	1,479

NAVAL TRAINEES.

The Defence Act provides that a proportion of the trainees under the universal training system is allotted to the naval forces, the navy having first choice in selection. The senior naval cadets in New South Wales are drawn chiefly from the maritime districts in the neighbourhood of Sydney and Newcastle. The senior cadets transferred to the adult forces in New South Wales numbered 264 in 1912; and 207 in 1913.

The number of naval trainees in New South Wales at 1st July, 1912-14 is shown below :—

Year.	Sydney.		Newcastle.	
	Adults.	Cadets.	Adults.	Cadets.
1912	158	780	37	204
1913	322	698	77	241
1914	416	714	115	261

NAVAL TRAINING SHIP.

The naval training ship "Tingira" was commissioned in June, 1912, when 100 boys, selected from the several States of the Commonwealth, commenced training. The ship is moored in Rose Bay, Port Jackson, and has accommodation for 300 boys. On the completion of their course on the "Tingira," the trainees will be drafted into the permanent naval forces. In March, 1914, the trainees numbered 182.

NAVAL COLLEGE.

As a site for the Royal Australian Naval College an area of territory at Jervis Bay was ceded to the Commonwealth by the Government of New South Wales. The College is in course of erection, and will be opened in 1915; pending its completion a temporary college was opened on 1st March, 1913, at Geelong, Victoria.

FACTORIES FOR DEFENCE SUPPLIES.

In order to render Australia self-contained in the matter of supplies for defence purposes, factories have been established throughout the Commonwealth for the manufacture of small arms, cordite, clothing, harness and leather accoutrements, and woollen fabrics.

The small arms factory, which was opened on 8th June, 1912, is situated at Lithgow, New South Wales; the factory site contains about 123 acres, and the buildings have a floor-space of nearly 2 acres

ROYAL NAVAL HOUSE.

The Royal Naval House, erected in Sydney exclusively for the accommodation of the men of the British Navy, was built in 1889, at a total cost inclusive of land, of £25,000, contributed by citizens and by the Government of New South Wales. A new wing was added, in 1908, at a cost of £8,600. The House contains large reading, smoking, dining, and billiard rooms, besides a gymnasium, and other accessories. Sleeping accommodation is available for 400 men. The institution is self-supporting, but an annual grant from the Government of New South Wales is devoted to maintaining the House during the absence of the Squadron from Sydney. It is now used by the petty officers and men of the Australian Navy.

This is the only establishment of its kind in Australasia, and is controlled by a Superintendent, a Committee elected by the Trustees from among their number, and a few Naval Officers, with an Honorary Secretary and Treasurer.

EXPENDITURE ON DEFENCE.

The expenditure on defence in Australia is controlled entirely by the Commonwealth Government. Separate figures cannot be shown for the State of New South Wales. The expenditure in Australia for the year 1913-14 was estimated as follows:—Army, £3,291,000; Navy, £2,456,000; Total, £5,747,000, equal to £1 3s. 7d. per inhabitant. The expenditure per inhabitant, taken from the latest estimates, were for Great Britain, £1 12s. 3d.; Germany, £1 1s. 5d.; France, £1 8s. 7d.; Italy, 12s. 9d.; United States of America, 12s.; Japan, 4s. 6d.; Canada, 4s. 5d.

The expenditure of the Defence Department of the Commonwealth during the four years ended 30th June, 1913, and the estimate for the year 1913-14 are shown below:—

Branch or Department.	1909-10.	1910-11.	1911-12.	1912-13.	1913-14, Estimate.
	£	£	£	£	£
Administrative—Central Administration	26,366	104,740*	289,558*	245,913*	267,854*
Naval Forces	63,143	96,291	248,738	608,955	869,494
Military Forces	853,420	947,948	1,172,871	1,386,647	1,680,457
Rent, Repairs, and Maintenance	29,621	42,782	46,765	58,779	64,114
Additions and New Works	81,430	177,623	244,520	396,312	567,830
Defence Arms, Equipment, etc.	196,481	273,387	561,596	551,895	500,500
Audit Office	954	1,140	1,180	1,298	1,381
Pensions and Retiring Allowances	781	965	2,969	1,121	1,130
Supervision of Public Works by State Officers	1,046	3,787	2,905	4,943	8,000
Naval Agreement	200,000	200,000	200,000	166,600	.....
Miscellaneous "Other"	21,539	232	.....	.....	.....
Fleet Unit	60,000	1,135,000	1,108,171	604,397	1,002,432
Naval Works and Armament .. .. .	.....	24,780	38,696	180,865	165,721
Interest and Sinking Fund on Transferred Properties .. .. .	.....	.....	162,132	122,561	143,030
Miscellaneous .. .. .	.....	.....	638	1,807	.....
Sites for Defence Purposes } Payable from Machinery, etc., Cockatoo Island } Loan. {	.....	.....	.....	.....	300,000
	.....	.....	.....	.....	175,000
Total	1,534,881	3,008,705	4,080,039	4,331,493	5,746,853

* Includes establishments under the control of the Central Administration.

POPULATION.

EARLY ENUMERATIONS.

INFORMATION regarding the population from the foundation of New South Wales in 1788, when Governor Phillip landed with 1,035 persons, until the first census in 1828, depends on the records of the enumerations or "musters," which were taken at frequent intervals on account of the dependency of the people on the public stores in those early years.

The growth of New South Wales for many years was very slow, and the population was diminished in 1803 by the formation of a settlement at Van Diemen's Land, now known as the State of Tasmania. The following table shows, as nearly as can be ascertained, the population of New South Wales, including Norfolk Island, at quinquennial intervals from the end of the year 1790 until the year 1825:—

Year.	Population.	Year.	Population.
1790	2,800	1810	10,100
1795	4,500	1815	13,300
1800	6,200	1820	25,300
1805	7,400	1825	33,500

Only the totals are given, since for the period of the "musters" very scanty details are available, the sexes of the children being unstated.

The first census was taken during the month of November, in the year 1828, the result showing a total of 36,598 persons, of whom 27,611 were males and 8,987 females, thus exhibiting a preponderance of the male sex.

The slow growth during the forty years to which the previous figures relate was followed by a rapid increase in population, induced by the steady development which resulted from the progressive public policy inaugurated during the governorship of Sir Richard Bourke. A system of immigration was introduced on a scale of annually increasing dimensions, which appeared in definite strength in the year 1832, so that at the end of 1833 the population had increased to 61,000, being an advance of 27,500 on the number for the year 1825, or at the rate of 82 per cent. for the period of eight years.

The population is shown below as at each census from 1828 to the year 1856, when Responsible Government was established:—

Date of Census.	Males.	Females.	Total.	Increase.	
				Number.	Per cent.
— Nov., 1828	27,611	8,987	36,598	.....	...
2 Sept., 1833	44,644	16,150	60,794	24,196	66.1
2 Sept., 1836	55,539	21,557	77,096	16,302	26.8
2 Mar., 1841	87,298	43,558	130,856	53,760	69.7
2 Mar., 1846	114,769	74,840	189,609	58,753	44.9
1 Mar., 1851 {	155,845	112,499	268,344	78,735	41.5
Victoria } Incl. Victoria }					
1 Mar., 1856 {	109,643	81,356	190,999	.....	...
Victoria } Excl. Victoria }					
1 Mar., 1856	150,488	119,234	269,722	78,723	41.2

The discoveries by explorers during the early period had opened vast areas of inland country to pastoral and agricultural occupation, and a system of assisted immigration, inaugurated in 1832, was energetically pursued. With the rapid expansion of settlement a great demand for labour was created, and the high rates of wages attracted a large influx of unassisted immigrants. The most powerful factor in promoting the development of Australia, however, was the discovery of rich gold-fields in 1851.

Victoria was founded in July, 1851, by the separation of the Settlement of Port Phillip, with a population of 77,345, from New South Wales. For the purposes of comparison, the population at the census of 1851 has been shown in the above table, both inclusive and exclusive of Victoria.

After the year 1856 there was yet another reduction in the territory of New South Wales, when, in 1859, Queensland, with a population of 16,907, was separated from New South Wales.

A further, though comparatively small, reduction of territory took place on 1st January, 1911, when the Federal Capital Territory, with a population of 1,724, was transferred to the Commonwealth.

CENSUS ENUMERATIONS, 1861-1911.

At the census taken in New South Wales on 7th April, 1861, the ascertained population was 350,860. Thereafter the numbers were determined decennially, the last census having been taken on 2nd April, 1911, when the population had increased to 1,648,746. This number does not include the population of the Federal Capital Territory, which was transferred to the Commonwealth of Australia on 1st January, 1911; and the inhabitants of which, at the census of 1911, were 997 males and 727 females, 1,724 persons, of whom 10 were aborigines. The population of New South Wales at each census period from 1861 to 1911 is stated below, also the estimated population as at 31st December, 1913. Aboriginal natives are included, except for 1861, when they were not enumerated; their number in 1911 was 2,012 (1,152 males and 860 females).

Year.	Males.	Females.	Total.	Numerical Increase.
1861	198,488	152,372	350,860	.....
1871	275,551	228,430	503,981	153,121
1881	411,149	340,319	751,468	247,487
1891	612,562	519,672	1,132,234	380,766
1901	712,456	646,677	1,359,133	226,899
1911	858,850	789,896	1,648,746	289,613
1913	962,749	869,707	1,832,456	183,710

The relative increase from census to census, may be measured according to the several methods shown in the following statement. In the first column, the population in 1861 is taken as a basis:—

Year.	Index Number of Population.	Increase since previous census.		Persons per square mile.
		For period.	Average annual rate.	
		per cent.	per cent.	
1861	100	.....	.....	1·12
1871	144	43·64	3·69	1·61
1881	214	49·11	4·08	2·41
1891	323	50·67	4·19	3·64
1901	387	20·04	1·84	4·38
1911	470	21·31	1·95	5·32
1913	522	11·14	3·92	5·92

The population has increased more than fivefold since 1861. The largest intercensal increase took place between 1881 and 1891, the average annual rate for that decennium being 4·19 per cent. After 1891 there was a considerable decline in the rate down to less than 2 per cent. during the succeeding two periods; but it is satisfactory to note that the annual rate

since the census of 1911 has shown great improvement. In 1861 the number of persons per square mile was 1.1, in 1891 it was 3.6, and in 1913 it was 5.9.

The following statement gives the population of each State of the Commonwealth at the last census, in comparison with the estimated population as at 31st December, 1913, and the average annual rate of increase during the period. The figures are exclusive of full-blood aborigines:—

State.	Census Population, 1911.	Estimated Population, December, 1913.	Proportion in each State.		Average Annual Rate of Increase since census, 1911.
			1911.	1913.	
New South Wales ...	1,646,734	1,830,444	per cent. 36.96	per cent. 37.53	per cent. 3.92
Victoria	1,315,551	1,412,119	29.53	28.99	2.61
Queensland	605,813	660,158	13.60	13.55	3.17
South Australia ...	408,558	440,047	9.17	9.04	2.74
Western Australia ...	282,114	320,634	6.33	6.58	4.77
Tasmania	191,211	201,675	4.29	4.14	1.96
Northern Territory ...	3,310	3,672	.08	.08	3.85
Federal Capital Territory	1,714	1,988	.04	.04	5.54
Commonwealth ...	4,455,005	4,870,787	100.00	100.00	3.30

The average annual increase of the Commonwealth since the census of 1911 has been 3.30 per cent. The rate was highest in Western Australia, 4.77 per cent., and New South Wales ranks next with 3.92 per cent.; Tasmania showed the lowest rate, 1.96 per cent. The population of New South Wales in 1913, represented 37.58 per cent. of the population of Australia as compared with 36.96 per cent. in 1911.

ESTIMATES OF POPULATION.

Reliable estimates of the population are required during the intercensal periods for many purposes affecting the welfare of the community. Apart from its value as the standard by which other statistics are measured, the population is used as the basis of important political and financial arrangements between the Government of the Commonwealth and the individual States, as, for instance, in the distribution amongst the States of the representation in the Federal Parliament, and in the determination of the amount of revenue to be paid back to each State by the Commonwealth.

The elements of increase of the population are the excess of births over deaths, which is termed "natural increase," and the excess of immigration over emigration. The registers of births and deaths ensure a reliable return of the natural increase, but it is unfortunate that the records of arrivals and departures are defective, as in a young and progressive country the element of migration is extremely variable.

The records of overland migration are not perfect, but they give with fair accuracy the gain or loss to the State across its borders. In the case of the sea traffic, however, the returns are less reliable, as there are persons whose departure is not recorded. The usual practice has been to assume that arrivals as recorded are correct, and to add to the recorded departures, as an allowance for unrecorded, a certain percentage of those departures, which was based on the experience of the preceding intercensal period. This method is not altogether satisfactory, as when the census is taken, it is found that the estimate differs more or less from the census figure, and it becomes necessary to adjust the estimated populations of all the years between censuses, so that they may not appear incompatible with the census results.

At different periods, Conferences of the Statisticians of the several States of Australia have been held for the purpose of devising a uniform method of estimating population; such a Conference was held in Sydney in March, 1912, and its resolutions were to the following effect:—

1. That as regards migration overland by rail, a count of the passengers on the railway trains is the best method, if carried out effectively.
2. That such count should be made under the supervision of the Railway Commissioners of the several States, and being of so continuous a character, such financial arrangements should be made as would enable the Railway Commissioners to ensure an accurate count.
3. That migration by road should be estimated at 10 per cent. of migration by rail.
4. That as regards the movement of population between the States by sea, it is evident that if an accurate statement be given of persons arriving, with ports of departures of same specified, then an accurate statement of departures can be obtained; but as it appeared that the returns of arrivals were not correct, especially as to the places from which the persons arriving came originally, the most satisfactory manner of ensuring exactitude would be to obtain periodically (without warning), lists of persons arriving in a port and, on the other hand, lists of persons embarking from all the ports for that port. These lists could be compared and the reasons for any discrepancy investigated.
5. That a similar course of action might be taken to ensure accuracy in regard to oversea migration.
6. That an interval of ten years between censuses is too long to enable inaccuracies in estimating population from year to year to be corrected, and an interim census, limited to sex and locality, at intervals of five years from the last recorded decennial census, was desirable.

The estimated population of New South Wales, including aborigines, at the end of each year since 1901, was as follows; the population of the Federal Capital Territory has been excluded since 1st January, 1911:—

Year.	Estimated Population at end of Year.			Annual Increase.		Mean Population.
	Males.	Females.	Total.	Numerical.	Per cent.	
1901	719,672	656,527	1,376,199	11,609	·85	1,366,900
1902	729,893	667,965	1,397,858	21,659	1·57	1,388,400
1903	738,493	678,386	1,416,879	19,021	1·36	1,407,400
1904	750,997	689,922	1,440,919	24,040	1·70	1,428,700
1905	765,161	703,992	1,469,153	28,234	1·96	1,454,800
1906	779,666	718,943	1,498,609	29,456	2·00	1,484,600
1907	795,635	736,345	1,531,980	33,371	2·23	1,517,900
1908	809,240	750,786	1,560,026	28,046	1·83	1,545,700
1909	829,329	767,356	1,596,685	36,659	2·35	1,577,200
1910	852,680	785,540	1,638,220	41,535	2·60	1,616,200
1911	889,391	809,345	1,698,736	62,240	3·80	1,664,500
1912	935,979	842,983	1,778,962	80,226	4·72	1,738,600
1913	962,749	869,707	1,832,456	53,494	3·01	1,809,400

SOURCES OF INCREASE.

The following statement shows the extent to which each source contributed to the growth of the population during the census periods from 1861; in calculating the increase from 1901 to 1911, the population of the Federal Capital Territory has been taken into consideration; aborigines are included:—

Period.	Increase.			Average Annual Rate of Increase.		
	By excess of Births over Deaths.	By excess of Immigration over Emigration.	Total Increase.	By excess of Births over Deaths.	By excess of Immigration over Emigration.	Total.
				per cent.	per cent.	per cent.
1861-71	106,077	47,044	153,121	2·68	1·27	3·69
1871-81	140,382	107,105	247,487	2·49	1·95	4·08
1881-91	211,301	169,465	380,766	2·51	2·05	4·19
1891-1901	226,676	223	226,899	1·84	...	1·84
1901-11	247,565	43,472	291,337	1·69	·32	1·96
1911 (April-Dec.)	22,923	27,067	49,990	1·85	2·19	4·04
1912	33,107	47,119	80,226	1·95	2·77	4·72
1913	32,402	21,092	53,494	1·82	1·19	3·01

The rate of natural increase fell steadily throughout each intercensal period, and reached its lowest point in 1903, when it was only half the average annual rate during the period 1861-71. The fall was caused by the declining birth-rate, as the death-rate has shown constant improvement. Since 1903, however, the rate of natural increase has risen and in 1912 it was the highest since 1893.

The migration increase advanced steadily during each period up to 1891. During the decade 1861-1871, after the excitement of the gold discoveries had abated, a reaction set in, and public interest was directed again to the pastoral and agricultural industries. The policy of encouragement and assistance to immigrants was continued, and the Crown Lands were thrown open to free selection. During the succeeding periods, the construction of railways and other public works increased the demand for labour; consequently, many persons were attracted to the State by the ease with which employment could be obtained and by the high rate of wages, notwithstanding that State-aided immigration practically ceased in 1886. Towards the end of the period 1881-91, expenditure, both State and private, was suddenly curtailed, and there was a scarcity of employment and consequent check to immigration. The year 1891 saw a cessation of immigration, and for the next decade the population progressed only by reason of the natural increase, as the excess of arrivals was only 223. The balance of migration was, moreover, affected by the rush of men to Western Australia after the discovery of gold in 1894, and by the departure of over 5,000 troops to the war in South Africa, from 1899 to 1901. After the war the troops returned to New South Wales, and in 1905, State assistance to immigrants was restored; consequently the experience of 1901-11 was an improvement on that of the ten years prior to 1901.

MIGRATION.

The next table shows the arrivals in, and departures from, New South Wales by sea and by land since 1901, allowance being made for those unrecorded :—

Year.	Arrivals.			Departures.		
	By Sea.	By Land.	Total.	By Sea.	By Land.	Total.
1901	76,139	87,474	163,613	72,758	101,100	173,858
1902	81,191	79,459	160,650	72,149	88,031	160,180
1903	70,570	81,773	152,343	67,525	85,266	152,791
1904	72,978	83,283	156,261	67,549	87,979	155,528
1905	74,165	98,134	172,299	69,606	98,982	168,588
1906	79,465	113,870	193,335	75,421	114,431	189,852
1907	101,125	140,213	241,338	90,748	143,004	233,752
1908	101,589	143,570	245,159	98,521	150,027	248,548
1909	106,310	144,199	250,509	92,504	149,275	241,779
1910	111,525	163,691	275,216	96,514	166,509	263,023
1911	141,667	198,458	340,125	111,295	197,088	308,383
1912	163,788	221,609	385,397	125,010	213,268	338,278
1913	146,749	234,441	381,190	123,184	234,914	358,098

There is a very large movement of population each year, but it can hardly be described as immigration or emigration in the popular sense in which those terms are used, and is largely due to the arrival and departure of tourists and business men. Of the total movement, 80 per cent. is with the other Australian States, and one-third of the movement with countries outside Australia is with New Zealand.

The net gain of population from various countries during the last thirteen years is shown in the following table :—

Year.	Other Australian States.	New Zealand.	United Kingdom.	China, India.	Other British Possessions.	Foreign Countries.	Total.
1901	(—) 12,665	1,238	(—) 775	(—) 132	(—) 807	2,896	(—) 10,245
1902	(—) 1,767	98	(—) 1,305	(—) 103	(—) 532	4,275	470
1903	(—) 1,251	807	(—) 1,070	(—) 324	(—) 2,133	2,635	(—) 448
1904	(—) 630	1,069	(—) 1,207	(—) 195	(—) 953	2,639	733
1905	1,724	2,346	(—) 837	(—) 11	(—) 940	1,429	3,711
1906	2,673	531	852	(—) 479	(—) 842	748	3,483
1907	2,610	387	3,288	(—) 565	1,119	747	7,586
1908	(—) 1,465	(—) 1,529	3,076	(—) 596	1,715	416	1,611
1909	(—) 4,547	5,228	8,291	33	(—) 1,368	1,093	8,730
1910	(—) 1,394	5,163	8,703	(—) 226	(—) 1,015	962	12,193
1911	5,710	8,415	15,380	78	(—) 844	3,003	31,742
1912	13,034	7,005	25,278	874	(—) 2,071	2,999	47,119
1913	2,094	2,517	17,316	359	(—) 2,390	1,196	21,092

(—) Signifies Loss.

The excess of arrivals from countries outside the Commonwealth during 1913 was 21,092. The excess of arrivals from New Zealand was 2,517, from South Africa 65, and there was a loss of 821 persons to Canada.

The most remarkable feature shown by the above table is the change in the movement of population with the United Kingdom. In the first five years of the period reviewed there was a substantial loss of population to that country, but since the revival of the assisted immigration policy in 1905 there has been a steadily increasing excess of arrivals, amounting in 1912 to 25,278. Owing to great improvement in labour conditions in Great Britain and keener competition among Oversea Dominions for British emigrants the gain from the United Kingdom in 1913 was less than in 1912.

STATE ASSISTED IMMIGRATION.

Recognising the need of a much more rapid increase in population, in order to develop the vast resources and latent wealth of the country, the State Government has made arrangements for the systematic advertisement throughout the United Kingdom of the advantages offered to immigrants. The cost to suitable immigrants of the passage to Australia is lessened by Government contributions. Residents of New South Wales may arrange, by nomination, assisted passages for relatives and friends desirous of settling in this State.

Under an agreement with the States, the Federal Government co-operates in the encouragement of immigration by undertaking the advertisement of the resources of Australia, while the selection of the immigrants is conducted by the representatives of the individual States, who also arrange the assisted passages.

From July, 1913, the Governments of New South Wales and Victoria arranged for conjoint action regarding the regulation and supervision of assisted immigration.

The number of persons assisted to immigrate since 1st January, 1906, is shown hereunder:—

Year.	Total Assisted Immigrants.			Nominated by Relatives or Friends in New South Wales (included in preceding).		
	Males.	Females.	Total.	Males.	Females.	Total.
1906	...	...	590	...	...	114
1907	...	...	2,917	...	...	490
1908	...	...	3,048	...	...	1,237
1909	...	...	4,308	...	...	1,979
1910	2,689	2,019	5,058	1,406	1,530	2,936
1911	3,880	4,042	9,922	3,647	3,279	6,926
1912	8,361	6,595	14,956	5,278	5,545	10,823
1913	4,180	5,680	9,860	3,335	4,997	8,332

Full details as to assisted immigration are shown in the chapter "Employment and Industrial Arbitration" of this Year Book.

LENGTH OF RESIDENCE IN AUSTRALIA.

The figures derived from the census returns show the population of New South Wales at 2nd April, 1911, exclusive of aborigines of full-blood, classified according to length of residence in Australia:—

Length of Residence in Australia.	Males.	Females.	Total.
Years.	No.	No.	No.
0—4	31,686	15,190	46,876
5—9	6,724	3,147	9,871
10—14	7,142	3,265	10,407
15—19	7,610	4,597	12,207
20—24	18,856	12,417	31,273
25—29	26,943	17,545	44,488
30—34	17,030	9,926	26,956
35—39	7,043	3,820	10,863
40—44	4,954	3,142	8,096
45—49	6,766	4,901	11,667
50—54	7,393	6,038	13,431
55—59	7,081	6,182	13,263
60—64	1,953	1,990	3,943
65—69	754	820	1,574
70—74	919	923	1,842
75 and over	143	196	339
Unspecified...	12,965	9,484	22,449
Australian born	691,736	685,483	1,377,219
Total ...	857,698	789,936	1,646,754

The rise and fall of immigration, as noted above, are reflected in this table, which shows that, exclusive of the Australian born, persons who had resided in Australia less than five years, that is, those who arrived since 1905, outnumbered those in any other five-year period; the next in numerical order were those who arrived during the years 1881-6, and whose period of residence was from 25-29 years. On the other hand, persons whose period of residence was from 5-9 years were exceeded by those in every other period up to 40 years.

DISTRIBUTION OF POPULATION.

The distribution of population, as estimated at 31st December, 1913, in various divisions—the metropolitan area, the country municipalities, the Shires, and the unincorporated part of the Western Division—is shown below; also the proportion in each division and the average population per square mile :—

Division.	Area.	Estimated population, 1913.		
		Total.	Proportion in each Division.	
	sq. miles.		per cent.	per sq. mile.
Sydney	5	115,900	6·3	23,180·0
Suburbs	180	609,500	33·3	3,386·1
Metropolis	185	725,400	39·6	3,921·1
Country Municipalities... ..	2,853	456,050	24·9	159·8
*Shires	180,531	633,000	34·5	3·5
Western Division (Part unincor- porated).	125,893	17,899	1·0	·1
Lord Howe Island	5	107	·0	21·4
Total, New South Wales	309,467	1,832,456	100	5·9

* The Ku-ring-gai Shire, area 36 sq. miles, population 12,140, is included with Suburbs of Metropolis.

The population of the Metropolis represents nearly two-fifths of the total population; one-quarter reside in the country municipalities, and nearly one-third in the other incorporated areas.

The area of the Federal Capital Territory transferred to the Commonwealth on 1st January, 1911, is about 900 square miles; at the last census the population, exclusive of aborigines, was 1,714 persons, or 1·9 per square mile. At 31st December, 1913, the estimated population was 1,988.

THE METROPOLIS.

The Metropolis includes Sydney, the forty municipalities which surround it, and the Ku-ring-gai Shire, as well as the islands of Port Jackson, and embraces an area of 185 square miles. The boundaries may be described roughly as follows: on the east, the sea-coast; on the south, the waters of Botany Bay and George's River; on the west, Hurstville, Canterbury, Enfield, Strathfield, Concord, and Ryde; on the north, Ryde, Eastwood,

Ku-ring-gai Shire, and Manly. The habitations within these limits are fairly continuous. The following statement shows, at the Census of 1911, and on 31st December, 1913, the population of each municipality of the metropolis, and of the Ku-ring-gai Shire :—

Municipality.	Population.		Municipality.	Population.	
	Census, April, 1911.	Estimated 31st Dec., 1913.		Census, April, 1911.	Estimated 31st Dec., 1913.
City of Sydney*	119,771	115,900	Manly	10,465	12,690
Alexandria ...	10,123	11,260	Marrickville ...	30,653	35,150
Annandale ...	11,240	12,320	Mascot	5,836	7,570
Ashfield	20,431	25,130	Mosman	13,243	15,980
Balmain	32,038	33,450	Newtown	26,498	28,010
Bexley	6,517	8,840	North Sydney ...	34,646	39,270
Botany	4,409	5,280	Paddington ...	24,317	26,000
Burwood	9,380	11,140	Petersham	21,712	23,690
Canterbury ...	11,335	19,370	Randwick	19,463	27,560
Concord	4,076	5,320	Redfern	24,427	25,340
Darlington ..	3,816	3,920	Rockdale	14,095	17,870
Drummoyne ...	8,678	11,650	Ryde	5,231	7,390
Eastwood	968	1,200	St. Peter's	8,410	10,120
Enfield	3,444	4,600	Strathfield	4,046	4,880
Erskineville ...	7,299	7,740	Vaucluse	1,672	2,070
Glebe	21,943	22,940	Waterloo	10,072	11,050
Homebush ..	676	930	Waverley	19,831	24,700
Hunter's Hill ..	5,013	5,290	Willoughby	13,036	17,650
Hurstville ...	6,533	9,120	Woollahra	16,989	19,200
Kogarah	6,953	10,480	Ku-ring-gai Shire	9,458	12,140
Lane Cove	3,306	4,170			
Leichhardt ...	24,254	27,020	Total ..	636,353	725,400

* Includes shipping and islands of Port Jackson.

The population of the Metropolis is rather unevenly distributed. Two-fifths of the inhabitants reside within an area of less than 7,000 acres, having a density from 30 to 90 per acre, while one-third occupy about 24,000 acres with an average density of 10, and the remainder are scattered over about 88,000 acres, which have a density of a little over 1 per acre.

POPULATION OF CHIEF CITIES.

In Australia.

A comparison of the population of the chief cities (including suburbs) of each State of the Commonwealth is shown below :—

Metropolis.	Census, 1911.			Estimated Population, 31st Dec., 1913.
	Males.	Females.	Total.	
Sydney	305,728	323,775	629,503	725,400
Melbourne	277,956	311,015	588,971	651,000
Brisbane	67,628	71,852	139,480	151,272
Adelaide	90,578	99,068	189,646	200,917
Perth	53,231	53,561	106,792	*
Hobart	18,487	21,450	39,937	39,948

* Not available.

The Census populations are exclusive of shipping, and for this reason the population of Sydney and suburbs differs from that shown in the previous table.

In other Countries.

The population of the chief cities of the United Kingdom and other countries is given in the subjoined table :—

City.	Year.	Population.	City.	Year.	Population.
London (Greater) ...	1912	7,251,358	Petrograd	1912	2,018,596
Liverpool	1913	756,533	Budapest	1910	880,371
Manchester	1913	730,976	Brussels	1912	663,647
Birmingham	1913	859,644	Amsterdam	1912	587,878
Glasgow	1913	1,021,500	Madrid	1910	571,539
Edinburgh	1913	320,300	Copenhagen	1911	556,388
Dublin (Registration Area)	1913	403,000	Rome	1911	542,123
Belfast	1913	396,000	Tokio	1912	2,099,181
Montreal	1912	652,533	Peking	1912	692,500
Calcutta	1911	896,067	New York	1910	4,766,893
Paris	1911	2,898,110	Chicago	1910	2,185,283
Berlin	1910	2,071,257	Buenos Aires	1913	1,487,442
Vienna	1910	2,031,498	Rio de Janeiro	1911	1,128,637

COUNTRY DISTRICTS OF NEW SOUTH WALES.

In the Metropolitan districts settlement at first followed the main roads, but with the establishment of the railway, the population settled within reach of the railway lines. In the coastal area, where the bulk of the people dwell, the development of the towns has more than kept pace with the general population. Thus, in the Valley of the Hunter, with its large agricultural and mining industries, population has made rapid strides. Newcastle and suburbs, for instance, increased from 7,810 in 1861, to 54,991 in 1901, the estimated population in 1913 being 57,650. The Illawarra district, rich in coal and pasture, and the dairy, maize, and sugar-growing districts of the Clarence and Richmond Rivers, have also increased largely in their urban population. A number of large industrial works have been established around Lithgow, which has become an important centre of the western coalfields.

The next statement shows, at the Census of 1911, and at 31st December, 1913, the population of the principal country municipalities of New South Wales :—

Municipalities.	Census, 1911.	Estimated Dec., 1913.	Municipalities.	Census, 1911.	Estimated Dec., 1913.
Albury	6,309	6,750	Lithgow	8,196	8,700
Armidale	4,738	5,220	Liverpool	3,933	3,950
Ballina	2,061	2,750	Maitland	11,313	11,900
Bathurst	8,575	8,650	Moroe	2,931	3,150
Bega	1,969	2,100	Mudgee	2,942	3,050
Broken Hill... ..	30,972	33,900	Murrumburrah	2,136	2,300
Casino	3,420	4,250	Murwillumbah	2,206	2,900
Cobar... ..	4,430	5,100	Narrabri	3,320	3,380
Cooma	2,063	2,100	Narrandera	2,374	2,800
Cootamoble	2,262	2,500	Newcastle	55,380	57,650
Cootamundra	2,967	3,200	Orange	6,721	7,100
Corowa	2,063	2,250	Parkes	2,935	3,200
Cowra	3,271	3,750	Parramatta	12,465	12,600
Deniliquin	2,494	2,600	Penrith	3,682	3,770
Dubbo	4,452	4,700	Quirindi	2,240	2,400
Forbes	4,436	4,900	Singleton	2,996	3,050
Glen Innes	4,080	4,400	Tamworth	7,145	7,600
Goulburn	10,023	10,100	Temora	2,784	3,400
Grafton	5,888	6,950	Tenterfield... ..	2,792	2,900
Gunnedah	3,005	3,200	Wagga Wagga	6,419	6,900
Hay	2,461	2,600	Wellington	3,958	4,200
Inverell	4,549	5,050	Windsor	3,466	3,570
Junee... ..	2,531	2,760	Wollongong	4,660	5,000
Katoomba	4,923	6,000	Yass	2,136	2,200
Kempsey	2,862	3,200	Young	3,139	3,400
Lismore	7,331	8,250			

None of these municipalities is densely populated, the most closely inhabited having only 12 persons per acre. Amongst the municipalities which show large increases since 1901, are Casino, Lismore and Murwillumbah, on the Northern Rivers; Cowra and Temora in districts where the cultivation of wheat and other crops is steadily extending; Lithgow, a rising industrial centre, and Katoomba, a popular tourist and health resort in the Blue Mountains.

SEX DISTRIBUTION.

The number of males in New South Wales has always exceeded the number of females. In the early days the disparity was very marked, but there has been a gradual tendency towards an equal sex distribution. The preponderance of males is due to immigration, as the natural increase of females is the higher. The distribution of the sexes at each census since 1861 was as follows :—

Year.	Proportion of Males.	Proportion of Females.	Males per 100 Females.
	per cent.	per cent.	No.
1861	56·57	43·43	130
1871	54·67	45·33	121
1881	54·86	45·14	121
1891	54·14	45·86	118
1901	52·42	47·58	110
1911	52·09	47·91	109
1913*	52·54	47·46	111

* Estimate.

From 1871 to 1881 the proportion of males remained constant at about 55 per cent., but immigration was checked towards the end of the next decade, and in 1891 the proportion of males had decreased slightly. During the following period there was very little immigration, and in 1901 the difference between the sexes had become less than at any previous period, the proportion of males being 52·42 per cent. or 110 males to every 100 females. According to official estimates, the proportion of males remained fairly constant from 1901 to 1907, but since that year it has decreased; at the Census of 1911, the percentages were—males 52·09, females 47·91, or 109 males to every 100 females. At the end of the year 1913, it is estimated that there were 111 males per 100 females.

AGE DISTRIBUTION.

The table below shows the number of persons, exclusive of aboriginals, at each quinquennial period of age up to 85 years, as at the Census of 1911, in comparison with the ages at the previous Census. The population of the Federal Capital Territory is excluded in 1911 :—

Age-Group.	1901.			1911.		
	Males.	Females.	Total.	Males.	Females.	Total.
Years.						
Under 5 ...	80,308	78,553	158,861	102,003	98,863	200,866
5—9... ..	84,189	81,946	166,135	85,137	83,120	168,257
10—14... ..	81,582	80,097	161,679	79,136	77,998	157,134
15—19... ..	70,423	70,736	141,159	82,981	81,015	163,996
20—24... ..	62,448	64,818	127,266	87,314	82,850	170,164
25—29... ..	56,273	56,043	112,316	76,430	72,390	148,820
30—34... ..	52,596	46,697	99,293	64,228	59,896	124,124
35—39... ..	52,335	41,593	93,928	55,121	50,708	105,829
40—44... ..	44,930	33,436	78,366	50,940	43,455	94,395
45—49... ..	33,338	24,001	57,339	46,638	37,583	84,221
50—54... ..	25,615	19,327	44,942	39,345	29,964	69,309
55—59... ..	19,634	15,376	35,010	27,544	20,905	48,449
60—64... ..	16,733	12,192	28,925	20,023	16,352	36,375
65—69... ..	13,005	9,237	22,242	15,370	13,014	28,384
70—74... ..	7,772	5,202	12,974	10,611	8,585	19,196
75—79... ..	3,578	2,844	6,422	6,658	5,242	11,900
80—84... ..	1,883	1,574	3,457	2,719	2,223	4,942
85 and over ...	800	678	1,478	1,010	1,070	2,080
Unspecified ...	2,563	491	3,054	4,490	3,803	8,293
All Ages... ..	710,005	644,841	1,354,846	857,698	789,036	1,646,734

In 1911 the males were in excess of the females in every age-group up to 85 years, though at the previous census there were more females at ages 15-19 years. With regard to persons aged 85 and over, in 1901 there were more males than females, but in 1911 there was a preponderance of females. Comparing the number of males and females at each year of age up to 21, there was very little difference between the sexes at the census of 1911; but the males were more numerous, except at age 12 years, when there was an excess of females.

The age constitution of the people has materially altered since 1901. The results of the census of that year show that the largest number at any age period was from 5 to 9 years, and the number in the first group—under 5 years—was also exceeded by the total between 10-14 years. At the census of 1911, the group under 5 years was numerically the greatest; the group 20-24 years ranks next, followed by 5-9 years; then 15-19 years. In the group 10-14 years, the actual number of both sexes decreased during the decade.

The following statement shows the proportion per cent. of the total population and of each sex in each age-group:—

Age-Group.	1901.			1911.		
	Males.	Females.	Total.	Males.	Females.	Total.
Years.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
Under 5	11·31	12·18	11·73	11·96	12·59	12·26
5—9	11·86	12·71	12·26	9·98	10·59	10·27
10—14	11·49	12·42	11·93	9·28	9·93	9·59
15—19	9·94	10·97	10·43	9·72	10·32	10·01
20—24	8·89	10·07	9·45	10·23	10·55	10·38
25—29	8·01	8·70	8·34	8·96	9·22	9·08
30—34	7·45	7·25	7·36	7·53	7·63	7·58
35—39	7·41	6·46	6·96	6·46	6·46	6·46
40—44	6·35	5·19	5·80	5·97	5·53	5·76
45—49	4·71	3·73	4·24	5·47	4·79	5·14
50—54	3·62	3·00	3·33	4·61	3·82	4·23
55—59	2·77	2·39	2·59	3·23	2·66	2·96
60—64	2·36	1·89	2·14	2·34	2·08	2·22
65—69	1·84	1·44	1·65	1·80	1·65	1·73
70—74	1·10	·80	·96	1·24	1·09	1·17
75—79	·51	·44	·47	·78	·67	·73
80—84	·27	·25	·25	·32	·28	·30
85 and over	·11	·11	·11	·12	·14	·13
All Ages	100·00	100·00	100·00	100·00	100·00	100·00

In this comparison, it will be seen that the percentage of the population contained in the groups from 5-19 years of both sexes was less in 1911 than at the previous census; and in the case of the males, there has also been a proportionate decrease in the groups 35-44 years, and from 60-69 years.

The following statement shows the population distributed in certain conventional groups; in order to account for the whole population the unspecified have been apportioned among the specified:—

Age-Group.	Number.			Proportion per cent.		
	Males.	Females.	Total.	Males.	Females.	Total.
Years.						
Under 5	102,179	99,014	201,193	11·91	12·55	12·22
5-14	164,555	161,365	325,920	19·19	20·45	19·79
15-64	554,306	498,293	1,052,599	64·63	63·15	63·92
65 and over	36,658	30,364	67,022	4·27	3·85	4·07
Total	857,698	789,036	1,646,734	100·00	100·00	100·00
School age, 6-13	130,128	127,925	258,053	15·17	16·21	15·67
Adults, 21 and over... ..	490,240	430,557	920,797	57·16	54·57	55·92
Military age, 18-44	370,632	.....	.....	43·21	.....	.....
Reproductive age, 15-44 ... ..	.....	392,692	.....	.....	49·77	.....

The adults represented 55·9 per cent. of the population and the children of statutory school age 15·7 per cent. as compared with 51·7 per cent., and 19·5 per cent. respectively in 1901.

BIRTHPLACES.

The great majority of the inhabitants of New South Wales are of British origin; at the last census, out of a total of 1,635,916 persons whose birth-places were ascertained, 1,603,287, or 98 per cent. were returned as having been born in the British Empire.

The following statement shows the results of the enumeration of the birth-places at the census of 1911, in comparison with the figures obtained at the previous census. Aboriginal natives of full-blood have been excluded:—

Birthplace.	1901.			1911.		
	Males.	Females.	Total.	Males.	Females.	Total.
Australasia—						
New South Wales	487,039	490,137	977,176	608,517	610,340	1,218,857
Victoria	30,358	25,661	56,019	42,701	34,835	77,536
Queensland	7,097	7,871	14,968	11,018	12,275	23,293
*South Australia	11,981	10,078	22,059	13,005	11,189	24,194
Western Australia	450	437	887	1,253	1,229	2,482
Tasmania	3,722	3,855	7,577	5,209	5,112	10,321
*Northern Territory ... ..	.....	.....	.....	12	5	17
Australia (undefined)	239	229	468	10,021	10,498	20,519
	540,886	538,268	1,079,154	691,736	685,483	1,377,219
New Zealand	5,425	5,164	10,589	7,290	6,667	13,953
	546,311	543,432	1,089,743	699,026	692,150	1,391,176
Europe—						
England (including Isle of Man)	76,187	49,930	126,117	75,015	47,448	122,463
Wales	2,254	1,368	3,622	2,791	1,591	4,382
Scotland	18,566	12,151	30,717	19,403	11,857	31,260
Ireland	30,463	29,482	59,945	24,098	22,558	46,656
Other European British Possessions	92	50	142	495	268	763
Austria-Hungary	594	73	667	520	116	636
Belgium	104	34	138	90	39	129
Denmark	1,150	216	1,366	1,083	214	1,297
France	1,354	453	1,787	935	412	1,347
Germany	6,344	2,288	8,632	5,323	1,918	7,241
Greece	357	35	392	764	58	822
Italy	1,243	334	1,577	1,332	391	1,723
Netherlands	191	21	212	202	35	237
*Norway	3,010	180	3,190	964	68	1,032
Portugal	120	8	128	77	7	84
Russia	1,022	240	1,262	1,218	318	1,536
Spain	65	39	104	90	44	134
*Sweden ... ..	.....	.....	.....	1,679	118	1,797
Switzerland	363	91	454	340	102	442
Other European Countries	60	23	83	134	50	184
	143,539	96,996	240,535	136,553	87,612	224,165

Birthplace.	1901.			1911.		
	Males.	Females.	Total.	Males.	Females.	Total.
Asia—						
British India and Ceylon	2,413	544	2,957	1,895	554	2,449
Other Asiatic British Possessions	130	30	160	200	59	259
China	9,890	103	9,993	7,509	100	7,609
Japan	161	17	178	125	14	139
Syria	467	272	739	448	307	755
Other Asiatic Countries	167	23	190	209	43	252
	13,228	989	14,217	10,386	1,077	11,463
Africa—						
*Mauritius	167	89	256	145	95	240
Union of South Africa	203	127	330	272	262	534
South Africa (undefined)	73	66	139	554	503	1,057
Other African British Possessions	26	9	35	28	10	38
Other African Countries	180	54	234	88	42	130
	649	345	994	1,087	912	1,999
America—						
Canada	820	243	1,063	852	280	1,132
Other American British Possessions	342	97	439	191	55	246
United States	2,156	908	3,064	1,844	890	2,734
Other American Countries	144	71	215	224	88	312
	3,462	1,319	4,781	3,111	1,313	4,424
Polynesia—						
Fiji	180	138	318	227	249	476
Other Polynesian British Possessions	72	42	114	90	60	150
New Caledonia	123	81	204	114	129	243
Other Polynesian Islands	432	103	535	245	90	335
	807	364	1,171	676	528	1,204
At Sea	1,100	867	1,967	817	662	1,479
Unspecified	909	529	1,438	6,036	4,782	10,818
Total	710,005	644,841	1,354,846	857,698	789,036	1,646,734

*In 1901, the Northern Territory is included with South Australia, and Sweden with Norway, and the figures for Mauritius include the Seychelles.

The natives of the British Empire resident in New South Wales at the census of 1911 numbered 1,603,287, as compared with 1,316,097 in 1901, the proportions of the total population whose birthplaces were specified being 98·0 per cent. and 97·2 per cent., respectively.

The Australasian-born increased from 1,089,743, to 1,391,182 during the decade, or from 80·5 per cent. to 85·1 per cent. of the total specified birthplaces. Of the other British, the most numerous were the English-born, 122,463; and Irish, 46,656; but both have decreased since the previous census. The natives of Scotland and Wales numbered 31,260 and 4,382, respectively, having slightly increased during the period.

In 1901 the foreign-born population numbered 35,344 persons, or 2·6 per cent., but had decreased to 31,150 persons, or 1·9 per cent. at the census of 1911; the Europeans numbered 18,641 persons, including natives of Germany, 7,241; Sweden, 1,797; Italy, 1,723; France, 1,347; Denmark, 1,297; Russia, 1,536; and Norway, 1,032. The Greeks increased from 392 to 822, but with the exception of smaller increases in those born in Italy, Netherlands, Russia, and Spain, the natives of the other European foreign countries have decreased since 1901.

Of the foreign Asiatics the most numerous were the natives of China, 7,609; Syria, 755; and Japan, 139; the numbers in 1901 being 9,993, 739, and 178, respectively. The persons born in the United States of America numbered 2,734, having decreased from 3,064 in 1901.

Over 82 per cent. of the foreign-born population were males.

The proportions of British and foreign-born inhabitants at each census since 1891 are shown below, the percentages of each sex in 1911 appearing separately:—

Birthplace.	1891.	1901.	1911.		
			Males.	Females.	Total.
	per cent.	per cent.	per cent.	per cent.	per cent.
British—					
New South Wales	64·58	72·20	71·45	77·82	74·51
Victoria	3·63	4·14	5·01	4·44	4·74
Queensland	·91	1·11	1·29	1·56	1·43
South Australia (including Northern Territory)	1·58	1·63	1·53	1·43	1·48
Western Australia	·04	·06	·15	·16	·15
Tasmania	·52	·56	·61	·65	·63
Australia (undefined)	·08	·03	1·18	1·34	1·26
New Zealand	·80	·78	·86	·85	·85
England and Wales	13·74	9·59	9·13	6·25	7·75
Scotland	3·28	2·27	2·28	1·51	1·91
Ireland	6·68	4·43	2·83	2·88	2·85
Other British Possessions	·44	·44	·58	·31	·45
	96·28	97·24	96·90	99·20	98·01
Foreign—					
Germany	·85	·64	·63	·24	·44
Other European	1·07	·84	1·11	·25	·70
China	1·17	·74	·88	·01	·47
Other Asiatic	·04	·08	·09	·05	·06
African	·03	·02	·01	·01	·01
American	·32	·24	·24	·12	·19
Polynesian	·06	·05	·04	·03	·03
	3·54	2·61	3·00	·71	1·90
At Sea	·18	·15	·10	·09	·09
Total (excluding unspecified) ...	100·00	100·00	100·00	100·00	100·00

The natives of New South Wales increased from 64·6 per cent. to 74·5 per cent., during the period under review, and the proportions from each of the other States, except South Australia, were larger than in 1891. The percentage of natives of the United Kingdom decreased from 23·7 to 11·5. The foreign-born residents represented 3·5 per cent. in 1891, 2·6 in 1901, and 1·9 in 1911.

At the date of the last census 108,631 natives of New South Wales were living in the five other States and in New Zealand, and 151,877 natives of the other States and of New Zealand were resident in New South Wales, so that the excess in New South Wales of immigrants from other parts of Australasia was 43,246 persons. The distribution in each State was as follows:—

State.	Natives of other States living in New South Wales.*	Natives of New South Wales living in other States.	Gain to New South Wales.	Loss to New South Wales.
Victoria	77,583	28,692	48,891	.....
Queensland	23,302	38,921	.....	15,619
South Australia	24,199	7,446	16,753	.....
Northern Territory	17	185	.....	168
Western Australia	2,483	17,224	.....	14,741
Tasmania	10,326	2,330	7,996	.....
New Zealand	13,967	13,833	134	.....
Total	151,877	108,631	43,246	.....

* Including the Federal Capital Territory.

The figures are necessarily exclusive of a large number of persons of Australian birth who did not specify the State where born, and for the purposes of the table the Federal Capital Territory has been included with New South Wales. The table shows a very large gain of persons from Victoria, the excess of Victorians in New South Wales being 48,891 persons. New South Wales also gained from South Australia, Tasmania, and New Zealand, but lost to Queensland, Western Australia, and the Northern Territory.

A comparison with the census years of 1891 and 1901 is supplied below, the Northern Territory being included with South Australia:—

State.	Natives of other States living in New South Wales.			Natives of New South Wales living in other States.		
	1891.	1901.	1911.	1891.	1901.	1911.
Victoria	40,768	56,019	77,583	19,775	22,404	28,692
Queensland	10,173	14,968	23,302	17,023	24,868	38,921
South Australia... ..	17,716	22,059	24,216	2,154	4,128	7,631
Western Australia	464	887	2,483	555	14,122	17,224
Tasmania	5,851	7,577	10,326	1,180	2,075	2,330
New Zealand	9,015	10,589	13,967	2,833	6,492	13,833
Total	83,987	112,099	151,877	43,520	74,089	108,631

The gain from Victoria and Tasmania has increased steadily in each period; from South Australia it has fluctuated, but in 1911 was slightly greater than in 1891, and the interchange with New Zealand has become more evenly balanced than formerly. The loss to Queensland has increased between each enumeration, from 6,850 in 1891, to 15,619 in 1911; during the intercensal period 1891-1901, there was a large excess of emigration to Western Australia in consequence of the development of the goldfields. The net gain to New South Wales from all the States and New Zealand was 43,246 in 1911, as compared with 38,010 in 1901 and 40,467 in 1891.

In connection with the gain or loss of population between the States the following table will be of interest to show the distribution of the Australian-born population throughout the six States of the Commonwealth as at the Census of 1911. The population of the Federal Capital Territory is included with New South Wales, and of the Northern Territory with South Australia :—

Natives of—	Residing in—						Total Australian-born Population.
	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	
New South Wales ...	1,220,234	28,692	38,921	7,631	17,224	2,330	1,315,032
Victoria ...	77,583	1,010,219	15,943	14,650	54,613	8,779	1,181,787
Queensland ...	23,302	4,402	382,216	1,046	3,666	432	415,064
South Australia ...	24,216	23,545	3,376	319,062	24,356	923	395,478
Western Australia ...	2,483	4,536	482	2,600	104,208	241	114,550
Tasmania ...	10,326	19,030	1,798	1,248	2,479	158,889	193,770
Australia, Undefined	20,575	18,521	3,959	5,529	2,504	903	51,991
Total, Australian-born ...	1,378,719	1,108,945	446,695	351,766	209,050	172,497	3,667,672.

Of the persons resident in the State where they were born the proportions are highest among the natives of New South Wales, 92·8 per cent. ; Queenslanders 92·1 per cent. ; and Western Australians 91 per cent. The proportions are much lower with regard to the Victorians, 85·5 per cent. ; Tasmanians, 82 per cent. ; and South Australians, 80·7 per cent. Of those resident outside the State where born, the natives of New South Wales are most numerous in Queensland and Victoria, the Victorians in New South Wales and Western Australia, the Queenslanders in New South Wales, the South Australians in Western Australia, New South Wales and Victoria, and the Tasmanians in Victoria and New South Wales. The natives of Western Australia, which is the most recently settled of the States, are not found in large numbers in any other State.

The proportion to the total population of each State of the people born in the State in which they were resident at the time of each census since 1891, of those born in the other States, and of the total Australian-born population are shown below :—

State of Enumeration.	Natives of State of Enumeration.			Natives of other States.			Australian-born Population.*		
	1891.	1901.	1911.	1891.	1901.	1911.	1891.	1901.	1911.
New South Wales ...	64·58	72·20	74·52	6·68	7·50	8·42	71·26	79·73	84·19
Victoria ...	62·68	73·23	77·44	5·71	5·37	6·15	68·39	78·67	85·61
Queensland ...	44·99	57·00	63·39	6·87	7·87	10·04	51·86	64·87	74·09
South Australia ...	68·22	74·97	78·49	3·28	4·64	6·68	71·50	79·87	86·53
Western Australia ...	56·02	28·64	36·79	6·18	40·36	36·13	60·20	69·04	73·80
Tasmania ...	73·88	79·44	83·77	4·34	6·57	6·70	78·22	86·01	90·95

* Includes persons of Australian birth who did not specify State in which born, and therefore have been excluded from preceding columns of this table.

PERSONS OF NON-EUROPEAN RACES.

Legislative measures to restrict the influx of coloured aliens were passed in New South Wales in the early days of self-government. Public feeling was first aroused by the entry of large numbers of Chinese, and the enactments imposed limitations only on the immigration of this race. Subsequently, however, the restrictive powers were extended to regulate the influx of all coloured aliens.

At the establishment of the Commonwealth the control of the conditions relating to immigration was transferred to the Federal Parliament. The Federal legislation relating to immigration restriction does not aim at the exclusion of the people of any particular race or colour, but of undesirable immigrants generally. Under its provisions no person is allowed to land who fails to pass a dictation test in any European language chosen by the Customs officers. This test has not been applied to any desirable immigrant of European nationality. Paupers, criminals, lunatics, and other persons likely to be a source of danger to public health or morals are excluded.

Provision is made also to prevent the immigration of labourers under contract to perform manual labour, if their arrival has any connection with an industrial dispute, or if the contract rate of wages is less than that current in the district where the work is to be performed.

In 1901 the Commonwealth Government passed an Act to prohibit the introduction of native labourers from the Pacific Islands. These labourers were employed in the sugar plantations, for the greater part in Queensland, but also in smaller numbers in the north coastal districts of New South Wales. Under this Act all agreements with the islanders were terminated at the end of the year 1906, and arrangements were made by the Government for their deportation.

At the Census of 1911, the number of persons in this State, of non-European race other than aboriginal, was 13,140, which represents a very small proportion—8 per 1,000—of the total population.

Race.	Full-blood.			Half-caste.			Total.
	Males.	Females.	Total.	Males.	Females	Total.	
Asiatic—							
Chinese	7,939	284	8,223	561	571	1,132	9,355
Hindus	1,119	63	1,182	72	64	136	1,318
Japanese	119	7	126	19	13	32	158
Syrians	654	540	1,194	20	25	45	1,239
Malays	28	1	29	9	2	11	40
Filipinos	7	1	8	6	3	9	17
Javanese	7	2	9	1	...	1	10
Cingalese	89	13	102	13	5	18	120
Afghans and Baluchis	50	2	52	1	1	2	54
Arabs	16	.....	16	3	1	4	20
Jews... ..	11	10	21	...	...	...	21
Turks	9	6	15	...	...	...	15
Other Asiatic	6	.....	6	...	...	...	6
African—							
Negroes	134	23	157	95	71	166	323
Egyptians	5	4	9	...	...	...	9
Other African	3	.....	3	...	...	...	3
American—							
Indians	5	.....	5	5	...	5	10
Other American	5	.....	5	2	...	2	7
Polynesian—							
Polynesian (so described)... ..	250	18	268	22	19	41	309
Papuans ... ..	.....	1	1	...	1	1	2
Maoris	37	18	55	12	12	24	79
Fijians	14	5	19	1	3	4	23
Indefinite ... ..	.....	2	2	...	...	...	2
Total	10,507	1,000	11,507	842	791	1,633	13,140

The most numerous of these races are the Chinese, who constitute 70 per cent. of the coloured aliens; the Hindus and Syrians follow in numerical order.

Chinese.

The Chinese were first attracted to the State by the gold discoveries, and at the census of 1861, they numbered 12,988, exclusive of half-castes, who were not enumerated until 1891. From 1861 to 1871, the number declined, probably on account of the diminution in the gold yield, and the discovery of richer gold-fields in the neighbouring States; but in 1878, there was a steady increase in the arrivals from China, which lasted until about 1888, when an effective check was given to the immigration of this race by means of the Chinese Restriction and Regulation Act of that year.

The following statement shows the number of Chinese in Australia, including half-castes, as recorded at each census since 1891. For the purposes of comparison the Federal Capital Territory has been included with New South Wales, and the Northern Territory with South Australia. At the census of 1911 there were 3 Chinese in the Federal Capital area and 1,339 in the Northern Territory:—

State.	1891.	1901.	1911.
New South Wales (including Federal Capital Territory) ...	14,156	11,263	9,358
Victoria	9,377	6,956	5,601
Queensland	8,574	9,313	6,714
South Australia (including Northern Territory)	3,997	3,455	1,698
Western Australia... ..	917	1,569	1,872
Tasmania	1,056	609	529
Total, Commonwealth	38,077	33,165	25,772

ABORIGINES.

The aborigines of Australia form a distinct race, and it may be presumed that the whole of them throughout the continent sprang from the same stock, although it is remarkable that their languages differ so greatly that tribes in close proximity are quite unable to understand each other, and almost every large community of natives has its own peculiar dialect. It is difficult to form a correct estimate of the numbers of the aborigines; but while there is reason to believe that formerly they were very numerous, there is evidence that of late years they have been decreasing rapidly.

Governor Phillip estimated the aboriginal population, about the year 1800, at 1,000,000 of whom about 3,000 lived between Broken Bay and Botany Bay. Although the latter estimate (3,000) was very likely correct, the quotation for the whole territory, being based on the supposition that the natural resources of the continent were as great as those of the land under his notice, was no doubt exaggerated.

The aborigines were never properly counted until the Census of 1891, when they were classed as full-blood and half-caste. In 1901 only the full-blood and nomadic half-caste were counted. According to the Commonwealth Constitution Act, in reckoning the quota to determine the number of members to which the State is entitled in the House of Representatives, aboriginal natives of Australia are not counted. It has been decided that only full-bloods are aborigines within the meaning of the Act, and, consequently, in 1901 and 1911 half-castes were included in the general population. At the

census of 1911 no attempt was made to enumerate the aborigines living in a purely wild state, and the number shown in the following table represents only those who were in the employ of whites, or were living in a civilised or semi-civilised condition in the vicinity of settlements of whites, at the date of census. In 1861 aborigines were not enumerated at all; in 1871 and 1881 the wandering tribes were passed over, and only those who were civilised or in contact with Europeans were enumerated and included in the general population. The numbers of full-blooded aborigines in New South Wales, enumerated at each census, are shown below; the figures for 1911 are exclusive of the Federal Capital Territory, where there were 10 aborigines—5 males and 5 females:—

Census.	Males.	Females.	Total.
1871	709	274	983
1881	938	705	1,643
1891	4,559	3,721	8,280
1901	2,451	1,836	4,287
1911	1,152	860	2,012

In 1891 the number of half-castes was 1,663 males and 1,520 females. In 1901 the number of both full-bloods and half-castes was 4,093 males and 3,341 females, and of these the number of nomads was 509—259 males and 250 females. In addition to the 2,012 full-bloods at the Census of 1911 there were enumerated 4,512 half-castes—2,335 males, and 2,177 females.

The Board for the Protection of Aborigines has been constituted to safeguard the interests of the aboriginal population in New South Wales, and reserves have been set apart in different parts of the State, where they are provided with dwellings and means of livelihood. The residents on these stations are encouraged, as far as practicable, with a supply of tools and seed, to farm the land to its best advantage, and the children are educated. Under an Act passed in 1909 the control of the reserves is vested in the Board, and their powers of administration considerably amplified with a view of ameliorating the conditions of the race. Particulars relating to the operations of the Board will be found in the chapter entitled "Social Condition."

A comparison of the number of aborigines of full blood and half-castes in each State and Territory of the Commonwealth of Australia at the census of 1911 is afforded in the following table:—

States and Territories.	Full-bloods.			Half-castes.		
	Males.	Females.	Total.	Males.	Females.	Total.
States—						
New South Wales	1,152	860	2,012	2,335	2,177	4,512
Victoria	103	93	196	237	210	447
Queensland	5,145	3,542	8,687	1,361	1,147	2,508
South Australia	802	637	1,439	346	346	692
Western Australia	3,433	2,936	6,369	760	715	1,475
Tasmania	2	1	3	123	104	227
Territories—						
Northern Territory	743	480	1,223	117	127	244
Federal Capital Territory ...	5	5	10	4	4	8
Total, Commonwealth...	11,385	8,554	19,939	5,283	4,830	10,113

NATURALISATION.

Under the Commonwealth Naturalisation Act, which came into operation on 1st January, 1904, the issue of naturalisation certificates became a function of the Commonwealth Government. Any person is deemed to be naturalised who had, before the passing of the Act, obtained a certificate of naturalisation in any State.

An applicant must furnish a statutory declaration giving his name, age, birth-place, occupation, residence, the length of his residence in Australia, and stating that he intends to settle in the Commonwealth; also a certificate signed by some competent person that the applicant is of good repute.

It is enacted also that any person resident in the Commonwealth, other than British subjects and aboriginal natives of Asia, Africa, or the islands of the Pacific, excepting New Zealand, who intends to settle in the Commonwealth, and who has resided in Australia continuously for two years immediately preceding the application, or who has obtained a certificate of naturalisation in the United Kingdom, may apply to be naturalised.

The Governor-General, in his discretion, may grant or withhold a certificate of naturalisation; the certificate will not be issued until the applicant has taken an oath of allegiance.

Any person to whom a certificate of naturalisation is granted is entitled to the same rights and privileges, and is subject to the same obligations as a natural-born British subject, provided that where, by the provisions of any Commonwealth or State Constitution or Act, a distinction is made between the rights of natural-born British subjects and naturalised persons, the rights conferred by the Commonwealth Act are only those to which naturalised persons are entitled.

An alien woman who marries a British subject is deemed to be naturalised thereby. Any infant, not a natural-born British subject, whose father has been naturalised, or whose mother is married to a natural-born British subject or to a naturalised person, and who has at any time resided in Australia with such father or mother, is also deemed to be naturalised.

The number of naturalisation certificates issued in each State during the last ten years is shown below:—

State.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.
New South Wales	1,379	544	475	458	396	644	665	565	565	603
Victoria	319	213	301	214	243	507	329	491	295	434
Queensland	115	150	177	193	377	378	333	469	464	525
South Australia ...	25	34	45	27	45	600	299	282	343	355
Western Australia	248	166	150	134	152	221	187	248	243	342
Tasmania	21	11	39	16	28	81	36	22	35	30
Northern Territory	...	...	...	...	...	...	...	...	...	2
Total	2,107	1,118	1,187	1,042	1,241	2,431	1,849	2,077	1,945	2,291

Since 1849, certificates have been granted in New South Wales to 15,106 persons. Germans numbered 6,032; Swedes, 1,509; Danes, 943; Italians, 862; Russians, 898; and French, 694. No Chinese have been naturalised in New South Wales since 1887, but prior to that year 908 had obtained certificates.

The following table shows the birth-places of the persons resident in New South Wales to whom Commonwealth certificates of naturalisation were granted during each of the last ten years :—

Birth-places.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.
Austria	48	40	18	13	15	22	16	21	19	38
Denmark	96	23	31	31	24	39	50	38	39	50
France	69	36	14	27	17	37	57	35	26	24
Germany	412	170	154	163	140	217	213	190	160	177
Greece	53	33	27	19	15	34	37	24	30	23
Italy	116	58	44	51	38	66	53	40	40	32
Norway	111	32	28	20	13	34	39	23	28	45
Russia	148	11	18	10	40	62	50	42	44	77
Sweden	226	58	69	54	56	55	81	60	87	67
Switzerland... ..	24	11	6	15	8	11	14	7	14	13
Other European	45	36	18	11	22	27	28	23	20	36
United States	26	10	20	16	8	24	24	26	23	17
Syria ... ..	...	...	...	3	...	...	...	...	...	1
Others	5	26	28	25	...	16	3	36	35	3
Total	1,379	544	475	458	396	644	665	565	565	603

Records of the occupations of persons naturalised show that labourers, seamen, miners, and farmers were the most numerous.

The naturalised British subjects in Australia, as recorded at the Census of 1911, numbered 52,951, of whom 39,683 were males and 13,268 were females :—

State.	Naturalised British Subjects.		
	Males.	Females.	Total.
New South Wales... ..	11,333	2,808	14,141
Victoria	8,445	2,182	10,627
Queensland	11,025	5,562	16,587
South Australia	4,141	1,763	5,904
Western Australia	3,544	646	4,190
Tasmania	734	298	1,027
Northern Territory	457	13	470
Federal Capital Territory..	4	1	5
Total	39,683	13,268	52,951

VITAL STATISTICS.

NOTE.—Vital statistics of New South Wales are published in detail in the special reports issued annually by the Statistician. The Federal Capital Territory having been transferred to the Commonwealth on 1st January, 1911, the figures herein relate only to the State of New South Wales, exclusive of that territory.

REGISTRATION OF BIRTHS, DEATHS, AND MARRIAGES.

Civil registration of births, deaths, and marriages was inaugurated in New South Wales in March, 1856, when a general registry was established, and a Registrar-General appointed by the Governor. The laws relating to registration were consolidated by the Registration of Births, Deaths, and Marriages Act, 1899, and the acts relating to marriage by the Marriage Act, 1899.

New South Wales has been divided into registry districts, in each of which a District Registrar has been appointed; there are 214 District Registrars, of whom 76 are private persons, 16 Postmasters, 84 Clerks of Petty Sessions, 29 Crown Lands Agents and Clerks of Petty Sessions, and 9 Police Officers.

All births must be registered within sixty days by the parent. After the expiration of sixty days, no birth may be registered unless within six months a declaration is furnished by the parent or by some person present at the birth. Within six months of the arrival in New South Wales of a child under the age of 18 months, born outside the State, and whose parents intend to reside in New South Wales, the birth may be registered upon declaration by the parent.

Notice of the death of any person must be supplied to the District Registrar by a relation of the deceased or the householder or tenant of the house or place in which the death occurs.

Masters of British vessels arriving at any port in New South Wales must furnish to the District Registrar particulars regarding any birth or death which has occurred on board the ship whilst at sea.

Marriages may be celebrated only by District Registrars or by ministers of religion registered for that purpose by the Registrar-General. In the former case, the parties to be married must sign, before the Registrar of the district in which the intended wife ordinarily resides, a declaration that they conscientiously object to be married by a minister of religion, or that there is no minister available for the purpose of performing the marriage.

Within one month after a marriage the Minister must transmit the original certificate to the Registrar-General or District Registrar.

Any party to an intended marriage, not being widowed, who is under 21 years of age, must furnish the written consent of the father, if within New South Wales, or if not, of a guardian appointed by him, or, if there is no such guardian in the State, of the mother. Where there is no such parent or guardian in New South Wales, or if he or she is incapable, by reason of distance, habitual intoxication, or mental incapacity, the written consent may be given by a Justice of the Peace who has been appointed by the Supreme Court as a guardian of minors.

Marriage with a deceased wife's sister is valid in New South Wales.

Marriages between Quakers or Jews may be celebrated according to their respective usages, but certificates of such marriages must be transmitted to the Registrar within ten days.

No fee is charged for the registration of a birth, marriage, or death; but for a certified copy of the entry in the Register, a fee of 2s. is charged; for a search in any index 5s.; and for a marriage performed by a Registrar, £1.

CONJUGAL CONDITION.

The proportion of married persons in New South Wales is about one-third of the total population, as will be seen from the following statement, which shows the conjugal condition of the people at the Census of 1911 :—

Conjugal Condition.	Number.			Proportion per cent.		
	Males.	Females.	Total.	Males.	Females.	Total.
Never married	556,350	467,603	1,023,953	65·00	59·30	62·27
Married	275,428	276,216	551,644	32·18	35·03	33·54
Widowed... ..	22,887	43,571	66,458	2·67	5·52	4·04
Divorced	1,230	1,190	2,420	·15	·15	·15
Not stated	1,803	456	2,259	...	...	...
Total	857,698	789,036	1,646,734	100·00	100·00	100·00

The number of males never married is much greater than the females, the proportion of the total population being 65 per cent. for the males and 59·3 per cent. for the females. The married women are more numerous than the married men, but the difference is slight. The large excess of widows over widowers is due to the greater mortality amongst men, and to the fact that widowers re-marry more often than widows.

The proportions per cent. of the never-married, married, and widowed at each census since 1861 are shown below. The divorced are not included on account of the smallness of the numbers, and because they were not enumerated prior to 1891 :—

Census.	Males.			Females.		
	Never Married.	Married.	Widowed.	Never Married.	Married.	Widowed.
1861	69·34	28·23	2·43	61·09	35·14	3·77
1871	69·96	27·59	2·45	62·89	32·82	4·29
1881	70·64	26·94	2·42	63·52	31·75	4·73
1891	69·78	27·41	2·78	62·87	32·11	5·00
1901	68·46	28·69	2·75	62·43	32·00	5·46
1911	65·00	32·18	2·67	59·30	35·03	5·52

This table shows that the proportion of never married of each sex increased at each census up to 1881, but decreased from 1881 to 1911, the decrease being most marked between 1901 and 1911. The married, as might be expected, showed a contrary tendency. The proportion of widowers has been fairly constant, and that of the widows has increased.

A comparison of the conjugal condition of the people at various periods of age, at the Censuses of 1901 and 1911, shows that the proportion of un-married males has decreased, the proportion of married males has increased at every age, and the proportion of widowers is slightly lower in every group. With regard to the females the decrease in the proportion never married has taken place in the age-groups 15-29 years, as there has been an increase at all ages over 30 years. The married females in 1911 showed a proportionate increase in every group except 30-49 years, at which ages they have decreased. The widows have decreased in proportion in every age-group, but as the decrease has been smallest at the older ages when the proportion is high, the proportion at all ages, 5·52 per cent., is about the same as at the Census of 1901.

The following table shows the conjugal condition of the people as at the Census of 1911, classified according to ages. The greatest number of married males was at the age period 30-34 years, and the greatest number of married females at ages 25-29 years:—

Ages.	Never Married.		Married.		Widowed.		Divorced.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
Years.								
Under 15	266,274	259,975	2	6	...	...	...	...
15-19	82,580	77,091	398	3,833	3	13	...	1
20-24	74,733	55,492	12,203	27,031	95	198	11	39
25-29	43,591	28,428	32,188	43,113	435	663	66	141
30-34	24,109	15,893	39,083	42,598	762	1,208	149	171
35-39	15,822	10,099	37,919	38,382	1,108	1,990	162	212
40-44	12,549	6,883	36,530	33,446	1,556	2,893	181	214
45-49	10,249	4,559	34,102	28,728	2,014	4,108	199	170
50-54	8,085	3,060	28,425	22,037	2,567	4,732	184	119
55-59	5,197	1,773	19,569	14,173	2,622	4,907	112	43
60-64	3,850	1,297	13,400	9,535	2,652	5,487	71	28
65-69	2,804	945	9,680	6,177	2,810	5,804	44	20
70-74	2,270	504	5,801	3,191	2,496	4,878	20	7
75-79	1,395	259	3,212	1,370	2,027	3,602	7	8
80-84	532	101	1,095	397	1,084	1,720	6	...
85 and over	221	59	298	110	486	895	4	1
Unspecified	2,089	1,185	1,523	2,089	170	413	14	16
Total	556,350	467,603	275,428	276,216	22,887	43,571	1,230	1,190

PROPORTION PER CENT. IN EACH AGE GROUP.

Years.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
Under 15	100-00	100-00	0-00	0-00	...	...	...	...
15-19	99-52	95-25	4-8	4-73	0-00	0-02	...	0-00
20-24	85-86	67-05	14-02	32-66	1-11	2-4	0-01	0-05
25-29	57-15	39-29	42-20	59-59	5-7	9-2	0-08	0-20
30-34	37-61	26-55	60-97	71-15	1-19	2-02	0-23	0-28
35-39	28-76	19-93	68-93	75-73	2-01	3-92	0-30	0-42
40-44	24-69	15-85	71-89	77-00	3-06	6-66	0-36	0-49
45-49	22-01	12-14	73-24	76-48	4-33	10-93	0-42	0-45
50-54	20-59	10-22	72-40	73-58	6-54	15-80	0-47	0-40
55-59	18-90	8-48	71-16	67-83	9-53	23-48	0-41	0-21
60-64	19-28	7-93	67-09	58-33	13-28	33-57	0-35	0-17
65-69	18-28	7-27	63-11	47-49	18-32	45-09	0-29	0-15
70-74	21-44	5-88	54-79	37-19	23-58	56-85	0-19	0-08
75-79	21-01	4-95	48-37	26-15	30-52	68-75	0-19	0-15
80-84	19-58	4-55	40-30	17-90	39-90	77-55	0-22	...
85 and over	21-90	5-54	29-53	10-33	48-17	84-04	0-40	0-09
All Ages...	65-90	59-30	32-18	35-93	2-67	5-52	0-15	0-15

MARRIAGES.

The number of marriages celebrated in New South Wales during 1913 was 16,311, corresponding to a rate of 9.91 per 1,000 of the population. The number was the highest recorded in any year except 1912, and the rate was exceeded in 1911 and 1912, but otherwise is the highest since 1864.

The following table shows the average annual number of marriages and the rates per 1,000 of the population during each quinquennium since 1870 :—

Period.	Average Number of Marriages.	Rate per 1,000 of Population.	Period.	Average Number of Marriages.	Rate per 1,000 of Population.
1870-74	4,091	7.77	1900-04	10,240	7.37
1875-79	4,987	7.88	1905-09	12,080	7.97
1880-84	6,738	8.39	1910	14,294	8.85
1885-89	7,679	7.67	1911	15,267	9.17
1890-94	7,954	6.80	1912	16,664	9.58
1895-99	8,700	6.74	1913	16,311	9.01

Until the year 1891 the increase in the number of marriages was remarkably steady, very few checks being experienced, but in 1892 there was a sudden decline, which continued until 1895, when the figures again took an upward movement, but the proportion married per 1,000 of the population did not reach the 1891 level until 1900. In 1901 the rate was the highest since 1886, but in the next two years it again declined greatly. From 1904 to 1912, however, there was a constant improvement. Compared with the rates of the quinquennium 1905-09, the marriage rate of 1913 disclosed an advance of about 13 per cent.

A more exact method of stating the marriage rate is to compare the marriages with the number of marriageable males and females in the community, since the marriage rate is mainly a function of age.

Experience shows that of the bachelors marrying in New South Wales only $4\frac{1}{2}$ per cent. are outside the ages 20-44, and of the spinsters less than $1\frac{1}{2}$ per cent. are outside the ages 15-39. These have, therefore, been adopted as the marriageable ages of the sexes, and the following table shows, at quinquennial intervals since 1871, the proportion of bachelors and of spinsters married, per 1,000 unmarried males and females within the specified groups :—

Year.	Proportion of Bachelors married per 1,000 unmarried males aged 20 to 44.	Proportion of Spinsters married per 1,000 unmarried females aged 15 to 39.	Year.	Proportion of Bachelors married per 1,000 unmarried males aged 20 to 44.	Proportion of Spinsters married per 1,000 unmarried females aged 15 to 39.
1871	65.60	87.07	1901	65.92	62.69
1876	64.78	83.66	1906	65.32	62.87
1881	65.21	82.32	1911	79.25	75.03
1886	65.08	82.81	1912	86.19	80.12
1891	57.85	71.28	1913	81.03	75.48
1896	54.65	58.13			

Up to 1896 the female rate was the higher, but since that year the male rate has exceeded the female, probably on account of the increase in the proportion of females in the population. The rates for both sexes were fairly constant until the year 1886; during the succeeding decennium there was a heavy drop, and the year 1896 showed the lowest rate for both males and females. There was a large increase from 1906 to 1912, but the rate declined in 1913 as compared with the previous year. Nevertheless, the male rate was 24 per cent. higher, and the female rate 20 per cent. higher, than in 1906.

The marriage rate is an intimate reflex of the comparative prosperity of a country; also, a high marriage rate indicates a considerable proportion of marriageable persons in the community. From either point of view the augury in respect of New South Wales must be regarded as highly favourable.

The following statement shows the marriage rate per 1,000 of the population in each State of the Commonwealth of Australia, New Zealand, and in a number of other countries, during the last six years:—

State.	1908-1912.	1913.	Country.	1907-1911.	1912.
South Australia ...	9.08	9.44	Roumania	9.7	8.6
<i>New South Wales</i> ...	8.83	9.01	Hungary	9.1	8.6
Queensland	8.14	8.68	Prussia	8.0	8.0
Tasmania	7.77	8.27	France	7.9	7.9
New Zealand	8.59	8.25	England and Wales ...	7.6	7.8
Western Australia ...	8.01	8.19	Italy	7.9	7.6
Victoria	7.95	8.13	Netherlands	7.2	7.5
			Austria	7.6	7.4
			Denmark	7.4	7.3
			Spain	7.1	7.3
			Scotland... ..	6.7	6.9
			Norway	6.1	6.2
			Sweden	6.0	5.9
			Ireland	5.2	5.3

South Australia has the highest marriage rate in Australasia, followed closely by New South Wales, with Victoria last on the list. In 1913 in all the States except Tasmania the rates showed an improvement as compared with the experience of the quinquennium 1908-12.

A comparison of the marriage rates of various countries may be misleading, on account of the different conditions of life prevailing, and the varying number of marriageable persons therein. With few exceptions, the rates are lower than in New South Wales.

MARK SIGNATURES IN MARRIAGE REGISTERS.

The number of persons who signed the marriage register with marks in the year 1913 was 162, equal to 4.97 per 1,000 persons married. The number of mark signatures has steadily declined for many years past. In 1870 the proportion of signatures made with marks was as high as 18.23 per cent. of the whole, the decrease in illiteracy being therefore highly satisfactory.

MARRIAGES, IN RELIGIONS.

Of every hundred marriages performed in New South Wales, about ninety-eight are celebrated by ministers of religion. The actual figures for 1913 show that during that year 15,990 marriages were performed by Ministers of Religion, and 321 by District Registrars, giving the proportions of 98.03 per cent. and 1.97 per cent. respectively.

The Church of England performs the largest number of marriages, the Roman Catholic Church coming next, followed by the Methodist and Presbyterian Churches. The Registrar-General, in the year 1907, refused to renew the licenses of certain ministers of religion who performed marriages at matrimonial agencies, and such institutions no longer exist in New South Wales.

The following table shows the number and proportion per cent. of marriages registered by the several denominations during 1913, in comparison with the preceding five years:—

Denomination.	1907-12.		1913.	
	Marriages.	Proportion per cent.	Marriages.	Proportion per cent.
Church of England ...	29,474	40·98	6,746	41·36
Roman Catholic ...	12,956	18·02	2,887	17·70
Presbyterian ...	9,839	13·68	2,278	13·96
Methodist ...	9,047	12·58	2,332	14·30
Congregationalist...	5,620	7·82	887	5·44
Baptist ...	1,160	1·61	286	1·75
Hebrew ...	204	·28	52	·32
All other Sects ...	2,175	3·03	522	3·20
District Registrars ...	1,440	2·00	321	1·97
Total Marriages ...	71,915	100·00	16,311	100·00

In 1913 all the denominations showed an increased rate as compared with the previous five years except the Roman Catholic and Congregational.

CONDITION BEFORE MARRIAGE.

During the year 1913, of the males married, 15,349 were bachelors, 849 were widowers, and 113 were divorced. Of the females, 15,353 were spinsters, 782 were widows, and 176 were divorced. The proportion of males re-married was 5·90 per cent., and of females 5·87 per cent.

The following table shows at quinquennial intervals since 1881 the proportion of first marriages and re-marriages per 10,000 males and females respectively:—

Period.	Bachelors.	Widowers and Divorced Men.	Spinsters.	Widows and Divorced Women.
1881	9,087	913	9,044	956
1886	9,137	863	9,156	844
1891	9,229	771	9,216	784
1896	9,184	816	9,172	828
1901	9,270	730	9,268	732
1906	9,262	738	9,352	648
1911	9,407	593	9,456	544
1912	9,393	607	9,396	604
1913	9,410	590	9,413	587

AGE AT MARRIAGE.

Of the 16,311 couples married in 1913, the ages of 16,307 bridegrooms and of 16,306 brides were recorded. An examination of the figures shows that in 71·3 per cent. of the marriages the husband was older than the wife; in 9·8 per cent. the ages of the contracting parties were the same; while in the remaining 18·9 per cent. of the unions the bride was older than the bridegroom.

The results of a tabulation of the respective ages of bridegrooms and brides in 1913 are shown in the following table:—

Ages of Bridegrooms.	Ages of Brides.											Total.	
	Under 18	18	19	20	21 — 24	25 — 29	30 — 34	35 — 39	40 — 44	45 — 49	50 and over.		Not stated
Under 18 years	8	4	..	..	2	..	..	..	..	..	..	..	14
18 years	22	12	13	7	13	3	..	1	..	..	..	..	71
19 „	60	42	45	29	38	7	..	..	..	..	..	..	221
20 „	57	84	78	57	101	17	5	..	..	..	..	..	399
21—24	319	424	483	530	2,503	626	84	17	4	1	..	..	4,996
25—29	142	193	243	337	2,324	1,865	421	82	19	4	1	1	5,632
30—34	37	43	74	78	683	942	519	139	28	7	2	..	2,552
35—39	8	15	21	21	132	335	285	204	58	18	3	..	1,150
40—44	3	3	5	3	56	111	128	114	55	21	8	..	507
45—49	3	1	3	..	18	49	54	70	50	49	22	..	319
50 and over .. .. .	..	1	..	1	10	25	49	65	75	79	140	..	446
Not stated .. .. .	..	..	..	..	..	..	..	..	..	..	..	4	4
Total	659	822	970	1,063	5,930	3,981	1,545	692	239	179	176	5	16,311

The following statement shows the average age at marriage both of bridegrooms and brides for each of the last ten years. The difference between the ages at marriage of males and females is about 3½ years, the males being the older.

Year.	Average age of Bridegrooms.	Average age of Brides.	Year.	Average age of Bridegrooms.	Average age of Brides.
	Years.	Years.		Years.	Years.
1904	29·00	24·93	1909	29·11	25·30
1905	29·13	24·96	1910	29·02	25·31
1906	29·23	25·08	1911	28·81	25·32
1907	29·20	25·20	1912	28·91	25·47
1908	29·02	25·19	1913	28·85	25·56

The average age at marriage, both of bridegrooms and brides, has remained practically constant during the last ten years, although there is now a tendency to a slightly lower average on the part of bridegrooms, and to a slightly higher average on the part of the brides.

The above figures relate to all persons marrying during the year, and include those re-marrying. The average ages of those marrying for the first time during 1913 were, of bachelors 27·83 years, and of spinsters 24·74 years, being about twelve months lower in the case of bridegrooms and ten months lower in the case of brides.

MARRIAGE OF MINORS.

The number of persons under 21 years of age married during 1913 was 4,219, or 12·9 per cent. of the total. The proportion of bridegrooms who were minors was 4·3 per cent., and of brides 21·5 per cent. The figures at quinquennial intervals since 1881 are appended :—

Year.	Minors.		Percentage of—	
	Bridegrooms.	Brides.	Bridegrooms.	Brides.
1881	149	1,660	2·37	26·42
1886	187	1,806	2·39	23·12
1891	177	2,085	2·09	24·65
1896	212	2,065	2·49	24·31
1901	351	2,546	3·33	24·15
1906	497	2,837	4·20	24·56
1911	701	3,499	4·59	22·92
1912	769	3,734	4·61	22·41
1913	705	3,514	4·32	21·54

It will be seen from this table that the proportion of minors marrying is increasing among bridegrooms, and decreasing amongst brides.

BIRTHS.

The number of births during 1913 was 52,134, equal to a rate of 28·81 per 1,000 of the total population. The actual number of births was the highest ever recorded in this State, and the rate was 2·6 per cent. above the average for the last ten years. The birth-rate, which fell away sharply after 1888, declined considerably down to 1903, but since that year there has been an improvement, and in 1912 it was the highest rate since 1895.

The decrease in the rate in 1913 as compared with the previous year is due probably to the operation of the Maternity Allowance Act, by which the Commonwealth Government provided allowances in respect of births occurring in Australia. The Act commenced on 10th October, 1912, and had the effect of causing the prompt registration of many births during the last months of 1912 which otherwise would not have been registered till 1913. Details regarding maternity allowances are given in the chapter, "Social Condition" of this Year Book.

The following table shows the average annual number of births and birth-rate per 1,000 of the total population in quinquennial periods since 1870 :—

Year.	Average Births.	Birth-rate per 1,000 of Population.	Year.	Average Births.	Birth-rate per 1,000 of Population.
1870-74	20,733	39·36	1900-04	37,498	26·99
1875-79	24,388	38·51	1905-09	41,788	27·56
1880-84	30,417	37·89	1910	45,533	28·17
1885-89	36,877	36·85	1911	47,677	28·64
1890-94	39,550	33·60	1912	51,093	29·90
1895-99	37,042	28·68	1913	52,134	28·81

BIRTH RATES.

The rates shown above are calculated by the usual crude method of relating the births to the total population. It is unsatisfactory, for several reasons, so to measure the birth-rate. A preferable method for purposes of strict analysis is to relate the births according to the ages of the mothers to the total women living at corresponding ages.

This method can be followed with exactitude only at Census periods, since at any other period an accurate estimate of the number living at various ages is very difficult, on account of migration and other influences.

The ages and conjugal condition of the people of New South Wales having been obtained at the census of 1911, the birth-rates per 1,000 of women living at various groups of reproductive ages, from 15 to 45 years, have been calculated for the three census periods 1891, 1901, and 1911, and are shown in the following tables, distinguishing the total births from the legitimate, the illegitimate rates being shown on a later page.

The total births per 1,000 of all females living at each age were as follows:—

Ages of Mothers.	1891.	1901.	1911.	Decrease per cent. in rates, 1891 to 1911.
Years.				
15-19	35-30	30-87	33-75	4-4
20-24	170-90	134-65	141-45	17-2
25-29	247-48	177-95	187-35	24-3
30-34	238-81	168-42	161-20	32-5
35-39	196-15	136-60	122-27	37-7
40-44	96-61	70-79	54-51	43-6
15-44	161-74	117-46	118-50	26-7

The crude birth-rate declined sharply after 1889, and has never recovered the figure at which it then stood. From this table it will be seen that the decline has been general in all age groups since 1891, which is the first year for which the ages of mothers are available. As regards the relative decrease at each age, there has been a drop which has increased as the age increases. At ages 15-19 the decrease was 4 per cent.; at ages 25-29, 24 per cent.; and at ages 40-44, it was 44 per cent. For all ages the average was 27 per cent. Although the general rate shows a slight advance in 1911 when compared with 1901, the rate for mothers over 30 years of age shows a regular decrease from period to period, from which it would appear that the rate has been maintained only by births the result of recent marriages.

The next table shows the legitimate births per 1,000 married women at each age:—

Ages of Mothers.	1891.	1901.	1911.	Decrease per cent. in rates, 1891 to 1911.
Years.				
15-19	471-09	556-54	512-31	(+) 8-7
20-24	410-49	390-27	392-12	4-5
25-29	348-81	292-90	301-33	13-6
30-34	288-18	221-41	219-90	23-7
35-39	233-04	168-03	156-98	32-6
40-44	116-76	86-17	69-49	40-5
15-44	292-87	228-79	229-70	21-6

(+) Indicates increase.

This table shows that the rate at the youngest ages 15-19 has advanced, and in 1911, although lower than in 1901, was higher than in 1891. Thence onward, however, as the age advances the decline has been general, amounting to 21·6 per cent.

The birth-rate per 1,000 of the population of each State of the Commonwealth, of New Zealand, and of a number of other countries, according to the latest information, and during the previous five years, is given in the following table :—

State.	1908-12.	1913.	Country.	1907-11.	1912.
Queensland	27·76	30·26	Roumania	46·8	43·4
Tasmania	29·40	30·63	Hungary	36·4	36·3
Western Australia	28·79	29·39	Spain	33·0	32·6
South Australia	26·79	29·12	Italy	32·6	32·4
<i>New South Wales</i>	<i>28·43</i>	<i>28·81</i>	Austria... ..	33·0	31·3
New Zealand	26·66	26·14	Prussia	31·5	28·9
Victoria	24·98	25·81	Netherlands	29·1	28·1
			Denmark	27·8	26·7
			Scotland	27·0	25·9
			Norway	26·2	25·4
			England and Wales	25·7	23·8
			Sweden... ..	25·7	23·8
			Ireland... ..	23·3	23·0
			France	19·5	19·0

In Australasia, Queensland has the highest rate and Victoria the lowest. The comparatively high rate in Western Australia, due to the larger proportion of married women of child-bearing ages in its population, was exceeded by the rates in Queensland and Tasmania.

Generally the decline which has characterised the birth-rate, not only of Australia, but also of European countries, has not continued in the Australian States, as all the rates in 1913 show an advance on those of the previous quinquennium. The Australian birth-rates are lower than in most of the countries of the Old World, but, as will be shown subsequently, this is more than counteracted by much lower death-rates.

BIRTH-RATES—METROPOLIS AND COUNTRY.

Dividing the State into metropolitan and country districts, there were during 1913, in the former, 20,533 births, and in the latter 31,599, corresponding to rates of 28·92 and 28·74 per 1,000 of population respectively. From 1893 to 1912 the country showed a higher rate than the metropolis, but in 1913 the metropolitan rate was higher.

Year.	Number of Births.			Births per 1,000 of Population.		
	Metropolis.	Country.	New South Wales.	Metropolis.	Country.	New South Wales.
1880-84	49,058	103,026	152,084	40·16	36·90	37·89
1885-89	65,866	118,517	184,383	41·50	34·69	36·85
1890-94	68,754	128,998	197,752	34·11	33·63	33·80
1895-99	61,224	123,986	185,210	26·73	29·75	28·68
1900-04	63,694	123,795	187,489	25·16	28·07	26·99
1905-09	72,409	136,529	208,938	25·50	28·80	27·56
1910	16,204	29,329	45,533	26·39	29·27	28·17
1911	17,829	29,848	47,677	27·78	29·11	28·64
1912	20,140	31,853	51,993	29·80	29·97	29·80
1913	20,533	31,599	52,134	28·92	28·74	28·81

The rate has declined since the period 1880-84, but not to the same extent in the country as in the metropolis. In the metropolis there was a heavy fall from 1890 to 1894, and again from 1895 to 1899; in the country there was a corresponding fall, but it began earlier than in the metropolis. In both metropolis and country the rates fluctuated very slightly during the years 1904-09, but there has since been an improvement in each division.

SEXES OF CHILDREN.

Of the 52,134 children born during the year (exclusive of children still-born), 26,600 were males and 25,534 were females, the proportion being 104 males to 100 females. In no year, so far as observation extends, have the female births exceeded in number those of males, although the difference has sometimes been very small. The preponderance of births of male children in New South Wales during a number of years will be seen from the table given below:—

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1870-74	10,577	10,156	20,733	1900-04	19,134	18,364	37,498
1875-79	12,477	11,911	24,388	1905-09	21,406	20,382	41,788
1880-84	15,567	14,850	30,417	1910	23,443	22,090	45,533
1885-89	18,898	17,979	36,877	1911	24,508	23,169	47,677
1890-94	20,324	19,226	39,550	1912	26,628	25,365	51,993
1895-99	18,979	18,063	37,042	1913	26,600	25,534	52,134

The excess of males over females born during the past fifty-four years has ranged from 2 per cent. in 1875, 1876, and 1901, to 9 per cent. in 1864, the average being 5 per cent.

The following table shows the number of males born to every 100 females both in legitimate and illegitimate births during the last forty-four years:—

Year.	Legitimate Births.	Illegitimate Births.	All Births.	Year.	Legitimate Births.	Illegitimate Births.	All Births.
1870-74	104·3	101·0	104·1	1900-04	104·3	102·8	104·2
1875-79	104·6	108·8	104·8	1905-09	105·0	104·9	105·0
1880-84	104·9	103·9	104·8	1910	106·3	103·8	106·1
1885-89	105·4	98·8	105·1	1911	106·0	102·1	105·8
1890-94	105·7	105·4	105·7	1912	104·8	107·6	105·0
1895-99	105·0	105·4	105·1	1913	104·3	101·6	104·2

ILLEGITIMACY.

The number of illegitimate births in 1913 was 2,803, equal to 5·37 per cent. of the total births. A statement of the illegitimate births in New South Wales, distinguishing metropolis and country districts, is given below:—

Year.	Number of Illegitimate Births.			Ratio per cent. to Total Births.		
	Metropolis.	Country Districts.	New South Wales.	Metropolis.	Country Districts.	New South Wales.
1880	561	665	1,226	6·72	3·36	4·35
1890	1,056	995	2,051	7·81	3·91	5·26
1900	1,222	1,383	2,605	10·08	5·53	7·01
1905	1,530	1,382	2,912	11·11	5·37	7·37
1906	1,457	1,425	2,882	10·42	5·28	7·04
1907	1,546	1,423	2,969	10·79	5·11	7·04
1908	1,545	1,587	2,932	10·40	5·01	6·89
1909	1,549	1,320	2,879	10·02	4·70	6·58
1910	1,530	1,370	2,900	9·44	4·67	6·37
1911	1,680	1,269	2,949	9·42	4·25	6·19
1912	1,647	1,287	2,934	8·18	4·04	5·64
1913	1,522	1,280	2,802	7·41	4·05	5·37

The proportion of illegitimate to total births increased steadily from 1880 till the highest proportion was reached in 1905; since that year there has been a decline, as the actual number of illegitimate births has remained fairly constant while the legitimate births have increased.

Doubtless the smaller proportion of illegitimate births in the country districts is caused partly by the gravitation of mothers to the metropolis, due to the presence of public maternity hospitals in Sydney, but in the absence of information regarding the proportion of unmarried females of productive ages in each division it is not possible to make a satisfactory comparison.

The method of stating the illegitimate as a proportion of the total births is erroneous, because the illegitimate births have no necessary relation to the legitimate births, and because they are compared with a standard which has been declining for several years, and which is itself variable.

The following table is therefore presented—on a similar basis to those on a previous page relating to the total, and to the legitimate births—showing the illegitimate births per 1,000 unmarried women at each age for the three census periods, 1891, 1901, and 1911 :—

Ages of Mothers.	1891.	1901.	1911.	Decrease per cent. in rates, 1891 to 1911.
Years.				
15-19	10·81	11·14	9·85	8·9
20-24	25·80	23·45	19·30	25·2
25-29	25·73	18·38	18·64	27·6
30-34	27·73	17·46	15·69	43·4
35-39	23·79	14·83	13·67	43·0
40-44	5·68	7·83	4·24	25·4
15-44	18·41	16·10	14·18	23·0

By the usual method of stating the illegitimate births as a proportion of the total births it appeared up to 1905 that illegitimacy was increasing, but from the table here presented it will be seen that the illegitimate rate, based upon the number of unmarried women, has steadily decreased at all ages, and amounted on the average to 23 per cent. during the twenty years 1891-1911. The decline has been general at all ages, and larger than in the legitimate rate.

LEGITIMATION ACT OF 1902.

An Act was passed in New South Wales in 1902 to legitimise children born before marriage, on the subsequent marriage of their parents, provided that no legal impediment to the marriage existed at the time of birth. Any such child born before or after the passing of the Legitimation Act is deemed, on registration as provided in the Act, to have been legitimated from birth by such marriage, and is entitled to the status of a child born in wedlock. Legitimation is effected on the father of the child producing to a Registrar the necessary statutory declaration and a certified copy of the entry of his marriage with the child's mother. The child, whether dead or alive, is then registered as the lawful issue of the parents. If the child had been registered

previously as illegitimate, a note of the entry under this Act must be made in the Register where the previous entry was made. Since the passing of the Act there have been 2,840 registrations :—

Year.	Registrations.	Year.	Registrations.
1902	6	1909	267
1903	158	1910	288
1904	173	1911	394
1905	175	1912	405
1906	191	1913	298
1907	217		
1908	238	Total	2,840

PLURAL BIRTHS.

During the year 1913 there were 551 cases of plural births, consisting of 1,098 children, eight still-births not being included; there were 548 cases of twins, 556 males and 534 females; two cases of triplets, one male and four females; and one case of quadruplets, three male children born alive. Of these 551 cases of plural births, 531 were legitimate and 20 illegitimate. The number of children born at plural births formed 2.11 per cent. of the total births.

The following table shows the number of cases of twins, triplets, and quadruplets born in New South Wales during the twenty-one years 1893-1913, excluding those still-born, and distinguishing legitimate and illegitimate :—

Cases of—	Legitimate.	Illegitimate.	Total.
Twins	8,342	420	8,762
Triplets	78	5	83
Quadruplets	4	...	4

The total number of confinements recorded during the twenty years was 849,356. It follows, therefore, that the rates per million confinements were 10,316 cases of twins, 98 of triplets, and 5 of four children at a birth. Stated in another way, there were 10.4 plural births in every 1,000 confinements.

The smallest proportion of plural births is found amongst women below age 20; the proportion increases steadily with the age of the mothers until it reaches a maximum with women between the ages of 35 and 40 years, after which there is a decline, but the decline does not bring the ratio back to its starting-point, for at ages 45 and over the plural births are 1 to every 130 confinements recorded, whereas under 20 years the proportion is 1 to 194.

The results of the observations for the twenty-one years 1893-1913 will be found in the following table; the figures relate to legitimate births only :—

Age-group of Mothers.	All Births.	Plural Births	Plural Births per 1,000 of all Births.
Years.			
Under 20	31,859	164	5.15
20-24	183,568	1,209	6.59
25-29	227,091	2,269	9.99
30-34	177,409	2,356	13.28
35-39	120,749	1,805	14.95
40-44	47,360	582	12.29
45 and over	5,063	39	7.70

It is a remarkable fact that of 8,424 plural births, 4,782 occurred to mothers whose ages were 30 years or upwards; this gives a proportion of 57 per cent., whereas of all legitimate births only 44 per cent. occurred at those ages.

NATURAL INCREASE.

The excess of births over deaths, or the "natural increase," was 32,402 in 1913, and was slightly below the figure for the previous year. The excess of births over deaths does not show a steady increase or decrease, but fluctuates somewhat, as might be expected.

Year.	Natural Increase.					Increase Per cent. of population at end of previous year.
	Metropolis.	Country Districts.	Whole of State.			
			Males.	Females.	Total.	
1904	7,540	15,767	11,124	12,183	23,307	1·64
1905	7,999	16,524	11,497	13,026	24,523	1·70
1906	8,281	17,692	12,351	13,622	25,973	1·77
1907	8,096	17,659	12,187	13,598	25,785	1·72
1908	8,825	17,610	12,320	14,115	26,435	1·73
1909	9,312	18,617	13,297	14,632	27,929	1·79
1910	9,839	19,503	14,094	15,248	29,342	1·84
1911	10,856	19,642	14,504	15,994	30,498	1·86
1912	12,459	20,648	15,526	17,581	33,107	1·95
1913	12,597	19,805	15,091	17,311	32,402	1·82

The natural increase is now 1·82 per cent., as against 2·25 per cent. in 1890, the falling off being due to the decline in the birth-rate, as there has been a constant improvement in the death-rate.

Although the males born are more numerous than the females, the actual increase of population from the excess of births over deaths is greatly in favour of the females. The male population exceeds the female, and there is a correspondingly larger number of deaths of males. There is also a greater mortality amongst male than amongst female children, and from this cause alone the natural excess of male births is almost neutralised. During the ten years which closed with 1913, the number of females added to the community by excess of births exceeded the males by 15,319, or 12 per cent.

While the rate of natural increase in New South Wales is low as compared with that of twenty years ago, it is not exceeded by any country outside Australasia, as will be seen from the following table. The figures represent the birth and death rates, and the difference between them (the natural increase) per 1,000 of mean population in each country—in the Australian States and New Zealand for 1913 and in the other countries for 1912:—

Country.	Birth-rate.	Death-rate.	Natural Increase.	Country.	Birth-rate.	Death-rate.	Natural Increase.
Roumania ...	43·4	22·9	20·5	Finland ...	29·1	16·3	12·8
Western Australia ...	29·4	9·4	20·0	Japan ...	33·9	21·1	12·8
Queensland ...	30·3	10·4	19·9	Norway ...	25·4	13·4	12·0
Tasmania ...	30·0	10·9	19·1	Spain ...	32·6	21·8	10·8
South Australia ...	29·1	10·8	18·3	Austria ...	31·3	20·5	10·8
<i>New South Wales</i> ...	<i>28·8</i>	<i>10·9</i>	<i>17·9</i>	Scotland ...	25·9	15·3	10·6
Servia ...	33·0	21·1	16·9	England and Wales.	23·8	13·3	10·5
New Zealand ...	26·1	9·5	16·6	Ontario, Canada ...	22·4	12·4	10·0
Netherlands ...	28·1	12·3	15·8	Sweden ...	23·7	14·2	9·5
Victoria ...	25·8	11·1	14·7	Chile ...	38·7	29·7	9·0
Italy ...	32·4	18·2	14·2	Switzerland (1911)...	24·1	15·8	8·3
Denmark ...	26·7	13·0	13·7	Ireland ...	23·0	16·5	6·5
Prussia ...	28·9	15·5	13·4	Belgium (1911) ...	22·9	16·4	6·5
Hungary ...	36·3	23·3	13·0	France ...	19·0	17·5	1·5

It will be seen that the countries with the highest birth-rate have not necessarily the highest rate of natural increase. The increase in population also depends upon the death-rate, which to a considerable extent is influenced by the birth-rate.

Roumania, owing to an exceedingly high birth-rate, stands first of the list, Western Australia and Queensland, which have very favourable death-rates, are second and third, New South Wales is sixth, and Victoria tenth.

AGES OF MOTHERS.

During the twenty-one years 1893-1913 the ages of the women giving birth to children ranged from 11 to 58 years. The majority of the very young mothers were unmarried; thus of 10,884 mothers under 18 years of age, 5,492 were unmarried. The total number of married women who gave birth to children during the twenty-one years was 793,156, the ages of whom were as follows. The proportion of married mothers at each age per 10,000 of all ages is also shown:—

Married Mothers.			Married Mothers.		
Ages.	Number.	Per 10,000 at all ages.	Ages.	Number.	Per 10,000 at all ages.
Years.			Years.		
13	2	...	25	46,559	587
14	21	...	26	47,003	593
15	171	2	27	45,750	577
16	1,151	14	28	45,676	576
17	4,047	51	29	42,103	531
18	9,470	119	30-34	177,409	2,237
19	16,997	214	35-39	120,749	1,522
20	22,731	287	40-44	47,360	597
21	34,975	403	45 and over	5,063	64
22	38,727	488	Not stated	57	1
23	43,930	554			
24	46,205	583	Total ...	793,156	10,000

It is found that the ages of the mothers of one-fourth of the children born do not exceed 25 years, and that before women pass their twenty-ninth year they give birth to one-half their offspring. Twenty-two per cent. of the births occur after age 35, and less than 7 per cent. after age 40 is reached.

The mothers of illegitimate children are in some cases very young, as will be seen from the following table, which shows the ages of the mothers who gave birth to illegitimate children during the twenty-one years 1893-1913. The proportion of unmarried mothers at each age per 10,000 of all ages is also shown:—

Unmarried Mothers.			Unmarried Mothers.		
Ages.	Number.	Per 10,000 at all ages.	Ages.	Number.	Per 10,000 at all ages.
Years.			Years.		
11	1	...	27	1,851	329
12	2	...	28	1,689	301
13	30	5	29	1,411	251
14	145	26	30	1,379	245
15	594	106	31	821	146
16	1,606	286	32	991	176
17	3,114	554	33	823	146
18	4,592	817	34	814	145
19	5,459	971	35	777	139
20	5,267	937	36	692	123
21	5,113	910	37	533	95
22	4,361	776	38	587	104
23	3,838	683	39	493	88
24	3,128	557	40 and over.	1,101	196
25	2,635	469	Not stated	150	27
26	2,203	392	Total ..	56,200	10,000

Two-thirds of the illegitimate children are born of mothers between the ages of 15 and 25, and one-half to women aged from 17 to 22 years.

DEATHS.

The deaths during 1913 numbered 19,732, equal to a rate of 10·91 per 1,000 of the population, which is the highest since 1903, and is 4 per cent. above the mean rate of the last ten years. This total includes 11,509 males and 8,223 females, so that amongst males the rate was 12·10, and amongst females 9·58 per 1,000 living of each sex. The average annual number of deaths of each of the sexes, with the rate per 1,000, in quinquennial periods, from 1870 is given below :—

Period.	Average Annual Number of Deaths.			Death-rate per 1,000 of total Population.		
	Males.	Females.	Persons.	Males.	Females.	Persons.
1870-74	4,391	2,948	7,339	15·58	12·32	13·93
1875-79	6,199	4,860	10,559	17·99	15·10	16·67
1880-84	7,286	5,124	12,410	16·55	14·14	15·46
1885-89	8,461	6,043	14,504	15·43	13·36	14·40
1890-94	8,877	6,344	15,221	14·06	11·77	13·01
1895-99	9,002	6,514	15,516	13·11	10·77	12·01
1900-04	9,195	6,733	15,928	12·65	10·17	11·47
1905-09	9,076	6,583	15,659	11·52	9·04	10·33
1910	9,349	6,842	16,191	11·13	8·82	10·02
1911	10,004	7,175	17,179	11·52	9·01	10·32
1912	11,102	7,784	18,886	12·16	9·43	10·86
1913	11,509	8,223	19,732	12·10	9·58	10·91

The death-rate has fallen continuously amongst both sexes, but slightly more for males than for females. The death-rate for males is, however, about one-fourth higher than for females, the reason being that males are exposed to more risks than females, and that male infants are the more delicate. It will be noticed that the death-rate has declined largely since the period 1890-94, and is thus coincident with the decline in the birth-rate. The falling birth-rate has influenced the death-rate in so far as it has affected the age constitution of the population by reducing the proportion living at the first five years where the mortality is high, and at the same time increasing the proportion living at ages from 5 to 20 where the mortality is low. The decline in the death-rate is also coincident with the inauguration of the metropolitan sewerage scheme, as mentioned below.

For comparative purposes a table of the death-rates per 1,000 for each of the Australian States, New Zealand, and a number of other countries during the last six years is given below :—

State.	1908-1912.	1913.	Country.	1907-1911.	1912.
Victoria	11·77	11·11	Hungary	25·0	23·3
New South Wales	10·34	10·91	Roumania	26·2	22·9
Tasmania	10·58	10·87	Spain	23·8	21·8
South Australia	10·02	10·82	Austria	23·2	20·5
Queensland	10·26	10·39	France	19·1	17·5
New Zealand	9·35	9·47	Ireland	17·2	16·5
Western Australia	10·57	9·35	Prussia	17·2	15·5
			Scotland	15·9	15·3
			Sweden	14·2	14·2
			Norway	13·8	13·4
			England and Wales	14·5	13·3
			Denmark	13·7	13·0
			Netherlands	14·3	12·3

The comparatively favourable conditions of Australasia will be manifest from an inspection of these rates. New South Wales occupies the second place on the list for 1913, more favourable rates being shown by all the States except Victoria.

It might have been expected that in any case the rates in the European countries would be higher than in New South Wales on account of the larger proportions of old persons in their populations, but in addition it must be remembered that some of the endemic scourges of the Old World are unknown in Australia; also, apart from climatic conditions, which are most favourable here, the social condition of the great body of the people is far superior to that of Europeans, and their occupations more conducive to health. The enforcement also of the provisions of many Acts of Parliament dealing with the general health of the community, *e.g.*, Public Health Act, Dairies Supervision Act, Pure Food Act, besides regulations framed by Local Government authorities, conduce to the good health of the people.

DEATHS—METROPOLIS AND COUNTRY.

It is not possible to show the exact difference between urban and rural mortality in New South Wales, but an approximate idea may be obtained from a comparison of the experience of the metropolis with that of the country districts, although a few large towns are contained in the latter. Separating the State, therefore, into these two broad divisions, there were 7,938 deaths in the metropolis during 1913, and 11,794 in the country, corresponding to the rates of 11·18 and 10·73 per 1,000 living respectively. The average annual number of deaths and the rate per 1,000 in each of these divisions since 1880, in five-year periods, is given in the subjoined table:—

Period.	Metropolis.		Country Districts.		New South Wales.	
	Average Number of Deaths.	Rate per 1,000.	Average Number of Deaths.	Rate per 1,000.	Average Number of Deaths.	Rate per 1,000.
1880-84	5,033	20·60	7,377	13·21	12,410	15·46
1885-89	6,181	19·47	8,323	12·18	14,504	14·49
1890-94	5,979	14·83	9,242	12·05	15,221	13·01
1895-99	5,634	12·30	9,882	11·86	15,516	12·01
1900-04	5,845	11·54	10,083	11·42	15,928	11·47
1905-09	5,979	10·53	9,680	10·21	15,659	10·33
1910	6,365	10·36	9,826	9·80	16,191	10·02
1911	6,973	10·90	10,206	9·95	17,179	10·32
1912	7,681	11·37	11,205	10·54	18,886	10·86
1913	7,938	11·18	11,794	10·73	19,732	10·91

In both metropolis and country the rate has steadily improved, but very much more in the metropolis, so that there the rate is now very little higher than in the country districts, whereas twenty-five years ago it was 50 per cent. higher. The fall began in the metropolis after 1889, the year when the improved sewerage system was installed, and about the same time that the Dairies Supervision Act came into operation. The decline in the rates for each division and for the State will be further emphasised when it is stated that the metropolitan rate fell from 19·5 in the period 1885-9 to 11·2 per 1,000 in 1913, or 42 per cent. The rate in country districts declined from 12·2 to 10·7, or 12 per cent., and for the whole State from 14·5 to 10·9, or 25 per cent.

MORTALITY OF INFANTS AND YOUNG CHILDREN.

A further measure of the mortality in the metropolis and country, offering a most sensitive test, is obtained by a comparison of the death-rates of infants in each district.

Children under 1 year.

The number of children under 1 year of age who died in 1913 was 4,084, equal to a rate of 78·3 per 1,000 births. The rate was the highest since 1907, being 2 per cent. above the average of the last ten years, which, however, included several years of exceptionally low infantile mortality. Male infants died at the rate of 85·2 per 1,000 births, and female infants at the rate of 71·2 per 1,000 births. To the total the metropolis contributed 1,608 deaths, or 78·3 per 1,000 births, and the country 2,476, or 78·4 per 1,000 births.

The average annual number of deaths of children under 1 year, in quinquennial periods since 1880, in the metropolis and country, and the proportion per 1,000 births, are shown below :—

Period.	Metropolis.		Country.		New South Wales.	
	Deaths under 1.	Rate per 1,000 Births.	Deaths under 1.	Rate per 1,000 Births.	Deaths under 1.	Rate per 1,000 Births.
1880-84	1,707	174·0	1,956	94·9	3,663	120·4
1885-89	2,168	164·6	2,256	95·2	4,424	120·0
1890-94	1,908	138·8	2,471	95·8	4,379	110·7
1895-99	1,646	134·4	2,572	103·7	4,218	113·9
1900-04	1,416	111·2	2,399	96·9	3,815	101·7
1905-09	1,255	86·7	2,035	74·5	3,290	78·7
1910	1,329	82·0	2,068	70·5	3,397	74·6
1911	1,268	71·1	2,045	68·5	3,313	69·5
1912	1,530	76·0	2,177	68·3	3,707	71·3
1913	1,608	78·3	2,476	78·4	4,084	78·3

The infantile mortality rate has improved more in the metropolis; in fact, until 1900, in the country districts it was increasing. In the year 1904 there was a large decrease in both divisions compared with the rate for the previous five years, and this improvement continued in 1905 and 1906. In 1907, in consequence of an epidemic of whooping-cough, the rate took an upward movement, greater in the country than in the metropolis, but it has since declined. The upward movement in the rate in 1913 was greater in the country districts than in the metropolis. In all previous years the rate in the rural districts was more favourable than in the urban.

The improvement in the rate in the metropolis is no doubt partly due to the preventive measures taken by the Sydney Municipal Council to reduce the death from diarrhoeal diseases which have largely contributed to the infantile mortality. These measures were initiated in 1903 by the distribution of instructional circulars and pamphlets for the guidance of mothers regarding the care and feeding of young children. Circulars are despatched to the mother immediately after the registration of a birth in the thickly-populated areas of the city. The scheme has been supplemented by the appointment of trained women inspectors to visit the houses in the populous parts of the city and surrounding suburbs as soon as possible after the registration of a birth therein, with the object of instructing the mothers, and encouraging them in the exercise of hygienic principles in the care of their infants.

Of the total number of deaths of infants under 1 year of age, nearly one-third die within a week of birth; by the end of the first month the proportion is over two-fifths; and after three months it reaches three-fifths. Approximately one in every 46 children born dies within a week of birth. The following statement shows for 1913, in comparison with the average of the five preceding years, the deaths per 1,000 births during each of the first four weeks after birth, and then for each successive month. The experience in the metropolis is distinguished from that in the country districts, and the sexes are taken together. Also for the year 1913, illegitimate children are distinguished from legitimate for the State as a whole.

Age.	Metropolis.		Country.		New South Wales.			
	1908-12.	1913.	1908-12.	1913.	1908-12.	1913.		
						Legitimate.	Illegitimate.	Total.
Under 1 week	22·6	24·1	20·9	22·0	21·5	22·1	35·7	22·9
1 week	4·6	4·6	3·8	4·0	4·1	4·0	6·8	4·1
2 weeks	2·8	2·7	2·9	3·0	2·9	2·8	4·3	2·9
3 "	2·5	2·2	2·3	2·5	2·4	2·4	3·5	2·4
Total under 1 month	32·5	33·6	29·9	31·5	30·9	31·3	50·3	32·3
1 month	7·1	6·7	6·5	6·7	6·7	6·0	18·9	6·7
2 months	5·5	5·6	4·9	4·9	5·1	4·5	17·1	5·2
3 "	5·8	6·1	4·9	5·0	5·2	4·8	16·1	5·4
4 "	5·3	4·7	4·5	5·2	4·8	4·3	16·8	5·0
5 "	4·1	4·5	3·8	4·2	3·9	4·0	9·6	4·3
6 "	3·9	3·7	3·4	4·6	3·6	4·1	7·9	4·3
7 "	3·5	3·3	2·8	4·0	3·0	3·6	6·8	3·7
8 "	2·8	2·6	2·4	3·4	2·6	2·8	7·5	3·1
9 "	2·9	2·5	2·5	3·7	2·6	3·1	5·0	3·2
10 "	2·5	2·3	2·1	2·8	2·3	2·6	2·5	2·6
11 "	2·4	2·7	2·2	2·4	2·3	2·5	2·5	2·5
Total under 1 year ...	78·3	78·3	69·9	78·4	73·0	73·6	161·0	78·3

In the first week of life the mortality is more than five times as great as in the second, and in the second about twice as great as in the fourth. From the first month to the second the mortality falls rapidly, and from the second to the twelfth gradually. Comparing the mortality in the two divisions of New South Wales—metropolis and country—the usual experience is that at every stage of life children die more quickly in the metropolis. In 1913 the metropolitan rate was 78·3 and the country 78·4 per 1,000 births; this is the first occasion on which the country rate has exceeded the metropolitan; during the previous five years the metropolitan rate was 12 per cent. higher than the country. In 1913 the difference was greatest at the earlier ages, the metropolitan rate being 33·6 per 1,000 during the first four weeks, as compared with 31·5 in the country. At one month the rates were equal; after the first month the difference fluctuated, the country rate being the higher.

The table shows also the great waste of life among illegitimate children, the mortality under 1 year being 161·0 per 1,000, as compared with 73·6 among legitimate children. The largest proportional excess is not immediately after birth, but about four months later. During the first week the mortality of illegitimates exceeded that of legitimates by 61 per cent., thereafter it increased until in the second month the excess was 380 per cent., after this it dropped irregularly until in the eleventh month the rates were equal.

The following statement furnishes a comparison of the rates of infantile mortality in the Australian States, New Zealand, and in various other countries; the rates indicate the deaths under 1 year per 1,000 births:—

State.	1911.	1912.	1913.	Country.	1910.	1911.	1912.
<i>New South Wales</i> ...	69·5	71·3	78·3	Hungary ...	194	207	186
Victoria ...	68·7	74·5	70·5	Roumania ...	...	197	186
Tasmania ...	73·7	66·6	70·1	Austria ...	189	207	180
South Australia ...	60·5	61·6	70·1	Prussia ...	157	188	146
Western Australia ..	76·2	82·1	70·0	Ontario, Canada ...	123	117	110
Queensland ...	65·4	71·4	63·3	Finland ...	118	114	109
New Zealand ...	56·3	51·2	59·2	England and Wales...	105	130	95
				Denmark ...	102	106	93
				Netherlands ...	103	137	87
				Ireland ...	95	94	86
				France ...	111	117	78

The rates in Australasia are much lower than those in the other countries, New Zealand showing the most favourable rate.

Children under 5 years.

Taking account of the first five years of life, it is found that there has been a great improvement in the rates for those ages, and, at the same time, it is apparent that the excessive total death-rate in the metropolis as compared with the country districts is caused by the deaths in this group. At every period shown in the subsequent table the metropolitan rate is the higher—in some cases over 50 per cent., and never below 8 per cent. in excess.

Table showing the mortality in each division, in quinquennial periods since 1890, of children under 5 years of age:—

Period.	Metropolis.		Country.		New South Wales.	
	Number.	Rate per 1,000 living.	Number.	Rate per 1,000 living.	Number.	Rate per 1,000 living.
1890-94	13,370	48·45	17,728	32·06	31,098	37·52
1895-99	11,027	40·77	17,436	30·97	28,463	34·15
1900-04	9,233	35·17	16,049	29·64	25,282	31·44
1905-09	8,062	27·61	13,612	23·39	21,674	24·80
1910	1,751	26·51	2,812	21·81	4,563	23·40
1911	1,625	23·79	2,694	20·10	4,319	21·35
1912	2,142	29·06	2,982	21·74	5,124	24·30
1913	2,066	26·02	3,400	24·07	5,466	24·81

The improvement in the metropolis has been greater than in the country; in the former the rate has decreased by 46 per cent. since 1890, and in the latter by 25 per cent. In the country the rate did not vary a great deal until 1904, when there was a large decline, which continued until 1911, when the rate showed an upward tendency. The increase in the rate for the whole State in 1913 was due to the increased mortality in the country. During the year 1913 there was a saving of the lives of 22 in every 1,000 children under 5 years of age in the metropolis and 8 in every 1,000 in the country, as compared with the mortality rate of twenty years ago.

The table appended gives, for 1913, and for the five years preceding, the death-rates of illegitimate children under 1 and under 5 years of age, as compared with legitimate children of like ages:—

Age.	Legitimate.		Illegitimate.		Total.	
	Deaths.	Rate per 1,000 living.	Deaths.	Rate per 1,000 living.	Deaths.	Rate per 1,000 living.
Under 1 year—						
1908-1912	14,348	66·15	2,543	174·25	16,891	72·96
1913	3,633	73·64	451	160·96	4,084	78·34
Under 5 years—						
1908-1912	19,470	21·16	2,994	51·92	22,464	22·97
1913	4,949	23·73	517	44·08	5,466	24·81

It will be seen how unfavourable is the position, and how reduced is the chance of living of the illegitimate child as compared with the legitimate, since at each age the death-rate of the illegitimate is more than twice that of the legitimate. In 1913 one-sixth of the illegitimate children born did not live through the first year.

CHILDREN SURVIVING AT THE AGE OF FIVE YEARS.

The tables just given show the death rates of children under 1 and under 5, and in the next statement will be found, out of 10,000 children born alive, of each sex, the number living at each period up to five years of age.

The table which is unadjusted is based on the experience of the eight years 1906-13, the year 1906 being the first for which the details are available, and it appears that out of 10,000 boys born, 1,070 will die before reaching 5 years of age, and out of 10,000 girls, 925 will die. Of the number who fail to survive five years, 244 boys and 193 girls die within the first week of birth, and 321 boys and 256 girls within the first month. At the end of the first year there will be 9,176 boys and 9,313 girls surviving.

NUMBER OF CHILDREN LIVING AT EACH AGE OUT OF 10,000 BORN ALIVE.

Age.	Boys	Girls.	Total.	Age.	Boys.	Girls.	Total.
0 week ...	10,000	10,000	10,000	7 months ...	9,322	9,442	9,379
1 ,, ...	9,756	9,907	9,781	8 ,, ...	9,286	9,411	9,346
2 weeks ...	9,711	9,771	9,739	9 ,, ...	9,256	9,385	9,318
3 ,, ...	9,679	9,744	9,709	10 ,, ...	9,228	9,357	9,290
				11 ,, ...	9,203	9,334	9,266
1 month ...	9,652	9,722	9,685				
2 months ...	9,576	9,659	9,615	1 year ...	9,176	9,313	9,243
3 ,, ...	9,514	9,610	9,560	2 years ...	9,025	9,171	9,096
4 ,, ...	9,460	9,559	9,507	3 ,, ...	8,968	9,113	9,039
5 ,, ...	9,408	9,513	9,458	4 ,, ...	8,930	9,075	9,001
6 ,, ...	9,364	9,475	9,417				

DEATHS IN QUINQUENNIAL AGE GROUPS.

In the year 1913 the deaths of persons in quinquennial age groups were as follow :—

Age Group.	Males.	Females.	Total.	Age Group.	Males.	Females.	Total.
Years.				Years.			
0—4	2,955	2,511	5,466	65—69	800	491	1,291
5—9	203	197	400	70—74	838	502	1,340
10—14	145	133	278	75—79	813	518	1,331
15—19	215	173	388	80—84	518	411	929
20—24	367	274	641	85—89	237	215	452
25—29	361	355	716	90—94	65	68	133
30—34	376	330	706	95—99	18	23	46
35—39	372	296	668	100—110	8	5	13
40—44	466	311	777	Age not stated } (adults)	11	3	14
45—49	606	332	938				
50—54	656	323	979	All ages . . .	11,509	8,223	19,732
55—59	736	384	1,100				
60—64	743	383	1,126				

DEATHS OF CENTENARIANS.

The following return shows, for the years 1904—13, the number of deaths in New South Wales of persons aged 100 years and upwards :—

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1904	4	3	7	1909	2	6	8
1905	2	3	5	1910	5	5	10
1906	4	6	10	1911	6	5	11
1907	6	1	7	1912	7	5	12
1908	8	3	11	1913	8	5	13

DEATH RATES ACCORDING TO AGES.

The age and sex distribution of a population are most important factors in determining the death-rate; for instance, the rates at ages 5 to 50 are lower than for the whole population, so that a country with a high proportion at those ages, as in New South Wales, might expect to have a low death-rate. Again, a country with a high proportion of females will most likely have a favourable death-rate.

The following tables have been prepared to supply an accurate comparison of the mortality rates per 1,000 of both sexes in the principal age-groups during the five decennial periods from 1861 to 1910, and for the year 1911:—

Age Group.	1861-70.	1871-80.	1881-90.	1891-1900.	1901-10.	1911. (Census Year).
MALES.						
Years.						
0—4 ...	48.16	45.73	44.57	37.65	27.90	23.08
5—9 ...	5.62	4.67	3.62	2.88	2.07	2.00
10—14 ...	3.34	2.84	2.44	2.08	1.78	1.68
15—10 ...	4.36	4.17	3.74	3.13	2.85	2.33
20—24 ...	6.67	5.30	5.83	4.38	3.67	3.30
25—34 ...	9.25	7.41	7.72	5.88	4.51	4.35
35—44 ...	13.29	12.67	10.92	9.13	7.46	7.09
45—54 ...	21.03	19.10	17.65	14.69	12.87	12.17
55—64 ...	35.62	35.31	30.46	29.05	24.95	25.51
65—74 ...	70.42	70.98	63.67	56.58	58.77	58.40
75 and over ...	153.10	165.95	149.36	148.98	142.43	150.35
All ages ...	17.89	16.90	15.62	13.43	11.77	11.54

FEMALES.						
Years.						
0—4 ...	42.61	40.75	40.47	32.98	24.21	19.25
5—9 ...	5.43	4.09	3.29	2.77	1.88	1.63
10—14 ...	2.87	2.50	2.18	1.77	1.58	1.24
15—19 ...	3.81	3.82	3.52	2.80	2.53	1.94
20—24 ...	5.54	4.99	5.40	4.12	3.59	3.00
25—34 ...	7.54	7.59	7.44	5.70	4.71	4.20
35—44 ...	10.88	11.47	9.95	8.04	6.82	5.77
45—54 ...	15.71	14.11	13.83	10.86	9.50	9.21
55—64 ...	27.33	26.93	23.12	21.16	18.24	18.40
65—74 ...	57.68	57.08	52.73	43.48	45.91	46.86
75 and over ...	135.98	142.49	135.66	134.14	123.05	131.27
All ages ...	14.61	14.04	13.47	11.02	9.47	9.02

TOTAL.						
Years.						
0—4 ...	45.41	43.26	42.56	35.35	26.08	21.20
5—9 ...	5.52	4.38	3.46	2.83	1.98	1.82
10—14 ...	3.10	2.67	2.32	1.93	1.68	1.46
15—19 ...	4.08	3.99	3.63	2.97	2.69	2.13
20—24 ...	6.13	5.15	5.63	4.25	3.63	3.16
25—34 ...	8.54	7.48	7.60	5.83	4.60	4.28
35—44 ...	12.36	12.20	10.53	8.67	7.17	6.47
45—54 ...	19.09	17.20	16.19	13.11	11.42	10.87
55—64 ...	32.86	32.15	27.62	25.83	22.04	22.51
65—74 ...	66.40	66.10	59.39	51.22	53.22	53.18
75 and over ...	147.66	157.82	144.15	142.68	133.72	141.23
All ages ...	16.42	15.59	14.65	12.31	10.67	10.34

At all ages the rate decreased largely, slowly for the first thirty years, and rapidly during the last twenty. In this can probably be seen the influence of the Dairies Supervision Act of 1886, the Diseased Animals and Meat Act of 1892, the Public Health Act, 1896, and, moreover, in the early nineties, an improved sewerage system was carried on after the transfer, in 1889, to the present Board of the old sewerage works. Over the whole period the fall for all ages was as much as 37 per cent. Up to age 35 the

decline was over 50 per cent., namely, 67 per cent. at ages 5-9, 53 per cent. at ages 0-4, 53 per cent. at ages 10-14, 48 per cent. at ages 15-24, and 50 per cent. at ages 25-34. At ages 35-75, the fall was 48 per cent. in the first group (35-39), and 20 per cent. in the last (70-74).

Comparing the rates for each sex, it will be seen that the male rate is higher than the female in every age-group shown above, the only exceptions being in the periods 1871-80 and 1901-10, when the female rate was slightly in excess at ages 25-34 years. The female rate has shown greater improvement than the male, as will be seen from the following tables, which show the rates for each period, as compared with those in 1861-70, assuming the rate for each age-group in that period to be 100.

Age Group.	1861-70.	1871-80.	1881-90.	1891-1900.	1901-10.	1911.
MALES.						
Years.						
0-4 ...	100	95	92	78	58	48
5-9 ...	100	83	64	51	37	36
10-14 ...	100	85	73	62	53	50
15-19 ...	100	96	86	72	65	53
20-24 ...	100	79	87	66	55	50
25-34 ...	100	80	83	64	49	47
35-44 ...	100	95	82	69	56	53
45-54 ...	100	91	84	70	61	58
55-64 ...	100	99	85	82	71	72
65-74 ...	100	101	90	80	83	83
75 and over ...	100	108	97	97	93	98
All ages ...	100	94	87	75	60	65
FEMALES.						
Years.						
0-4 ...	100	96	95	77	57	45
5-9 ...	100	75	61	51	35	30
10-14 ...	100	87	76	62	55	43
15-19 ...	100	100	93	74	66	51
20-24 ...	100	90	97	74	65	54
25-34 ...	100	101	99	76	63	56
35-44 ...	100	106	92	74	63	53
45-54 ...	100	90	88	69	60	59
55-64 ...	100	98	85	77	67	67
65-74 ...	100	99	91	75	80	81
75 and over ...	100	103	100	99	91	96
All ages ...	100	96	92	75	65	62
TOTAL.						
Years.						
0-4 ...	100	95	94	78	57	47
5-9 ...	100	79	62	51	36	33
10-14 ...	100	86	75	62	54	47
15-19 ...	100	98	89	73	66	52
20-24 ...	100	84	92	69	59	52
25-34 ...	100	88	89	68	54	50
35-44 ...	100	99	85	70	58	52
45-54 ...	100	90	85	69	60	57
55-64 ...	100	98	84	79	67	68
65-74 ...	100	100	89	77	80	80
75 and over ...	100	107	98	97	91	96
All ages ...	100	95	89	75	65	63

In comparing the total rates in the preceding tables the changes in the age and sex constitution of the population have not been considered. For this reason the rate now is not strictly comparable with that of fifty years ago, because, first, with regard to the total rate for each sex, the distribution in the various age-groups has changed, the proportion living at the higher ages having increased, which would naturally tend to increase the death rates; and second, the sex distribution has changed, the number of females being now more nearly equal to the number of males, which would tend to improve the rate. Making allowance for these two factors it is found that the improvement in the rate has actually been greater than disclosed by the preceding tables.

Corrected rates for the males and females and for both sexes together are shown below; these rates have been calculated by assuming the proportion of sexes at the different ages to be the same in each period as in 1901-10. The decline in the rate as compared with 1861-70 is also shown:—

Period.	Rate per 1,000.			Decrease (1861-70=100).		
	Males.	Females.	Total.	Males.	Females.	Total.
1861-1870	18.42	14.91	16.84	100	100	100
1871-1880	17.41	14.39	16.03	94	96	95
1881-1890	16.16	13.66	15.03	88	92	89
1891-1900	13.95	11.35	12.74	76	76	76
1901-1910	11.77	9.47	10.67	64	64	63
1911	11.06	8.54	9.86	60	57	58

INDEX OF MORTALITY.

In order to compare the death-rates of New South Wales with those of the other Australian States on a uniform basis, the death-rate of each State (index of mortality) has been calculated on the assumption that its population contained the same proportion at each of five age-groups (under 1, 1 to 19, 20 to 39, 40 to 59, 60 and over) as was contained in the population of Australia as a whole at the census of 1911. Similarly in obtaining the index of mortality of each capital city, the population at the census of 1911, of all the capital cities, was taken as a standard.

The indexes of mortality during 1913 were as follows; for purposes of comparison the crude rates are shown also:—

State.	Index of Mortality.	Crude Death-rate.	City.	Index of Mortality.	Crude Death-rate.
New South Wales ...	10.82	10.91	Sydney ...	11.02	11.18
Victoria ...	11.53	11.11	Melbourne ...	11.78	12.44
Queensland ...	10.61	10.39	Brisbane ...	12.62	13.12
South Australia ...	10.32	10.82	Adelaide ...	12.85	14.06
Western Australia ...	10.16	9.35	Perth ...	*	*
Tasmania ...	10.84	10.87	Hobart ...	14.42	16.09

* Not available.

Sydney has the most favourable index of mortality of all the capitals, and New South Wales is fourth amongst the States.

CAUSES OF DEATH.

One of the most important sections of vital statistics is that relating to causes of death, and in the following discussion the principal diseases in New South Wales are treated in detail.

Until 1906 the system of classifying the causes of death was that adopted by the Registrar-General, England. In 1906, however, at a conference of Australian Statisticians, it was agreed to adopt the Bertillon classification, and causes of death in New South Wales are now tabulated according to that classification. As the Bertillon system differs in many cases from the old, a comparison of the results since 1906 with previous years is, to some extent, impaired.

The causes of deaths in Sydney and suburbs and in New South Wales during 1912 and 1913, were classified as follows:—

Causes of Death.	Sydney and Suburbs.				New South Wales.			
	1913.			1912.	1913.			1912.
	Males.	Females.	Total.	Total.	Males.	Females.	Total.	Total.
General Diseases—								
Typhoid Fever	46	24	70	59	151	85	236	236
Smallpox ... ..	...	1	1	...	...	1	1	...
Measles	4	1	5	189	28	23	51	371
Scarlet Fever	4	9	13	8	10	13	23	11
Whooping-cough	51	76	127	48	139	205	344	118
Diphtheria and Croup	46	59	105	110	144	179	323	266
Influenza	9	11	20	38	62	48	110	137
Dysentery	4	2	6	4	25	15	40	41
Other Epidemic Diseases	12	4	16	20	21	19	40	41
Septicæmia	13	15	28	16	26	23	49	31
Tetanus	12	4	16	16	33	10	43	44
Tuberculosis—Lungs	277	201	478	393	731	479	1,210	1,078
Other Organs	62	55	117	75	109	103	212	146
General	5	3	8	18	13	9	22	28
Syphilis	27	12	39	39	40	22	62	60
Cancer	323	349	677	621	739	593	1,332	1,312
Rheumatism	24	31	55	66	72	80	152	153
Diabetes	48	46	94	69	89	97	186	149
Exophthalmic Goitre	1	10	11	17	2	18	20	28
Anæmia	21	47	68	46	54	76	130	91
Other General Diseases	51	22	73	69	161	52	213	176
Local Diseases—								
Meningitis	40	31	77	68	110	87	197	167
Diseases of Spinal Cord	41	21	62	62	99	43	142	125
Hæmorrhage, &c., of Brain	165	168	333	311	435	351	786	734
General Paralysis of Insane	51	5	56	61	69	7	76	80
Convulsions of Infants	23	12	35	42	89	60	149	163
Other Nervous Diseases	65	58	123	141	158	115	273	271
Acute Endocarditis	30	13	43	75	55	33	88	114
Organic Diseases of Heart	365	312	677	699	962	670	1,632	1,701
Other Diseases Circulatory System	124	71	195	183	249	144	393	367
Bronchitis	94	129	223	207	306	279	585	552
Pneumonia, Broncho-pneumonia	259	172	431	407	667	443	1,110	1,098
Other Diseases Respiratory System	54	39	93	96	156	100	256	262
Diseases of Stomach	37	36	73	82	100	91	191	183
Diarrhoea and Enteritis (under 2)	330	250	580	660	839	649	1,488	1,402
" " (over 2)	66	61	127	127	185	164	349	339
Appendicitis	35	18	53	61	90	56	146	136
Intestinal Obstruction	38	38	76	55	95	75	170	149
Cirrhosis of Liver	53	23	76	75	95	33	128	148
Other Diseases Digestive System	43	66	109	99	123	140	263	241
Nephritis	313	209	522	477	631	354	985	923
Other Diseases Urinary System	71	20	91	83	192	29	221	209
Diseases of Genital Organs	1	51	52	46	2	76	78	78
Puerperal Condition	...	152	152	112	...	329	329	305
Diseases of Skin	24	25	49	34	69	50	119	99
Diseases of Bones, &c.	4	3	7	19	16	6	22	33
Congenital Malformations	45	31	76	67	105	67	172	156
Diseases of Early Infancy	325	304	629	539	849	691	1,540	1,413
Senility	127	179	306	332	733	519	1,252	1,263
Violence—								
Suicide	98	35	133	117	219	58	277	261
Accident	270	82	352	327	908	256	1,164	1,027
Homicide	14	4	18	20	25	14	39	42
Execution ... ..	...	...	...	...	...	...	...	1
Not Classed (Open Verdict)	26	9	35	30	66	20	86	68
Ill-defined Causes	34	13	47	46	163	64	227	239
Total	4,316	3,622	7,938	7,681	11,509	8,223	19,732	18,866

In the following table will be found the principal causes of death arranged in order of fatality, together with the average number of deaths from the same causes during the previous five years, due allowance having been made for the increase in population:—

Causes of Death.	Number, 1913.	Average Number, 1908-12.	Causes of Death.	Number, 1913.	Average Number, 1908-12.
Diarrhoea and Enteritis (under 2 years)	1,488	1,292	Typhoid Fever	238	291
Diarrhoea and Enteritis (over 2 years)	349	344	Meningitis	197	172
Organic Diseases of the Heart	1,632	1,727	Diabetes	186	158
Endocarditis	88	120	Congenital Malformations	172	133
Cancer	1,332	1,322	Intestinal Obstruction ...	170	154
Senility	1,252	1,162	Convulsions of Infants ...	149	189
Tuberculosis—Lungs ...	1,210	1,205	Appendicitis	146	145
Accident	1,164	1,062	Cirrhosis of the Liver ...	128	137
Pneumonia	1,110	1,031	Gastritis	115	119
Premature Birth	928	809	Influenza	110	157
Bright's Disease	893	796	Embolism and Thrombosis	107	103
Hæmorrhage, &c., of the Brain	786	745	Acute Rheumatism	101	93
Bronchitis	585	561	Epilepsy	84	77
Congenital Debility	405	480	Alcoholism	79	58
Whooping-cough	344	117	Syphilis	62	64
Puerperal Condition	329	311	Measles	51	124
Diphtheria and Croup ...	323	236	Dysentery	40	65
Suicide	277	223	Others	3,104	2,926
			All Causes	19,732	18,708

Of the eleven most numerous causes, all showed increases except organic diseases of the heart, which was 5 per cent. below the average of the previous five years.

As regards diseases ordinarily fatal to infants, there were decreases in congenital debility and convulsions, and increases in diarrhoea and enteritis, malformations, and premature birth.

SMALLPOX.

A severe epidemic of smallpox has not occurred in New South Wales. The early historical records indicate that the disease in a virulent form was prevalent amongst the aborigines in 1789, and between the years 1830 and 1840, but the infection did not spread amongst the white population.

In 1877 a case of smallpox was discovered on a steamer in Sydney Harbour, and some cases occurred in residences adjoining the wharf, and on other

ships in the port; 4 deaths were recorded. In 1881 the disease broke out in Sydney, and was epidemic for several months; 3 deaths were recorded in 1881, and 23 in the following year. A few cases were reported in 1883.

From 1883 to 1913 no cases of smallpox occurred in New South Wales; those brought occasionally by ships from oversea ports were isolated in the quarantine area, and the strict observance of the quarantine regulations prevented its introduction amongst the residents.

In 1913, smallpox, of the mildest type, became epidemic in Sydney. In the absence of severe symptoms the disease escaped detection till it had become distributed throughout the metropolitan area, and thence, in a few instances, to country districts. The total number of cases notified to 31st December, 1913, was 1,070; one death occurred.

Vaccination.

Vaccination is not compulsory in New South Wales, and a very small proportion of the people become vaccinated voluntarily, except when an epidemic is imminent. This may be attributed to a general feeling of security from infection on account of the distance from countries where the disease is more or less endemic. The duration of voyages from such places has been diminished considerably by improved transit facilities, and it is now possible for cases in the incubation period to enter the State undetected by quarantine inspectors.

During the year 1913, in consequence of the occurrence of smallpox in the State, there was a great demand for vaccination, many depôts were opened, and about 425,000 persons were vaccinated by Government medical officers and by private medical practitioners.

TYPHOID FEVER.

The number of deaths from typhoid fever during 1913 was 236, equivalent to 1.30 per 10,000 living, which is 19 per cent. lower than the rate for the previous five years. This is essentially a preventable disease, and readily yields to sanitary precautions, but the rate is still high, notwithstanding the great improvement in the last twenty years. It is higher than in England, where in 1913 the rate was .44 per 10,000, or one-third of the rate in New South Wales.

The number of deaths and rates since 1884 have been as stated below:—

Period.	Males.		Females.		Persons.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000
1884-88	1,356	5.12	1,115	5.13	2,471	5.13
1889-93	959	3.11	714	2.74	1,673	2.94
1894-98	1,107	3.27	731	2.46	1,838	2.89
1899-1903	1,054	2.93	733	2.25	1,787	2.63
1904-08	748	1.93	507	1.42	1,255	1.69
1909	169	2.07	118	1.55	287	1.82
1910	196	2.33	98	1.26	294	1.82
1911	106	1.22	78	.98	184	1.11
1912	151	1.65	85	1.03	236	1.36
1913	151	1.59	85	.99	236	1.30

The decrease between 1888 and 1893 was very marked, and is to be traced to the influence of the Dairies Supervision Act, which began to operate in 1889. From 1889 to 1903 the rate was very even, and did not decline to any extent, but during the next quinquennium there was a considerable improvement.

The next statement gives the rate in the metropolis and in the country districts during the last twenty years, and, as will be noticed, the rate in the metropolis has been only about two-thirds of that in the remainder of the State. It would appear that the drainage of some of the country towns is very defective, and the water supply less pure than in the metropolis.

Period.	Metropolis.		Country Districts.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1894-98	507	2.26	1,331	3.24
1899-1903	426	1.72	1,361	3.12
1904-08	334	1.21	921	1.97
1909	86	1.44	201	2.05
1910	94	1.53	200	2.00
1911	51	.84	130	1.27
1912	59	.87	177	1.67
1913	70	.99	166	1.51

Most deaths occur in the summer and autumn. In 1913 there were 97 deaths in the summer months, December, January, February, and 80 in the autumn months, March, April, May.

It has been established that inoculation of healthy persons with sterilised typhoid cultures is an effective measure for preventing infection by typhoid fever. By this means the case incidence may be reduced by 75 per cent., and when the disease does occur amongst inoculated persons it takes a milder form with a considerably lower fatality rate than amongst persons not so protected. In New South Wales the Department of Public Health supplies anti-typhoid vaccine to medical practitioners free of cost.

Typhoid is a disease of youth and early manhood, and the following table shows, in various age-groups, the death-rate per 10,000 of each sex in decennial periods since 1881 and in 1911 :—

Age-group.	Males.				Females.				Persons.			
	1881-1890.	1891-1900.	1901-1910.	1911.	1881-1890.	1891-1900.	1901-1910.	1911.	1881-1890.	1891-1900.	1901-1910.	1911.
Years.												
0—4...	3.67	1.46	.44	.39	3.76	1.38	.43	.20	3.71	1.42	.44	.29
5—9...	2.60	1.47	.75	.35	2.85	1.37	.76	.24	2.72	1.42	.76	.29
10—14...	2.57	1.94	1.20	.50	4.12	2.12	1.69	.51	3.33	2.03	1.44	.50
15—19...	5.85	4.22	2.71	1.19	7.28	4.20	2.99	1.95	6.56	4.21	2.85	1.56
20—24...	8.41	5.75	4.58	2.59	7.01	3.66	2.83	2.26	7.75	4.72	3.71	2.43
25—34...	7.45	5.02	4.08	2.24	6.34	3.23	1.98	1.27	6.99	4.21	3.07	1.77
35—44...	4.15	3.18	2.63	1.02	4.07	2.16	1.69	.94	4.12	2.75	2.21	.98
45—54...	3.53	1.88	1.94	1.37	3.23	1.37	1.29	.73	3.41	1.67	1.66	1.09
55—64...	3.13	1.20	1.29	1.03	2.98	1.65	.65	.53	3.07	1.38	1.02	.81
65—74...	3.14	1.31	.56	.76	2.82	.79	.73	.91	3.02	1.08	.63	.83
75 and over	2.63	1.08	.24	...	3.43	.49	.15	...	2.93	.83	.20	...
All ages	4.73	3.00	2.22	1.22	4.73	2.37	1.61	.98	4.73	2.71	1.93	1.11

The rate has steadily declined in every age-group throughout each decennial period—the decrease being greater for females than for males.

Among males during the first ten years of life, there is not much variation in the rate. After that, it rises fairly rapidly to a maximum at ages 20-24, and then gradually declines with advancing age. With females the experience is similar, except that the maximum point is reached at ages 15-19, five years earlier than with males. At ages 5-19 and 65-74 the rates for females are slightly higher than for males, but at all other ages the rates for males are the higher.

MEASLES.

Measles was the cause during 1913 of 51 deaths, equal to a rate of .28 per 10,000 living. The rate for males was .29, and for females .27. The following statement shows the deaths from measles and the rate per 10,000 living, for each sex, arranged in quinquennial periods since 1884 :—

Period.	Males.		Females.		Persons.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	166	.63	165	.76	331	.69
1889-93	393	1.28	369	1.41	762	1.34
1894-98	338	1.00	324	1.09	662	1.04
1899-1903	160	.44	219	.67	379	.55
1904-08	82	.21	107	.30	189	.25
1909	8	.10	3	.04	11	.07
1910	50	.60	49	.63	99	.61
1911	25	.29	19	.24	44	.26
1912	198	2.17	173	2.10	371	2.13
1913	28	.29	23	.27	51	.28

The rate in 1913 shows a decrease of 59 per cent. as compared with that of the preceding quinquennium. The high rates during the second and third periods were due to severe outbreaks in 1893 and 1898.

Measles is a disease chiefly affecting children, and is periodically epidemic. It was epidemic in 1912, the first occasion since 1898-9, when 719 deaths were recorded. Of the 51 deaths last year, 37 were of children under 5, and 12 of children under 1 year of age. The rates would be more accurately stated if the deaths were compared with the children living of like ages ; this will be found in a subsequent table, giving the mortality rates under 1 and under 5 from the diseases to which children are particularly liable.

SCARLET FEVER.

In 1913 the number of deaths from this disease was 23, equivalent to a rate of .13 per 10,000 of the population, which is 13 per cent. lower than the rate during the previous five years. The number of deaths in the metropolis was 13, and in the remainder of the State 10, the equivalent rates being .18 and .09 respectively per 10,000 living ; the rate in the metropolis is usually about three times as large as in the country districts. Since 1884 the deaths from scarlet fever and the rates for each sex have been as follows :—

Period.	Males.		Females.		Persons.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	287	1.08	342	1.57	629	1.30
1889-93	185	.60	236	.90	421	.74
1894-98	162	.48	218	.73	380	.60
1899-1903	84	.23	114	.35	198	.29
1904-08	88	.23	91	.26	179	.24
1909	10	.12	20	.28	30	.19
1910	9	.11	14	.18	23	.14
1911	6	.07	5	.06	11	.07
1912	6	.07	5	.06	11	.06
1913	10	.11	13	.15	23	.13

Over the whole period the deaths from scarlet fever show a steady and most satisfactory decrease in both sexes. Generally the rate for females is

higher than for males. Like measles, it is an epidemic disease chiefly affecting children. The last years of heavy mortality were 1893 and 1894. Since when the rate has fluctuated, ranging from $\cdot 63$ in 1898 to $\cdot 06$ in 1912.

WHOOPING-COUGH.

Whooping-cough is another of the diseases which chiefly affect children. During 1913 the deaths numbered 344, of which 139 were of boys and 205 of girls. The rate was 1.90 per 10,000 living, and is 192 per cent. above the average of the previous five years. In 1907 whooping-cough was epidemic, and 594 cases proved fatal, the rate being the highest since 1878. The deaths and rates for each sex since 1884 have been as stated below :—

Period.	Males.		Females.		Persons.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	327	1.24	472	2.17	799	1.66
1889-93	495	1.61	666	2.55	1,161	2.04
1894-98	343	1.01	502	1.69	845	1.33
1899-1903	573	1.59	726	2.23	1,299	1.90
1904-08	369	.95	445	1.25	814	1.10
1909	8	.10	9	.12	17	.11
1910	93	1.11	81	1.04	174	1.08
1911	78	.90	82	1.03	160	.96
1912	59	.65	59	.71	118	.68
1913	139	1.46	205	2.39	344	1.90

Taking the whole period covered by the table, this disease does not show any marked tendency to decline, the rates being maintained by epidemics. Of the children who died in 1913, 232 were under 1 year of age and 338 under 5.

DIPHTHERIA AND CROUP.

Diphtheria, with which is included membranous croup, was the cause of 310 deaths in 1913, while croup, so defined, caused 13. The rate was 1.78 per 10,000 living, being 37 per cent. above the rate for the previous five years. In the metropolis the number of deaths was 105, and in the remainder of the State 218, corresponding to rates of 1.48 and 1.98 per 10,000 living in each. The following table shows the number of deaths and the rates in five-year periods since 1884 :—

Period.	Males.		Females.		Persons.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	1,069	4.04	980	4.51	2,049	4.25
1889-93	1,433	4.65	1,399	5.36	2,832	4.98
1894-98	712	2.10	710	2.39	1,422	2.24
1899-1903	310	.86	299	.92	609	.89
1904-08	367	.95	338	.95	705	.95
1909	96	1.17	89	1.17	185	1.17
1910	113	1.35	120	1.55	233	1.44
1911	122	1.41	115	1.44	237	1.42
1912	129	1.42	137	1.65	266	1.53
1913	144	1.52	179	2.08	323	1.73

Until 1893 the rate did not show very much diminution, but it then declined considerably, and in 1908 was less than one-third of what it was twenty years previously. During the last five years the rate has shown an upward tendency, the rate in 1913 being the highest for fourteen years. Nearly 84 per cent. of the persons who died from diphtheria were under 10, and about 57 per cent. under 5 years of age.

NOTIFIABLE INFECTIOUS DISEASES.

The following statement shows the total number of cases of scarlet fever, diphtheria, and typhoid fever reported to the Board of Health, with regard to the metropolitan and Newcastle districts during the years 1904 to 1913, together with the death-rates and the fatalities per 100 cases:—

Notifiable Diseases.	Notified Cases.		Deaths.		
	Number.	Per 10,000 of Population.	Number.	Per 10,000 of Population.	Per 100 cases.
METROPOLIS.					
Scarlet Fever	8,640	14.4	122	.2	1.4
Diphtheria	13,324	22.2	547	.9	4.1
Typhoid Fever	6,188	10.3	619	1.0	10.0
NEWCASTLE DISTRICT.					
Scarlet Fever	2,134	38.3	18	.3	.4
Diphtheria	834	15.0	48	.9	5.8
Typhoid Fever	1,027	18.4	70	1.3	6.8

In both districts during the last five years there was an unusual prevalence of diphtheria, fortunately of a very mild type. In 1913 the case rates of scarlet fever and typhoid fever in the metropolis were 46 per cent. and 22 per cent. respectively below the decennial average; the case rate of diphtheria was 30 per cent. above the average. In Newcastle the case rate of diphtheria was double the decennial average, of scarlet fever 48 per cent. below, and of typhoid fever 24 per cent. above the average.

In Newcastle the case incidence of scarlet fever and typhoid fever is greater than in Sydney, but the fatality rate is lower. With regard to diphtheria, Sydney shows a higher case rate but a lower proportion of fatalities.

Infantile paralysis was declared a notifiable disease on 1st February, 1912, and a serious study of the disease is now being undertaken. Although it is unusual to find more than one case in one family, the Public Health authorities consider it prudent that patients, during the acute stages of infantile paralysis, should be isolated, and precautions taken against possible infection. An opportunity will be afforded thereby of inquiring into the circumstances surrounding the occurrence of the illness and discovery of its cause.

INFLUENZA.

There were 110 deaths attributed to influenza during the year, equal to a rate of .61 per 10,000, which is 30 per cent. below the average of the previous five years. The rate for males was .65, and for females .56 per 10,000 living. Prior to 1891 this disease was very little known, or rather few deaths

were ascribed to it, but in that year there was a very severe epidemic, and it has since always been more or less prevalent. The majority of deaths from influenza occur in the four months, July—October.

TUBERCULOUS DISEASES.

To the several forms of tuberculous diseases, 1,444, or 7·3 per cent. of the total deaths in New South Wales during 1913 are attributable, equivalent to 7·98 per 10,000 living. This rate was 2·8 per cent. above the average for the previous five years.

The death rates from all forms of tuberculosis, other than pulmonary, are stated hereunder for decennial periods since 1881, and for 1911. The rates are per 10,000 of each sex in various age-groups.

Age-group.	Males.				Females.				Persons.			
	1881-1890.	1891-1900.	1901-1910.	1911.	1881-1890.	1891-1900.	1901-1910.	1911.	1881-1890.	1891-1900.	1901-1910.	1911.
Years.												
0—4 ...	24·10	15·93	7·11	3·96	22·10	13·41	5·98	3·79	22·63	14·69	6·55	3·88
5—9 ...	·82	1·64	1·11	·92	·87	1·29	·89	·71	·85	1·47	1·01	·82
10—14 ...	·39	·70	·73	1·86	·46	·80	·67	·38	·42	·75	·70	1·13
15—19 ...	·30	·59	·73	·36	·28	·83	·74	·24	·29	·71	·74	·30
20—24 ...	·48	·75	·71	·45	·46	·89	1·00	·72	·47	·82	·85	·58
25—34 ...	·39	·86	·90	·49	·46	·86	1·13	·67	·42	·86	1·01	·58
35—44 ...	·42	·71	1·08	·84	·17	·73	1·04	·31	·32	·72	1·06	·59
45—54 ...	·42	·74	1·25	·69	·30	·44	·50	·58	·37	·62	·93	·64
55—64 ...	·39	·96	1·39	·83	·61	·70	·69	1·32	·47	·85	1·08	1·04
65—74 ...	·76	·68	1·37	...	·30	1·05	·79	·91	·58	·82	1·12	·41
75 & over	·53	...	1·59	...	...	·24	·75	...	·33	·10	1·21	...
All ages...	3·71	2·76	1·70	1·12	3·75	2·62	1·51	·98	3·73	2·69	1·61	1·05

This table shows that the infantile mortality from these diseases was very largely in excess of any other group, and that the decrease in the general rate since 1881 is due entirely to the decline in the deaths at ages under 5 years, from 22·6 per 10,000 in 1881-90, to 6·6 per 10,000 in 1901-1910, and 3·9 in 1911.

Taking the experience during 1901-1910, the rate for both sexes fell rapidly from the first to the second age-group, then the male rate decreased slowly to ages 20-24, thence it increased at each age up to 55-64 years. With regard to the females the rate fluctuated throughout each successive group, after a decline in ages 5-14, it rose again up to age 34 years, then declined, reaching a minimum at ages 45-54. Except at ages 15-34 years the male rate in each group was the higher. In 1911 the rate was generally much lower than in the previous decade.

Tuberculosis of Lungs.

Tuberculosis of lungs, or phthisis, as it is more commonly called, caused 1,210 deaths during the year. The rate was 6·69 per 10,000 living; amongst males 7·69, and amongst females 5·58 per 10,000. The rate improved steadily after 1885, until in 1912, it was the lowest on record, and 53 per cent. below the figure for the first-mentioned year. The rate in 1913 was the highest since 1906, and was 2·5 per cent. above the average for the five years 1908-12.

The table below shows the deaths from this disease and the rates for each sex since 1884 :—

Period.	Males.		Females.		Persons.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	3,132	11·83	2,022	9·30	5,154	10·69
1889-93	3,269	10·61	1,925	7·38	5,194	9·13
1894-98	3,191	9·43	1,983	6·63	5,174	8·15
1899-1903	3,322	9·24	2,304	7·08	5,626	8·21
1904-08	2,985	7·72	2,184	6·13	5,169	6·96
1909	590	7·21	450	5·93	1,040	6·50
1910	591	7·03	466	6·00	1,057	6·54
1911	648	7·46	451	5·66	1,099	6·60
1912	643	7·04	435	5·27	1,078	6·20
1913	731	7·69	479	5·58	1,210	6·69

The decrease in the number of deaths from tuberculosis has taken place since the passing of the Dairies Supervision Act of 1886, the Pure Food Act, 1908, the Diseased Animals and Meat Act of 1892, and the Public Health Act of 1896, and may be attributed to their operation. The Board of Health is empowered by these Acts to supervise dairies and the production of milk, cream, butter, and cheese, and to prevent the sale of tuberculous meat. The Dairies Supervision Act was improved in the powers conferred by the Pure Food Act, 1908, which makes the finding of a diseased cow in a dairy herd *prima facie* evidence that its milk had been sold for food, and a prosecution for selling diseased milk can be instituted by the health inspectors. An Advisory Board was appointed in 1912, to advise the Government as to the best method of dealing with tuberculosis; particulars of its operations and other matters relating to the treatment, cure, and prevention of tuberculosis, will be found in chapter "Social Condition" of this volume.

If the deaths be distinguished in the two divisions of the metropolis and the country districts, as in the following table, it will be seen that in 1894-98 the rate in the former was 47 per cent. higher than in the latter. Since that period the rate in the country districts has remained fairly constant, but in the metropolis the decline has been very marked, and amounts to 34 per cent. The reason for the decline is the establishment of hospitals for the treatment of consumptives :—

Period.	Metropolis.		Country Districts.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1894-98	2,302	10·26	2,872	6·99
1899-1903	2,490	10·03	3,136	7·18
1904-08	2,184	7·89	2,985	6·40
1909	403	6·73	637	6·51
1910	443	7·21	614	6·13
1911	445	6·96	654	6·38
1912	393	5·82	685	6·45
1913	478	6·73	732	6·66

Within the City of Sydney, pulmonary tuberculosis is a notifiable disease. The observance of the health regulations, and the general and widespread improvements and ventilation of business and residential buildings and places of amusement, and the destruction in recent years of very many unhealthy tenements, have resulted in a most satisfactory fall in the rate of mortality from phthisis. Although the population of the metropolis has increased considerably, the deaths from this disease have decreased from 589 in the year 1903 to 478 in 1913.

A comparison of the death rates according to age and sex in each decennial period since 1881, and in 1911, is supplied in the following statement, the rates are per 10,000 living in each group :—

Age Group.	Males.				Females.				Persons.			
	1881-1890.	1891-1900.	1901-1910.	1911.	1881-1890.	1891-1900.	1901-1910.	1911.	1881-1890.	1891-1900.	1901-1910.	1911.
Years.												
0—4 ...	2.32	1.06	1.17	.39	2.27	.97	.97	.80	2.30	1.01	1.07	.59
5—9 ...	.71	.34	.31	.35	.77	.57	.39	...	.74	.45	.35	.16
10—14 ...	.62	.54	.52	.75	1.74	1.08	1.07	.63	1.17	.81	.79	.69
15—19 ...	5.15	3.57	2.86	1.31	7.17	4.71	5.30	4.02	6.15	4.14	4.07	2.65
20—24 ...	14.62	10.69	7.97	6.65	13.97	9.64	8.94	6.55	14.31	10.17	8.45	6.61
25—34 ...	20.95	15.68	11.35	10.43	19.07	13.75	11.16	10.63	20.16	14.81	11.26	10.55
35—44 ...	21.99	18.28	14.79	13.36	18.02	13.39	11.90	10.07	20.40	16.22	13.48	11.82
45—54 ...	23.43	19.04	16.56	14.99	16.54	10.84	9.76	7.16	20.80	15.67	13.63	11.55
55—64 ...	19.40	21.98	17.44	19.23	12.72	11.17	10.15	8.73	16.81	17.60	14.28	14.63
65—74 ...	17.44	17.09	17.02	14.75	10.22	7.62	9.07	11.89	14.61	12.97	13.59	13.45
75 and over	6.04	4.67	7.45	8.51	7.28	2.44	4.64	3.46	6.51	3.73	6.19	6.24
All ages ...	11.83	9.63	8.06	7.48	9.19	6.77	6.48	5.67	10.64	8.30	7.31	6.61

The decline in mortality from phthisis has been general throughout all age-groups, and was greatest between the first and second decennial periods shown above. As compared with the previous ten years there was in 1911 a marked decline in the death rates at all ages up to 55 years; above that age the difference was not great. The male rate is lowest at ages 5-9 years, after which it rises in each successive group up to 65 years. For the females the lowest rate is also at 5-9 years, but the highest is at ages 35-44 years. The female rate exceeds the male at ages 5-24 years, but for the other groups the male rate is considerably higher.

Of the 1,210 persons who died from tuberculosis of lungs or phthisis in 1913, 802 were born in Australia, and of the remainder, 98 had been resident in the Commonwealth less than five years, 59 from five to twenty years, and 231 for more than twenty years; in 20 instances either birth-place or length of residence was not stated.

The following comparison of death-rates from tuberculosis of lungs in various countries is interesting. The rates are stated per 1,000 of total population, and thus do not take specifically into account either age or sex, which are material factors. If anything, this omission makes the comparison more favourable to New South Wales and other Australian States, where the proportion of aged persons is smaller than in the countries of the Old World. There is also possibly a variation in the methods of classification of the deaths in the various countries.

Country.	Death-rate per 1,000 of Total Population.		Country.	Death-rate per 1,000 of Total Population.	
	1907-11.	1912.		1907-11.	1912.
Ireland ...	1.87	1.70	Belgium ...	1.01	.....
Norway ...	1.82	.....	Victoria ...	.88	.83
Switzerland ...	1.63	.....	South Australia ...	.80	.75
Spain ...	1.30	1.20	Western Australia ...	.73	.74
Scotland ...	1.25	.....	New South Wales ...	.65	.62
Netherlands ...	1.23	1.10	Tasmania ...	.64	.56
Italy ...	1.22	1.07	Queensland ...	.60	.53
England and Wales ...	1.09	1.04	New Zealand ...	.60	.50

New South Wales stands fourth from the bottom of the list. The rate in all the European countries is higher than in New South Wales. The experience of the countries in the table, is similar to that of New South Wales, namely, that the rate is decreasing.

Tuberculosis of Meninges.

Tuberculosis of meninges caused 100 deaths during 1913, which is equal to a rate of .55 per 10,000 living. Nearly all were children, 76 or 58 per cent., being under the age of 5 years.

Abdominal Tuberculosis.

Included under this heading are deaths from tabes mesenterica. There were 58 deaths in 1913, of these 26 or 45 per cent. were of children under 5 years of age.

Other Tuberculous Diseases.

Tuberculous diseases, other than those referred to above, caused 76 deaths, being at the rate of .42 per 10,000 living.

CANCER.

There were 1,332 deaths from cancer in 1913, equal to a rate of 7.36 per 10,000 living, which is .8 per cent. above the average for the preceding five years. The deaths during the year were 739 amongst the males and 593 amongst the females, the rates being 7.77 and 6.91 per 10,000 living of each sex respectively.

The following table shows the deaths and rates per 10,000 living for each sex since 1884 :—

Period.	Males.		Females.		Persons.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	859	3.25	732	3.37	1,591	3.30
1889-93	1,262	4.10	1,038	3.98	2,300	4.04
1894-98	1,719	5.09	1,387	4.68	3,106	4.89
1899-1903	2,295	6.38	1,877	5.77	4,172	6.09
1904-08	2,671	6.91	2,418	6.73	5,089	6.85
1909	608	7.43	558	7.35	1,166	7.39
1910	623	7.42	556	7.16	1,179	7.29
1911	666	7.67	567	7.12	1,233	7.41
1912	726	7.95	586	7.10	1,312	7.55
1913	739	7.77	593	6.91	1,332	7.36

The rates have increased steadily, although the female rate fluctuates to some extent. In New South Wales, the male rate is usually the higher, which is contrary to the experience of the United Kingdom.

The ages of persons who died from cancer during 1913 ranged from 1 month to 96 years, but cancer is essentially a disease of old age; 95 per cent. were aged 35 and over.

The following table shows for each sex the death-rate per 10,000 in age-groups after 25 years, during each decennial period since 1881 and for the year 1911 :—

Age Group.	Males.				Females.				Persons.			
	1881-1890.	1891-1900.	1901-1910.	1911.	1881-1890.	1891-1900.	1901-1910.	1911.	1881-1890.	1891-1900.	1901-1910.	1911.
Years.												
25-34 ...	.75	.94	.89	1.19	1.36	1.24	1.37	1.42	1.01	1.07	1.12	1.30
35-44 ...	2.88	3.63	3.93	4.55	5.25	6.79	7.16	6.50	3.82	4.96	5.39	5.46
45-54 ...	9.36	12.13	12.53	14.19	14.63	17.93	19.21	20.03	11.37	14.52	15.41	16.75
55-64 ...	11.95	30.36	34.96	35.56	22.88	33.20	36.54	33.35	21.09	31.52	35.65	34.59
65-74 ...	34.78	51.32	72.00	74.14	31.85	43.00	62.06	58.98	33.63	47.18	67.71	67.27
75 and over	41.24	63.78	86.36	88.89	35.97	62.95	79.98	101.51	39.24	63.43	83.49	94.52
All ages ...	3.24	4.99	6.90	7.68	3.19	4.77	6.62	7.13	3.22	4.88	6.77	7.42

Since 1881-90 the death rates from cancer have more than doubled for both sexes, having risen constantly for every age-group throughout each decennial period. It has been stated that the more skilful diagnosis of late years, especially of internal cancer, may account for part of the increase, but how far this is so it is impossible to say, and there seems to be no doubt that the spread of cancer is real.

The rate is the lowest in the earliest age-group shown above, and rises steadily with increasing age, the rate for both sexes together in 1901-10 being 1.12 per 10,000 at ages 25-34, as compared with 83.49 at ages 75 and over. Up to age 64 years the female rate is higher than the male, but over that age the mortality is greater amongst males. Comparing the rates in 1911 with those of the period 1901-10, every group of males shows an increase, but the female rates were slightly lower at ages 35-44 and 55-74 years.

Cancer is probably the most feared of all diseases, inasmuch as no specific remedy is known, and in all countries for which there are records the death-rate is increasing. In the following table the rates based on the whole population are given for certain countries. The comparison, being uncorrected for age incidence, is somewhat crude, but is apparently favourable to the Australian States.

Country.	Death-rate per 1,000 of Total Population.		Country.	Death-rate per 1,000 of Total Population.	
	1907-1911.	1912.		1907-1911.	1912.
Switzerland	1.25	...	New Zealand ... ..	.74	.78
Netherlands	1.04	1.09	New South Wales ... ..	.72	.76
Scotland	1.01	...	Italy ... ..	.65	.64
Norway ... ..	.96	...	Belgium... ..	.65	...
England and Wales ... ..	.95	1.02	Tasmania ... ..	.64	.64
Victoria ... ..	.81	.91	Queensland ... ..	.63	.63
Austria ... ..	.79	.78	Western Australia ... ..	.57	.59
Ireland ... ..	.79	.85	Spain ... ..	.51	.56
South Australia ... ..	.77	.77	Hungary ... ..	.45	.47
Prussia ... ..	.76	.81	Jamaica ... ..	.18	.17

DIABETES.

The deaths attributed to diabetes in 1913 numbered 186, equal to a rate of 1.04 per 10,000 living, which is 20.9 per cent. above the average for the preceding five years. The rate for males was .94 and for females 1.13 per 10,000 living of each sex. Most of the deaths occur after middle life. Of the total, 139 were of persons over 45 years of age.

MENINGITIS.

Inflammation of the brain or its membranes caused 197 deaths, equal to a rate of 1.09 per 10,000 living. This is 12.4 per cent. above the average rate during the previous five years. The disease is principally one of childhood. Of those who died during the year, 112, or 57 per cent., were under 5 years of age. Included in the total are 36 deaths from cerebro-spinal fever.

HÆMORRHAGE OF THE BRAIN.

To cerebral hæmorrhage and apoplexy there were due 670 deaths, of which 365 were males and 305 females. The rate is 3.70 per 10,000 living, 3.84 for males and 3.55 for females, in each case being above the average.

The following table shows the rates for these diseases for each sex in quinquennial periods since 1884:—

Period.	Males.		Females.		Persons.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	778	2·97	467	2·15	1,245	2·58
1889-93	796	2·58	618	2·37	1,414	2·48
1894-98	943	2·79	710	2·39	1,653	2·60
1899-1903	1,059	2·92	788	2·42	1,833	2·68
1904-08	1,303	3·31	1,039	2·91	2,342	3·15
1909	323	3·95	286	3·77	609	3·86
1910	286	3·15	265	3·41	531	3·29
1911	328	3·77	317	3·98	645	3·88
1912	345	3·78	266	3·22	611	3·51
1913	365	3·84	305	3·55	670	3·70

Generally the male rate is a little higher than the female. There has been slight difference in the rate for many years—it has fluctuated, first with a tendency to decrease down to 1895, and then to increase. Possibly the variations in the rate are due to some extent to differences in classification.

CONVULSIONS OF CHILDREN.

Convulsions of children (under 5 years) caused 149 deaths during 1913, or ·82 per 10,000 living, which is 21 per cent. below the average for the previous five years. This disease, however, being entirely confined to children under 5, the rate is more properly stated as a proportion of those ages. Comparing therefore the deaths with the number living at those ages, the rate during 1913 was ·68 per 1,000, as against ·87, the average of the previous five years. The constant decrease in the number of deaths of children ascribed to convulsions is gratifying, indicating as it does a more definite diagnosis of infantile disease.

INSANITY.

Insanity is classed as a distinct disease of the nervous system; but of the total number of deaths of insane persons in 1913, only 139 deaths appear in the tables as due to insanity (including general paralysis of the insane), the remaining deaths being attributed to their immediate cause.

The death-rate of persons dying from insanity, including general paralysis of the insane, per 10,000 living, was 1·07 in the case of males, and ·43 in the case of females.

Practically all the insane persons in New South Wales are under treatment in the various Hospitals for the Insane. At the end of 1913 there were 6,639 persons under official control and receiving treatment. This is equal to 3·62 insane persons per 1,000 of population. The average during the preceding five years was 3·69 per 1,000.

The percentage of deaths of insane persons in New South Wales is comparatively light. The following table has been computed on the basis of the average number of patients resident in Hospitals for the Insane :—

Period.	Males.		Females.		Persons.	
	Deaths in Hospitals for Insane.	Proportion of average number resident.	Deaths in Hospitals for Insane.	Proportion of average number resident.	Deaths in Hospitals for Insane.	Proportion of average number resident.
1894-98	782	6·86	366	5·18	1,148	6·21
1899-1903	1,021	7·77	465	5·54	1,486	6·91
1904-1908	1,280	8·24	613	6·00	1,893	7·35
1909	240	7·14	125	5·58	365	6·52
1910	280	7·97	145	6·22	425	7·27
1911	345	9·46	152	6·42	497	8·28
1912	335	9·01	166	6·87	501	8·17
1913	340	9·03	153	6·09	493	7·85

DISEASES OF THE HEART.

Diseases of the heart were the cause of 1,767 deaths, equivalent to a rate of 9·77 per 10,000 living, which is 7 per cent. below the average for the preceding five years. Of the total, 1,050 were males and 717 females, the rates being 11·04 and 8·35 per 10,000 living respectively. The deaths and death-rates for each sex since 1884 are shown below:—

Period.	Males.		Females.		Persons.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	2,149	8·12	1,390	6·39	3,539	7·34
1889-93	2,250	7·30	1,357	5·20	3,607	6·34
1894-98	2,434	7·19	1,478	4·98	3,912	6·16
1899-1903	2,917	8·11	1,932	5·94	4,849	7·08
1904-1908	3,791	9·81	2,727	7·65	6,518	8·77
1909	923	11·28	677	8·92	1,600	10·14
1910	918	10·93	720	9·23	1,638	10·13
1911	1,033	11·90	768	9·65	1,801	10·82
1912	1,130	12·38	751	9·10	1,881	10·82
1913	1,050	11·04	717	8·35	1,767	9·77

The ages of the persons who died ranged up to 98 years; and, as might be expected, the great majority of deaths occurred after middle age had been passed, 1,435 being of persons over 45 years of age.

Included in the total are deaths from pericarditis, endocarditis, organic diseases of the heart, and angina pectoris. The largest number of deaths

(about one-half of the total) was attributed to "heart disease" without further definition—that is to say, without the particular cardiac lesion being specified.

The following table shows the rates per 10,000 for males and females in age-groups for decennial periods since 1831, and for the year 1911 :—

Age Group.	Males.				Females.				Persons.			
	1831-1890.	1891-1900.	1901-1910.	1911.	1831-1890.	1891-1900.	1901-1910.	1911.	1831-1890.	1891-1900.	1901-1910.	1911.
Years.												
0—4 ...	1.27	1.14	1.13	.77	1.28	.89	.97	1.10	1.28	1.02	1.05	.93
5—9 ...	1.34	.99	1.10	1.16	1.09	.98	1.16	.47	1.21	.99	1.13	.82
10—14 ...	1.73	1.28	1.49	1.74	1.50	1.31	1.84	2.66	1.61	1.30	1.66	2.20
15—19 ...	1.90	1.40	1.92	2.14	2.21	1.66	1.98	2.92	2.05	1.53	1.95	2.52
20—24 ...	2.52	1.42	1.55	2.14	2.47	1.83	1.94	2.26	2.50	1.62	1.74	2.20
25—34 ...	3.61	2.66	2.15	2.10	4.58	2.53	2.53	2.69	4.01	2.60	2.34	2.38
35—44 ...	8.86	5.81	5.46	6.03	7.86	5.63	6.13	4.72	8.46	5.74	5.77	5.42
45—54 ...	17.53	13.36	13.79	14.76	15.98	11.20	11.80	13.74	16.94	12.47	12.93	14.32
55—64 ...	35.37	36.56	35.37	37.63	31.13	25.29	23.72	33.88	33.73	31.96	32.48	35.98
65—74 ...	74.99	69.40	91.84	109.69	60.00	54.65	78.67	95.55	69.12	62.37	86.15	103.29
75 & over	91.41	104.74	178.83	253.42	88.64	89.54	141.23	204.16	90.36	98.30	161.94	231.23
All ages...	7.91	7.31	9.60	11.92	6.02	5.20	7.51	9.66	7.05	6.33	8.60	10.84

Diseases of the heart are increasing, although it may be that part of the increase is due to a better acquaintance with the action of the heart, and that many deaths which were formerly attributed to old age are now ascribed to some form of heart disease. The rates above show that the increase has been in the ages 65 and over, and that it was most marked during the periods 1891 to 1910. The rates do not vary greatly up to age 24 years but rise steadily after that age.

The death-rate for males generally is higher than for females, probably due to the greater risks and shocks to which males are exposed. At ages 5 to 45 years the female rate is higher than the male; after 45 the male rate is much the higher. Among both sexes the rates in 1911 were generally higher than in the decennium 1901-10.

BRONCHITIS.

Bronchitis caused 582 deaths in 1913, equivalent to 3.23 per 10,000 living, which is 4 per cent. above the mean rate of the previous five years. The rate for males was 3.22 and for females 3.25 per 10,000; of the total deaths 219 were stated to be due to acute and 366 to chronic bronchitis. This disease chiefly affects the extremes of life. In 1913, of those who died, 146, or 25 per cent., were under 5, and 355, or 61 per cent., over 65 years of age.

PNEUMONIA.

The total deaths from pneumonia were 1,110, equal to a rate of 6.13 per 10,000 living. Included in the total are 391 deaths which were ascribed to broncho-pneumonia. Among males the rate was 7.01, and among females 5.16 per 10,000 living of each sex respectively. The rate is 7.5 per cent.

above the average of the previous five years. Pneumonia is more fatal to males than to females, as the following table, giving the rates by sexes since 1884, shows:—

Period.	Males.		Females.		Persons.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	2,032	7·68	1,301	5·98	3,333	6·91
1889-93	2,158	7·00	1,373	5·26	3,531	6·21
1894-98	2,514	7·43	1,528	5·15	4,042	6·37
1899-1903	3,191	8·87	2,000	6·15	5,191	7·58
1904-1908	2,816	7·28	1,824	5·12	4,640	6·24
1909	517	6·32	351	4·62	868	5·50
1910	525	6·25	340	4·38	865	5·35
1911	575	6·62	398	5·00	973	5·85
1912	699	7·66	399	4·83	1,098	6·32
1913	667	7·01	443	5·16	1,110	6·13

Most deaths from pneumonia occur in the cold weather. In 1913 there were 509 deaths, or 46 per cent. in the four months June to September.

There has been little reduction in the mortality for some years. There was a drop after 1888, but it then steadily increased, with a few fluctuations, to the highest point on record, in 1902. The general rates since that year has been much lower.

Pneumonia is most destructive amongst young children and old persons.

The following table shows the rates per 10,000 in age-groups of both sexes from 1881 to 1911:—

Age Group.	Males.				Females.				Persons.			
	1881-1890.	1891-1900.	1901-1910.	1911.	1881-1890.	1891-1900.	1901-1910.	1911.	1881-1890.	1891-1900.	1901-1910.	1911.
Years.												
0—4 ...	17·97	21·08	21·19	19·21	15·83	17·16	17·70	17·48	16·92	19·15	19·48	18·36
5—9 ...	1·63	1·29	1·31	1·62	1·72	1·20	1·27	1·19	1·67	1·25	1·29	1·41
10—14 ...	1·21	·55	·95	·12	1·02	·93	1·10	1·14	1·12	·74	1·02	·63
15—19 ...	2·33	2·01	2·29	1·66	1·90	1·26	1·49	·24	2·12	1·64	1·90	·96
20—24 ...	3·99	3·08	3·00	2·14	2·63	1·90	1·54	1·19	3·36	2·50	2·28	1·68
25—34 ...	4·90	3·91	3·67	2·80	4·21	2·60	2·30	1·79	4·61	3·32	3·01	2·31
35—44 ...	7·65	6·69	6·06	4·18	5·97	3·97	3·92	3·67	6·98	5·55	5·09	3·94
45—54 ...	12·98	9·61	9·47	7·67	7·35	5·33	4·78	2·78	10·83	7·85	7·45	5·52
55—64 ...	17·00	16·08	16·15	9·72	8·87	10·78	10·19	7·94	13·85	13·92	13·56	8·94
65—74 ...	26·01	28·21	28·47	26·86	22·22	18·66	22·98	17·37	24·53	23·89	26·10	22·56
75 and over ...	30·21	42·40	46·54	54·84	28·26	35·38	50·32	53·06	29·47	39·42	48·24	54·04
All ages ...	7·77	7·46	7·68	6·63	5·86	5·22	5·50	5·00	6·91	6·42	6·64	5·85

A very large increase has taken place in the rates for the oldest group, 75 years and over, the rates for the groups under 5 years and 65-74 are also greater than in the period 1881-1890, but in all the other groups the rate has declined slightly. The rate is at a minimum at ages 10-14 years, after which it rises gradually up to age 35, and then very rapidly with increasing age.

In 1911 all age-groups except 5-9 years and 75 and over, showed improved rates as compared with the previous ten years.

DISEASES OF DIGESTIVE SYSTEM.

The deaths attributed to these diseases numbered 2,735, equivalent to 15·11 per 10,000 living, the rates for males and females being 16·05 and 14·07 as compared with 14·81 and 13·00 respectively, the rates during the preceding five years. Deaths in this system were ascribed mainly to diarrhoea and enteritis, which with appendicitis and cirrhosis of the liver are discussed hereunder. Gastritis caused 115 deaths, 53 being of children under 5 years of age; and 41 deaths were ascribed to gastric ulcer.

DIARRHOEA AND ENTERITIS.

In 1913 there were ascribed to these two causes 1,837 deaths, or 10·15 per 10,000 living, which is 12·2 per cent. above the average of the preceding five years. The rate for males was 10·76 and for females 9·47 per 10,000 living. The following table gives the deaths and rates of males and females since 1884:—

Period.	Males.		Females.		Persons.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	3,412	12·89	3,048	14·02	6,460	13·40
1889-93	3,451	11·20	2,851	10·92	6,302	11·07
1894-98	4,042	11·94	3,638	12·26	7,680	12·09
1899-1903	4,422	12·29	3,901	11·99	8,323	12·15
1904-1908	3,714	9·61	3,000	8·41	6,714	9·03
1909	834	10·19	652	8·59	1,486	9·42
1910	769	9·15	662	8·53	1,431	8·85
1911	698	8·04	535	6·72	1,233	7·41
1912	932	10·40	809	9·61	1,741	10·01
1913	1,024	10·76	813	9·47	1,837	10·15

There was a large drop in the rate after 1888, probably due to the influence of the Dairies Supervision Act. During the next fifteen years there was a gradual increase, but in 1904 a very great improvement ensued, which has since been fairly maintained.

According to the Bertillon classification, deaths from these diseases are divided into two groups, one including children under 2 years of age, and the other all persons 2 years of age and over. In the first group there were 1,438, or 81 per cent. of the total, and in the second 349. The mortality rate of children under 2 years during 1913 was 10 per cent. above the average of the previous quinquennium, being 15·81 per 1,000 children under 2 as compared with 14·24 during 1908-12.

Of the total deaths from these causes, 751, or 41 per cent., occurred in the three summer months, January, November, and December; and 650, or 35 per cent., in February, March, and April. As a rule, about 50 per cent. of the deaths occur in the summer months.

APPENDICITIS.

To this cause 146 deaths were ascribed in 1913, the rate being ·81 per 10,000 living, which is 1·3 per cent. below the average of the preceding five years. The rate for the males in 1913 was ·95, and for the females ·65 per 10,000 living. This disease is much more fatal to males than to females.

CIRRHOSIS OF THE LIVER.

In 1913 deaths from cirrhosis of the liver numbered 128, the rate being $\cdot 71$ per 10,000 living, which is 7 per cent. below the average of the previous five years. This disease is more prevalent among males than females—the rate for the former in 1913 being 1·00, and for the latter $\cdot 38$ per 10,000 living in each sex.

BRIGHT'S DISEASE.

Of the 1,206 deaths due to diseases of the urinary system, 893 were caused by chronic nephritis or Bright's disease, and 92 by acute nephritis. Taking these two diseases together, the rate was 5·44 per 10,000 living; for males 6·63, and for females 4·12. In 1913 the rate was 13·5 per cent. above the mean rate of the previous five years. The changes in the rates of these two diseases, acute and chronic nephritis, will be seen below:—

Period.	Males.		Females.		Persons.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000
1884-88	626	2·37	386	1·78	1,012	2·10
1889-93	907	2·94	570	2·18	1,477	2·60
1894-98	1,291	3·81	821	2·77	2,112	3·33
1899-1903	1,659	4·61	996	3·06	2,655	3·88
1904-1908	2,056	5·32	1,199	3·36	3,255	4·38
1909	447	5·46	256	3·37	703	4·46
1910	465	5·54	272	3·50	737	4·56
1911	525	6·05	315	3·96	840	5·05
1912	581	6·36	342	3·75	923	5·31
1913	631	6·63	354	4·12	985	5·44

During the whole period covered by the table the rate, both for males and females, has been doubled. The male rate is about half as high again as the female. Not many persons under 35 die from nephritis, the proportions per cent. for 1913 being: under 35, 13·5; and over 35, 86·5.

Since 1881 the rate has steadily risen, the increase being greatest at ages over 45 years. The rates per 10,000 are shown below for males and females in decennial periods since 1881 and in 1911:—

Age Group.	Males.				Females.				Persons.			
	1881-1890.	1891-1900.	1901-1910.	1911.	1881-1890.	1891-1900.	1901-1910.	1911.	1881-1890.	1891-1900.	1901-1910.	1911.
Years.												
0-4	1·19	1·31	1·52	·77	1·12	1·44	1·23	·50	1·16	1·37	1·38	·64
5-9	·42	·44	·48	·23	·32	·44	·50	·47	·37	·44	·49	·35
10-14	·35	·26	·49	·50	·27	·38	·53	·38	·31	·32	·51	·44
15-19	·47	·76	·72	·59	·68	·61	·77	·61	·57	·68	·74	·60
20-24	·81	1·01	1·04	1·35	1·18	1·26	1·07	1·79	·98	1·13	1·05	1·56
25-34	1·76	1·80	1·85	1·82	1·74	2·38	1·74	1·42	1·75	2·06	1·80	1·63
35-44	2·94	4·48	4·36	4·55	3·69	4·52	4·12	3·57	3·24	4·50	4·25	4·09
45-54	5·41	8·40	9·92	10·99	4·09	6·65	7·98	7·75	4·91	7·68	9·08	9·56
55-64	10·58	15·39	20·17	22·12	6·50	10·47	12·83	16·68	9·00	13·39	16·98	19·73
65-74	14·67	26·47	40·87	54·84	11·41	15·77	25·06	36·12	13·39	21·71	34·05	46·37
75 and over	19·18	29·29	59·12	67·14	6·42	16·59	29·65	40·37	14·33	23·90	45·89	55·08
All ages	2·40	3·62	5·16	6·06	1·77	2·63	3·33	3·96	2·13	3·16	4·29	5·05

At ages under 5 the mortality is higher than at any subsequent age up to 25 years. The minimum point is from ages 5 to 9, but after that point the mortality increases steadily up to age 35, and then rapidly to the highest ages. At all ages, except 5 to 24, the male rate is the higher. In 1911 the rate was lower than in the previous ten years in all ages up to 45 years; above that age there were considerable increases.

DEATHS IN CHILD-BIRTH.

The number of deaths of women in child-birth in 1913 was 329, corresponding to a rate of 6.3 per 1,000 births. Of these, 138 were due to puerperal septicæmia, 27 to accidents of pregnancy, and 164 to other puerperal accidents. The deaths resulting from various diseases and casualties incident to child-birth are about 6 per 1,000 births, or 1 death to every 157 births. During the twenty-one years ended 1913, the deaths were as follow :—

Cause of Death.	1893-1896	1897-1900	1901-1904	1905-1908	1909-12.	1913.	1893-1913.	
							Total Deaths.	Proportion due to each cause.
Accidents of Pregnancy	132	197	176	280	143	27	955	per cen 16.62
Puerperal Hæmorrhage	142	159	135	106	114	33	689	11.99
Puerperal Septicæmia ...	369	362	378	205	442	138	1,984	34.54
Albuminuria & Eclampsia	100	126	113	141	179	63	722	12.57
Other Casualties of Child-birth	272	279	256	301	219	68	1,395	24.28
Total	1,015	1,123	1,058	1,123	1,097	329	5,745	100.00

Owing to the changes in classification of causes of death, the figures for the last nine years are not quite on the same basis as those for previous years, but the differences are only slight.

During the twenty-one years, 1893-1913, of the 5,745 women who died from diseases of child-birth, 5,166 were married, and 579 single, and as there were during this period 793,156 legitimate and 56,200 illegitimate births—reckoning cases of twins and triplets as single births—it follows that amongst married women the fatal cases average 6.5 per 1,000 births, or 1 in 154, and amongst single women 10.3 per 1,000, or 1 in 97.

VIOLENCE.

Of 19,732 persons who died during the year, 1,566, or 7.93 per cent., met with violent deaths. The rate per 10,000 living was 8.65, being 11 per cent. higher than the mean rate during the previous quinquennium. The mortality rate from violence amongst males is nearly four times as great as for females, since of the deaths of this kind, 1,218, equal to 12.80 per 10,000 living, were of males, and 348, equal to 4.05 per 10,000, were of females.

ACCIDENT.

The number of fatal accidents during the year was 1,164, viz., 908 of males and 256 of females, equal to rates of 9.55 and 2.98 per 10,000 living of each sex. The general rate was 6.43 per 10,000 living. Accidental deaths have always been numerous in the country. Of those registered during 1913, the

deaths from accident in the metropolis numbered 352, and in the country districts, 812. As a rule, about three-fourths of the accidents occur in the country, which contains about five-eighths of the total population.

The number of deaths from accident and the rates since 1884 are shown in the table below:—

Period.	Males.		Females.		Persons.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	3,550	13·41	944	4·34	4,494	9·32
1889-93	3,666	11·90	966	3·70	4,632	8·14
1894-98	3,498	10·33	1,095	3·69	4,593	5·23
1899-1903	3,432	9·54	1,103	3·39	4,535	6·62
1904-1908	3,143	8·13	1,055	2·96	4,198	5·65
1909	658	8·04	221	2·91	879	5·57
1910	721	8·58	197	2·54	918	5·68
1911	795	9·16	222	2·79	1,017	6·11
1912	809	8·86	218	2·39	1,027	5·91
1913	908	9·55	256	2·98	1,164	6·43

Although the accident rate is still high compared with that of more settled countries, it has been steadily decreasing; among males the decline has been more rapid than amongst females. In 1913, however, the rate showed an increase of 9·5 per cent., as compared with the average of the previous five years. For the years prior to 1894 the rates are really slightly lower than are shown in the table, because certain causes formerly classed as accidents are now recorded elsewhere.

The experience of the past five years shows that out of every 1,000 accidents 163 are due to drowning, 160 to vehicles and horses, 136 to burns or scalds, 112 to falls, 93 to railways and tramways, 50 to mines and quarries, and 34 to weather agencies. Among males the greatest number are due to drowning, and among females to burns or scalds.

SUICIDE.

The number of deaths due to this cause during 1913 was 277, equal to a rate of 1·53 per 10,000 living, which is 16 per cent. above the average of the previous five years. The number of males was 219, equal to a rate of 2·30 per 10,000 living, and of females 58, equal to ·68 per 10,000, so that the rate for males is about three and a half times as great as that of the females.

Period.	Males.		Females.		Persons.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1884-88	428	1·62	96	·44	524	1·09
1889-93	519	1·68	110	·42	629	1·11
1894-98	679	2·01	169	·57	848	1·34
1899-1903	651	1·81	142	·44	793	1·16
1904-1908	719	1·86	160	·49	879	1·18
1909	148	1·81	45	·59	193	1·22
1910	134	1·60	27	·35	161	1·00
1911	164	1·89	39	·49	203	1·22
1912	192	2·10	69	·76	261	1·50
1913	219	2·30	58	·68	277	1·53

The means usually adopted by men for self-destruction are shooting, poisoning, stabbing, or hanging. Amongst women, weapons are avoided, and poison has been the means most often used. Out of every 100 cases, during the last five years, 32 were by poisoning, 27 by shooting, 17 by stabbing, 14 by hanging, and 7 by drowning.

Experience shows that morbidity is largely influenced by the seasons. As regards suicides, this is most plainly seen amongst males, who are more inclined to attempt self-destruction in the first and last quarter of the year. For the ten years ended 1913, the proportion of male suicides per 1,000 during the first quarter of the year was 262; second, 229; third, 245; and fourth, 264. January, February, and December, the three hottest months of the year, usually have the largest record of suicides.

Female suicides, classified by quarters for the same period, show the highest proportion during the first quarter of the year, the figures being as follow:—First quarter, 271 per 1,000; second, 224; third, 244; and fourth, 261.

Suicide at ages under 20 is not common, but after that age, especially with males, it increases with increasing age. The rates per 10,000 for each sex in age-groups from 1881 to 1911 is shown below:—

Age Group.	Males.				Females.				Persons.			
	1881-1890.	1891-1900.	1901-1910.	1911.	1881-1890.	1891-1900.	1901-1910.	1911.	1881-1890.	1891-1900.	1901-1910.	1911.
Years.												
15-19 ...	.28	.21	.29	.24	.44	.59	.53	.61	.36	.43	.41	.42
20-24 ...	1.01	1.29	1.18	1.35	.46	.86	.86	.12	.75	1.08	1.02	.75
25-34 ...	2.15	2.06	2.04	2.17	.60	.67	.51	.75	1.50	1.43	1.30	1.48
35-44 ...	2.64	3.78	3.06	3.62	.82	.94	.80	1.15	1.91	2.58	2.04	2.46
45-54 ...	4.25	4.72	3.97	3.89	1.05	.88	.75	.88	3.03	3.14	2.58	2.57
55-64 ...	4.54	6.32	5.55	6.00	.95	1.35	.78	.79	3.15	4.29	3.48	3.71
65-74 ...	5.43	7.39	6.24	3.40	1.19	.79	.51	.91	3.77	4.59	3.77	2.28
75 and over ...	4.47	7.73	4.15	6.62	.86	1.95	.45	1.15	3.09	5.28	2.49	4.16
All ages ...	1.52	1.93	1.76	1.89	.39	.50	.44	.49	1.01	1.26	1.13	1.22

The suicide rate shows very little variation throughout the period under review, but in 1911 was slightly higher than in 1881-1890. Comparing the mortality at various ages, the rates for males rose gradually up to ages 65-74, though in 1911 the rate in this group was unusually low. In 1901-10 the highest rate for the females was at ages 20-24 years, in the next group it was lower, but rose again at ages 35-44, after which it declined.

Except at the ages 15-19, the male rate is considerably higher than the female.

SEASONAL PREVALENCE OF DISEASES.

The statement below shows the principal diseases, the deaths from which vary according to the seasons. The figures are based on the experience of the eleven years 1903-13, and represent the proportion of deaths in each month

per 1,000 deaths during the year from each cause. The actual returns were adjusted on account of the unequal number of days in the various months to render the figures comparable:—

Month.	Typhoid Fever.	In- fluenza.	Diph- theria and Croup.	Whoop- ing Cough.	Phthisis.	Pneu- monia.	Bron- chitis.	Diarrhoea, Enteritis, and Dysentery.	Bright's Disease.
January ...	142	39	54	84	80	51	47	150	75
February ..	145	21	67	68	71	44	42	128	73
March ...	148	18	78	66	75	47	43	112	68
April ...	130	31	114	81	81	60	61	109	76
May ...	105	47	117	79	85	76	81	69	84
June ...	67	85	123	66	86	100	116	40	89
July ...	39	117	99	82	88	119	139	28	98
August ...	30	172	91	85	93	132	143	24	97
September.	26	181	82	85	91	126	126	26	92
October ...	25	138	56	96	90	95	83	47	81
November.	45	94	63	92	82	82	68	117	86
December..	98	57	56	116	78	63	51	150	81
	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000

The chief feature of the above table is the contrast between typhoid fever and diarrhoea and enteritis on the one hand, and influenza, pneumonia, and bronchitis on the other. In the first group the influence of the warm weather is the controlling factor, and in the second the cold weather. The warmest months in the year are January, February, and December; and the coldest June, July, and August. Phthisis does not vary a great deal throughout the year, but the rates show that in the cold months the deaths are most frequent. Bright's disease, also, is most fatal in the cold weather.

CAUSES OF INFANTILE MORTALITY.

The mortality of infants in New South Wales was exceptionally low during the nine years 1904-12. An upward movement in 1907, when the rate was higher than in any of the three preceding years, was followed by a decline in the two succeeding years; in 1910 there was a slight increase, but in 1911 the rate was the lowest on record. In 1912 there was a slight increase as compared with the previous year, but the rate was considerably lower than the average for the preceding quinquennium, notwithstanding it was a period of low mortality. In 1913 the rate was 78.3, being 2 per cent. above the average of the previous ten years, and the highest since 1907. Prior to 1904 there had been practically little change in the rates for thirty years, but from 1860 up to 1873 the rate was lower than in the years immediately preceding 1904.

Although at very early ages children are most susceptible to the attacks of disease, and the rates for preventable diseases are highest, there is no doubt that many children succumb through parental ignorance of the proper food or treatment required. In New South Wales, out of every 10,000 children born, as will be seen from a previous table, about 1,000 die before reaching their fifth year.

As the death-rate of infants is usually looked upon as a reliable sanitary test, and as it is of interest to know the diseases most fatal to children, the following statement has been prepared. It shows the principal causes of deaths of children—under 1 per 1,000 births and under 5 per 1,000 living—in 1913 and in the five years 1908–12, distinguishing deaths in the metropolis from those in the country districts:—

Cause of Death.	Deaths under 1 per 1,000 births.						Deaths under 5 per 1,000 living.					
	Metropolis.		Country.		New South Wales.		Metropolis.		Country.		New South Wales.	
	1908-1912.	1913.	1908-1912.	1913.	1908-1912.	1913.	1908-1912.	1913.	1908-1912.	1913.	1908-1912.	1913.
Measles	·5	·1	·4	·3	·5	·2	·6	·1	·3	·2	·4	·2
Scarlet Fever	·0	·0	·0	·0	·0	·0	·1	·1	·1	·1	·1	·0
Whooping-cough	1·4	4·0	1·4	4·7	1·4	4·5	·6	1·6	·5	1·5	·5	1·5
Diphtheria and Croup	·3	·4	·3	·3	·3	·3	·6	·9	·7	·8	·7	·8
Tuberculosis—Meninges	·6	·6	·2	·4	·3	·5	·5	·5	·1	·2	·2	·3
" Peritoneum	·3	·1	·5	·4	·4	·3	·2	·1	·2	·1	·2	·1
" Other Organs	·1	·1	·2	·1	·1	·1	·1	·1	·1	·1	·1	·1
Syphilis	1·5	·9	·3	·4	·8	·6	·4	·3	·1	·1	·2	·2
Meningitis	1·1	1·3	1·1	1·3	1·1	1·3	·5	·4	·5	·6	·5	·5
Convulsions	2·3	1·5	3·3	2·8	2·9	2·3	·8	·5	·9	·8	·9	·7
Bronchitis	2·3	1·9	2·9	2·3	2·7	2·1	·7	·6	·8	·7	·8	·7
Broncho-pneumonia	3·1	3·0	2·9	2·8	3·0	2·8	1·3	1·3	1·0	1·0	1·1	1·1
Pneumonia	1·5	1·2	1·7	1·8	1·6	1·6	·8	·7	·7	·8	·7	·7
Diarrhoea and Enteritis	25·4	24·1	18·0	22·8	20·7	23·3	7·9	7·5	5·3	6·8	6·2	7·1
Congenital Malformations	2·5	3·4	2·4	2·6	2·4	2·9	·7	·9	·6	·7	·6	·8
Infantile Debility	8·3	11·2	10·7	12·1	9·9	11·7	2·1	2·9	2·5	2·7	2·4	2·8
Premature Birth	17·7	19·4	14·6	16·7	15·7	17·8	4·5	5·1	3·3	3·8	3·7	4·2
All others	9·4	5·1	9·0	6·6	9·2	6·0	3·6	2·6	3·7	3·1	3·7	3·0
Total	78·3	78·3	69·9	78·4	73·0	78·3	26·0	26·2	21·4	24·1	23·0	24·8

In comparison with the preceding five years there was an advance of 7·2 per cent. in the rate in 1913.

The high mortality of infants is due to the deaths of children who from the beginning are greatly weakened either from immaturity or debility at birth. Of children under 1, the deaths from these causes in 1913 were equal to 32·4 per 1,000 births, or 41 per cent. of the total deaths of children at that age. A previous table shows that the mortality during the first month of life is over two-fifths of the total mortality during the whole of the first year, and 82 per cent. of this mortality is due to deaths from congenital debility or defects. After these, in 1913, came diarrhoea and enteritis, which were responsible for deaths to the extent of 23·3 per 1,000 births. The deaths from infectious diseases amounted to 5·0 per 1,000 births, of which whooping-cough caused 4·5. Respiratory diseases are rather fatal to children; bronchitis, in 1913, caused 2·1, broncho-pneumonia 2·8, and pneumonia 1·6 per 1,000 births. The rates for these respiratory diseases showed decreases in 1913. Convulsions had a death-rate of 2·3, tuberculosis diseases ·9, and meningitis (not tuberculous) 1·3 per 1,000 births.

It has already been pointed out that life in the metropolis is more unfavourable to children than in the country. The total excess mortality in the metropolis during the quinquennium 1908–12 was 12 per cent., the excess from diarrhoea and enteritis being 41 per cent.; in 1913 the metropolitan rate remained normal, but the country rate increased considerably, and exceeded the metropolitan.

Turning to the second part of the table, dealing with children under 5, it will be found that the most fatal causes are congenital debility, diarrhoea and enteritis, pneumonia, and whooping cough, in the order stated.

Deaths of Illegitimate Children.

A further statement is given below in which the causes of death of illegitimate children are compared with those of legitimate children. The figures represent the deaths of children under 1 year per 1,000 births in the State as a whole in 1913:—

Causes of Death.	Deaths under 1 per 1,000 Births.		
	Legitimate.	Illegitimate.	Total.
Measles	·2	·7	·2
Scarlet Fever	·0	·0	·0
Whooping-cough	4·3	6·1	4·5
Diphtheria and Croup	·3	1·1	·3
Tuberculosis—Meninges	·4	1·1	·5
" Peritoneum	·3	·3	·3
" Other Organs	·1	·0	·1
Syphilis	·4	4·6	·6
Meningitis	1·3	1·8	1·3
Convulsions... ..	2·1	5·0	2·3
Bronchitis	2·1	2·5	2·1
Broncho-pneumonia	2·7	5·0	2·8
Pneumonia	1·4	3·6	1·6
Diarrhoea and Enteritis	21·3	58·5	23·3
Congenital Malformations	2·9	2·5	2·9
Infantile Debility	11·1	26·1	11·7
Premature Birth	17·3	26·8	17·8
All others	5·4	15·3	16·0
Total... ..	73·6	161·0	78·3

The reasons for the greater mortality of illegitimate children are seen from this table. Excluding diseases which may be ascribed to inherent weakness, there is strong evidence of neglect or want of care as regards these unfortunate children. Infantile debility, including congenital malformations and premature birth, showed 55·4 per 1,000 births as against the legitimate rate, 31·3. Diarrhoea and enteritis were 58·5 as compared with 21·3; respiratory diseases, bronchitis, broncho-pneumonia, and pneumonia, 11·1 as compared with 6·2; and syphilis 4·6 as compared with ·4. Among the epidemic diseases the great difference was in deaths from whooping-cough—6·1 as against 4·3.

EDUCATION.

THE STATE SYSTEM OF EDUCATION.

ON the foundation of New South Wales as a British Colony, authority was given to the Governor to reserve 200 acres of land in the vicinity of each township to provide for the maintenance of a teacher. This plan was not followed, however, and for the first sixty years, from 1788 to 1848, education remained the province of private initiative. The first four teachers accredited in New South Wales were provided through the instrumentality of the Society for Promotion of the Gospel in Foreign Parts, the Society granting, at the urgent request of the Rev. R. Johnson, a sum of £40 per annum towards their salaries. The first school was opened at Parramatta in 1796, and most of the schools established subsequently were conducted under the auspices of religious bodies, the cost of their maintenance being met by voluntary subscriptions. From 1810, these subscriptions were supplemented by subsidy from the Government out of Customs Duties, and in 1834, one year after the Imperial Parliament made its first appropriation for elementary schools, the Government of New South Wales made a grant for the same purpose, and the money was distributed to the controlling religious bodies in proportion to the amount expended by them for educational purposes.

In 1839 a grant was authorised from the public funds of New South Wales to provide undenominational schools where required, but little activity was evinced in this connection till 1848; when, following a recommendation made in 1844 by a Select Committee of the Legislative Council, an Act was passed authorising the incorporation of a Board of National Education to administer the appropriation for State undenominational education. At the same time a Denominational School Board was created, with one representative each from the Church of England, the Roman Catholic, Presbyterian, and Wesleyan Churches, to distribute to the respective denominations the moneys allotted from the Treasury in support of their educational work.

The period characterised by this dual administrative control of moneys supplied from the Treasury of the State lasted from 1848 to 1866, and was naturally distinguished by a spirit of rivalry. The extension of National Schools was hampered by a regulation that one third of the cost of building and equipment should be contributed by the applicants for such schools. In 1857, arrangements were made for the establishment and maintenance of non-vested schools, property in which was not vested in the Board of National Education. These schools won a degree of public approval, and prepared popular sentiment for a more truly national administration.

The Public Schools Act, 1866, which was operative from January, 1867, to 30th April, 1880, was devised as a measure "to make better provision for public education." A Council of Education of five members was constituted, in which were vested all the lands, moneys, securities, and personal property of the Board of National Education, all lands and school buildings held by trustees under the regulation and inspection of the Denominational School Board as well as all personalty of the latter Board. The new Council was empowered to disburse all moneys appropriated by Parliament for elementary instruction, to establish and maintain public schools, and to grant aid to certified denominational schools, and, subject to regulations, to define the course of secular instruction generally.

Four classes of schools were recognised, viz., Public, Denominational, Provisional, and Half-time; while, for sparsely settled districts, itinerant teachers

might be appointed, or private schools assisted, provided they were subject to inspection as prescribed by the Council. The Council was empowered to authorise a scale of fees to be charged in the public and in the certified denominational schools, but inability to pay such fees did not constitute a valid reason for excluding children from the schools.

Training schools for teachers were authorised; Public School Boards were appointed to exercise a localised supervision; four hours per school-day were reserved for secular instruction exclusively, and a maximum period of one hour per school-day was left available for visiting religious teachers to impart religious instruction; all existing national schools, vested and non-vested, were declared public schools. On its establishment in 1867 the Council of Education assumed control over 259 national and 310 denominational schools. From 1875 the entire cost of building and maintaining public schools was defrayed from the public funds, and the number of schools increased so rapidly that in 1880, when the Department of Public Instruction was created, there were 1,220 schools under control, viz., public, 705; provisional, 313; half-time, 97; and denominational, 105; and a degree of standardisation had been attained.

The Public Instruction Act, 1880, marked a new era. Under it the powers and authority of the Council of Education were vested in a responsible Minister of the Crown as Minister for Public Instruction, with power to disburse all moneys appropriated by Parliament for public instruction. The subsidies to certified denominational schools ceased, after due notice, on 31st December, 1882; an undenominational system of education was established as a public service, and attendance at school for a minimum period of 70 days in each half-year was declared obligatory, failing just cause of exemption, on all children between the ages of 6 and 14 years. The classes of schools to be established and maintained were defined as follows:—Public schools, primary and superior; evening public schools; and high schools for girls and for boys; and the conditions in regard to provisional schools and itinerant teachers, as contained in the Public Schools Act, 1866, were retained but in amplified form, along with other features of that Act, *e.g.*, regarding allocation of hours of instruction, &c

The Public Instruction Act, 1880, remains the basis of the educational system of the present day, though it was amended by the Free Education Act, 1906, which expressly enacts that instruction in primary and superior public schools shall be free, no fees being chargeable therefor. Previously, the maximum fee chargeable in public primary schools was 3d. per week per child, with a limitation of 1s. per week for all the children of one family. Fees chargeable in higher schools were determined by regulation, and following the lead of the Free Education Act, 1906, amended regulations were issued making instruction in high schools also free from 1st January, 1911.

In the thirty-four years during which the Public Instruction Act, 1880, has been operative, numerous adjustments in organisation and procedure have been made to admit of educational development in consonance with changing ideals. In New South Wales a considerable proportion of the population is located in sparsely settled districts, and in virtual detachment from community life. On the other hand, an urban population is concentrated at a few points only. These two entirely diverse conditions of settlement complicate the difficulties of administering a general education policy, by making the higher standards designed by the law unattainable except in large centres of population, and necessitating special adjustments of standards for isolated areas and pioneer settlements.

In these circumstances school accommodation has extended steadily, the immediate needs being supplied by the establishment of primary schools on which superior departments have been grafted as occasion arose.

Except for the work of the high schools in Sydney and in Maitland, secondary education has remained the province of denominational or private schools, of which one only, the Sydney Grammar School (for boys) is subsidised from the public funds, while all are exempt from any measure of supervision or superintendence. Some of the private schools and colleges are linked in a defined plan of organisation and administration, but for the most part they exist as independent and isolated units, and the curricula varies with the controlling authorities. In the absence of co-ordination of standards, entrance to the University, as the highest educational institution, is subject to a test of fitness prescribed by the University for individual students.

Realisation of the importance of thorough education led to a conference in 1902 of representatives of different interests in educational matters in New South Wales. In April of that year a Royal Commission of two members was appointed to proceed to Europe and America "to enquire into existing methods of instruction in connection with primary, secondary, technical, and other branches of education," and to recommend for adoption whatever improvements might be introduced with advantage in New South Wales.

Extensive recommendations were made by the Commission, and a further Conference, convened by the Minister for Public Instruction, was held in 1904 to consider the question of State Education from every point of view. The plan of action embodied in the resolutions of this Conference involved the cessation of the pupil-teacher system, which had been operative in the public schools since 1852; the introduction of specially trained teachers, and for this purpose the equipment and maintenance of a Normal School, with a Practice School attached; the formation of a Kindergarten Training College, and of local training schools for country-school teachers. The establishment of a Chair of Pedagogy at the University of Sydney, of truant schools, and schools for the feeble-minded was urged, and other resolutions involving alterations in matters of procedure in the public (primary) schools were adopted.

To accord with the new policy, a Syllabus of Instruction for Primary School Work was issued in 1905, with the grouping of subjects as follows:—

English.—Correct speech, reading, writing, spelling, composition, recitation, grammar.

Mathematics.—Arithmetic, mensuration, algebra, geometry.

Nature Knowledge.—Geography, object-lessons, elementary science.

Civics and Morals.—History, Scripture, moral duties, citizenship.

Art Manual Work.—Drawing, brushwork, kindergarten exercises, modelling, woodwork, needlework.

Musical and Physical Education.

Since 1905 steady progress has been made towards embodying, with a minimum of disruption of existing institutions, the adjustments necessary to effect complete co-ordination of educational effort in all stages. The regular school work has been extended; to include more manual and vocational training for boys, and better opportunities in domestic science for girls; emphasising the application of school work to the daily life of the citizen by means of special courses; progress has been made in school buildings; the question of playgrounds has received attention; medical inspection is conducted over more extensive areas; and the increase of high school facilities expresses a desire to provide a higher standard of education to the people than hitherto.

The secondary school system was extended greatly and a new syllabus was introduced in 1911, which, in modified form, has been adopted in State High Schools, and in all the private schools registered under the Bursary Endowment Act.

A system of certificates has been introduced. The Qualifying Certificate marks the completion of the primary course, and admits to a secondary school. The Intermediate Certificate is issued on the completion of the first two years of the secondary course, and the Leaving Certificate after the completion of the full High School course. The Leaving Certificate is accepted under certain conditions by the University as equivalent to matriculation, and secures admission to the Teachers' College. Certificates also mark the completion of a two year's course of instruction in the Superior (Day Continuation) Public Schools, and the Evening Continuation Schools. Each type has three separate courses—Commercial, Junior Technical, and Domestic. A Bureau of Employment has been instituted in the Department for boys possessing either of these certificates.

Important statutory provisions affecting educational matters are contained in the Bursary Endowment Act, 1912, and in the University Amendment Act, 1912, concerning which details are given subsequently.

The year 1913 was marked by a wide extension of the scheme of medical school inspection; by the reorganisation of technical education upon a Trades School basis; and by the reorganisation of Superior Schools upon a vocational basis.

DIFFUSION OF EDUCATION.

Some idea of the diffusion of education among the people of New South Wales may be gathered from the following figures, derived from the Census of 1911 :—

	Males.	Females.	Total.
English Language—			
Read and write ...	696,258	645,022	1,341,280
Read only ...	2,565	3,140	5,705
Foreign Language only—			
Read and write ...	5,889	650	6,539
Read only ...	497	61	558
Cannot read ...	134,215	123,808	258,023
Not stated ...	18,274	16,355	34,629
Total ...	857,698	789,036	1,646,734

As regards those who cannot read, classification according to age shows the following :—

Ages—Years.	Males.	Females.	Total.
0—4 ...	102,003	98,863	200,866
5—9 ...	16,612	14,944	31,556
10—14 ...	605	440	1,045
15—19 ...	641	338	979
20 and upwards ...	13,934	8,922	22,856
Unspecified ...	420	301	721
Total ...	134,215	123,808	258,023

Persons above the age of 4 years who could not read, in proportion to the total population, were :—Males, 3·7 per cent.; females, 3·1 per cent. These figures included immigrants and persons who had not come under the operation of the Public Instruction Act of New South Wales.

SCHOOL POPULATION.

Under the Public Instruction Act, 1880, attendance at a school is obligatory upon children between the ages of 6 and 14 years; but this period of eight years does not cover the full school age, which is extended

frequently by kindergarten training on the one hand and by continuation or secondary school work on the other; so that the full school age may fairly be taken as from ages 5 to 18 inclusive. The following statement, derived from the records of the Census in April, 1911, shows the population of the State (exclusive of full-blood aboriginals), in relation to schooling, distinguishing the persons receiving instruction at school, at the University, or at home, and those not so classified:—

Ages—Years.	At School.			At University (Day Students only).	At home.	Not recorded as receiving Instruction.	Total.
	Public.	Private.	Unspecified.				
MALES.							
Under 5 ...	1,463	551	97	...	82	99,810	102,003
5 ...	5,237	1,372	288	...	635	10,990	18,522
6 ...	10,126	2,305	472	...	755	4,200	17,858
7 ...	11,518	2,497	501	...	593	1,266	16,375
8 ...	11,980	2,568	464	...	494	752	16,258
9 ...	12,131	2,449	453	...	455	636	16,124
10 ...	12,529	2,469	518	...	351	567	16,434
11 ...	12,345	2,455	495	...	297	751	16,343
12 ...	11,002	2,224	470	...	250	884	14,830
13 ...	10,348	2,140	436	...	241	2,518	15,683
14 ...	4,953	1,606	308	...	137	8,842	15,846
15 ...	1,882	1,329	80	...	94	12,597	15,982
16 ...	681	963	52	11	52	14,368	16,127
17 ...	295	635	16	36	39	15,851	16,872
18 ...	136	406	24	93	34	16,544	17,237
19 ...	90	238	15	121	14	16,285	16,763
20 and upwards	122	689	51	501	79	502,509	503,951
Unspecified ...	177	79	52	...	15	4,167	4,490
Total ...	107,015	26,975	4,792	762	4,617	713,537	857,698
FEMALES.							
Under 5 ...	1,319	659	70	...	75	96,740	98,863
5 ...	4,870	1,443	337	...	669	10,672	17,991
6 ...	9,108	2,627	406	...	894	4,437	17,472
7 ...	10,431	2,824	425	...	679	1,524	15,883
8 ...	11,409	2,969	445	...	548	821	16,192
9 ...	10,930	2,974	449	...	519	710	15,582
10 ...	11,612	3,091	402	...	458	691	16,254
11 ...	11,315	3,057	393	...	401	770	15,936
12 ...	10,506	2,957	404	...	369	1,092	15,328
13 ...	8,818	2,830	355	...	323	2,757	15,083
14 ...	4,600	2,199	244	...	227	8,127	15,397
15 ...	2,050	1,648	122	...	163	11,910	15,893
16 ...	822	1,261	77	16	97	13,690	15,963
17 ...	373	742	34	18	46	15,100	16,313
18 ...	206	371	37	30	26	16,038	16,708
19 ...	125	226	32	25	13	15,717	16,138
20 and upwards	105	279	816	82	10	442,945	444,237
Unspecified ...	155	71	63	...	13	3,501	3,803
Total ...	98,754	32,228	5,111	171	5,530	647,242	789,036

Summarising the totals under the various heads of the table given above, the following comparison for all ages and for school ages is derived :—

	All ages.			School ages (6-14).		
	Males.	Females.	Total.	Males.	Females.	Total.
Receiving Instruction— At School—						
Public... ..	107,015	98,754	205,769	91,979	84,129	176,108
Private	26,975	32,228	59,203	19,107	23,329	42,436
Unspecified	4,792	5,111	9,903	3,809	3,279	7,088
Total	138,782	136,093	274,875	114,895	110,737	225,632
At the University	762	171	933	.....	.....	.....
At home	4,617	5,530	10,147	3,436	4,191	7,627
Total receiving instruction.	144,161	141,794	285,955	118,331	114,928	233,259
Not recorded as receiving instruction.	713,537	647,242	1,360,779	11,574	12,802	24,376
Total	857,698	789,036	1,646,734	129,905	127,730	257,635

Persons of all ages who were receiving instruction formed 17·36 per cent. of the total population; persons of school age (6-14 years) represented 15·67 per cent. of the total, the proportion of girls being rather greater than the proportion of boys, viz., 16·21 per cent. as against 15·17 per cent.

The following figures represent the proportion of the total population over 5 years of age, in two groups, 5-14 years and 15 years and over, who could read and write, or read only, in English or a foreign language, and the proportions unable to read :—

	1891.		1901.		1911.	
	Males.	Females.	Males.	Females.	Males.	Females.
Read and write—	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
Ages 5-14 years	73·1	74·3	76·2	77·1	88·9	89·8
15 and over	92·4	92·2	94·0	95·3	97·0	97·7
Total, 5 and over	87·5	86·8	89·3	90·0	95·3	95·9
Read only—						
Ages 5-14 years	8·4	7·7	5·0	4·7	·3	·3
15 and over	2·4	3·7	1·4	1·8	·4	·5
Total, 5 and over	4·0	4·9	2·3	2·7	·4	·5
Unable to read—						
Ages 5-14 years	18·5	18·0	18·8	18·2	10·8	9·9
15 and over	5·2	4·1	4·6	2·9	2·6	1·8
Total, 5 and over	8·5	8·3	8·4	7·3	4·3	3·6

The increase in the proportion of those who can read and write indicates the extension of educational facilities.

As to the ages of compulsory attendance, viz., 6 and under 14 years, some further details are available to afford a comparison between the urban area

of Sydney and suburbs, and the remainder of New South Wales, as at the census of 1911 :—

Children of School Ages. (6-14 years.)	Sydney and Suburbs.		Remainder of State.		Total.		
	Males.	Females.	Males.	Females.	Males.	Females.	Total.
Receiving Instruction at School :—							
Public	30,051	27,433	61,928	56,696	91,979	84,129	176,108
Private	9,086	11,436	10,021	11,893	19,107	23,329	42,436
Unspecified	1,345	1,301	2,464	1,978	3,809	3,279	7,088
Total	40,482	40,170	74,413	70,567	114,895	110,737	225,632
At home	373	694	3,063	3,497	3,436	4,191	7,627
Not recorded as receiving Instruction	2,757	3,131	8,817	9,671	11,574	12,802	24,376
Total	43,612	43,995	86,293	83,735	129,905	127,730	257,635

Of 24,376 children of ages 6 and under 14 years who were not recorded as receiving instruction 18,488 were resident outside the Metropolitan area.

The following statement summarises the records in regard to children of statutory school age, as derived from the last three censuses :—

	Sydney and Suburbs.			Remainder of State.		
	1891.	1901.	1911.	1891.	1901.	1911.
At School—						
Public	44,448	53,876	57,484	103,783	118,476	118,624
Private	16,894	27,280	20,522	18,934	27,213	21,914
Unspecified	477	2,137	2,646	336	4,608	4,442
Under instruction at home	1,590	1,773	1,067	9,173	10,982	6,560
Total receiving instruction	63,409	85,066	81,719	132,226	161,279	151,540
Not recorded as receiving instruction	2,972	3,561	5,888	13,235	13,896	18,488
Total	66,381	88,627	87,607	145,461	175,175	170,028

In 1901 children of compulsory school age were nearly one sixth of the total population ; in 1911 they were more nearly one-seventh.

The following statement shows the figures in each group reduced to percentages of the total number of children of the statutory school age at each date :—

	Sydney and Suburbs.			Remainder of State.		
	1891.	1901.	1911.	1891.	1901.	1911.
At School—						
Public	20·98	20·42	22·31	48·99	44·91	46·04
Private	7·97	10·34	7·97	8·94	10·32	8·51
Unspecified	·23	·81	1·02	·16	1·75	1·72
Under instruction at home	·75	·67	·41	4·33	4·16	2·55
Total receiving instruction	29·93	32·24	31·71	62·42	61·14	58·82
Not recorded as receiving instruction	1·40	1·35	2·29	6·25	5·27	7·18
Total	31·33	33·59	34·00	68·67	66·41	66·00

In the period between 1891 and 1911 there was a gain to the metropolitan area in the proportion of children of school age; there was also an increase in the proportion of the children attending public schools, and of the total receiving instruction. For the rest of the State there were proportionate decreases in the numbers receiving instruction, in all but the unspecified schools. The increases in the number of children "not recorded as receiving instruction" are unsatisfactory features of the table.

STATE EXPENDITURE ON EDUCATION.

The expenditure of the Government on Education includes grants and subsidies to Educational and Scientific institutions, cost of maintenance of industrial schools and reformatories, as well as expenditure for premises, equipment, and maintenance of public schools; the aggregate has been increasing steadily during the past ten years. Relatively to the mean population the increase was almost imperceptible until 1907, but for the last seven years there has been a distinct advance in all the items, particularly in the amount spent on schools and other buildings.

In the following statement, the expenditure on buildings, equipment, sites, &c., representing capital expenditure, has been distinguished as far as practicable from expenditure for maintenance, including grants and subsidies, all of which constitute annual running costs:—

Year ended 30th June.	Expenditure.			Cost per head of population.	
	Capital.	Annual.	Total.		
	£	£	£	s.	d.
1904	57,951	913,197	971,148	13	7
1905	30,227	916,071	946,298	13	0
1906	42,937	938,640	981,577	13	3
1907	99,338	946,044	1,045,382	13	9
1908	132,753	1,058,864	1,191,617	15	5
1909	203,954	1,110,621	1,314,575	16	8
1910	159,890	1,148,520	1,308,410	16	3
1911	176,778	1,213,368	1,390,146	16	9
1912	185,710	1,419,234	1,604,944	18	6
1913	357,135	1,518,863	1,875,998	20	9

These figures are exclusive of amounts spent on the colleges, experiment farms, and societies for the promotion of agriculture and allied interests, concerning which reference should be made to the chapter on Agriculture. Naturally, under each head, the largest item relates to the Public Schools of the State. The following statement, giving in more detail the expenditure for 1913, demonstrates this fact:—

Object.	Expenditure.	
	Capital.	Annual.
	£	£
Public Instruction Department, Schools, &c. ...	343,134	1,420,413
Educational Institutions, Schools of Arts, &c. ...	1,361	9,333
University, and affiliated Colleges ...	8,330	39,534
Sydney Grammar School ...	.....	1,500
Industrial Schools	306	9,066
Kindergarten Union ...	.....	850
Public Library ...	3,504	10,613
Museum ...	500	10,838
Grants and Subsidies to Various Societies ...	.....	16,716
Totals ...	357,135	1,518,863

The major portion of the annual expenditure of the Government in connection with the promotion of educational interests is obviously for institutions which are under control of governmental or delegated officials, as the Department of Public Instruction, industrial schools, public library, &c. The University of Sydney, though a publicly endowed institution, was a notable instance of freedom from any measure of Governmental supervision until 1912, when the University Amendment Act was passed, under which the Government is represented on the Senate of the University. Grants and subsidies to institutions, schools, and societies represent annual payments conditional upon satisfactory fulfilment of functions.

SCHOOLS AND TEACHING STAFFS.

The total number of public and private schools in operation at the end of each of the past ten years, and the aggregate teaching staff in each group, are shown in the following table:—

Year.	Schools.			Teaching Staffs.		
	Public.	Private.	Total.	In Public Schools.	In Private Schools.	Total.
1904	2,870	852	3,722	5,699	3,396	9,095
1905	2,901	853	3,754	5,719	3,482	9,201
1906	2,885	852	3,737	5,758	3,557	9,315
1907	2,918	806	3,724	5,918	3,524	9,442
1908	3,002	792	3,794	6,012	3,501	9,513
1909	3,075	789	3,864	6,176	3,633	9,809
1910	3,105	774	3,879	6,262	3,602	9,864
1911	3,125	756	3,881	6,517	3,659	10,176
1912	3,234	754	3,988	7,048	3,673	10,721
1913	3,285	733	4,018	7,261	3,593	10,854

These figures are exclusive of Technical Schools, the Sydney Grammar School, the Ragged, and Free Kindergarten Schools, the New South Wales Institution for the Deaf and Dumb and the Blind, Institutional schools under denominational control, Shorthand and Business Colleges, Agricultural Schools, &c. In 1903 there was, on the average, one school to 383 persons; in 1913 there was one school to 456 persons in the population of the State. Since 1904 there has been an increase of 415, equivalent to 14 per cent., in the number of public schools, which increase was partly off set by a decrease of 119 in the number of private schools. The Teaching Staff averaged 1 per 158 persons in the population in 1903, and in 1913, 1 to 169. The Teaching Staff per school was much greater for the private schools than for the public, but the staffs of the private schools include a number of visiting teachers who do not devote their whole time to one school.

As to the private schools, there has been a continuous drop in their number since 1901, when there were 889, until in 1913 there were 733, a decrease of 156. Included in these schools are those of the Roman Catholic denomination, which show a substantial increase, in contrast to the diminution of other private schools.

In the public schools there was little advance in numerical strength during the first half of the period covered by the table. The policy of conveying children to central schools, rather than of opening a large number of small

schools, is partly accountable for this. The granting of educational subsidies has obviated in many cases the necessity of increasing the number of small country schools, but during the last seven years an advance is apparent, due mainly to the extension of small schools in scattered districts.

ENROLMENT.

A comparative review of the enrolment of children at public and private schools is restricted to the last quarter in each year, as the figures collected in regard to private schools refer only to that period. The following statement shows the recorded enrolment of public and of private schools for the December quarter during each of the last ten years:—

Year.	Enrolment (December Quarter).			Proportion of Total Children Enrolled.	
	In Public Schools.	In Private Schools.	Total.	In Public Schools.	In Private Schools.
1904	207,860	57,811	265,671	per cent. 78·2	per cent. 21·8
1905	206,010	57,854	263,864	78·1	21·9
1906	207,298	58,707	266,005	77·9	22·1
1907	209,229	57,440	266,669	78·2	21·8
1908	214,495	57,111	271,606	79·0	21·0
1909	213,739	58,361	272,100	78·6	21·4
1910	214,776	59,247	274,023	78·4	21·6
1911	221,810	60,963	282,773	78·4	21·6
1912	228,529	61,744	290,273	78·7	21·3
1913	241,784	64,591	306,375	78·9	21·1

During the first half of the period under review the total enrolment appears almost stationary, if not retrogressive. Latterly, however, there is an appreciable recovery, so that the figures for 1913 are 15 per cent. in advance of those for 1905.

The ratio of enrolment of children in public and private schools for the various years of the decade remains very constant, varying from 77·9 in 1906 to 79·0 in 1908 in the case of the former, and conversely from 22·1 in 1906 to 21·0 in 1908 in that of the latter.

The figures relating to enrolment are exclusive of the Sydney Grammar School for Boys, Business and Shorthand Schools, the School held in connection with the Deaf and Dumb and Blind Institution, the Ragged Schools, and Free Kindergarten Schools, Institutional Schools under denominational control, Agricultural and Technical Schools, etc.

AVERAGE ATTENDANCE.

A comparison over the last ten years between the average quarterly enrolment and the average attendance for Public Schools is derived from the rolls for all quarters of the year, not for the December quarter only. The pupils attending Subsidised Schools are included only for 1907 and

subsequent years. For Private Schools the ratio is on the December quarter for the first three years (1904-6) and on the average daily attendance during the whole year for the last seven years (1907-1913):—

Year.	Public Schools.			Private Schools.		
	Average Quarterly Enrolment.	Average Attendance during the year.	Ratio of Attendance to enrolment.	Enrolment, December Quarter.	Average Attendance.	Ratio of Attendance to enrolment.
			per cent.			per cent.
1904	211,489	153,260	72·5	57,811	46,667	80·7
1905	209,227	152,105	72·7	57,854	46,480	80·3
1906	207,741	151,261	72·8	58,707	46,942	80·0
1907	213,769	152,608	71·4	57,440	46,697	81·3
1908	216,747	155,997	72·0	57,111	48,203	84·4
1909	218,248	160,080	73·3	58,361	48,792	83·6
1910	218,539	157,498	72·1	59,247	49,351	83·3
1911	223,603	160,776	71·9	60,963	51,569	84·6
1912	235,803	171,028	72·5	61,744	51,168	82·9
1913	245,819	178,028	72·4	64,591	54,305	84·1

The quarterly enrolment, as the standard for comparison of children under tuition, and, by means of the average attendance, of the degree of constancy in the education of children, is an unsatisfactory test.

Yearly, quarterly, or weekly rolls of the pupils are functions of the same variable—*daily attendance*—, and the longer the intervals of compiling the roll, whether for a week, a quarter, or a year, the greater the error introduced by multiple enrolment into the basis of comparison. Figures for the gross enrolment in public schools indicate that in 1913 approximately 42,000 enrolments resulted from children attending more than one school being enrolled more than once.

It has been ascertained in the Department of Public Instruction that 14 per cent. of the gross yearly enrolment must be deducted to obtain the number of individual pupils enrolled. Furthermore, the effective quarterly enrolment is only 91 per cent. of the yearly roll, and the weekly roll again only 90 per cent. of the quarterly.

It is remarkable, however, how greatly the percentage varies in the different inspectorial districts. As might be expected, there is more school migration in the tourist districts, while in the western districts the percentage of pupils who have been enrolled in more than one school during the year is extremely small. In the Moss Vale district, for example, in the year 1913 the percentage was 16·3; Wollongong, 14·3; and Blackheath, 19·2. On the other hand, the percentage at Broken Hill was only 5·5; Hay, 8·7; Albury, 8·9; and Wellington, 11·1.

The weekly roll is clearly the best test, inasmuch as it most nearly approaches the basis (daily) on which the average attendance is computed; but preferably the average attendance of scholars should be compared with the total children who can be regarded as in need of education. Such comparison is rendered possible by means of the census figures for 1911, already quoted.

The following statement shows, for the last ten years, the average attendance at public and private schools in comparison with the estimated numbers of children requiring education :—

Year.	Estimated children of school age. (6-14).	Other Children under and over school age on roll.	Total Children requiring education.	Average Attendance Public and Private Schools	Proportion per cent. attending school.
1904	266,100	44,603	310,706	199,927	64·3
1905	264,200	40,352	304,552	198,585	65·2
1906	262,500	41,436	303,936	198,203	65·2
1907	260,800	43,111	303,911	199,305	65·6
1908	259,400	42,551	301,951	204,200	67·6
1909	259,200	43,242	302,442	208,872	69·1
1910	257,900	44,364	302,264	206,849	68·4
1911	260,800	43,979	304,779	212,345	69·7
1912	264,700	44,992	309,692	222,196	71·7
1913	271,300	45,293	316,593	232,333	73·4

The figures in this table are exclusive of Technical schools, Sydney Grammar School, charitable schools, and shorthand and business schools and colleges, &c.

Following is a comparison of enrolment and attendance in public schools in recent years, including Primary, High, and Evening Continuation schools, and Subsidised schools :—

Enrolment.					
Year.	Individual Pupils.			Averages.	
	Boys.	Girls.	Total.	Quarterly.	Weekly.
1905	121,233	106,790	228,023	209,227	*
1906	121,294	108,194	229,488	207,741	*
1907	123,730	112,006	235,736	213,709	*
1908	122,383	110,741	233,124	216,747	194,641
1909	125,116	113,398	238,514	218,248	197,979
1910	129,364	114,475	243,839	218,539	198,874
1911	130,926	118,606	249,532	223,603	203,385
1912	136,719	123,103	259,822	235,803	213,930
1913	142,739	127,198	269,937	245,819	218,410†

Attendance.							Attendance in Proportion to Enrolment.	
Year.	During the Year.			December Quarter.			Quarterly.	Weekly.
	Boys.	Girls.	Total.	Boys.	Girls.	Total.		
1905	81,445	70,660	152,105	80,868	70,165	151,033	Per cent. 72·69	Per cent. *
1906	80,904	70,357	151,261	80,245	70,878	151,123	72·81	*
1907	81,103	71,505	152,608	79,769	70,717	150,486	71·40	*
1908	82,550	73,447	155,997	84,090	75,205	159,295	71·97	80·10
1909	84,830	75,250	160,080	83,379	73,956	157,335	73·34	80·85
1910	83,710	73,788	157,498	80,917	71,328	152,245	72·07	79·19
1911	85,196	75,580	160,776	87,097	77,245	164,342	71·85	79·00
1912	91,492	79,536	171,028	91,661	79,151	170,812	72·53	79·94
1913	95,115	82,913	178,028	97,369	85,509	182,878	72·42	79·93

* information not obtainable. † Does not include weekly enrolment at subsidised schools.

On the individual enrolment the attendance during the year was slightly better for boys than for girls, viz., 66·6 per cent. as compared with 65·1.

The discrepancy between enrolment and attendance is ascribed to several contributing causes—(1) laxity of home control ; (2) indifference to the need for education ; (3) desire to exploit the energies of children, and (4) ineffective compulsory-attendance laws. The question of truancy inspection has aroused considerable attention at various times, and the need for making attendance at continuation schools obligatory has been discussed recently.

To reduce the disproportion between attendance and enrolment, in State schools particularly, and to secure the enrolment of all children of school age, amendment of the Public Instruction Act is projected, to enable the Department to deal more stringently with truants and children who fail to attend a school regularly.

During 1913, in the State schools, 33,599 children between the ages of 6 and 14 years, in the first half of the year, and 28,143 in the second half-year, failed to complete the minimum attendance of 70 days. Legal action to enforce attendance was taken in 849 cases, viz., 523 in the first half-year, and 326 in the second. In 2,346 cases the parents were cautioned.

AGE DISTRIBUTION OF PUPILS.

The age-grouping of pupils enrolled at schools during the last ten years is shown in the following table ; for Public Schools the basis, prior to 1913, is on the mean quarterly enrolment ; throughout the series, the basis for Private Schools is on the enrolment for December quarter in each year, as are the Public Schools figures for 1913 :—

Year.	Public Schools.				Private Schools.			
	Under 6 years.	6 years and under 14.	14 years and over.	Total.	Under 6 years.	6 years and under 14.	14 years and over.	Total.
1904	8,559	180,480	22,450	211,489	5,193	44,214	8,404	57,811
1905	7,430	182,460	19,337	209,227	4,848	44,269	8,737	57,854
1906	8,302	180,223	19,211	207,741	4,972	44,784	8,951	58,707
1907	8,762	184,858	20,089	213,709	4,859	43,180	9,401	57,440
1908	8,933	187,750	20,064	216,747	4,839	43,549	8,723	57,111
1909	9,613	189,074	19,561	218,248	5,007	44,293	9,061	58,361
1910	10,140	188,770	19,629	218,539	5,180	44,652	9,415	59,247
1911	10,688	194,394	18,521	223,603	5,247	46,193	9,523	60,963
1912	11,271	205,000	19,532	235,803	5,279	47,555	8,910	61,744
1913	10,663	211,742	19,379	241,784*	5,706	49,340	9,545	64,591

*Not including Evening Continuation Schools.

Since 1907 the figures relating to public schools include enrolment at subsidised public schools.

RELIGIONS.

A comparative view of the aggregate enrolment in all schools (public and private) for the December quarter during the last ten years, is given here-under, and the figures, being on the same planes of comparison for each year, may be accepted as illustrative of the progression of each type of school during the period.

The first table contains the numerical enrolment and its constituent subdivisions; and the second table supplies the ratios per cent. which such subdivisions bear to the aggregate enrolment, thus providing a ready means for comparisons :—

Year.	Total Enrolment all Schools.	Public Schools— Denomination of Children.					Private Schools— Denomination of Schools.		
		Church of England.	Roman Catholic.	Presbyterian.	Methodist.	Other.	Church of England.	Roman Catholic.	Other.
1904	265,671	109,658	30,233	23,829	28,240	15,900	4,116	41,112	12,583
1905	263,864	108,333	29,935	24,070	28,603	15,019	3,954	41,268	12,632
1906	266,005	108,497	30,636	24,207	28,866	15,092	3,922	42,106	12,679
1907	266,669	109,306	31,436	24,453	28,954	15,080	3,434	42,005	12,001
1908	271,606	112,728	32,209	24,913	29,581	15,064	3,415	42,295	11,401
1909	272,100	113,019	31,190	24,941	29,582	15,007	3,308	43,615	11,438
1910	274,023	114,677	30,937	25,021	29,640	14,501	3,500	44,249	11,498
1911	282,773	118,794	31,044	26,347	30,595	15,030	3,297	46,097	11,569
1912	290,273	123,190	31,313	26,992	31,768	15,266	3,347	46,778	11,619
1913	306,375	131,052	32,553	28,601	33,499	16,079	3,533	49,580	11,478

Taking the total enrolment as 100, following are the proportionate values under each head of the table given above :—

Percentage of Total Enrolment.

Year.	Public Schools— (Denomination of Children).					Private Schools— (Denomination of Schools).		
	Church of England.	Roman Catholic.	Presbyterian.	Methodist.	Other.	Church of England.	Roman Catholic.	Other.
1904	41·23	11·38	8·97	10·63	5·98	1·55	15·47	4·74
1905	41·06	11·36	9·12	10·84	5·69	1·50	15·64	4·79
1906	40·79	11·52	9·10	10·85	5·67	1·47	15·83	4·77
1907	40·99	11·79	9·17	10·86	5·65	1·29	15·75	4·50
1908	41·50	11·86	9·17	10·89	5·55	1·26	15·57	4·20
1909	41·54	11·46	9·17	10·87	5·51	1·22	16·03	4·20
1910	41·85	11·29	9·13	10·82	5·29	1·28	16·15	4·19
1911	42·01	10·98	9·32	10·81	5·32	1·17	16·30	4·09
1912	42·44	10·79	9·30	10·94	5·26	1·15	16·12	4·00
1913	42·77	10·63	9·34	10·93	5·25	1·15	16·18	3·75

It will be noticed that in the public school figures the column headings indicate the denomination of the children, and in the private school figures the denomination of the schools. In the former case the denomination of the child is ascertained, but not in the latter, and the pupil, although attending a school of stated denomination, is not necessarily to be considered of that denomination. It may be assumed, however, for purposes of comparison, that on the whole the religion of the child accords with that of the denomination of the private school he is attending, and on this basis the following comparisons are obtained.

As to the children of the Church of England, its constituent percentages of the total children enrolled in the State were :—

Year.	Proportion of Total Children Enrolled in State—		
	Public Schools.	Church of England Schools.	All Schools.
	%	%	%
1904	41·28	1·55	42·83
1905	41·06	1·50	42·56
1906	40·79	1·47	42·26
1907	40·99	1·29	42·28
1908	41·50	1·26	42·76
1909	41·54	1·22	42·76
1910	41·85	1·28	43·13
1911	42·01	1·17	43·18
1912	42·44	1·15	43·59
1913	42·77	1·15	43·92

The percentage evidently has been very constant during the whole period for both classes of schools—public and private—the advance, on the whole, for the period covered by the table being about 1 per cent. of the total school children enrolled, and of the Church of England children attending school only 3 per cent. attend their own denominational schools.

As to the Roman Catholic children, the figures appear as follows :—

Year.	Proportion of Total Children Enrolled in State—		
	Public Schools.	Roman Catholic Schools.	All Schools.
	%	%	%
1904	11·38	15·47	26·85
1905	11·36	15·64	27·00
1906	11·52	15·83	27·35
1907	11·79	15·75	27·54
1908	11·86	15·57	27·43
1909	11·46	16·03	27·49
1910	11·29	16·15	27·44
1911	10·98	16·30	27·28
1912	10·79	16·12	26·91
1913	10·63	16·18	26·81

Here is observed extremely slight fluctuation in the percentage attending public schools, and as to the denominational schools, the rates show a tendency to rise. The Roman Catholic children at present attending the schools of their own denomination represent 60 per cent. of the total Roman Catholic enrolment.

Religious Instruction in State Schools.

A provision of the Public Instruction Act, 1880, retained from the Public Schools Act, 1866, reserves a maximum period of one hour in each school day, during which religious instruction may be given to scholars in State schools by visiting ministers and teachers of religious bodies; and the following table indicates the number of visits of Clergymen during the past five years:—

Denomination.	Number of Visits.				
	1909.	1910.	1911.	1912.	1913.
Church of England	24,977	25,209	26,101	27,229	30,958
Roman Catholic	936	840	711	887	833
Presbyterian	6,920	7,132	7,452	8,074	7,922
Methodist	8,301	8,430	8,800	9,956	10,914
Other Denominations	4,542	5,094	5,536	6,737	6,694
Total	45,676	46,705	48,600	52,883	57,321

During 1913 over 1,400 visits were paid each week that the schools were open. The extent to which opportunities for religious instruction are used could be measured more closely if the number of children taught were recorded.

THE STATE SCHOOLS.

Annual Expenditure.

The following statement shows the expenditure by the Department of Public Instruction in each calendar year since 1905, for maintenance, administration, and building, on account of primary and secondary public day schools and technical schools:—

Year.	Primary and Secondary Schools.				Technical Education.		
	Maintenance and Administration.				Building, including Repairs.	Maintenance and Administration.	Land and Building, including Repairs.
	Rent and Rates.	Maintenance and Salaries.	Administration and Training.	Total.			
	£	£	£	£	£	£	£
1905	9,171	729,464	51,692	790,327	49,648	25,315	...
1906	8,570	737,041	54,565	800,176	81,405	26,879	...
1907	10,965	758,131	60,817	829,913	92,382	33,569	187
1908	7,342	873,748	64,557	945,647	139,373	40,896	10,918
1909	17,445	877,916	66,324	961,685	148,254	45,489	15,963
1910	18,657	911,641	71,711	1,002,009	189,704	49,293	16,430
1911	19,494	967,900	80,683	1,068,077	174,499	51,473	10,393
1912	18,875	1,191,744	93,666	1,304,285	285,702	60,762	17,466
1913	22,880	1,211,921	106,405	1,341,206	344,950	52,585	16,042

These figures represent governmental expenditure only. In regard to Technical Education, it is necessary to note that fees paid by students constitute a considerable item of receipt in each year. Fees in primary schools were abolished as from 8th October, 1906, and High School fees from 1st January, 1911.

Throughout the period quoted, the item of rent paid on account of public day schools has fluctuated between £1,300 and £2,300 per annum approximately. Rates constitute the greater part of the amount shown under the heading of rent and rates, and include water and sewerage rates.

The figures given above represent the annual normal expenditure. To estimate the total cost of State school education during any year would necessitate investigation of the capital value of buildings and equipment, the rate of depreciation to be allowed, &c. At the present time the Department of Public Instruction has not the necessary data to give an exact valuation, but the latest approximate estimated value of the Departmental properties, including the sites, is £2,400,000.

The comparative intensity of annual cost in primary and secondary schools is indicated in the following table, in which the relative cost per school is shown for a series of years :—

Year.	Schools.	Per School.		
		Rent, Rates, &c.	Maintenance and Salaries.	Administration and Training.
	No.	£ s. d.	£ s. d.	£ s. d.
1895	2,563	0 11 8	215 2 2	17 19 7
1900	2,745	2 6 2	223 19 10	18 12 2
1905	2,901	2 12 8	251 9 0	17 16 5
1910	3,105	5 10 7	293 12 1	23 1 11
1911	3,125	6 4 9	309 14 10	25 16 4
1912	3,234	5 16 9	368 10 1	28 19 3
1913	3,285	6 19 4	368 18 6	32 7 10

The following statement shows, in comparative form, the distribution of expenditure (exclusive of rates) in connection with primary and secondary schools under the Department of Public Instruction in 1912 and 1913 :—

	1912.	1913.
	£	£
School premises	287,522	347,183
Maintenance—		
Primary and Subsidised Schools :		
Teachers' salaries and allowances	1,062,998	1,051,457
Other expenses	78,863	94,308
High Schools :		
Salaries and maintenance	24,743	43,784
Scholarships and bursaries	13,445	9,840
Evening Continuation Schools :		
Salaries and allowances	9,416	9,464
Other expenses	2,279	3,068
Training of teachers	36,274	36,871
Administration	57,392	69,534
Total	£1,572,932	£1,665,509

SCHOOL ACCOMMODATION, SITES, AND PLAYGROUNDS.

There was accommodation in the schools in 1881 for 98,721 children, and at the end of 1911 for 228,253 ; and comparison of the latter number with the average attendance at the present time shows that there is, on the whole, ample space in the school buildings to meet requirements. On the basis adopted in 1908 in regard to school buildings, 150 cubic feet of air space are required per child, though under the Public Instruction Act, 1880, the minimum apportionment of space inside a public school building is 100 cubic feet for each child ordinarily in attendance. In the last five years, Departmental expenditure for building has been far in excess of that for earlier years, and progress has been made in the work of remodelling

existing buildings; effecting improvements in lighting, ventilation, and general sanitation; erecting science, cookery, and manual-training rooms; and providing assembly-halls and supplying furniture of modern type.

There were 194 works in progress at the end of the year 1913 for new schools, residences, additions, and alterations. Omitting the value of the sites, the total cost of these buildings under construction will be £240,000.

During 1913, 121 sites for public schools were vested in the Department. Of these, 50 were grants of Government lands, 38 were resumed, 29 purchased, and 4 conveyed as gifts. In several cases additional land was secured for the purpose of enlarging existing playgrounds. In the city and suburban area the question of adequate ground space in connection with the public schools is complicated by the high resumption values involved, and the authorities controlling some of the Metropolitan and Suburban parks have given assistance to the Education Department in the establishment of "Park Kindergartens."

In the Victoria Park, Sydney, under the City Council, an area of 2 acres has been fenced off and a shelter shed erected; swings and appliances have been provided for the amusement of children, and a trained Kindergarten Supervisor appointed.

SCHOOL FURNITURE AND EQUIPMENT.

The Departmental workshops at Cockatoo Island were resumed by the Commonwealth, and in April, 1913, a furniture factory at Drummoyne was purchased for school purposes at a cost of £14,500. The factory was also used for making portable class-rooms, and the output included such articles of school use as desks, work benches, easels, blackboards, tables, chairs, book-presses, &c.; also various articles of furniture for the Departmental offices. The saving in the cost of furniture production is estimated at 28 per cent.

ADMINISTRATIVE OFFICES.

At present the Department of Public Instruction is housed partly in buildings constructed as far back as 1814, and partly in private rented offices.

To relieve the congestion in the clerical department and to centralise the staff, an Act was passed in April, 1912, authorising the construction of new offices on a site adjacent to the present building.

The offices, which are practically fire-proof, are already well advanced, and are built of local freestone, with steel frames and concrete floors. The estimated cost is £81,092, and the construction is being carried out by day-labour. It is expected that the buildings will be completed early in 1915.

PRIMARY AND SECONDARY SCHOOLS.

The number of Primary and Secondary Schools open at the end of each of the last nine years is shown in the following statement:—

Year.	Secondary High.	Primary Day.				Primary Evening.	
		Primary and Superior.	Provisional and Half-time.	House-to-house.	Subsidised.	Primary.	Continuation.
1905	4	1,923	768	12	160	32	...
1906	5	1,908	750	10	195	34	...
1907	5	1,927	721	9	220	33	...
1908	5	1,941	727	9	284	33	...
1909	5	1,949	729	12	344	33	...
1910	5	1,950	740	9	362	36	...
1911	8	1,915	746	6	425	16	18
1912	12	1,942	739	6	439	3	41
1913	15	1,975	709	7	529	1	47

The number of schools open at any time during the year does not necessarily coincide with the number open at the end of that year, as with variations in population, changes are being made constantly in the classification of schools opened, and new schools are established or existing schools closed. The most consistent demand for new schools and additional accommodation is from the metropolitan district. Country towns, with a comparatively stationary population, present little difficulty; but the continuous demands for new schools in freshly-settled districts, remote from towns, account in great measure for the increase in recent years in the number of subsidised schools.

The following table affords a comparison between the number and type of State schools in operation in 1881, the first full year in which the Department of Public Instruction was under immediate ministerial control, and the numbers open during the years 1891, 1901, 1911, 1912, and 1913; the figures represent the gross number of schools in operation at any time during the year:—

Type of School.	Schools in operation.					
	1881.	1891.	1901.	1911.	1912.	1913.
High ... ..	...	5	4	8	12	15
Public, Primary and Superior Day	1,100	1,697	2,049	1,945	1,972	1,993
Provisional	246	349	423	514	528	541
Half-time	93	300	276	303	295	278
House-to-house ... ..	...	92	20	6	6	7
Evening, Primary	57	11	41	24	16	1
" Continuation ... ..	...	...	...	18	41	50
Subsidised ... ..	...	...	...	494	633	660
Reformatory and Industrial ...	2	3	4	3	2	2
Total	1,498	2,460	2,822	3,315	3,505	3,547

Centralisation of Small Schools.

In 1904 the consolidation of small schools was initiated, the Department of Public Instruction granting a subsidy for the conveyance, to central schools, of children attending various small schools. The advantages of this system are that better buildings and equipment, as well as a larger teaching staff, can be provided, and a wider range of instruction imparted. The number of central schools and the cost of conveyance of children to them are shown in the following statement for each year:—

Year.	Schools.	Cost of Conveyance.	Year.	Schools.	Cost of Conveyance.
		£			
1904	12	267	1909	51	3,713
1905	13	959	1910	63	3,967
1906	17	1,302	1911	80	4,650
1907	38	2,812	1912	111	5,859
1908	47	3,280	1913	162	6,719

Study Courses.

Details have been given previously regarding the Primary School Syllabus as revised in 1905, and instruction in all primary schools is along the lines of this syllabus, with such adaptations in methods of treatment of each subject as may be essential to bring the schools into accord with modern ideals, and to fit the pupils for useful citizenship.

Primary and higher primary work are undertaken in schools classifiable broadly in two groups—(a) Primary and Superior Schools in more or less populous centres, and (b) schools in isolated and sparsely settled districts, viz., Provisional, Half-time, House-to-House, and Subsidised Schools.

House-to-house teaching is restricted generally to English and mathematics.

In half-time schools, one teacher divides his time between two schools, so arranging that homework and preparatory study will occupy the time of the pupils in the absence of the teacher. The course of instruction follows that of full-time schools.

SUBSIDISED SCHOOLS.

For the education of children resident in places remote from any State schools, the Subsidised School was instituted in 1903 with good effect. The conditions upon which aid is granted are that two or more families must combine to engage a private teacher, who, after approval of the Minister as to qualifications, receives, if in the Eastern portion of the State, a subsidy at the rate of £5 per pupil per annum, the maximum amount being £50 per school; and if in the Western portion, a subsidy of £6 per pupil per annum—the maximum per school being £60. The provisions of the Regulation have been extended in the direction of granting a subsidy to any family with not less than four children of school age and living in complete isolation. Subject to certain conditions, subsidy at the stipulated rates may be paid as an aid towards boarding children in a township for the purpose of attending a public school. The amount paid towards salaries of teachers of subsidised schools for the year 1913 was £18,830.

Following are the records of Subsidised Schools for December Quarter of the last ten years:—

Year.	Teachers.			Pupils.						Attendance per cent. of Enrolment.
				Quarterly Enrolment.			Average Attendance.			
	Males.	Females.	Total.	Boys.	Girls.	Total.	Boys.	Girls.	Total.	
1904	118		118	540	458	998	801		801	80·2
1905	160		160	701	659	1,360	570	538	1,108	81·4
1906	195		195	969	915	1,884	694	691	1,385	75·5
1907	220		220	926	883	1,809	747	712	1,459	80·6
1908	37	247	284	1,281	1,267	2,548	1,039	1,039	2,078	81·5
1909	35	309	344	1,598	1,581	3,179	1,294	1,299	2,593	81·5
1910	33	324	362	1,710	1,761	3,471	1,394	1,437	2,831	81·5
1911	39	386	425	1,862	1,807	3,669	1,521	1,502	3,023	82·3
1912	50	439	489	2,025	1,975	4,000	1,885	1,604	3,489	87·2
1913	63	466	529	2,216	2,075	4,291	1,823	1,724	3,547	82·8

During 1912, regulations and arrangements were made whereby subsidised school teachers could be examined, certified, and registered on passing the examination, the Department furnishing the names of such registered teachers to parents requiring their services.

TRAVELLING SCHOOLS.

The Subsidised School was till recently the outpost of the State's educational activity, but in 1908, to supply means of education for families so isolated that even two could not readily combine to form a Subsidised School, a Travelling School was established in the Narrabri district; the

teacher was provided with a vehicle to carry school requisites, and a tent for use as a schoolroom, and teaches for a week at a time at each centre in his circuit. Two additional travelling schools have since been established, as investigation had revealed the fact that about 1,000 children in the most inaccessible localities in New South Wales were still lacking any educational facilities.

Another form of the travelling school is established in connection with extensive railway construction works, where Railway Camp Schools render educational facilities available to the children of the men engaged on the works.

EVENING PRIMARY SCHOOLS.

For some years Evening Primary Schools had been open in localities where there was a definite demand for them, to enable students to make good deficiencies in early education. The pupils enrolled were boys. Following is the record of evening primary schools for the last four years :—

Year.	Schools.	Teachers.	Students.		Average Age, Years.
			Enrolment.	Average Attendance.	
1910	36	36	981	539	17
1911	16	16	639	343	17
1912	3	3	110	60	17
1913	1	1	24	19	17

In 1913 only one of the Evening Primary Schools remained, the work having been taken over by the Evening Continuation Schools, particulars of which are supplied elsewhere.

KINDERGARTEN.

During the year 1913 classes were in operation in sixty-four public schools. The enrolment was 3,721 ; with an average attendance of 2,591.

Montessori Methods.

The published success in 1912 of the Educational methods adopted by Dr. Montessori, of Rome, in the case of mentally deficient children, caused the Education Department of this State to obtain particulars with a view to following the course with normal children.

The underlying principle is individual liberty, and it is claimed that the pupil "acquires" what previously was taught.

An experiment was conducted by the Mistress of the Kindergarten Practice School at Blackfriars, who is also Lecturer in Kindergarten in the Sydney Training College, and so great was the success that it was deemed advisable to study the system firsthand, for which purpose the Mistress visited Rome.

The study of the system not only bore out the first impressions, but, according to the report, the methods were capable of extension to children much older than those usually associated with Kindergarten.

The results of the twelve months' experimental work have been satisfactory, and it has been demonstrated that children learn to read and write without strain and without any formal teaching.

The main benefits of the system, as already tested, are greater liberty, independent work, more rapid progress, and a joyousness in work for both teacher and children hitherto unknown.

Students from the other States are availing themselves of the benefits of the Lecturer's experience in Italy, and 4,000 copies of the report were secured by the New Zealand Education Department for distribution among New Zealand teachers.

CLASSIFICATION.

Public schools are classified according to average attendance, and in the largest schools there are separate departments for infants (up to about age 8), for boys, and for girls.

In the classification of schools, made in January of each year, the schools were graded as follows:—

Class.	Average Attendance.	Schools.				
		1910.	1911.	1912.	1913.	1914.
I	600 and over	62	65	70	73	74
II	400-599	45	42	35	31	34
III	200-399	85	85	86	93	91
IV	50-199	378	370	375	383	412
V	30-49	605	600	605	582	559
VI	20-29	482	455	460	545	566
VII	Under 20	1,025	1,077	1,030	967	946

In the smaller schools work beyond the primary syllabus is not usually undertaken, but in the larger schools, constituted in several departments, higher primary work is conducted.

VOCATIONAL TRAINING AND SECONDARY EDUCATION.

Provision is made in State Schools for education beyond the primary stage in Superior or Continuation District and High Schools, and in Technical Schools and Colleges.

Art and manual training, nature study and the school garden, and elementary science, as adjuncts to the primary work, are initiatory stages in vocational training, which may be continued in a more specialised way in the higher schools.

SUPERIOR AND CONTINUATION SCHOOLS.

Till 1912 the Superior Schools continued the work of the primary syllabus, with such additional subjects as would enable pupils to compete at public examinations.

Any Public School may be declared a Superior School if there is in one department a minimum attendance of 20 pupils who have completed study in the primary course.

The course of instruction in superior schools is designed for pupils between ages 13 to 15 years. In 1912 the study course was remodelled, and some of the schools reorganised as Day Continuation Schools, though still retaining the name "Superior."

In the Day Continuation Schools, specialised instruction for any one vocation is not designed, but preparation fundamental to various groups of industry is made possible. The schools are organised as Junior Technical (boys), Commercial (boys and girls), Domestic (girls), and Independent Preparatory, and in all the types provision is made for a group of studies having no immediate bearing upon vocational ends, but designed for training in citizenship. These subjects are, English, civics and morals, history, music, and social exercises; the hours of instruction are twenty-five weekly, as

compared with six hours per week in the Evening Continuation Schools; and a Special Certificate marks the satisfactory completion of the two years' course.

Such of the Superior Schools as have not been reorganised as Day Continuation Schools will continue the general higher primary work.

Prior to the year 1910 Evening Schools were maintained, to afford instruction to those who had not had the full advantage of primary education. As the need for thus completing an unfinished primary course became subordinate to the imperative demand for an Evening-School system for pupils who had completed their primary school work, it became necessary to modify and adjust the Evening-School organisation. Consequently, the Evening Schools now comprehend two distinct types of training—(a) the Primary Schools, now practically obsolete, to complete elementary education, (b) the Continuation Schools, properly so-called, to provide instruction on special lines for persons engaged in daily employment.

In January, 1911, the Director of Education was entrusted with a commission to inquire into the working of Continuation Schools in Great Britain and Europe, and to recommend for adoption whatever improvements might be of advantage in New South Wales. Following his report, issued in July, 1911, Evening Continuation Schools were organised, and numbers of the evening primary schools have been converted into Continuation Schools.

The first of these schools were artisan, commercial, or domestic, and were instituted in populous suburbs of Sydney and Newcastle. At the end of 1913, forty-seven such schools had been opened—Commercial Schools in such districts as Mosman, Petersham, Gladstone Park (Balmain), Cook's Hill, Cleveland-street, &c.; Junior Technical Schools at Paddington, Newtown, Rozelle, Wickham, &c.; and Domestic Schools at Newtown, North Sydney, &c. The enrolment was heavier at commercial than at the junior technical schools, but both types were well supported. In connection with the system the question of compulsory attendance has been the subject of much discussion, particularly as the responsibility for the direction of military training of youths for the Commonwealth Defence Force has been imposed upon the State school teachers primarily.

The following is the record of these Evening Continuation Schools for the year 1913:—

Classification.	Schools.	Pupils.	
		Enrolment.	Average Attendance.
Junior Technical (boys)	18	1,073	659
Commercial (boys)	19	1,593	975
Preparatory	2	42	28
Domestic (girls)	8	513	325

In these schools the fee chargeable is 6d. per week; but on completion of a satisfactory attendance above a stipulated minimum, in each year, the amount paid is returnable to the student. The average age of pupils attending the Preparatory Schools was 16 years, while for the other Evening Continuation Schools the average was 18 years. At the beginning of 1914 there were thirty Evening Continuation Schools in the metropolitan area and seventeen in country districts; ten of the latter were Junior Technical Schools.

HIGH SCHOOLS.

In December, 1913, there were twenty High Schools, including a Technical High School, where both boys and girls attended; of these nine were outside the metropolitan area. The course of instruction practically covered

secondary education in literary subjects up to the highest standard of University entrance examination. In 1911 fees in High Schools were abolished; entrance was made conditional on satisfactory completion of the primary school work and a guarantee of attendance for the full period of four years. The total expenditure on High Schools for 1913 was £60,292 as compared with £25,686 for 1912.

The following are the particulars relating to High Schools during the last ten years:—

Year.	High Schools	Teachers.			Pupils. Enrolment.		Attendance. Daily average.	Holders of—		Fees received.	Cost per head of enrolment.
		M.	F.	Total.	Total.	Average Quarterly.		Bursaries.	Scholarships.		
1904	4	16	12	28	696	550	512	111	138	£ 3,689	£ s. d. 4 4 11
1905	4	14	12	26	693	563	524	127	148	3,481	4 11 8
1906	5	21	13	34	917	723	670	126	143	3,350	4 19 5
1907	5	23	12	35	908	739	669	129	149	3,617	6 9 7
1908	5	24	17	41	969	811	728	143	196	3,702	6 5 4
1909	5	25	16	41	1,035	875	786	151	220	3,703	6 5 6
1910	5	29	19	48	1,168	894	826	162	246	3,575	7 13 3
1911	8	59	38	97	2,293	1,864	1,786	201	250	...	10 6 10
1912	12	95	51	146	3,002	2,714	2,392	470	781	...	8 11 1
1913	20*	154	97	251	4,714	4,178	3,623	499	821	...	14 13 4

* Includes 5 Intermediate High Schools.

The increased attendance at High Schools in recent years is very noticeable. In 1912 the teaching staff was rearranged and reclassified; the syllabus provides for complete secondary courses, extending over four years, designed as preparation for various types of vocation:—(a) A general course leading to professional study in higher institutions; (b) a commercial course preparatory to business careers; (c) a technical course; (d) a domestic course, qualifying for home management.

So far the schools are constituted on the basis of professional study, except for the Technical and Agricultural High Schools in connection with the Technical College. Particulars as to the various High Schools for 1913 are as follows:—

High School.	Teachers.			Pupils.		Attendance.		
	M.	F.	Total.	Total Enrolment.	Average Weekly Enrolment.	Average Weekly.	* Holders of Bursaries.	* Scholarships.
Bathurst ...	4	2	6	127	103	96	10	10
East Maitland ...	7	...	7	144	124	117	30	29
Fort-street (Boys) ...	26	...	26	477	433	409	51	118
Fort-street (Girls) ...	...	22	22	410	348	324	34	112
Goulburn ...	5	3	8	119	97	90	14	8
Grafton ...	5	3	8	183	158	145	15	23
Hurlstone ...	9	...	9	67	57	55	11	9
Newcastle ...	16	4	20	370	316	271	43	53
Orange ...	4	4	8	106	87	80	12	7
Parramatta ...	9	...	9	204	170	153	4	17
Sydney (Boys) ...	20	...	20	399	338	321	126	153
Sydney (Girls) ...	...	20	20	341	311	286	66	127
Technical ...	20	...	20	410	331	310	29	68
Wagga Wagga ...	3	3	6	104	85	78	15	20
West Maitland ...	1	11	12	119	106	97	26	11
Intermediate (5)† ...	25	...	25	1,134	878	787	13	56
Total ...	154	97	251	4,714	3,942	3,619	499	821

* Total for December Quarter, 1913.

† Includes Cleveland St., Kogarah, Newtown North, North Sydney and Petersham.

In 1913 High Schools were established at Bathurst, Goulburn, and Parramatta, while the new Girls' High School at North Sydney was ready for occupation at the beginning of 1914.

DISTRICT SCHOOLS.

In country centres where the enrolment of secondary pupils is not sufficient to warrant the establishment of a separate High School, "District" Schools have been established as a "top" to the local Primary School. These schools are specially staffed, and the higher classes, 6th and 7th, undertake the secondary course of instruction as followed in High Schools. At the close of 1913, twenty-two of these schools were in operation, the average weekly enrolment of secondary pupils being 716 boys and 567 girls, while the average attendance was 636 boys and 502 girls.

SCHOOLS IN FEDERAL CAPITAL TERRITORY.

An arrangement has been made by the Commonwealth and State Governments, by which the Department of Public Instruction will continue to administer Education in the Federal Area. Buildings will be erected, equipped, and maintained, and the general provisions of the Public Instruction Act of New South Wales enforced. Teachers will be subject to classification, status, and transfer on an equal footing with ordinary State School teachers.

Should the Commonwealth demand teachers of higher qualifications than is provided in ordinary circumstances, the rates of payment will be determined jointly by the Administrator and the State Education Department.

The subjoined statistics of the Federal Capital Territory have been included in the foregoing tables relating to State Schools:—

Year.	Number of Schools.	Teachers.			Gross Enrolment.		
		M.	F.	Total.	Boys.	Girls.	Total.
1911	14	10	4	14	178	170	348
1912	12	9	3	12	177	164	341
1913	11	9	2	11	168	149	317

The religions of scholars on the net December enrolment was:—

Year.	Church of England.	Roman Catholic.	Presbyterian.	Methodist.	Others.	Total.
1911	98	135	22	21	...	276
1912	93	142	21	23	1	280
1913	112	84	19	28	5	248

The expenditure by the State on behalf of the Commonwealth for the year 1911, was £1,593; and for 1912, £2,473, and for 1913, £1,920.

TECHNICAL EDUCATION.

The foundation of the New South Wales Technical School was due in great measure to the efforts of a few enthusiasts connected with the Sydney Mechanics' School of Arts; and, in 1873, it was decided to establish a Technical College, affiliated to that institution, with the object of improving the scientific knowledge of Australian artisans. In the year 1878 a sum of £2,000 was granted by Parliament towards the organisation of a Technical College, and the work of the institution was carried on in connection with the School of Arts. In 1883, however, a Board was appointed by the Government to take over the management, and the Technical College became a State institution. In addition to the classes held in the metropolis, lectures

were delivered in country towns, and classes were established wherever sufficient support was given.

Towards the end of 1889 the Board was dissolved, and the Technical College placed under the direct control of the Department of Public Instruction. Technical education is administered by a superintendent, with financial and general procedure independent of primary and secondary education. Suitable accommodation for the classes was provided by the erection of the Technical (Central) College, at Ultimo. This central College was opened for the reception of students in January, 1892, and has been subjected to extensive additions and alterations.

During 1913 the whole system of technical education was reorganised, and operations under the new scheme commenced in 1914. The scheme is based upon the experience gained of Technical education in this and other countries, but with special features to meet requirements under the industrial laws of New South Wales.

The scheme provides for two complete courses of instruction, namely:— (1) trades courses, (2) higher courses of technological instruction.

Each course embraces a period of five years' evening instruction. The trades courses are arranged so that a person attending them will be engaged, during the day, in the practice of the trade the course for which he will be following in the evenings. This arrangement is the result of a unanimous agreement of employers and employees, that the proper work of the trades schools is to supply supplementary training to actual workshop or factory practice. The trades courses will therefore consist of tuition in the underlying principles of the trades, and practical lessons to increase the skill of the apprentices. These courses, in their five years' duration, will be concurrent with the apprenticeship period, so that a young tradesman will have completed his course on reaching the age of twenty-one years. Only those engaged in the actual practice of a trade can be admitted to the course of supplementary trade instruction for that trade, since the latter would be useless without the trade practice. Provision has, however, been made for the admission of any journeyman to the course of instruction for his particular trade. The trades course is essentially a co-ordination of the training received in the workshop or factory with the instruction given in the trades schools. This co-ordination requires a very complete system to record the progress of apprentices in the workshops and in the evening courses of supplementary trade education, and an excellent and elaborate card system has been devised.

At the end of five years, a student's card will contain a complete record of the results of his studies in the course of supplementary trade instruction at the trades schools, together with a statement of his actual trade experience. This card will be placed before an examining committee of employers and employees in the particular trade of the apprentice, who will examine the card and decide whether the young man should receive a certificate of trade competency. If the report is favourable, the Department will grant a certificate, but if otherwise, he must make good his defective knowledge or training, whereupon the Department will grant the certificate. A certificate gained under such conditions will be ample proof of competency, whereas under the old system of technical education the trade certificates were lightly regarded.

Apprentices desiring admission to the trades courses must have sufficient education to enable them to take proper advantage of the instruction to be given, and students not thus qualified must attend the Continuation Schools to render themselves efficient. Students holding certificates of Continuation Schools will be admitted without examination. Journeymen also will be admitted without examination to any part of the trades courses.

The subjects of each course must be taken in order as laid out in the regulations. Usually the trades courses will consist of mathematics, drawing, and the practical work.

On the completion of the trades courses, a student will be eligible for admission to the Higher Courses, which provide instruction in the higher branches of his trade. The Higher Course will range from three to five years in duration, and are intended to give the knowledge required by foremen, managers, and clerks of works. A student who passes through the higher courses will be qualified to hold such positions, provided he has the capacity to control men.

Science is included as a special course in the higher division. Admission to the Science Course will be granted to any one who can pass the entrance examination at this stage. The Senate of the University of Sydney allows the work done at the Central College to count as part of the University Science and Engineering Courses, so that the College students will be able, provided they matriculate, to proceed to the University, and so obtain a science or engineering degree.

The following Departments of Study are provided in trades and higher courses :—

Engineering (Mechanical and Electrical)	Applied Art.
Architecture (including Building Trades).	Women's Handicrafts.
Science.	Sheep and Wool.
Sanitation.	Printing.
	Manufacturing Trades.

Each of these Departments includes trades and higher courses, and will be under the supervision of a "lecturer in charge."

The following is a list of the subjects taught :—

Engineering Trades (Mechanical) :

Trades Mathematics, Trades Drawing, Blacksmithing, Boilermaking, Fitting and Turning, Ironmoulding, Patternmaking, Motor Construction, Applied Mechanics, Mechanical Drawing, Machine Erecting, and Steam and Other Prime Movers.

Engineering Trades (Electrical) :

Trades Mathematics, Trades Drawing, Electrical Engineering, Electrical Wiring, Armature Winding and Telephone Mechanics.

Architecture (including Building Trades) :

Trades Mathematics, Trades Drawing, Bricklaying, Cabinet Making, Carpentry and Joinery, House Painting, Signwriting, Design and Illumination, Graining, Machine Wood Working and Wood Turning, Masonry, Plastering, Plumbing, Sheet Metal Work, Sheet Copper and Brass Working, Carriage Building (rail), Wood Carving, French Polishing, Quantity Surveying, Slide Rule, Construction Drawing, Constructional Design, Architectural Drawing, Building Construction, Styles of Architecture and Hand-railing and Staircasing.

Science :

Mathematics, Chemistry (Inorganic and Organic), Assaying, Metallurgy, Geology, Mineralogy, Mining (Metalliferous), Ore Dressing, Botany, Zoology, Entomology, Bio-Chemistry, Physiology, Physics.

Sanitation :

Sanitary Engineering, Sanitary Law, Medical Hygiene, Meat Inspection, House Drainage, Sanitary Inspectors' Course (Correspondence), and Country Water Fitters and Drainers' Course (Correspondence).

Applied Art :

Drawing—Perspective, Model, Freehand, Plant, Black and White, Antique, Life, and Blackboard.

Painting—Flower, China, Still Life, Life and Pastel.

Modelling—Antique, Ornament, Casting, Life, Pottery. Plaster Casting.

Women's Handicrafts :

Cookery (Plain and Advanced), Laundry, Starching and Ironing, Sweets Making, Domestic Science, Dressmaking, Millinery, Ladies' Tailoring and Corset Making.

Sheep and Wool :

Sheep Shearing, Sheep and Wool Training, Wool-classing, Fell-mongering.

Printing :

Composing, Machining, Lithography, Photo-Engraving, and Book-binding.

Manufacturing Trades :

Bootmaking, and Leather Dressing and Tanning.

Separate Classes :

Agriculture (Elementary and Advanced), Care of Animals, Book-keeping, Penmanship, Shorthand, German, French, Elocution, Breadmaking, Photography, Tailors' Cutting.

All country Technical Colleges, with the exception of that at Newcastle, and the Technical Colleges at Granville, and Balmain, will be classified as Trades Schools, and it is proposed to build new trades schools at Leichhardt, Waverley, North Sydney, Redfern, and Enmore. Additional trades schools will be established at other centres in the suburbs and country whenever the probable attendance of apprentices and journeymen will warrant the expense.

The School of Tanning at present at the Circular Quay, Sydney, and the Bootmaking School at Erskineville, are to be removed to a new site at Redfern, where specially designed and equipped buildings are to be erected.

The classes and students in the Technical Education Branch have increased considerably in the last six years, as may be seen from the following record covering the past decade :—

Year.	Classes.		Individual Students.		Average Weekly Attendance.		Fees paid by Students.
	Technical College and Branches.	Public Schools.	Technical College and Branches.	Public Schools.	Technical College and Branches.	Public Schools.	
	No.	No.	No.	No.	No.	No.	£
1904	415	231	7,147	6,074	6,673	2,587	10,053
1905	449	176	7,282	4,344	7,257	2,560	9,861
1906	482	172	8,169	4,232	7,606	2,165	11,007
1907	565	153	10,106	4,129	8,616	2,644	13,046
1908	667	123	12,451	2,415	9,506	992	14,176
1909	736	128	12,434	3,036	10,924	1,341	15,475
1910	777	109	12,712	3,127	12,172	1,083	15,873
1911	816	57	14,147	1,600	14,560	514	16,395
1912	732	61	14,805	1,613	17,204	545	15,846
1913	582	*	11,620	*	12,214	*	13,760

* Since 1912 technical classes at Public Schools have been dissociated from the Technical College, and manual work formerly under direction of Technical College teachers now forms part of the ordinary Public School course.

The substantial decrease shown in the figures of 1913, as compared with those of previous years, is due to the reorganised scheme preventing overcrowding of classes, and the retardation of defective parts of the whole system. The average weekly attendance, however, shows an increase of 11 per cent. as compared with the previous year.

The teaching staff in connection with technical education consists of lecturers in charge of departments and resident masters in charge of branch schools, together with assistant teachers. The following statement shows the number of teachers in the Technical Education branch in the last five years.

Year.	Lecturers in charge.	Resident Masters.	Teachers.						Total.	
			On Salary.				On Fees.			
	Males.	Males.	Masters.		Assistants.		Males.	Females.	Males.	Females.
			Males.	Females.	Males.	Females.				
1909	11	8	126	32	36	3	31	45	212	80
1910	11	7	139	31	55	4	31	56	243	91
1911	11	8	151	33	54	9	28	49	252	91
1912	11	8	149	29	60	13	20	50	248	92
1913	10	7	133	14	53	8	18	43	221	65

The results of the Technical Examinations for 1913 show that out of 4,811 examinees 3,577, or 74.3 per cent., were successful; 502, or 14 per cent., obtaining honours. The number of scholarships awarded was 175.

AGRICULTURAL AND RURAL TRAINING.

Education in subjects pertaining to rural industries is commenced in the primary schools with the teaching of the elementary principles of agriculture, both practical and theoretical. School gardens and experiment plots are adjuncts to the majority of State schools, and for these gardens grants are made of farm, vegetable, and flower seeds.

In 1905 an Instructor of School Agriculture was appointed, to direct the work of the teachers in the primary schools; his duties are to visit schools in the interests of school agriculture, and to supply the teachers with information required to direct the work of the pupils.

Rural camp schools are held in each Autumn and Spring, at which metropolitan school-boys are accommodated for a short period, while they visit dairies, farms, &c., under suitable guidance, and are instructed by direct illustration. The object of these camps is to familiarise city lads with the important rural industries of the State, and to foster an inclination for rural pursuits.

During 1913 camp schools were held at Richmond and at Orange. The former camp was established close to the Hawkesbury College, and 538 boys and 43 masters attended. The principal places visited were the Agricultural College, Pitt Town Labour Farm, Riverstone Meatworks, and Windsor Condensed Milk Factory, and the local orchards and farms.

At Orange 580 boys and 48 masters comprised the Spring term camp. The farms of Millthorpe and Spring Hill, the orchards of Canoblas, and the mining industries of Cadia, Lucknow, and Borenore, furnished opportunities of studying the main industries of the district.

A special Agricultural High School (Hurlstone) is established at Ashfield. The grounds, covering 26 acres, are used for teaching practical operations and for experimental work in the growth of crops, action of fertilisers, &c. The course at this school extends over two years, and covers a general English education in addition to science with laboratory practice, and

agriculture with field work. During 1913 there were sixty-seven students on the roll, of whom thirty-five were in residence. At the end of 1913 there were thirty-five students in residence of whom nine were bursars, and two were scholarship holders. For resident students the fee is £6 6s per quarter; for day students no fees are charged.

The training at Hurlstone Agricultural High School forms a preparatory course to the more advanced work at Hawkesbury Agricultural College and, from the school, three scholarships are available annually to the Hawkesbury College.

At the Central Technical College at Ultimo, a diploma course covering two years is available for evening students.

Supplementing the training given to pupils under the Department of Education a graduated scheme of agricultural instruction is organised in connection with the development of rural industries, by the Department of Agriculture of New South Wales. This scheme provides for apprentice Schools for lads between the ages of 16 and 20 years who intend to become agricultural workers. These schools are conducted in connection with Experiment and Demonstration Farms at Cowra (mixed farming), Glen Innes (mixed), Grafton—both opened in February, 1912—Yanco (irrigation), Dural (orchard), and Wollongbar; and offer one year practical courses at a charge of £5 per half-year.

Experiment Farm Schools, which provide a preparatory course for older lads to enable them to work their own farms, are established in connection with the Experiment Farms at Wagga, Bathurst, and hitherto at Berry. At these Schools, scholarships are available as follows: Wagga, three; Bathurst, three; Wollongbar, one.

During recent years lads have been received for short courses of agricultural training at the Casual Labour Farm at Pitt Town. Since 1910 the whole establishment, converted into the Government Agricultural Training Farm, has been devoted exclusively to the training of lads, particularly in connection with the Dreadnought Funds, publicly subscribed, of which the Government has undertaken the administration. At 30th June, 1913, fifty-nine lads were in residence.

Hawkesbury Agricultural College provides higher agricultural education. The farm covers 3,430 acres, and the average number of students in attendance during the year 1913, was 203. From the establishment of the College to June, 1913, 1,577 students had passed through the College courses in addition to 609 State school teachers who attended Summer Schools, and 731 farmers who attended Winter Schools, and 118 students of dairy science. The Diploma course at the College covers three years' work and, for the year 1910-11, ten students obtained this award; certificates are obtained for shorter courses. Students holding the Diploma of the College may be permitted to complete the course for the degree of Bachelor of Science in Agriculture at the University in three years instead of four. Under the direction of the College, Dairy-Science Schools have been held in various centres for the benefit of factory managers and assistants. The College has been provided with twenty scholarships and bursaries, as follows:—

Department of Agriculture	3
Department of Public Instruction—	
For Students of the Teachers' Training College	3
For Students of the Hurlstone Agricultural High School... ..	3
Messrs. J. Fairfax & Sons (<i>Sydney Morning Herald</i>)	1
The <i>Daily Telegraph</i> Newspaper Co.	1
Farrer Research Scholarship... ..	1
Government Farrer Scholarship	1

In addition to these scholarships, prize funds have been provided liberally from public and private sources.

The following statement shows the attendance during the last seven years at Agricultural Farm Schools, and Hawkesbury College :—

Year.	Experiment Farm Schools.			Apprentice Schools.						Government Agricultural Training Farm.	Hawkesbury College.
	Wagga.	Bathurst.	Berry.	Wollongbar.	Cowra.	Yanco.	Dural.	Glen Innes.	Grafton.		
1907	63	23	11	18	...	...	...	...	...	90	230
1908	58	33	5	18	...	...	...	...	...	105	231
1909	60	45	5	19	...	...	...	...	...	199	237
1910	69	48	...	23	...	...	3	...	...	88	221
1911	77	49	...	11	19	20	5	...	...	177	217
1912	75	51	...	2	20	23	3	12	14	366	201
1913	79	51	...	6	29	18	3	33	21	252	203

The final stages of agricultural education and training in this State are reached at the University, where, in the beginning of 1910, a department of Agriculture was instituted as a branch of the Faculty of Science. A four-years' course leads to the degree of Bachelor of Agricultural Science ; and, in providing a higher training ground for teachers and experts, completes the whole system of preparation for rural industries. The Experiment Farms of the State are available for the practical and experimental work in connection with the degree course.

In addition to the educational work undertaken, either under the State system of education, or in the development of rural industries, agricultural interests are developed by means of such institutions as Agricultural Bureaux, shows, &c. In regard to the agricultural shows, detailed figures are given in the part of this volume relating to "Agriculture."

During each year various short courses of study and practice in matters pertaining to rural industries are held. Following is the record of short-course students in the last eight years :—

Year ended 30th June.	Students Attending.		
	Dairy Science Schools.	Hawkesbury.	
		Winter School for Farmers.	Summer School for Teachers.
1906	13	61	102
1907	.....	77	98
1908	17	78	88
1909	19	67	96
	12		
1910	14	113	96
	13		
1911	10	125	81
1912	10	94	48
1913	30	117	.....

TEACHERS.

Training.

Until the year 1905 the teaching staff of the State Schools was recruited by means of the pupil-teacher system, under which boys and girls commenced between the ages of 14 and 16 years as pupil-teachers, charged with the control and instruction of a certain number of children ; in return for their services they received, in addition to a small salary, instruction and practical advice from the principals of the schools where they were employed. After four years service, marked by annual examinations conducted by the

Department of Public Instruction, a limited number who passed the qualifying examinations were admitted to a course at the Training College—men at a non-residential institution in connection with Fort-street Model School; and women at Hurlstone College, where residence was provided. On completion of the course, trainees were classified as teachers.

Pupil-teachers who did not enter the training schools were appointed as assistants, or placed in charge of small schools; and after a probationary service were allowed to compete for classification on the same footing as the trained teachers. A number of practically untrained teachers entered the service as teachers of small schools in outlying districts, and became eligible for classification.

The inadequacy of this system for maintaining an efficient and well-trained body of teachers becoming apparent, the pupil-teacher system was abandoned in 1905; and a well devised training system instituted for all prospective teachers.

The training schools at Hurlstone and Fort-street were closed, and a general training school established in connection with Blackfriars Public School, with a one-year course, ninety-five students being admitted. In 1911, Hereford House School, Glebe, was opened as an adjunct to the Blackfriars School, but both these establishments were intended as temporary expedients. The necessity for adequate accommodation in a specially equipped building has been obvious, and is accentuated by the urgent need of teachers for primary work in small country centres, and for specialised work in continuation schools, and in secondary schools.

During 1912 the Teachers' College and Building Acts were passed, authorising the construction and maintenance, by the Department of Public Instruction of a Teachers' College, within the domain of the University of Sydney; the College is now in course of erection.

At the present time training for prospective teachers takes two forms—a short course of six months at Hereford House School for assistant teachers and teachers in small country schools, and a complete course, extending over two years, with the option of a third and fourth year for specialised work for the higher primary and High schools. Entrance to the short course is conditional upon the passing of a qualifying examination, held twice annually, viz., in February and August.

To prevent the entrance of untrained teachers into the Service, the admission of Junior Assistants has been stopped, and now no teacher enters without at least six months professional training.

Entrance to the full course at Blackfriars has been hitherto conditional upon passing a special entrance examination, held annually. The first examination for the Intermediate Certificate in 1912 gave entrance to the Teachers' Training College, but from 1914 entrance will be dependent on the results of the Leaving Certificate examination.

Candidates for admission to the Teachers' College are provided with a two-year preliminary training course in District Schools, &c., as "probationary students." At the close of 1913 students in training numbering 432, viz., 156 males and 276 females, were in attendance. Of these 153, comprising 53 males and 100 females, were in their first year, 133, composed of 34 males and 99 females in their second year; 14 males and 16 females in third and fourth years, and 116 Short Course (Hereford House) students.

The maximum age of entrance for candidate probationary students has been 18 years. From 1911 the age limits are over 15 and under 20 in January following the examination. During the year 1913, 169 probationers in District Schools qualified for entrance to the Training College.

In 1913, students and graduates underwent courses of instruction at the Teachers' College, their distribution among the different years being as follows:—

Students.	Males.	Females.	Total.
First year	54	98	152
Second year	36	99	135
Third year	13	13	26
Fourth year ... ..	...	1	1
Short course	115	132	247
Total	218	343	561

NOTE.—In addition to the figures above, there were, in 1913, two travelling students (males), and forty-seven evening students (females).

On completion of training, one year students may qualify in attainments for a 3rd class certificate, second year students for a 2nd class, and third year students for a 1st class. The classification is not awarded, however, until a probationary period of practical work has been satisfactorily accomplished, and the student has satisfied certain requirements as to Methodology, &c.

The candidates tested during the year 1913 in connection with Teachers examinations included the following:—

Candidates for Training—		
Probationary students	...	169
Not previously in Department	...	22
Pupil-teachers and assistants	...	13
Small-school teachers...	...	2
Applicants for probationary studentships ..	...	331
Students of Training College	...	159
Trainees in Art subjects	...	299
Admission to Hereford House	...	460
Teachers examined at Easter	...	1,189
" " (Art subjects only)	...	435

Conditions of Service.

Prior to 1908 the salaries paid to classified teachers in charge of schools depended entirely on the classification of their schools, as determined by average attendance. Under the present system the classification is rendered more stable by restrictions upon the transference of schools from class to class, and arrangements have been made by which the teachers' promotion depends, not only on the promotion of their schools, but also on the improvement of their qualifications. To qualify for a higher grade the teachers must pass a series of examinations, but to obtain promotion they must show also the requisite degree of efficiency in practical work. During 1911-12 regrading of salaries was effected, special attention being given to the question of residence or rent allowance.

The following statement shows the range of salaries paid to teachers at schools having an average attendance of 200 and over:—

Class of School.	Required Average Attendance.	Principal Teachers.		Mistress.				First Assistant			
				Girls' Department.		Infants' Department.		Male.		Female.	
		Classification.	Salary.	Classification.	Salary.	Classification.	Salary.	Classification.	Salary.	Classification.	Salary.
I.	600 and over	1A	£ 450	1A	£ 288	1A	£ 252	1B	£ 288	1B	£ 210
		...	...	1B	252	1B	240	2A	246	2A	180
		...	...	...	...	2A	216	...	...	...	...
II.	400-599	1A	408	1A	252	1A	216	1B	264	2A	168
		1B	390	1B	240	1B	210	2A	234	2B	150
		...	...	2A	216	2A	198	2B	198	...	...
III.	200-399	1A	366	1B	216	1A	210	1B	240	...	...
		1B	342	2A	204	1B	193	2A	216	...	...
		2A	306	...	...	2A	192	2B	198	...	...

When the average attendance in a boys department exceeds 500, the principal receives £500, and the first assistant £312. When the average exceeds 400, the salaries are £475 and £300 respectively. If the average exceeds 300, the principal teacher receives £465. Similarly, if a girls' department exceeds 400, the mistress receives £312, and the first assistant (1B) £222, or (2A) £192.

At each State school where the average attendance is less than 200 the salary of the principal teacher is as below :—

Class of School with Average Attendance.							
IV. 50-199 Pupils.		V. 30-49 Pupils.		VI. 20-29 Pupils.		VII. Under 20 Pupils.	
Classification.	Salary.	Classification.	Salary.	Classification.	Salary.	Classification.	Salary.
1A.	£ 324	2A	£ 234	2B	£ 204	3A	£ 174
1B	306	2B	222	3A	192	3B	156
2A	270	3A	216	3B	174	Uncl.	110
2B	258	3B	192				

Assistants.—The salaries of ordinary assistants are :—1B men £228, women £162; 2A men £204, women £156; 2B men £186, women £144; 3A men £174, women £126; 3B men £156, women £120; Unclassified (men and women), £110; Junior Assistants under 21 years, men £72, women £60.

In addition to these rates, special allowances are made to teachers of District schools and to teachers of special subjects, such as Science, Manual Training, Cookery, &c. If married, teachers in charge of schools are granted residences at an assessed rental. Extra allowances may be granted to teachers stationed in remote localities, where the cost of living is high. Teachers in half-time schools and teachers of house-to-house schools are paid at the same rates as those in public schools of corresponding classification; subsidised teachers receive £5 per head of average attendance, with a maximum of £50 per annum. In the western districts the subsidy is £6, and the maximum £60 per annum. Teachers are eligible for a minimum salary of £110 per annum on attainment of age 21; and extended leave after twenty years' service is part of the conditions of service.

Classification and Improvement.

State school teachers are graded and obtain promotion after passing a series of examinations, framed to test their progress in scholastic attainments as well as their skill in imparting knowledge. For meritorious service, also, teachers may receive promotion.

Teachers' associations are established in inspectorial districts to keep the teachers in touch with modern educational methods. Meetings are held at frequent intervals for the discussion of educational topics; addresses are delivered, and demonstration and practical lessons are given on subjects of professional interest. Circulating libraries have been established by a large number of these associations.

In isolated districts, where the teachers are unable to be present at these meetings, they are allowed to attend for a short period, from time to time, at larger schools.

Summer schools are held regularly to improve the skill and knowledge of teachers. During 1912 and 1913 schools for art work, music, and physical culture were conducted. Schools of instruction are held by inspectors.

During 1913, 227 teachers were enrolled as students in the University of Sydney, 165 attending in the evening ; of the total, 149 were studying Arts, and 19 a Science Course ; a special day course of instruction for workmistresses was given at the Central Technical College ; special classes in Art and Manual Training were formed at various centres.

Supervision.

A staff of Inspectors has been organised to exercise supervision over educational work in Public Schools. In 1913 the inspectors for primary and superior schools numbered 39. In addition there were attached to the Department of Public Instruction an Inspector of Secondary Schools, and an Inspector of Evening Continuation Schools. The former, under the Bursary Endowment Act, is charged with the inspection of such private secondary schools as apply for registration.

Methods of inspection have been radically altered in recent years to accord with the spirit pervading the new syllabus. Detailed exhaustive examination of schools has been abandoned, a quarterly examination by the principal of the school in certain subjects having been substituted, which is tested at various points, so as to bring the inspector and teacher into close and friendly contact and to co-ordinate their duties.

This mode enables the inspector to devote his attention to general observation of the work of the school, inspecting minutely where signs of weakness may be apparent.

As the result of his examination, the Inspector will assess the value of the teaching, with special reference to various considerations, as detailed in his official instructions.

The Inspector is required to meet the teachers of his district during each year ; the meetings being devoted to lectures, essays, and the discussion of educational topics. In 1913 Schools of Instruction were conducted by Inspectors at various country centres.

Although the whole internal administration of schools is reserved to the Minister, Public School Boards are appointed to visit schools, to induce parents to send their children regularly, and to carry out other duties either in support of the teachers or to check or report misconduct. These Boards are restricted in supervision to the schools in their respective districts, which are defined by the proclamation of the Governor. About one-third of the members of the Boards are women.

During recent years, a number of Parents' and Citizens' Associations have been formed in connection with schools. Their growth testifies to a widespread desire to do something independently of State aid to make the schools better fitted in the matter of equipment for educational work. These associations have no authority in respect of the internal management of the schools nor in the expenditure of public moneys.

MEDICAL INSPECTION.

In 1907, arrangements were made for the medical inspection of children in the State schools, but inspections were restricted in the first couple of years mainly to schools in the most populous centres of Sydney and Newcastle. During 1911 medical inspection was slightly extended to a few schools in the South Coast District and to a number of the largest inland towns.

During 1913 the medical work of the Department was reorganised to include the medical inspection of all Public Schools throughout the State, and the majority of the private schools. It was estimated that the number

of pupils to be examined was approximately 300,000, out of a total school population of 310,000. It was proposed to examine each child every four years, thus ensuring two medical examinations during school-life.

Some conception of the magnitude of this undertaking can be formed when it is known that it includes the investigation of epidemics of infectious diseases affecting school children; the inspection of school buildings; the delivering of systematic courses of lectures at the Training Colleges; lectures to senior girls in all metropolitan schools on the care of babies, personal cleanliness, home hygiene, sick nursing, &c.; lectures to parents; examination of candidates for admission to the Teaching Service; first treatment in the back-country schools of the eyes of scholars suffering from ophthalmia, and instructing the children and parents regarding future treatment and prevention; also supplying those children with sufficient drugs to carry on the treatment; the following up of untreated cases by visits of school nurses to parents of defective children, in order to secure the medical treatment of those children.

A series of lectures are given to the women students at the Teachers' Training College by a member of the School Medical Staff and forms part of the Infant Teachers' course of instruction, the students being trained to observe children and to diagnose simple ailments.

In their endeavours to rectify the abnormalities discovered the medical inspectors have delivered addresses to parents; and attention has been given to school architecture, sanitation, &c. Special schools for delinquent or mentally defective children are mentioned elsewhere in this volume.

PHYSICAL AND MILITARY TRAINING.

At the close of 1910 there were in the State schools 7,000 cadets in Metropolitan and Country Corps, in addition to senior companies at the Sydney Boys' High School, Fort-street Model School, Hurlstone Agricultural High School, and Cleveland-street School. The ranges in use numbered 239, including 75 miniature rifle ranges, constructed during 1910. On 1st July, 1911, the State Schools' organisation of senior mounted and school cadets was superseded by the Commonwealth compulsory training system, initiated in the latter half of 1911; the first half of the year having been devoted to the preparation of candidates for posts as non-commissioned officers in the forces. The State Department of Public Instruction acts in co-operation with the Defence authorities, since the responsibility for carrying out the defence scheme devolves largely upon teachers. To complete their year's training, junior cadets prior to 1912 served for 120 hours, in periods of $2\frac{1}{2}$ hours per week for 44 weeks. The Defence Act of 1912 reduced the yearly service to 90 hours. Elementary marching drill occupies one half-hour per week, and the optional subjects include miniature rifle shooting, swimming, running exercises, and first aid. Senior cadets (14-18 years) attend weekly drills after school hours; and 6 half-day musketry parades per annum are required, in addition to 4 whole day parades, and 6 half-day parades on public holidays or Saturdays. Senior cadets having now the option of choosing whether they will drill with the school unit or with the area unit, may be enrolled in the school corps. Particulars concerning the system of universal military and naval training are given in the chapter dealing with "Defence."

To secure the efficiency of the teaching staff for the universal training of cadets, schools of instruction for teachers are arranged—the course to cover physical training, drill, shooting, swimming, first aid, &c. In 1913 there were attending the State Primary Schools 20,028 Junior Cadets and 1,018 Senior Cadets. All other pupils, boys under 12 years of age, and girls, practise drill and physical exercises daily in school.

Three instructors, assigned by the Commonwealth Defence Department to New South Wales, were occupied in visiting schools and instructing teachers.

Swimming is encouraged; one afternoon per week in the season may be devoted to acquiring and practising the art of swimming. At country schools, when possible, instruction in swimming and life-saving is given.

In 1913 the Defence Department of the Commonwealth extended its activities to include the physical training of girls. In April a School of Instruction was held in Melbourne for selected women-teachers from public schools in the several States. Six women teachers attended from New South Wales. After completing the instructional course these teachers specialised in the physical training of girls in their respective districts and gave demonstrations in the practice schools of other divisions.

SCHOLARSHIPS AND BURSARIES.

In addition to providing schools it has been the policy of the State to assist promising students, especially to High Schools and to the University, by means of scholarships and bursaries, of different tenures and values.

During 1913, 648 scholarships, each carrying priority of admission to a High or District School, and a grant of text books of the annual value of £1 10s. were awarded after competitive examination for the qualifying certificate to boys and girls under age 15. For the future the age limit will be 14 years.

The number of Bursaries granted during 1913, was 304 each carrying in addition to the grant of 30s. per annum for books, a maintenance allowance of £10, £10, £15, and £20 in successive years for pupils living at home, or £30 for each of the four years in the case of those who have to live away from home to attend school. From the commencement of 1914, however, the living away allowance will be at the rate of £30 for each of the first and second years, and £40 for each of the third and fourth years.

On the results of the Intermediate examination, there were granted 20 scholarships carrying living allowances, and 30 with allowances for text books, tenable at High Schools. In addition 10 scholarships with living allowances, and 15 without, were awarded and made tenable at Technical Colleges or the Agricultural College.

There were also 88 Probationary Student Scholarships granting two years at selected district schools, and carrying living allowances.

Until 1911, Scholarships tenable at the Teachers' Training College were in two classes, carrying different rates of remuneration. In January, 1912, all scholarships were fixed at the higher rate, viz., £50 per annum for students boarding away from home, and £30 per annum for students living at home.

In 1908, Travelling Scholarships of an annual value of £150 to £200, and open to ex-students of the college, were established.

In 1911 a sum of £2,500 was provided by Mrs. Falkiner, of Deniliquin, to establish a scholarship fund for the Hay District. A Falkiner scholarship, carrying University training, with text-books and costs of board and residence while in attendance at lectures and examination, for four years, has been founded. It is open for competition at the Leaving Certificate examination for boys who have passed through the Hay District School.

The Scholarship was granted in 1912, the successful candidate choosing the Engineering course.

In 1912 a special scholarship on the lines of the Falkiner scholarship was provided by the Department of Public Instruction for the Riverina district, and is to be available in alternate years.

Bursary Endowment.

In 1912 the Bursary Endowment Act was passed by the Parliament of New South Wales, providing for the allocation of public moneys for the purpose of establishing a fund for bursaries, tenable in secondary schools, public, or private, and in the University of Sydney. This fund is administered by a specially constituted board, consisting of two representatives each of the University of Sydney, of the Department of Public Instruction, and of the Secondary schools registered under the Act. A representative of the Department of Public Instruction is chairman.

Schools desiring to benefit under the Act must register; and such registration, which is effective for two years, is conditional upon inspection to determine the suitability of school premises, the organisation and equipment of the school, the method and range of instruction, efficiency of the teaching staff, and the general conduct of the school. The inspection is conducted by the Inspector of Secondary schools under the Department of Public Instruction.

The general conditions attached to registration are (1) a school must be capable of providing a four-year course of instruction beyond the primary stage, (2) such course shall lead to a standard not lower than that of the leaving certificate in at least six subjects (of which mathematics shall count as two subjects), and (3) the subjects of the course shall be such as the Board may approve. Fifty private schools were registered in 1913 under the Bursary Endowment Act as eligible to receive bursaries in 1914.

Twenty-four Bursaries, tenable at the Sydney University, were awarded to pupils from all schools, according to their positions as candidates at the Leaving Certificate Examination of November, 1913, the candidates being under 19 years of age at date of examination.

A full Bursary entitles the holder to a grant of text-books not exceeding £5 per annum, and free education, together with an allowance not exceeding £20 per annum, to those who need not board away from home, and not exceeding £50 per annum to those who must do so; provided that a Bursar who wins and elects to hold a Scholarship or Exhibition offered by the Senate of the University shall be entitled to receive from the two sources conjointly an allowance of not more than £50 per annum. In terms of section 8 of the University (Amendment) Act, 1912, a number of exhibitions exempting the holders from payment of matriculation tuition and degree fees at the Sydney University are offered annually upon the results of the Leaving Certificate Examination. In connection with the examination of 1913, 100 exhibitions were available, but for the 1914 examination 200 will be available. These exhibitions are open for competition to students of State High Schools and non-State registered secondary schools who have completed the four-year secondary course. A small number of exhibitions, not exceeding 5 per cent. of the total number awarded, are open to competitors other than school students, provided they have been residents of New South Wales for three years.

Under the Bursary Boards Regulations it is open to a bursary holder, who is also an exhibitor, to have the advantage of his bursary not only in the science or arts course as hitherto, but in any of the professional schools in which the University Senate has made his exhibition tenable.

The following Statement shows the particulars of Scholarships and Bursaries granted during 1913 :—

Classification.	Number Awarded.			Value per Annum.	Method of Award.
	M.	F.	T.		
Scholarships.....	418	213	631	Secondary Education, and £1 10s. text books.	Qualifying Certificate Examination.
Intermediate Scholarships.....	1	4	5	If at home, £15 and £20 in third and fourth years, and £30 if away from home.	Intermediate Certificate Examination.
do. do.	14	5	19	Education, and text books £1 10s. ...	do. do.
Technical do.	8	...	8	If at home £15 for first, and £20 for subsequent years; if away from home, £30 p.a. and text books, £1 10s.	do. do.
do. do.	2	...	2	Education and text books	do. do.
Hawkesbury Agricultural Scholarships.	3	...	3	Two years at College, and £1 10s. text books.	do. do.
Hawkesbury Agricultural Bursaries.	3	...	3	Two years' course at the Hawkesbury Agricultural College, with grant of £30 per annum. Students to pay College fees.	do. do.
Probationary Students Scholarships.	41	171	212	If at home, £12 during second year; if away from home, £30.	do. do.
Intermediate Bursaries	10	6	16	Text books not exceeding the value of £1 10s. per annum, together with an allowance of £15 for the first year, and £20 for the second year when the student resides at home, and £30 per annum to those who live away from home in order to attend school.	do. do.
Bursaries	218	85	303	If at home, £10 for first and second years, and £15 and £20 for third and fourth; if away from home, £30 for first year and such sum in excess of £30 as may be determined for the subsequent years.	Qualifying Certificate Examination.
University Bursaries.....	20	4	24	If at home, £20 per annum; if away from home, £50, also £5 for text books.	Leaving Certificate Examination.

PRIVATE SCHOOLS.

Concerning private schools, particulars have been given of the aggregate number of schools and of the pupils enrolled. Little other information is available; many of these schools are denominational, and none are subsidised excepting the Sydney Grammar School, which was incorporated by an Act of Parliament of 1854, and opened on 3rd August, 1857; it was established to confer on all classes and denominations of British subjects the advantages of a regular and liberal course of secondary education. The Act authorised the payment of £20,000 for the erection of school buildings, and an annual endowment of £1,500. The following is the record for the last five years of the numbers of teachers and students in the Sydney Grammar School, which since its foundation has been conducted exclusively for boys :—

Year.	Teachers.			Students.				
	Holding University Degrees.	Not Holding University Degrees.	Total.	Enrolment.		Attendance.	Age Groups.	
				Total.	Quarterly Average.	Daily Average.	December Enrolment.	
							6-14 years.	Over 14 years.
1909	18	8	26	719	604	574	112	489
1910	17	8	25	639	572	536	138	414
1911	18	8	26	696	584	553	153	434
1912	17	8	25	665	561	522	143	379
1913	18	8	26	695	606	566	132	463

New pupils admitted in 1913 numbered 253, viz., 144 under, and 109 over, 14 years of age.

This school has occupied a special place in the educational world on account of its early establishment under Government support. Private endowments have made available various prize funds and two exhibitions annually for students proceeding to the University.

The income and expenditure of the school for 1913 were as follows:—

<i>Income.</i>				<i>Expenditure.</i>			
				£			
From State grant			1,500	Total Expenditure			13,179
From school fees			10,382				
From special prizes, &c.			541				

The cost per pupil in average attendance was £21 15s. 1d., being 2s. 3d. less than in 1912; the expense to the State was £2 13s. 0d. per head, being 4s. 6d. less than in the previous year.

Private Kindergarten Schools.

Free Kindergarten schools are conducted by the Kindergarten Union of New South Wales, which is assisted by a grant from the Government amounting to £850 per annum. In 1913 there were 11 Free Kindergarten schools with 46 teachers, 9 being in the metropolitan area, and 2 at Newcastle. The number of scholars on the roll during the December quarter was 617, of whom 585 were under 6 years of age, and 32 between 6 and 14 years. The average daily attendance was 442, and the gross enrolment for the year, 958.

In connection with Kindergarten teaching a private institution provides training in Froebelian methods, and the Free Kindergartens provide observation and practice schools.

Business Colleges and Shorthand Schools.

Students at many of the public and private schools receive instruction in business methods, and this branch of education is undertaken also at the Technical schools of the Department of Public Instruction.

A return of the number of pupils taught in these special subjects is not available, but the following statement shows that many persons who have passed the school age receive instruction annually at special Business and Shorthand Schools which are entirely under private management. Book-keeping, Business Methods, Shorthand, and Typewriting are the main subjects taught:—

Year.	Schools.	Teachers.		Enrolment.			Average Attendance.			Total Fees Received.
		M.	F.	M.	F.	Total.	M.	F.	Total.	
1907	17	73		1,776	1,185	2,961	1,137	699	1,836	£ 11,447
1908	19	96		2,430	2,237	4,667	1,301	1,281	2,582	16,509
1909	18	99		2,177	2,558	4,735	1,069	1,230	2,299	16,293
1910	18	65	36	2,492	2,638	5,130	1,316	1,184	2,500	17,159
1911	19	66	36	3,336	4,223	7,559	1,490	1,741	3,231	19,436
1912	18	59	44	3,280	5,231	8,511	1,321	2,134	3,455	22,743

In addition to the above, there are many students to whom instruction is being imparted in their own homes by means of correspondence.

Evening classes are conducted by various institutions, e.g., classes held at the Young Men's Christian Association; also, at the Railway Institute. These institutions have really been carrying on Continuation School work for some years.

At the Railway Institute, lectures of a technical and scientific character are arranged, in addition to the regular class work, in subjects ranging from ordinary English and commercial subjects to engine-driving, electrical physics, safe railway working, goods and coaching accounts, &c. The institute, also has succeeded in accumulating a choice collection of New South Wales timbers. Under the ægis of this institute, ambulance classes, &c., are undertaken and the attendance is exceptionally good.

SCHOOL SAVINGS BANKS.

A system of school savings banks in connection with the public schools of the State was initiated during 1887. By this means £465,231 have been received in deposits, and £108,285 transferred to other banks as Children's Individual Accounts. The object of these school banks is to inculcate principles of thrift while the minds of the children are susceptible of deep impressions.

In 1913 these banks numbered 727; the estimated number of depositors was 60,000. The deposits amounted to £29,247, and withdrawals, £29,501; £5,807, representing individual sums of £1 and upwards, were transferred to the Government Savings Bank, leaving £11,865, as credit balances in the school banks.

The largest deposit in any month was £4,062, and the largest deposit by one school during the year was £234.

EXAMINATIONS.

Since 1867 the University has conducted annual Public Examinations, Junior and Senior, which are open to candidates from any school, on payment of the necessary fee. These examinations have ranked as tests of the soundness of instruction imparted in the public and private schools of the State.

The number of candidates and the passes at these examinations are shown for quinquennial periods as under:—

Period.	Senior.			Junior.		
	Candidates.	Passes.		Candidates.	Passes.	
		Total.	Per cent. of Candidates.		Total.	Per cent. of Candidate.
1867-1870	35	30	85·7	69	53	76·8
1871-1875	294	174	59·2	951	544	57·2
1876-1880	316	237	75·0	1,737	1,046	60·2
1881-1885	311	238	76·5	2,471	1,589	64·3
1886-1890	617	471	76·3	4,756	3,152	66·3
1891-1895	771	586	76·0	8,606	5,250	61·0
1896-1900	602	496	82·4	6,102	3,915	64·2
1901-1905	674	568	84·3	5,841	3,944	67·5
1906-1910	867	719	82·9	6,408	4,560	71·2
1911-1913	549	429	78·1	3,272	2,462	75·2

The following table shows the distribution of successful candidates in recent years:—

Year.	Senior Passes.			Junior Passes.		
	Boys.	Girls.	Total.	Boys.	Girls.	Total.
1906	92	34	126	582	263	845
1907	104	45	149	531	273	804
1908	101	50	151	582	332	914
1909	90	55	145	604	311	915
1910	114	34	148	721	361	1,082
1911	100	31	131	645	299	944
1912	114	53	167	615	271	886
1913	95	36	131	418	214	632

The scope of the examinations is wide enough to embrace all subjects usually included in the curricula of secondary schools; seven subjects at the Junior, and eight at the Senior now constitute the maximum for proficiency prizes, and the attainment of specified standards is the equivalent of matriculation. Honours at matriculation are obtainable at the Senior examination.

Examinations for the admission of articled clerks in Law have been conducted by the University since 1877 under a rule of the Supreme Court. The records of these examinations in the past four years were:—

Year.	Candidates.	Passes.	Year.	Candidates.	Passes.
1910	43	25	1912	49	23
1911	55	27	1913	43	15

The subjects of examination are English, Latin, Mathematics, and Greek, or French, or German.

Various other public examinations are conducted by different bodies, for which the schools prepare their pupils, notably the Institute of Bankers for admission to the Bank service, and the Public Service examination for admission to the Service of the State.

Prior to 1911 students from public schools, superior and high, were successful competitors at public examinations. With the introduction of a co-ordinated system of secondary education, designed to furnish adequate preparation for various types of vocation, the necessity for competing at such examinations has vanished with the acceptance by the University, of the certificates of the Department of Public Instruction, as indicating the attainment of satisfactory standards of education.

The higher school courses are designed to furnish preparation for various types of vocation, viz:—(1) A general course leading to the professional studies of higher institutions. (2) A commercial course, preparing for business careers. (3) A technical course, leading to industrial pursuits. (4) A domestic course, qualifying for home management. Three certificates mark definite stages in the progress of public school pupils. The Qualifying Certificate indicates that the holder has completed the primary course, and is fitted to enter upon a secondary course. This standard is a condition precedent to admission to all higher schools. The Intermediate Certificate marks the completion of the higher primary stage constituting the first two years of the secondary course. The Leaving Certificate is obtainable on graduation from the full four years' course of the High Schools, and is accepted as indicative of adequate preparation for the University, if it shows a pass in matriculation subjects.

The first examination for the Qualifying Certificate was held in December, 1911, at some 600 centres in New South Wales. The following are particulars regarding the three examinations held to date:—

Year.	Examinees.	Qualifying Certificates Issued.	High School Scholarships and Bursaries.
1911	12,000	7,092	900
1912	16,500	7,869	1,000
1913	15,348	7,921	952

As the object of this examination is to avoid stereotyped questions and discourage "cramming," the schools were classified in districts, and the papers set in each had a bias towards problems especially applicable to local conditions. In allotment of the certificates on this examination, which also determines the allocation of Scholarships to District and High (including Agricultural and Technical Schools) the teachers' reports and the record of school attendance are influential factors.

The Examining Board in connection with the Intermediate and Leaving Certificates consists of the Director of Education, the Chief Inspector, the Principal of the Teachers' College, the Inspector of Secondary Schools, and four delegates appointed by the University.

The number of candidates for the Intermediate Certificate in 1912 was 1,571, of whom 41 per cent. obtained passes. In 1913, of the 1,573 candidates, 58 per cent. were successful. The percentages for the latter year in Sydney and Country schools were 69 and 45 respectively. The low percentage of passes in 1912 is due to the fact that in the initial year the full course had not been covered before the examination, and in 1913, of the candidates who failed in 1912 and re-presented themselves, 70 per cent. succeeded.

The first Leaving Certificate Examination was held in November, 1913, and of 156 candidates, 124, or 80 per cent. were successful. The passes in subjects ranged from 88 to 62. On the results of this examination, as provided for in the University Amendment Act, 86 exhibitions were given to successful pupils, 56 coming from the State Schools, and 30 from Registered Secondary (principally denominational) Schools.

Scholars of Private Secondary Schools may compete for the Leaving Certificate.

SPECIALISED EDUCATIONAL ACTIVITIES.

Reference has been made to the system recently inaugurated in State Schools, of secondary education in preparation for various types of vocation. In this scheme consideration is given to the necessity of commercial, as well as domestic, training.

In the new scheme of the reorganised Superior Public Schools provision has been made for the establishment of Domestic Superior Public Schools for girls. The syllabus came into operation at the beginning of 1913, and the course has been drawn up for Australian girls under local conditions. It includes household accounts, cookery, laundry work, dressmaking, millinery, garden, art of home decoration, music, and social exercises, morals and civics, physical training, as well as a course in English, designed to encourage a taste for wholesome reading.

Three hours per week are devoted to cooking and laundry, the course being practical and diversified. Personal hygiene, nursing of sick, and the care of the infant receive considerable attention.

Botany and gardening are taught, and while the course is designed primarily to train girls to manage a home, provision is also made for a training in commercial horticulture, and an alternative course of business lessons in the second year is intended to fit girls to take up work in the commercial houses in the city.

During 1913, 59 practical cookery classes were in operation at various centres, and were attended by girls from neighbouring schools, the course covering twelve months; the number enrolled was 3,396. In the Cookery Demonstration Classes, the number of pupils enrolled was 5,044. The Technical College provides more advanced courses.

COMMERCIAL EDUCATION.

Preparatory education for commercial life has been provided in the State schools by means of the curricula of classes in which youths receive tuition for the commercial certificates issued in connection with the University public examinations, and special preparation is given in the Commercial Continuation Schools recently established.

Private schools and colleges afford facilities for commercial training, both by day and evening classes, and advanced preparation for commercial life has been provided in the University evening lectures for the diploma in Economics and Commerce. This section of the University teaching was promoted originally by the Sydney Chamber of Commerce in the form of brief lecture courses available to the general public, and in examinations conducted for senior and junior commercial certificates issued by that body. The diploma course was, in 1913, converted into a full degree course; separate Chairs for applied chemistry and for economics have been provided, and it is hoped that means will be provided for practical research work which will be of great benefit to Australian industries. Such industrial research work is warranted by the necessity for keeping abreast of similar movements now being developed, particularly in numerous Universities and higher colleges of the United States of America.

In connection with the question of vocational training and compulsory attendance at continuation schools, it is of interest to note that the Royal Commission of Inquiry into the alleged shortage of labour, &c., in New South Wales, reporting in 1912 under the second head, viz., "Hours and general conditions of employment of female and juvenile labour in factories and shops, and the effect on such employees," recommended as the most essential reform the raising of the entry age to 16 years, and, as a corollary, education with vocational direction. In regard to the third part of the inquiry, viz., "Cause of the decline in apprenticeship of boys to skilled trades, and the practicability of using technical and trade classes as aids to or substitutes for apprenticeship," the Commission emphasised the fact that children may leave the primary school at age 14. The Technical College evening classes being devised for adults, boys under age 16 are discouraged from attending. Similarly, in entering on an apprenticeship, employers favour boys of at least age 16, so that they may have the benefit of the full five years' term. The interval between ages 14 and 16 thus presents a serious problem. The remedy recommended is an Apprenticeship Commission (with the Director of Education as President) to—

- (a) Classify for apprenticeship trades and branches of trades which may be deemed skilled;
- (b) Determine with regard to apprenticeship the period, rates of pay, length of attendance at technical classes, and amount of pay for certificated attendance;
- (c) Supervise the carrying-out by masters and apprentices of the apprenticeship agreement, and transfers of indentures.

Supplementary to the Apprenticeship Commission, a new apprenticeship law is deemed essential, making—

- (a) Apprenticeship in skilled trades compulsory for future juvenile labour;
- (b) Technical education obligatory on all apprentices; and
- (c) Additional wage payment enforceable for certified technical study.

DELINQUENT AND DEFECTIVE CHILDREN.

The special provision made for delinquent and defective children expresses the humanitarian tendencies of the times, in striving to enable such of these classes as can profit by education to receive that special training which may best fit them for life, consistently with their capabilities.

In addition to purely educational establishments, the State of New South Wales maintains several reformatories and industrial schools. For girls there is the Industrial School at Parramatta; and for boys the Carpenterian Reformatory (Brush Farm Home) and the Gosford Farm School, these institutions being under the control of the Minister of Public Instruction. At the Parramatta Industrial School for Girls there was during 1913 an enrolment of 157. At an annex to the School a Training Home for Girls established in 1912, there were, at the end of the year, 21 inmates. The average attendance in the combined institutions was 118, and on 31st December, 1913, there were 119 girls remaining. The gross expenditure on the Institution was £4,235 but, deducting parents' contribution for maintenance and value of laundry work done, the net cost was £3,549.

During 1912, 69 boys were admitted to the Carpenterian Reformatory (Brush Farm Home), Eastwood, while 71 were discharged. The ages of these boys were:—

		Years.					Total.
		14	15	16	17	18	
Admissions	...	4	13	38	12	2	69
Discharges	...	...	5	24	25	17	71

The site at Eastwood having been deemed unsuitable a new one was selected, consisting of Crown Lands at Penang Mountain, 3 miles from Gosford Railway Station, with an area of 700 acres possessing a healthy aspect, good water supply, land suitable for cultivation and removed from thickly populated areas but nevertheless within easy reach of stores and medical assistance. In the middle of the year 1912 a party of the boys, under the direction of skilled workmen, did much good in the way of clearing, draining, levelling and erecting buildings in concrete. During 1913 the necessary buildings were completed and provision was made for classification of inmates. The number of admissions was 74, and 82 were discharged. The following table shows the receptions and disposals in ages:—

		Years.						Total.
		Under 14	14	15	16	17	18	
Admissions	...	5	20	32	12	5	...	74
Discharges	...	1	6	22	26	19	8	82

The total expenditure for the year 1913 was £4,321, and deducting parents' contributions, &c., the net expenditure amounted to £3,721 or £24 12s. 9d. per head of enrolment.

Education of deaf and dumb and blind children is undertaken at a school in connection with the Institution for the Deaf and Dumb and the Blind. This institution receives periodical grants from the Government, and the school fees are remitted in cases where the parents are unable to pay.

In 1913, the sum of £1,540 was received from legacies, the whole amount being placed to credit of the Perpetual Subscribers' Fund. The income of the institution, excluding legacies, was £7,143. The expenditure for the year was:—For maintenance, £3,440; salaries and wages, £3,507; total, £6,947. The expenditure for new buildings during 1913 was £1,371. The number of teachers employed was 20, and the average cost per pupil was £50 6s. 9d., as against £47 18s. 3d. for 1912. Pupils in residence during 1913 numbered 147, as compared with 149 in 1912. The December enrolment was 140, and of these, 64 were under and 76 were over 14 years of age. Distribution into sexes showed, 93 males and 47 females. The admissions during the year were 23, of whom 22 were under 14 years of age. Thirteen pupils were discharged, 3 being under and 10 over 14 years of age. In the education of the children 8 male and 12 female teachers were employed.

Ragged Schools have been conducted since 1860 in Sydney, to provide education and attention for neglected children. During 1913, 5 schools were open, 6 teachers, all females, were employed, and 269 individual scholars were enrolled. The average daily attendance was 136. Of the 184 on the roll in the December quarter 29 were under 6 years, 111 from 6 to 14 years, and 44 above 14 years. Meals and clothing are provided when necessary. The operations of these schools have decreased in recent years, with the enactment of free education in State schools.

At charitable institutions in 1913 there were 14 schools with 50 teachers and a gross enrolment of 1,107. In December quarter the enrolment of 1,001 consisted of 73 under 6 years of age, 800 between 6 and 14 years, and 128 over those ages. These were denominational institutions conducted by the Roman Catholic Church and the Church of England.

THE UNIVERSITY OF SYDNEY.

An Act to incorporate and endow the University of Sydney was passed by the Parliament of New South Wales on 1st October, 1850, and received Royal Assent on 9th December, 1851.

The Government of the University was vested in a Senate of sixteen elective fellows (at least twelve to be laymen) and a maximum of six *ex officio* members, professors of the University. Vacancies were filled by election at a convocation of persons entitled to vote, to be held within sixty days of the first meeting of the Senate after the occurrence of the vacancy. The Chancellor and Vice-Chancellor were elected by the Senate from their own body—the Chancellor triennially under the by-laws, the Vice-Chancellor annually by statute. The Senate was empowered to make by-laws and regulations relating to the government of the University, examinations, conferring of degrees, &c., such by-laws, &c., being subject to approval of the Governor of the State.

By the Act of foundation, the University was required to be undenominational, religious tests for admission to any privilege being prohibited expressly; degrees in Theology or Divinity are not conferrable. Authority was given to examine, and to grant degrees in Law and Medicine as well as in Arts.

The first Senate was appointed on 24th December, 1850, and established immediately three Chairs—in Classics, Mathematics, and Chemistry and Experimental Physics. On the 11th October, 1852, the University was opened, and twenty-four matriculated students were admitted to membership.

In 1858 a Royal Charter was granted, declaring that "the degrees of this University in arts, law, and medicine shall be recognised as academical distinctions of merit, and be entitled to rank, precedence, and consideration in the United Kingdom as fully as if the said degrees had been granted in any university of the United Kingdom."

Since the passing of the original Act various amendments have been made. In 1884 the Senate's powers as regards teaching and degrees were extended to provide instruction and to grant degrees or certificates in all branches of knowledge, other than Theology or Divinity, subject to a proviso that no student should be compelled to attend lectures or to pass examinations in Ethics, Metaphysics, or Modern History; and the benefits and advantages of the University in all respects were extended to women equally with men. In 1900 the various enactments were consolidated by means of the University and University Colleges Act.

The University Amendment Act, 1912, made radical alterations in the Constitution of the Senate, which now consists of 24 members, viz. :—

- 4 Fellows appointed by the Governor of New South Wales.
- 1 Fellow elected by the Legislative Council.
- 1 " " " Assembly.
- 5 Fellows representing the Teaching Staff of the University, *i.e.*, one elected by the Professorial Board, and one each by the four Faculties.
- 10 " elected by Graduates.
- 3 " " the aforesaid Fellows.

Special provision was made in the Act for the retention of the Chancellor and Vice-Chancellor as additional Fellows for their lifetime; otherwise the maximum term of office is five years. Authority was given for the establishment and maintenance of evening tutorial classes; the State endowment was increased to £20,000 per annum, with proportionate increases of £1 for each 15 persons between ages 17–20, added to the population of the State as determined by Census records after 1912. Public exhibitions covering cost of matriculation, tuition, and degree fees were authorised in the proportion of one for every 500 persons between ages 17–20 in the population of the State as shown by Census records.

The establishment of colleges of residence in connection with religious denominations for the association of students in the cultivation of secular knowledge was authorised by an Act passed in 1854. Under this provision three colleges have been established adjacent to the University, namely, St. Paul's (Church of England), St. John's (Roman Catholic), and St. Andrew's (Presbyterian), and action is being taken at the present time for the foundation of a Methodist College. A college of residence for women was established in 1892, on a strictly undenominational basis. The colleges provide assistance to students in preparing for the University lectures and examinations.

Endowment.

On incorporation an endowment of £5,000 per annum was provided from the public revenue for "defraying the stipends of teachers in literature, science, and art," and for purposes of administration; but provision was not made for teaching in other branches of learning.

This endowment remained unaltered until 1880, when £1,000 was added for assistant lectureships; in 1882 a further allocation of £5,000 was made for the establishment of schools of Medicine and Engineering, and to assist the Faculty of Arts. Periodically grants were made, until in 1893 the Government endowment for general purposes amounted to £13,000, and the special grants to £6,595. In 1902 the endowment for maintenance was placed upon a statutory footing at £10,000 per annum, payable quarterly; the special grants for 1903 amounted to £3,750. These included a sum of £2,000 per annum as a provision for evening lectures, which were initiated in 1882. In 1908 and 1909, £2,500 were added for the establishment of departments of Veterinary Science and Agriculture, and a sum of £5,000

is voted annually for the maintenance of these departments. During 1910 the amounts received from the Government for general purposes aggregated £18,800.

In 1913 the Government statutory endowment was raised to £20,000 per annum, and Parliament voted the following sums for the services mentioned, viz. :—

	£		£
Extensions of existing departments	1,500	Organic and Applied Chemistry	1,500
Chair of Agriculture	2,500	Astronomy	200
„ Botany	1,000	Scientific apparatus	2,500
„ Economics and Commerce	2,000	Apparatus for Department of	
Veterinary Science	3,500	Engineering	1,500
Library	1,000	Reduction of Lecture Fees	2,500
Science Research Scholarships	1,000	Evening and Extension Lectures	2,500
Retiring allowances	1,800	Geological Branch	500

Including the vote for additions, repairs, and furniture, £2,000, the total endowment from the State for 1912-13 was £44,966.

Private Benefactions.

Many benefactions have been bestowed on the University by private persons. Among the first were gifts of £1,000 each from Mr. Thomas Barker, Sir Daniel Cooper, and Sir Edward Deas-Thomson, represented by lands which have multiplied in value. The sum of £445 given in 1862 by Mr. W. C. Wentworth for the foundation of a travelling scholarship had, in December, 1912, accumulated to £3,550. Some prizes have been exhausted by award, but by careful investment, increases in value, unawarded scholarships, and other causes, these private foundations showed at 31st December, 1913, credit balances to the extent of £547,239.

These endowments include a sum of £30,000, bequeathed by Mr. Thomas Fisher, for a library, and £6,000 given in 1888 by Sir William Macleay for a Curatorship of the Natural History Museum, the collection contained in the Museum having been presented by him to the University, and for which the Government erected a suitable building. Bequests of property, other than money, are estimated to be worth £51,000; the Hovell bequest—made in 1877—of properties for the endowment of a Professorship in Geology and Physical Geography, is valued at £5,200; and the late Mr. John Henry Challis, in 1880, bequeathed his residuary real and personal estate, subject to certain annuities, to the University, “to be applied for the benefit of that Institution in such manner as the governing body thereof shall direct.” In December, 1890, the trustees of the Challis Estate handed over to the University the major part of the Australian portion of the estate, approximating to £200,000 in investments, together with a cash balance. The balance, bringing the capital of the fund to £276,856 was transferred, upon the termination of the last annuity, to the University in 1905, and under the bequest the Senate has created Chairs in Law, Modern Literature, History, Logic and Mental Philosophy, Anatomy, Engineering, and Biology, and a Directorship in Military Science, in addition to four Lectureships in Law, and three Readerships. To each of these it has given the testator's name. The Hovell and Challis bequests constituted, until 1896, the chief resources of the University for education, apart from the public endowments.

During 1896 Sir Peter Nicol Russell, (formerly of Sydney), presented £50,000 for the purpose of endowing the Department of Engineering as the Peter Nicol Russell School of Engineering, and this gift was supplemented by a further grant of £50,000 in 1904, with the stipulations that efficient teaching in electrical engineering be provided and additional scholarships founded, and that the Government should expend £25,000 upon buildings. Through this

endowment, seven Lectureships in Engineering have been established, in addition to Assistant Lectureships and for Instructors and Demonstrators. The deeds of gift stipulate practical and theoretical teaching in Mechanical and Electrical Engineering, Surveying, Mining, Metallurgy, Architecture, and other instruction as the Senate deems necessary. The income of the Fund is applicable to the maintenance of the School, but is not chargeable with the costs of existing buildings, of service of attendants, of Professorships of Mathematics, Chemistry, Physics, Geology, nor of the Challis Professorship of Engineering. Three Scholarships in Mechanical Engineering, each of the annual value of £75, and tenable for four years, are provided out of the fund.

In 1909 the sum of £7,050 was given by Mr. Hugh Dixon to enable the University to purchase the Aldridge Collection of Minerals from the Barrier District of New South Wales. This collection is distributed in four parts, viz., (a) a primary collection, completed by exchanges, in the Museum of the University; (b) a second collection for exhibition at the Technological or Australian Museum, or other suitable institution; (c) a collection for exhibition in London; and (d) specimens for exchange, analysis, or cabinet purposes. During 1910 a bequest of £450 was received from Miss Frances M. Busby, for the foundation of a Musical Scholarship, and two subscriptions of £400 for prize funds. In 1912, £200 was received for a H. C. Russell prize in Astronomy, and £100 was given by Messrs. William Cooper and Nephews for the foundation of an annual prize in the Department of Veterinary Science. In 1913 sums of £100, and £225, were received from subscribers to memorials of the late Sidney B. Clipsham, and Ethel Talbot, M.B., Ch. M., respectively.

Receipts and Disbursements.

Below is given a statement showing the amounts derived by the University from each of the principal sources of revenue, and the total expenditure, during each of the last seven years. Under the items are included sums received for special expenditure and amounts from benefactors to establish new benefactions.

Year.	Receipts.					Disbursements.	Private Endowments Credit Balance.
	Government Aid.	Fees.	Challis Fund and other Private Foundations.	Other Sources.	Total.		
	£	£	£	£	£	£	£
1907	13,750	19,961	42,473	251	76,435	52,756	541,232
1908	21,084	19,672	22,781	665	64,202	58,959	543,752
1909	15,425	20,714	30,630	483	67,252	68,331	546,634
1910	18,800	19,453	25,756	296	64,305	63,764	549,295
1911	22,550	20,206	26,710	91	69,557	72,149	546,260
1912	43,956	20,590	25,797	97	90,440	78,785	547,165
1913	44,966	20,637	24,219	1,134	90,956	87,951	547,386

The principal item of disbursements in each year is for salaries. In 1912 and 1913 the total expenditure was distributed as follows:—

Classification.	Amount.		Percentage of Total.	
	1912.	1913.	1912.	1913.
	£	£		
Salaries	54,302	58,317	68·9	66·3
Maintenance and Apparatus	13,730	21,504	17·4	24·5
Buildings and Grounds	3,444	1,267	4·4	1·4
Scholarships and Bursaries	3,692	4,727	4·7	5·4
Books, retiring allowances	3,617	2,136	4·6	2·4
Total	78,785	87,951	100·0	100·0

Faculties and Cost of Graduation.

Within the University there are four Faculties, viz., Arts, Law, Medicine and Science, and in addition there are four Departments. A Dean for each Faculty is appointed for a period of two years. The Professors of the four Faculties, with the Chancellor and Vice-Chancellor, form the Professorial Board which superintends in matters relating to study and discipline. In each faculty the higher degree includes the lower. The degrees and diplomas given, and the cost of graduation, including matriculation in the faculties and departments, are as follows:—

Faculty or Department.	Degree or Diploma.	Minimum	Degree	Total Cost of
		Term of Study.			Fee.	Graduation.
		Years.	£	£ s. d.
Faculty of Arts	Bachelor of Arts. B.A.	3	3	55 8 0
	Master " M.A.	2	5	.....
	Diploma in Education (post graduate).	1	3	18 15 0
Department of Economics and Commerce.	Diploma in Economics and Commerce.	3	1	19 18 0
	Bachelor of Economics. B.Ec.	3	3	55 8 0
Faculty of Law	Bachelor of Law. LL.B.	4	10	109 13 0
	Doctor " LL.D.	2	10	.....
Faculty of Medicine...	Master of Surgery. Ch.M.	5	10	163 4 0
	Bachelor of Medicine. M.B.	2	10	
	Doctor " M.D.	2	10	.....
	Diploma in Public Health (post graduate).	*	10	30 10 0
Department of Dental Studies.	Bachelor of Dental Surgery. B.D.S.	4	10	154 16 0
Department of Pharmacy	.....	1	...	15 15 0
Massage Course	.....	2	...	22 1 0
Faculty of Science	Bachelor of Science. B.Sc.	3	3	71 3 0
	Doctor " D.Sc.	3	10	.....
Department of Engineering.	Bachelor of Engineering. B.E.—	4	10	125 8 0
	Civil			
	Mining and Metallurgical			
	Mechanical and Electrical			
Department of Veterinary Science.	Master of Engineering. M.E.	3	10	.....
Department of Agriculture	Bachelor of Veterinary Science. B.V.Sc.	4	3	80 12 0
	Bachelor of Science in Agriculture. B.Sc.Ag.	4	3	83 15 0
Department of Military Science.	Diploma in Military Science...	3	1	15 12 0

* Two terms.

The total cost of graduation shown above includes lecture and laboratory fees, matriculation, and degree or diploma fees, also—in the medicine and dentistry course—hospital fees.

The University also awards an Australian Diploma in Tropical Medicine on a post graduate course in the Faculty of Medicine; the cost is £17 17s., including degree fee of £5 5s.; the term of study is 3 months, and includes a course at the Australian Institute of Tropical Diseases, Townsville, Queensland.

Matriculation.

Students proceeding to degrees must qualify for entrance to the University by matriculating, the examination fee being £2.

The subjects of examination for matriculation are—

- (1) English.
- (2) Mathematics.
- (3) Latin, Greek, French or German; and
- (4) One or more of the following, depending on the Faculty or Department into which entrance is sought:—
 - (a) One or more languages not already taken.
 - (b) Mechanics.
 - (c) History (i.) English, (ii.) Modern.
 - (d) One of the following sciences:—Botany, Chemistry (Inorganic), Geology, Physics, Physiology, Zoology.

Of the above-mentioned subjects, certain subjects must be taken at a high standard, as prescribed for admission to the respective faculties or departments of study:—

Arts : Latin or Greek, and one other subject. Law : Latin, and two other subjects. Medicine, Science and Agriculture : Three subjects, of which one must be Latin, Greek, French, or German. In the Department of Engineering, Mathematics, Mechanics, and one of the languages, Latin, Greek, French, or German are prescribed. In the Department of Veterinary Science, two subjects, one of which must be Latin, Greek, French, or German. In the Department of Economics and Commerce, two subjects, one of which must be French or German.

Matriculation examinations are conducted in March of each year, but matriculation passes are obtainable also at the senior public examinations. In 1913, 241 students were admitted to matriculation. Persons of the minimum age of 21 years, not being graduates of any University, may be admitted as advanced students, and graduates in Arts with qualifications for advanced study and research may be admitted as advanced students in Science; they proceed to a Certificate of Research, and thence to the degree of B.A. or B.Sc.

In 1912 arrangements were made with the Government for acceptance, in lieu of matriculation examination, of the Leaving certificate awarded by the Department of Public Instruction. On the examining board for this certificate the University is entitled to four representatives.

Lectures and Lectureships.

Non-matriculated students are admitted to lecture and laboratory practice, but are not eligible for degrees. Lectures are given during the daytime in all subjects necessary for the degrees and diplomas quoted above, and, in addition, evening lectures are provided in the subjects of the Arts course, including elementary science. In 1912, arrangements were made whereby the Government Astronomer of New South Wales was appointed Professor of Astronomy in the University, and lectures are given in connection with this subject.

In 1913, the Teaching Staff included 23 professors, 9 assistant professors, and 98 lecturers and demonstrators, of whom 7 professors and 7 lecturers and readers were paid out of the Challis Fund, and 12 from the Peter Nicol Russell Fund. There were, in addition, 4 honorary demonstrators. Professors and most of the lecturers are paid fixed salaries, and the remainder receive fees. Provision is made for a pension scheme for professors appointed since 1898 after twenty years' service, and after attaining the age of 50 years

Degrees and Diplomas.

From the foundation of the University to the end of 1913 there have been 4,104 Degrees of various kinds conferred; the highest annual number, viz., 237, having been granted in 1909. Of the total, male graduates numbered 3,504, and females 600. The Degrees conferred during 1912 and 1913, and the total Degrees from the foundation of the University to the end of 1912, are shown in the following statement:—

Degree.	Conferred during				Total to December, 1913.						
	1912.		1913.		Conferred by Examination.		Admitted <i>ad eundum</i> .		Total.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
M.A.	9	1	8	4	340	52	21	2	361	54	415
B.A.	40	31	46	35	1,349	446	9	...	1,358	446	1,804
LL.D.	...	...	...	...	22	...	3	...	25	...	25
LL.B.	10	...	12	...	199	1	4	...	203	1	204
M.D.	2	...	...	...	30	...	26	...	56	...	56
M.B.	14	...	56	2	618	39	9	...	627	39	666
Ch.M.	26	...	29	1	400	28	1	...	401	28	429
L.D.S.	...	...	...	...	28	2	...	...	28	2	30
B.D.S.	2	...	8	...	51	2	...	...	51	2	53
D.Sc.	2	...	...	...	9	...	...	...	9	...	9
B.Sc.	7	2	13	3	109	28	5	...	114	28	142
M.E.	...	...	...	...	5	...	1	...	6	...	6
B.E.	13	...	12	...	261	...	1	...	262	...	262
E. V.Sc.	2	...	...	...	3	...	...	...	3	...	3
Total	127	34	184	45	3,424	598	80	2	3,504	600	4,104

In connection with the degrees quoted as conferred in 1912, it is to be noted that examinations are held for most subjects in December and March, and the Degrees, &c., earned at these examinations are conferred publicly, usually in May following.

Diplomas are issued in Military Science, Public Health, Economics and Commerce, and Education.

In addition to the foregoing, Massage and Pharmacy students attend certain courses, and certificates are issued for attendances and examinations passed.

The University has no power to confer honorary degrees, but may admit *ad eundum gradum* graduates of other recognised universities.

Students.

The following statement shows the number of students attending lectures at the University at intervals since 1876:—

Year.	Matriculated.	Non-matriculated.	Total.
1876	34	24	58
1886	122	81	203
1896	438	16	454
1906	836	218	1,054
1907	871	307	1,178
1908	875	449	1,324
1909	924	350	1,274
1910	1,005	337	1,342
1911	1,060	327	1,387
1912	1,084	388	1,472
1913	1,259	372	1,631

The following table shows the distribution of the students attending lectures during 1912 and 1913, and includes students taking more than one degree course :—

Department.	Matriculated.				Non-matriculated.				Total.	
	Men.		Women.		Men		Women.			
	1912.	1913.	1912.	1913.	1912.	1913.	1912.	1913.	1912.	1913
Arts—Day	107	114	90	86	7	8	16	14	220	222
„ Evening	115	111	24	27	19	58	8	43	166	239
„ Post-graduate	22	27	19	13	...	...	...	...	41	40
Law	84	97	...	...	6	6	...	...	90	103
Medicine... ..	432	439	16	22	...	2	18	14	466	477
„ Post-graduate	8	15	...	...	...	...	...	...	8	15
„ Dentistry	23	21	3	2	7	4	...	...	23	27
Science—Pure	29	27	14	19	12	14	10	4	65	64
„ Agricultural	9	13	...	...	1	2	...	...	10	15
„ Engineering	87	97	...	...	8	12	...	...	95	109
„ Veterinary	15	15	...	...	...	...	...	...	15	15
Pharmacy ... ..	...	...	...	...	94	39	3	2	97	41
Military History and Science	...	...	...	...	59	82	...	...	59	82
Economics and Commerce ... ..	...	9	...	2	120	169	...	5	120	185
Research Study	10	10	1	1	...	...	...	...	11	11
• Total	941	995	167	172	333	396	55	82	1,496	1,645

The figures given above show that unmatriculated students, numbering 388 in 1912, and 478 in 1913 represented 25·9 and 29·0 per cent. respectively of the total number of students proceeding through the degree courses. Women students represent 14·8 and 15·4 per cent. respectively of the total students.

Scholarships, Bursaries, and Fellowships.

Scholarships, exhibitions, and bursaries have been founded, chiefly by private benefactors, as rewards for proficiency and for the purpose of placing the advantages of a University education within the reach of capable students, who otherwise might be excluded through want of financial means.

Such scholarships and exhibitions are awarded only when the examinations disclose a satisfactory degree of proficiency, and no candidate may hold more than two scholarships.

Candidates for bursaries are required to show that they do not possess sufficient means to attend the University. Bursaries to the number of nineteen are provided by the Senate; they are tenable only in the Faculties of Arts or Science (not including Engineering), and are supplemented, on the part of the Senate, with exemption from fees. In the case of the Struth Exhibition and the Henry Wait Bursary, awarded to students proceeding from the first year in the Arts course to the Faculty of Medicine, no exemption from payment of lecture fees is granted. In addition, bursaries are granted annually by the Government to pupils of State schools, and under the Bursary Endowment Act, 1912, bursaries will be available for pupils from private secondary schools.

A Rhodes Scholarship of the value of £300 per annum, tenable for three years at the University of Oxford, is awarded annually to students of Sydney University, and a commission in the British Army is also offered every year.

The following statement shows the number of students who attended University Lectures as non-paying students during the last four years:—

Year.	State and University Bursars.	Government Officers.		Military Science.	Other.	Total.
		Departments of—				
		Public Instruction.	Agriculture and Veterinary.			
1910	48	179	...	78	34	339
1911	49	160	7	49	30	295
1912	42	192	9	63	32	338
1913	49	221	9	82	24	385

Since 1912 Parliament has made an annual grant of £1,000 for Scientific Research Scholarships.

Fellowships available to graduates in science of the University include four annually under the Macleay bequest of £35,000 made in 1904 to the Linnean Society of New South Wales. These fellowships are intended to encourage research in Natural Science, by means of post graduate work; each is of the annual value of £400.

The Walter and Eliza Hall Engineering Fellowship, awarded annually, is of the annual value of £300 for a maximum period of three years. It is awarded to a graduate in Engineering of the University of Sydney of not more than four years' standing.

The University enjoys the privilege, bestowed through the Orient Royal Line of Mail Steamers, of allotting three first-class return passages to Europe to graduates desiring to continue studies abroad.

Clinics.

In 1873 the Government resumed land for the erection of the Royal Prince Alfred Hospital for the sick, which was designed as a General Hospital and Medical School for the instruction of University students, and for the training of nurses. The Hospital is open for students (during 42 weeks in each year) for certificates of hospital practice necessary for admission to final degree examination in medicine and surgery. Clinical lectures are delivered, in accordance with the University curriculum. All appointments to the Medical and Surgical Staff of the Hospital are made conjointly by the Senate of the University and the Directors of the Hospital.

In 1911 Lectureships in Clinical Medicine and Clinical Surgery were increased from one to three each.

Sydney Hospital, founded in 1811, also provides a Clinical School under the direction of a Board of Medical Studies, and all appointments of clinical lecturers and tutors are subject to the approval of the Senate.

Other hospitals recognised as places where studies may be undertaken in connection with the Faculty of Medicine, are:—The Royal Hospital for Women, Royal Alexandra Hospital for Children, St. Vincent's Hospital, the Gladesville and Callan Park Hospitals for the Insane, and the Women's Hospital.

In connection with the Department of Dental Studies, the United Dental Hospital of Sydney was established in 1901, and provides facilities for instruction of students. It was amalgamated with the Dental Hospital of Sydney in 1905. The University lecturers in Surgical and Mechanical Dentistry are, *ex officio*, honorary dental surgeons of the Hospital. The fee payable by students for dental practice in the Hospital is ten guineas per annum.

Buildings.

The University buildings consist of the main building, containing the great hall, lecture rooms, and offices, all built of Pyrmont sandstone; the Medical School, which is in the same style, and is now being enlarged; the Fisher Library, adjacent to the main building, and designed to form part of the main quadrangle. This is the latest addition to the buildings, and is of modern design, with bookstacks of steel and glass for 200,000 volumes, and with ample reading-room accommodation for students.

Separate buildings for the Departments of Chemistry, Physics, Geology, Biology, and Veterinary Science, and the Macleay Museum are distributed over the grounds, which, including lands vested by the Senate in the Affiliated Colleges, &c., cover an area of 126 acres. The Peter Nicol Russell School of Engineering has a separate building, provided by the State at a cost of £25,000. A building for the School of Agriculture is now in course of erection.

Most of the buildings and equipment of the University have been provided by the Government.

EXTENSION LECTURES.

University Extension Lectures were inaugurated in 1886, and have been conducted since that date under the direction of a University Extension Board of eighteen members appointed annually by the Senate, and including at least four members of that body, and four of the teaching staff. Courses of Lectures are given in various centres upon topics of literary, historical, and scientific interest. At the conclusion of a course, which consists of a minimum of three lectures, an examination may be held and a certificate awarded to successful candidates. During 1913 extension lectures were delivered in Sydney and suburban centres, and in other centres embracing country districts in New South Wales. The Board has till recently conferred the benefits of its lectures on other States.

AFFILIATED COLLEGES.

In the affiliated colleges within the University 151 students were in residence during 1913. Following are the figures relating to these colleges:—

College.	Members.	Students in Residence.	Principals and Lecturers.	Receipts.	Disbursements.
				£	£
St. Paul's (C.E.) ...	154	37	4	4,088	4,103
St. John's (R.C.) ...	132	17	4	1,110	1,112
St. Andrew's (Pres.)...	232	71	7	9,320	6,130
Women's ...	92	26	2	2,492	2,286

These colleges have been endowed from private sources with funds for scholarships, and each college is subsidised by the Government to the extent of £500 per annum for the Principal's salary. The Wesley College Incorporation Act, 1910, repealed an earlier Act of incorporation (23 Victoria), and empowered the University to grant the land necessary for a college in lieu of the earlier grant for a Wesleyan Methodist College, which had been allowed to lapse. For the purpose of establishing the college the Government, under the University and University Colleges Act, 1900, may subsidise the building fund of a college by sums corresponding to the amounts expended for the purpose of building by the college, out of its subscribed funds, up to a maximum of £20,000.

The Women's College, incorporated by Act 53 Victoria, No. 10, is not attached to any religious denomination.

RECIPROCIITY.

By Royal Charter in 1858 the same rank, style, and precedence were granted to graduates of the University of Sydney as are enjoyed by graduates of universities within the United Kingdom. The University of Sydney was affiliated to the University of Oxford in November, 1888, and later with the Universities of Cambridge and Dublin. The Universities of Oxford and Cambridge extend certain privileges to students of two-years' standing in the University of Sydney who desire to compete for honors, and graduates of Sydney, subject to certain conditions, are eligible for admission as advanced students at Cambridge, proceeding then to Degrees of Bachelor of Arts or of Law, or to Research Certificates.

Admission *ad eundem gradum* in the University of Sydney is obtainable by graduates of approved universities, viz., Oxford, Cambridge, London, Durham, Victoria, St. Andrew's, Edinburgh, Glasgow, Aberdeen, and Dublin, Queen's of Ireland, and the Royal of Ireland; and the universities of Melbourne, New Zealand, and Adelaide, and such other universities as the Senate may from time to time determine.

THE ADVANCEMENT OF EDUCATION.

Various organisations exist which have for their objective the encouragement of professional interests, the advancement of Science, Art, and Literature, and the promotion of the social well-being of the members, and the Commonwealth Government has afforded a measure of recognition to the efforts of Australian men of letters by establishing in 1908 a Commonwealth Literary Fund to provide pensions and allowances to literary men and their families. Concerning this Fund reference should be made to part "Social Condition" of this Year Book.

As far back as the year 1821 a scientific society, under the title of the Philosophical Society of Australasia, was founded in Sydney, and after many vicissitudes of fortune was merged, in 1866, into the Royal Society of New South Wales. Its objects are the advancement of science in Australia, and the encouragement of original research in all subjects of scientific, artistic, and philosophic interest, which may further the development of the resources of Australia, draw attention to its productions, or illustrate its natural history.

The study of the botany and natural history of Australia has attracted many enthusiastic students, and the Linnæan Society of New South Wales was established for the special purpose of furthering the advancement of these particular sciences. The Society has been richly endowed through the munificence of the late Hon. Sir William Macleay, and possesses a commodious building at Elizabeth Bay, Sydney, attached to which are a library and museum. The proceedings are published at regular intervals, and contain many valuable papers, with excellent illustrations of natural history.

Other important scientific societies are the Royal Zoological Society of New South Wales, inaugurated in 1879; a branch of the British Medical Association, founded in 1881; a branch of the British Astronomical Association, whose first meeting was held in 1895; the Royal Anthropological Society of Australasia; the Australasian Association for the Advancement of Science; the Royal Geographical Society; the University Science Society; and the Australian Historical Society.

All the learned professions are represented by associations or societies.

The Royal Art Society holds an annual exhibition of artists' work at Sydney; and of the many musical societies, mention may be made of the Royal Sydney Liedertafel, and the Royal Sydney Philharmonic Society, with over 1,000 members.

Last year there were 160 associations existing for the advancement of agriculture, horticulture, and pastoral pursuits, of which 138 were subsidised by the Government. Of these societies, the Royal Agricultural Society of New South Wales, which holds an annual show at Sydney, had a membership of 3,787 persons, and received a subsidy of £1,000.

SYDNEY OBSERVATORY.

The Sydney Observatory, established in the year 1856, is an institution of a scientific and educational character, supported by the State. The immense growth of Sydney has caused such adverse atmospheric conditions that the site is now altogether unfavourable for satisfactory work, and the Government is contemplating the removal of the Observatory to a new site some distance from the city.

Daily time-ball services are maintained at Sydney and Newcastle, and it is proposed to initiate a new time scheme, whereby every telephone subscriber in the metropolitan area may be enabled at any time, day or night, to obtain accurate time, direct from the Observatory.

During 1913, 77 earth tremors were recorded on the seismograph; and at the Red Hill Observatory Station a few test photographic plates were taken for focus and adjustment purposes; the Astrographic Telescope being in process of remodelling, magnetic work was continued at Red Hill.

Observations taken comprised 449 clock stars, 76 azimuth stars, and 398 determinations of collimation and azimuth. The 11½ inch equatorial telescope has been used for showing the principal celestial objects to visitors, and during the year was used on six evenings making observations with Westphal Comet, and on sixteen evenings observing the Zinner Comet. The measurement of star plates, undertaken jointly with Victoria, has proceeded during the year.

The Observatory at Sydney was visited by 483 persons during 1913, and the expenditure for 1913 was £2,895.

The Government Astronomer is also Professor of Astronomy at Sydney University.

Meteorological Bureau.

Meteorological observations are directed by a special Bureau, under the administration of the Commonwealth Government. Two bulletins and one weather chart are published daily by the Bureau. They contain full reports from 241 stations as to wind, weather, and sea at 2 p.m.; and in addition, at 9 a.m., as to rain, state of rivers, pressure, and temperature. For the chief centres of the other States a bulletin, showing pressure, temperature, wind, rain, weather, and state of sea, is issued daily at 1 p.m. Weather charts, published each afternoon, contain complete data, isobars, full notes, shaded rain area, and forecast for the ensuing twenty-four hours. A local forecast for Sydney is published at 10 a.m., and forecasts for the whole Commonwealth at 1 p.m. daily. Rain maps show daily, monthly, annual, and storm distribution of rainfall, and departures from the average. An isobaric chart, symbolising for various stations, wind-direction, rain area, thunderstorms, and condition of sea, is prepared for publication in the Sydney daily newspapers, with weekly and monthly reviews of weather over Australia. During the year 1913 there were 11,888 bulletins, 21,752 weather charts, and 12,513 rain maps of New South Wales issued. Forecasts were telegraphed to 114 towns daily.

During 1913, 43 new climatological stations were established, the total at the end of the year being 2,040. All stations are equipped with self-recording instruments. Seven have self-recording thermographs, eleven

barographs, 39 mercurial barometers, hygrometers, maximum and minimum thermometers, 94 maximum and minimum thermometers, with properly constructed screens, and 1,889 with rain-gauges only.

MUSEUMS, LIBRARIES, AND ART GALLERIES.

Recognising that Museums, Libraries, and Art Galleries are powerful factors in promoting the intellectual well-being of the people, the Government of New South Wales has been active in founding and maintaining such establishments.

The following statement shows the total expenditure by the State on buildings for Museums, Libraries, and Art Galleries, to 30th June, 1914 :—

Museums—	£	£
Australian... ..	...	79,997
Agricultural, Forestry, Mining and Geological ...	...	14,191
Technological ... ..	...	19,366
Botanical—Herbarium ... ..	...	11,436
Libraries—		
Public, of New South Wales	28,957	
Mitchell	43,118	
	<hr/>	72,075
Fisher—Sydney University ... ..	...	36,428
National Art Gallery ... ..	...	94,437
	<hr/>	<hr/>
Total... ..	...	£377,330

All these institutions are open to the public free of charge, but subject to any necessary regulations.

Museums.

The Australian Museum, the oldest institution of its kind in Australia, was founded in Sydney in 1836 as a Museum of Natural History; it contains fine specimens of the principal objects of natural history, and a valuable collection of zoological and ethnological specimens of distinctly Australian character, for which special accommodation was provided in a separate wing opened in 1910. The specimens acquired during 1913 numbered 14,507, of which 1,133 were purchased, and the remainder collected, exchanged, or donated. A fine library is attached to the institution, containing many valuable publications, the total volumes numbering 20,000. Lectures and gallery demonstrations are given in the Museum on the third Thursday in each month, and are open to the public. On Mondays students and artists only are admitted.

In 1853 the Museum, till then managed by a committee, was incorporated under control of trustees, with a State endowment, which is now supplemented by annual Parliamentary appropriations. Following is the record of expenditure for years ended 30th June, 1913 and 1914.

	1913.	1914.
	£	£
Salaries and allowances	7,665	7,769
Purchase, collection, and carriage of specimens ...	596	284
Books and binding	485	429
Catalogues and publications	486	735
Cases, bottles, and receptacles	1,084	895
Miscellaneous	977	1,031
	<hr/>	<hr/>
Total	£11,293	£11,133

A Technological Museum was instituted in Sydney at the close of 1879 under the administration of a committee of management appointed by the trustees of the Australian Museum. The whole original collection of some 9,000 specimens was destroyed in 1882 by the Garden Palace fire. Efforts were at once made to replace the lost collection, and in December, 1883, the Museum was again opened to the public. In 1890 it was transferred to the Department of Education, as an adjunct to the Technical College, and

now contains a valuable series of specimens illustrative of various stages of manufacturing, and an excellent collection of natural products. Technological Museums are established also at Goulburn, Bathurst, West Maitland, Newcastle, and Albury. The exhibits in the central and branch museums exceed £12,000, acquired by purchase, gift, loan, and exchange.

Research work is carried on by the Curator and his staff, and particularly in respect of the pines (natural order Coniferæ) of Australia, important characteristics were discovered. During 1912 an extensive research, covering many years, in connection with the Eucalypts of Australia, was completed. The economic value of the investigations into timbers and oils is considerable, and numerous inquiries are made as to the correct methods of distillation of the oil and the species of eucalyptus best fitted for the industry.

In 1913 special attention was directed to the possible economics of many of our local species of "Tea Trees" (Melaleucas).

The Museum issued an illustrated publication on the cabinet timbers of Australia, showing the qualities, uses, weights, and lengths of the best known woods; also the geographical distribution and botanical diagnosis of each tree.

Following are the records of attendance at museums in 1913:—

Museum.	Visitors.			Average Attendance.		Expenditure.	
	Week-days.	Sundays.	Total.	Week-days.	Sundays.	Salaries, &c.	Purchases.
Australian... ..	120,839	46,315	167,154	456	891	£ 7,769	£ 3,304
Technological—							
Sydney	46,126	35,873	81,999	146	703	4,945	
Newcastle	31,083	.....	31,083	123	.....	230	
Bathurst	35,761	.....	35,761	141	.....	95	
West Maitland	34,245	.....	34,245	135	.....	196	
Goulburn	24,703	.....	24,703	90	.....	134	
Albury	12,800	.....	12,800	50	.....	135	

Additions to the Collections in Technological and Australian Museums in the last two years are classified as under:—

Classification.	Donation.		Exchange.		Purchase.		Collection.		Total.	
	1912.	1913.	1912.	1913.	1912.	1913.	1912.	1913.	1912.	1913.
TECHNOLOGICAL MUSEUM.										
Mineral	706	164	442	30	59	92	...	110	1,207	396
Vegetable	99	61	...	...	100	77	41	45	240	183
Animal	11	16	...	...	62	2	19	...	92	18
Applied Art										
Miscellaneous }	73	47	...	...	374	357	...	...	447	404
Total	889	288	442	30	595	528	60	155	1,986	1,001
AUSTRALIAN MUSEUM.										
Vertebrata	4,134	890	294	50	1,184	39	231	256	5,833	1,235
Invertebrata	2,944	7,215	610	1,115	544	514	735	2,674	4,833	11,518
Fossils and Minerals	169	597	258	29	45	12	10	1	462	639
Ethnological and Historical	1,088	330	524	123	410	426	14	...	2,036	879
Miscellaneous	19	31	6	8	199	142	10	55	234	236
Total	8,354	9,063	1,682	1,325	2,382	1,133	1,000	2,986	13,418	14,507

The Mining and Geological Museum is connected with the Department of Mines. Exhibits number 28,000, the number acquired during 1913 being

1,074, viz., 919 by collection and 155 otherwise. The Agricultural and Forestry Museum is an adjunct of the Department of Agriculture and contains some 7,000 exhibits.

The functions of the Mining and Geological Museum include the preparation of collections of minerals to be used as teaching aids in schools and in other institutions. During 1913, 21 collections, comprising 4,000 specimens, were prepared; and many specimens received from country schools were classified.

The public have access to the "Nicholson" Museum of Antiquities, the "Macleay" Museum of Natural History, the Museum of Normal and Morbid Anatomy, attached to the Sydney University, and the National Herbarium and Botanical Museum at the Botanic Gardens. Housed in the Macleay Museum is the Aldridge collection of Broken Hill minerals, specially purchased for, and donated to, the University by Mr. Hugh Dixon.

PUBLIC LIBRARIES.

The principal public libraries, with the number of volumes in each at the end of the years 1912 and 1913, are shown in the following statement:—

Name of Library.	Total number of volumes.	
	1912.	1913.
Public Library of New South Wales, including Mitchell Library	250,383	258,742
Sydney University (Fisher Library)	100,000	100,000
Australian Museum	20,000	20,000
Botanical Museum	6,000	6,500
Technical College and Branches	11,020	13,271
Sydney Municipal Library	28,385	29,963
Other Municipal Libraries... ..	31,982	34,744
Schools of Arts, Mechanics' Institutes, &c.	660,168	655,807
State Schools	320,046	358,177
Teachers' Training College	7,000	7,540
Total	1,434,984	1,484,744

The Public Library of New South Wales was established, under the designation of the Free Public Library, on the 1st October, 1869, when the building and books of the Australian Subscription Library, founded in 1826, were purchased by the Government. The books thus acquired numbered about 16,000, and formed the nucleus of the present Library. In 1890 the Library was incorporated under its present designation, with a statutory endowment of £2,000 per annum for the purchase of books.

The scope of the Public Library, which is essentially a reference institution, is extended by a loan system, under which boxes, containing from 60 to 100 books, are forwarded to country libraries, schools of arts, progress associations, &c., to lighthouses, and to Public School Teachers' Associations. These collections are to be returned or exchanged within four months. This system was initiated in August, 1883, and has been extended gradually, the Lighthouse Library being taken over in 1903.

Loan operations during 1913 included the following:—

Country Libraries	No. 98	Volumes. 8,709
Lighthouses	25	1,543
Public School Teachers' Associations	43	2,980
Country Students ... ..	...	1,137

Students are expected to pay return freights on parcels, but all the other charges are defrayed by the State.

In 1913 The Reference Department of the Public Library contained 244,780 volumes, and there were also 13,962 volumes for country libraries under the lending system. For 1912 the figures were 237,481 and 12,902 respectively.

The total cost to the State of the library buildings has been £28,957; this includes expenditure for extensions in 1886 and 1887, and for the reconstruction of the main building, completed in 1890.

In 1899 Mr. David Scott Mitchell donated to the trustees of the Public Library a collection of 10,024 volumes, together with 50 valuable pictures, and at his death, in 1907, bequeathed to the State the balance of a unique collection, principally of books and manuscripts relating to Australasia, and containing over 60,000 volumes, and 300 framed paintings of local historic interest, valued at £100,000. A separate building designed on modern lines is under erection. The portion completed at a cost of £37,688, and opened on 8th March, 1910, now holds the Mitchell bequests, which, being so decidedly of Australian interest, form the nucleus of an historical library. During 1913, over 2,500 volumes were added to the original collections, making a total of 77,375 volumes in the library.

The attendance at the Public Library during 1913 was as follows:—

Branch.	Visitors during Year.			Average Attendance.	
	Week-days.	Sunday (afternoon).	Total.	Week-days.	Sunday (afternoon).
Reference	170,577	10,595	181,172	545	204
Mitchell	15,305	.....	15,305	49	...

The following statement shows the cost of maintenance and administration of the Public Library, including the Mitchell Library, for the last four years:—

Year.	Salaries.			Books, &c., and Binding.	Miscellaneous.	Total.
	Reference.	Mitchell.	Country.			
	£	£	£	£	£	£
1910	3,997	1,580	111	2,456	848	8,992
1911	4,121	2,201	115	2,178	1,616	10,231
1912	4,398	2,431	137	1,885	1,687	10,538
1913	4,534	2,521	200	2,409	2,306	11,970

Salaries in the Reference Library include expenditure in connection with the Board for International Exchanges.

The Sydney Municipal Library was formed by the transfer to the City Council in 1908-9 of the lending branch of the Public Library.

An "open access" system has been introduced, and a new classification adopted. For the year 1913 the classification of the old portion of the library is given.

Classification.	1912.		1913.*	
	Volumes.	Average Daily Issuc.	Volumes.	Average Daily Issuc.
Natural Philosophy, Science, and the Arts	6,646	89·0	3,582	3·0
History, Chronology, Antiquities, and Mythology...	3,312	12·9	2,727	2·2
Biography and Correspondence	4,219	19·7	3,436	2·1
Geography, Topography, Voyages and Travels, etc.	3,552	23·8	2,869	1·0
Jurisprudence and Social Science	1,877	14·1	1,124	1·0
Moral and Mental Philosophy and Religion	1,777	10·7	1,438	1·1
Poetry and Drama	1,205	14·1	745	1·0
Fiction and Prose	2,292	115·4		
Miscellaneous—General Philological and Juvenile	3,505	98·4	1,782	1·7
Total	28,385	389·1	17,703	13·1

* Old portion of Library only.

The classification of the "open access" portion of the Sydney Municipal Library for 1913 was as follows:—

Classification.	Number of Volumes.	Volumes Issued Week-days.	
		Total.	Average Daily.
Natural Science	879	5,941	25·28
Useful Arts... ..	1,829	11,039	47·00
Fine and Recreative Arts...	685	5,008	21·31
History	579	3,369	14·33
Biography	860	5,057	21·51
Geography, Topography, Travel, and Description..	753	6,688	28·42
Social Science	949	4,031	17·15
Philosophy and Religion ...	367	2,547	10·69
Poetry and Drama	562	4,300	18·29
Fiction	2,582	34,380	146·29
Literature	818	4,952	21·07
Miscellaneous	65	142	·60
Juvenile Section	1,333	18,559	80·25
Total	12,260	106,013	451·59

The attendance at the newspaper-room, attached to the library, was 184,425 persons for the year 1913, or an average daily attendance of 797.

Maintenance costs during 1913 amounted to £4,748, made up as follows:—Salaries, &c., £2,705; books, periodicals, binding, and electric lighting, £2,043.

Local libraries established in the principal population centres throughout the State, may be classed broadly under two heads—Schools of Arts, receiving an annual subvention in proportion to the amount of monetary support accorded by the public; and Free Libraries, established in connection with municipalities. Those of the former class preponderate, and in 1913 there were 425 such libraries with 655,807 volumes. Under the provisions of the Local Government Act of 1906, any shire or municipality may establish a public library, art gallery, or museum. At the end of 1913 there were, in addition to the Sydney Municipal Library, 31 municipal libraries in the State, with 34,744 volumes.

The library of the Australian Museum, though intended primarily as a scientific library for staff use, is accessible to students, and 20,000 volumes may be found on the shelves.

On 31st December, 1913, the library in connection with the Technological Museum, at the Central Technical College, and its branches, contained upwards of 13,000 text books, &c.

The Parliamentary Library contains over 52,000 books, and large numbers of volumes are at the libraries of the Law Courts and Government Offices.

The Bush Book Club, a private foundation, is intended to provide books to people in localities not served usually by Schools of Art, &c., and in sparsely settled districts.

Private circulating libraries, the subscribers to which are charged comparatively small fees, are used extensively.

NATIONAL ART GALLERY OF NEW SOUTH WALES.

The National Art Gallery contains an excellent collection of paintings and statuary, including some of the most famous works of the best modern artists, and some valuable gifts from private persons.

The collection of water colours is exceptionally fine, and it is estimated that the present value of the contents of the Gallery is £143,000.

During 1913, the Trustees acquired oil-paintings by British and French artists, and secured locally a number of oil-paintings, water-colour, and black and white drawings.

The Directors are now negotiating for suitable equestrian groups (sculpture) for the exterior of entrance Gallery portico.

The number of paintings, &c., in the Gallery at the end of years 1912 and 1913, and the amount expended in purchasing works of art during those years, are shown below:—

	1912. No.	1913. No.	Cost of purchases.	
			1912. £	1913. £
Oil Paintings	393	406	2,404	2,606
Water Colours	381	384	193	127
Black and White Works	526	536	172	50
Statuary, Casts, and Bronzes	160	160	47	...
Various Art Works in Metals, Ivory, Ceramics, Glass, Mosaic, &c.	368	373	52	34

The attendance at the National Art Gallery during the last seven years has been as follows:—

Year.	Visitors in the Year.		Average Attendance.	
	Week Days.	Sundays.	Week Days.	Sundays.
1907	165,638	95,194	532	1,830
1908	184,767	104,340	592	2,066
1909	173,361	99,730	557	1,918
1910	171,686	98,059	548	1,897
1911	183,745	104,319	587	2,006
1912	192,532	116,863	620	2,247
1913	178,362	118,583	569	2,280

Art students, under certain regulations, may copy any of the various works, and enjoy the benefit of a collection of books of reference on art subjects. In 1894 a system of loan exchanges between Sydney, Melbourne, and Adelaide was introduced, by which pictures are sent from Sydney to Melbourne and Adelaide and reciprocally, with results most beneficial to the interests of art. Since 1895 the distribution of loan collections of pictures to the principal country towns is permitted for temporary exhibition. During 1913, 112 pictures were so distributed among ten country towns, and shown in technical museums and municipal buildings. At the close of 1913 the total expenditure on the National Art Gallery, inclusive of the building, approximated £300,000, of which over £110,000 had been expended on works of art. The disbursements during 1911, 1912, and 1913 were:—

	1911. £	1912. £	1913. £
Works of art	2,369	2,868	2,817
Salaries, &c.	2,312	2,416	2,495
Sundries	612	768	689
Total	£5,293	£6,052	£6,001

The annual endowment for purchase of works of art is £2,000, but for some years this sum also covered portion of the expenditure for maintenance, &c. In 1912, pending the amendment of the Act, an additional grant of £1,500 was made to the Art Gallery. The Gallery has received but small support from private endowments, and, consequent upon its limited funds, is largely restricted to the collection of specimens of contemporary art. The Wynne Art Prize was instituted in 1897, and consists of the interest on approximately £1,000, which is awarded annually to the Australian artist

producing the best landscape painting of Australian scenery in oils or water-colours, or the best production of figure sculpture executed by an Australian sculptor.

SCHOOLS OF ARTS, ETC.

Schools of Arts, and Mechanics' or Working Men's Institutes, are established in nearly all centres of population throughout New South Wales. Particulars for the years 1911, 1912, and 1913 regarding these institutions, which are really libraries and recreation centres, are given below :—

Particulars.	Year.		
	1911.	1912.	1913.
Institutions	438	433	425
Membership	46,350	47,749	47,060
Books	623,440	660,168	655,807
	£	£	£
Value of library contents... ..	69,708	63,890	68,783
„ buildings	343,251	349,001	367,639
Government subsidy	11,353	11,152	9,734
Subscriptions	19,647	19,645	20,674
Other receipts	48,933	53,671	60,647
Expenditure—			
On books, &c.	11,083	11,288	13,243
„ maintenance	67,249	73,994	81,369

Other receipts in 1913 include £19,849 on account of billiards. Expenditure for maintenance includes £8,762 in this connection. The Sydney Mechanics' School of Arts is naturally the principal institute, having a membership of 2,230 and a library of 35,000 volumes. This institution was formed in 1833, essentially as a mechanics' institute, and was intended to provide opportunities for evening study for those employed during the day. In 1873 the Working Men's College was formed, but this section, devoted to the mechanic trades, was taken over by the Government in 1883 and so carried on till 1893, when the Technical College was opened. The educational work of the evening school has been continued at the institute, and classes for adults are held in literary and commercial subjects.

THE ARTS AND PROFESSIONS.

Apart from the initiatory work of instruction in art manual work and in singing, as portion of the syllabus work of the State schools, there is no organised State system of higher training for the arts, and practically all the preparation for art careers is undertaken by private schools. In the Technical Education scheme provision is made for teaching art work, modelling, and painting. At the public examinations of the University, drawing and the theory of music form the subjects of the art section, and to accord with the standard of these examinations the requisite instruction is available in the State schools. But though the State system of education makes no direct provision for higher training in this connection, it offers encouragement indirectly by means of subsidies, such as that to the Royal Art Society of New South Wales, and by the maintenance of libraries, museums, and especially of the National Art Gallery. In connection with this institution, a private bequest enables the trustees to offer annually the Wynne Art Prize, valued at £33 for the best landscape painting of Australian scenery, or the best figure sculpture executed by an Australian artist.

During 1912 the Government of New South Wales decided to establish a Conservatorium of Arts and Music; portion of the buildings used formerly in connection with the Federal Government House was set apart for the purpose, and is now in course of remodelling. Meanwhile a Library of Music has been instituted by the Public Instruction Department, and is housed temporarily in Sydney Girls' High School; it contains many valuable works which are available for the use of recognised musical societies and organisations. The conditions of loans of music, &c., are that 20 per cent. of the value of the goods is deposited, and 5 per cent. of the value is taken for the hire. The sum of £500 was placed on the Estimates of 1914 for the use of the Trustees in purchasing works and already the leading musical societies of the State are availing themselves of the offer.

In New South Wales the majority of professional workers are connected with a society or association peculiar to their particular profession, and in most cases, excluding of course those professions for which the University of Sydney supplies preparation, such associations direct the educational work for entrance to the profession, mainly by conducting examinations and issuing certificates. Physicians, dentists, and pharmacists are bound by statute to register with the Medical, Dental or Pharmacy Board before they can proceed to practise; similarly, barristers and solicitors must be formally admitted to their profession. Similar control is contemplated in regard to hospital nurses, but other professions have not yet been regulated by statute, except in so far as restrictions are placed on employment, such as in mining industries and in connection with local government control, engineering, surveying, Shire and Municipal Clerks, etc. In these cases the Government sets standards and issues certificates of fitness.

For the medical and legal professions and in various branches of science the University provides the requisite training. The practice of medicine is restricted to persons registered by the New South Wales Medical Board under the Medical Practitioners Act of 1898 and Amendments of 1900. To become a legally qualified medical practitioner an applicant must prove to the satisfaction of the Board (a) that he is a doctor or bachelor of medicine of some University, or a physician or surgeon licensed or admitted as such by a college of physicians or surgeons in Great Britain or Ireland; (b) that he has completed a five-years' medical course of a University or equivalent college, and has received after examination a diploma, degree, or license entitling him to practise medicine; (c) or he is a member of the Company of Apothecaries of London, or a member or licentiate of Apothecaries' Hall, Dublin. Medical officers duly appointed in His Majesty's sea or land service are eligible for registration.

During the last ten years the registrations of medical practitioners have been on an average eighty-five per annum, and at 31st December, 1913, there were 1,986 registrations in force. Holders of degrees of M.D., M.B., and Ch.M., conferred by the University of Sydney, are entitled to registration and recognition in the United Kingdom in the same way as holders of similar degrees conferred by a British University are recognised in New South Wales.

To qualify before the Dental Board of New South Wales, in terms of the Dentists Act, 1900, and the Amending Act of 1909, dentists must hold a recognised certificate; or have been engaged for not less than four years in acquiring a professional knowledge of dentistry, and passed an examination; or produce a diploma in dentistry from an Australian University. Persons in actual practice, or preparing for the profession at the time of passing of the Act, were exempted from these rigid provisions.

Following is the record of students in the School of Dentistry at the United Dental Hospital :—

Year.	Students.		
	Dental Board.	University.	Total.
1907	12	29	41
1908	21	37	58
1909	24	27	51
1910	23	38	61
1911	14	34	48
1912	47	21	68
1913	4	20	24

At the end of December, 1913, there were 1,388 registrations in force.

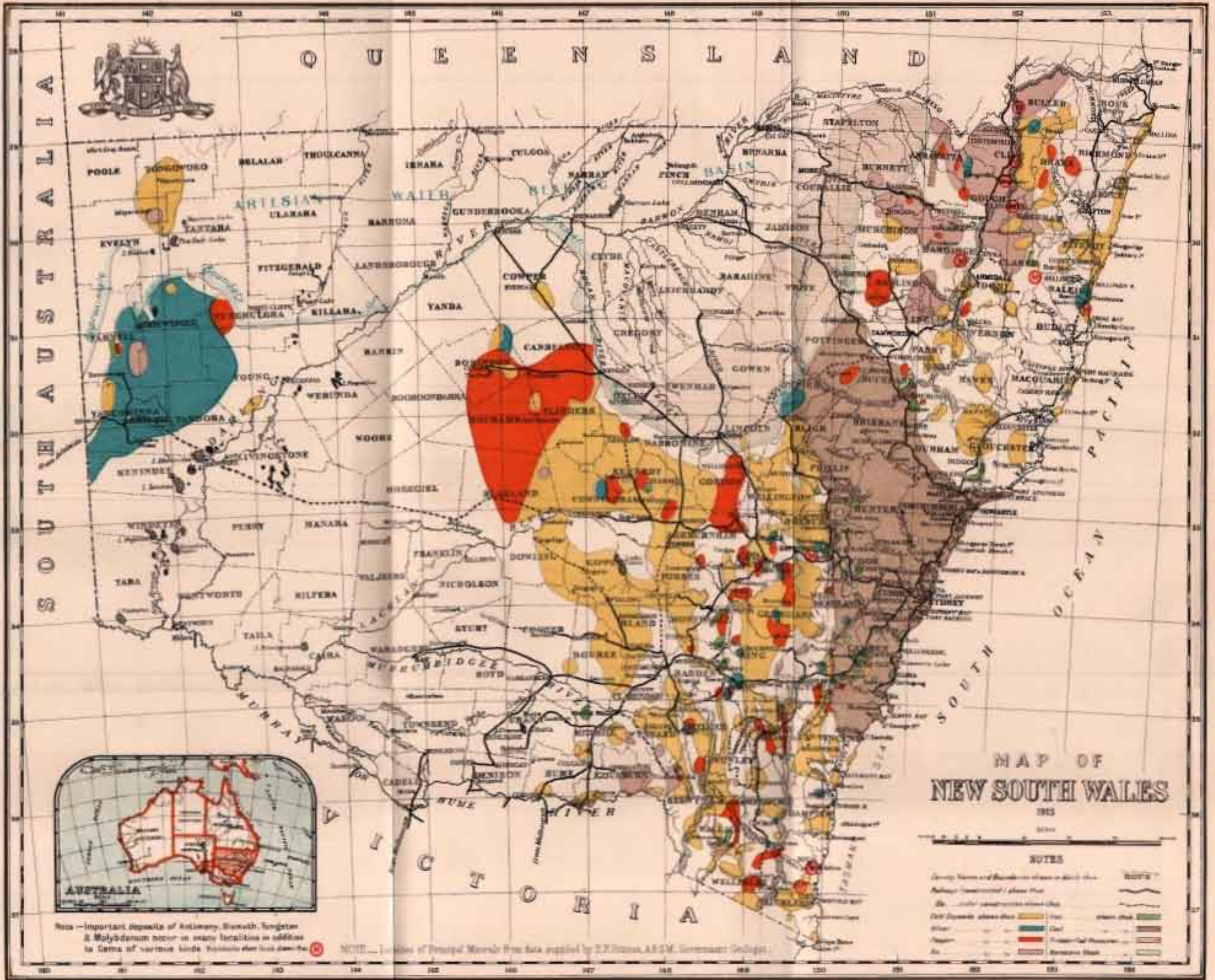
Pharmacists are registered under the Pharmacy Board appointed under the Act of 1897. To qualify for registration, evidence must be adduced of three years' apprenticeship in the business of a pharmacist keeping open shop; or of holding a certificate of competency from a recognised College or Board; or of registration under the Sale and Use of Poisons Act; or of having passed a preliminary examination before the Board, or the usual examinations of a recognised college or university.

The Board is charged with the publication, in January of each year, of a list of all registered pharmacists, corrected up to 31st December previous. At the end of 1913 the registrations in force numbered 1,136. In addition to qualified pharmacists, other dealers in poisons must be registered before the Pharmacy Board and obtain annual licenses, during 1913, 360 such poison licenses were issued. During the past ten years the registrations of pharmacists have averaged 35 per annum.

Members of the nursing profession are registered and certificated by the Australasian Trained Nurses' Association, which was established in New South Wales in 1899, and has branches in the other States. For the year ended 30th June, 1913, the register of nurses in New South Wales showed as follows:—General, 1,469; Obstetric, 713; Medical Members, 91; Mental Nurses, 32; Honorary Members, 24.

Barristers and solicitors may proceed through the courses provided in the Law School at the University, or they may qualify for admission by the Bar examinations. Barristers practising in New South Wales at the end of 1913 numbered 161; solicitors at the same date numbered 1,037, viz., 430 in the country, and 607 in Sydney.

Men desirous of entering into articles of clerkship with Attorneys, and who have not taken a University Degree, nor passed the preliminary examination required in England, Scotland, and Ireland, are required to pass a preliminary examination conducted by the University. The standard of the law matriculation examination is the University matriculation examination, lower division. Clerks are also required to pass three subsequent examinations in Legal History and Law before application for admission as solicitors. The examinations are conducted by a Board appointed by the Supreme Court.




MINING INDUSTRY.

THE discovery of gold in payable quantities in the year 1851 was a powerful factor in promoting the settlement of population in New South Wales, and consequently in Australia, and during the succeeding decade gold-mining became the leading industry, easily eclipsing in the value of production the mining of coal, which previously was the only mineral mined. In the earlier stages of gold-mining, when alluvial deposits were being worked, and diggers could obtain the metal readily, the knowledge of these conditions induced a great influx of population from other countries, and attracted the attention of the resident population from existing industries, so creating a local market for commodities of all descriptions. As alluvial deposits became exhausted, the characteristic fluctuations of the prospecting period gave way to more settled conditions of an industry, offering employment to fewer men and requiring large capital and expensive machinery, which were provided under the direction and control of companies, mainly organised on the liability system; and the surplus population of the early gold-field days was gradually diverted to the development of other industries, such as agriculture, which, with the increased population, became remarkably profitable.

In the last thirty years other metals have been discovered and worked in New South Wales, and though gold still occupies a prominent place in the mineral wealth of the State, such metals as silver, tin, copper, and iron now contribute considerably to the importance of metal mining as a primary industry.

GEOLOGICAL SURVEYS.

The geological survey of the State is conducted by the Geological Survey Branch of the Department of Mines. The main objects of its operations are (1) the mapping of the various geological formations, so that geological maps of the State may be prepared, and (2) the examination of the mineral deposits and the preparation of reports for scientific and economic purposes. A new edition of the geological map of the State is in course of preparation, in addition to detail maps of special areas.

The location of the principal minerals may  on the map in this volume.

GEOLOGICAL FORMATION.

Particulars regarding the sedimentary rock formations in New South Wales have been given in the section of this Year Book relating to Geography.

MINING AND GEOLOGICAL MUSEUM.

The Mining and Geological Museum, Sydney, contains a large number of exhibits, and 21 collections, comprising 4,000 specimens, were prepared during the year 1913. The Australian Museum at Sydney includes amongst its exhibits also a fine collection of minerals and fossils, additions to the number of 639 being made during 1913. These Museums are open to the public free of charge.

CHEMICAL LABORATORY.

During the year 1913 the numbered samples received totalled 5,752, and the determinations for various metals, &c., were 6,557. There were 599 analyses, and the sizing tests and weighings numbered 695. These tests related to fine coal dusts for the Committee of Inquiry upon Explosion of Fine Coal Dust in Collieries, and thirty-five clays were submitted to practical fire tests with a view of ascertaining their value for the manufacture of pottery, porcelain, fire bricks, &c.

SUPERVISION AND REGULATION OF MINING, &c.

The Department of Mines of New South Wales, created in 1874, is administered by a Minister of the Crown. The functions of the Department include the general supervision of the mining industry, geological and mining surveys and assays, the examination of coalfields, the inspection of collieries and mines, the administration of the Prospecting Vote, and legal enactments relating to mining.

Regulations under Mining Acts are made and administered by the Department of Mines; and it will be sufficient here to outline briefly the general conditions under which mining is conducted within the State.

Legislation regarding Coal Mines.

During the year 1913 the Coal Mines Regulation Act, 1912, was amended. The principal provisions of the Amending Act relate to the granting of certificates of service and competency to deputies; compulsory employment of deputies in gassy mines; inspection by representative of the employees of the place where any accident or explosion occurs; reporting minor accidents; weighing of coal before it is put on the screen; establishment of cages in all shafts exceeding 150 feet in depth, and ladders in shafts of a less depth; use of permitted explosives only in gassy and dusty mines; examination and testing of steam boilers; sanitation in mines; and traveling on haulage roads.

Wardens' Courts.

The Mining Act, 1906, provides for the establishment of Wardens' Courts, and at the end of the year 1913 there were 173 of these Courts in New South Wales. Wardens' Courts are Courts of Record, and are held by a Warden sitting alone. The Courts have jurisdiction to hear and determine all suits relating to the right to possession or occupation of Crown or private land by virtue of a miner's right, a registered share in a claim or lease, application for a lease, or of a license or authority, the right to cut, construct, use, possess, occupy, or hold any interest in any race, drain, dam, or reservoir for mining purposes. The subjects within the jurisdiction of the Courts are defined in the Mining Act and include all matters in dispute in regard to mining operations.

Miners' Rights and Business Licenses.

Authority must be obtained for all operations for the mining of gold, or other minerals, whether such operations are to be on, in, or under, Crown lands or private lands in which the minerals are reserved to the Crown, a penalty attaching for unauthorised mining on or occupation of Crown lands.

A miner's right entitles the holder to occupy Crown land for the purpose of mining for gold or other minerals, to construct works for mining purposes, to conserve water or obtain timber in connection with mining, except within exempted areas, and for residence. The areas which may be held, and the classes of tenements, are defined by the Regulations.

A business license entitles the holder to occupy one quarter of an acre of Crown land in a town or one acre outside town boundaries, for the purpose of carrying on any business.

A miner's right or a business license may be issued for any period from six months up to twenty years, the fees payable being determined according to the currency of the right or license. For a miner's right, the fee is 5s. per annum, and for a business license £1 per annum.

Under a provision of the Crown Lands Consolidation Act, 1913, holders of business areas exceeding the limit allowed by the Mining Act, 1906, within the suburban boundaries of any town, may obtain by purchase a freehold title to such areas, provided that registration was effected prior to July, 1907, and that the areas do not exceed one acre.

Regulations prescribe the areas which may be held as prospecting areas or claims for dam or machinery sites, and the contingent labour conditions; and provision is made for registration and survey in certain instances, transfer, creation of shares, and all other matters affecting holdings under miner's right or business license.

Special provision is made for the issue, to any holder of a miner's right, of an authority to prospect upon any Crown land, whether exempted from ordinary occupation under miner's right or not. Such authority is subject to payment of rent, and upon finding gold or minerals the holder must report the discovery within fourteen days and may be required to take out a lease.

Leases of Crown Lands.

The term "Crown Lands" embraces all lands vested in the Crown or in any trustee or constructing authority for public purposes, all lands held under lease from the Crown (except conditional lease or conditional purchase lease), and any navigable water, road, street, or highway.

Leases of Crown lands are divided into two classes—(a) Mining leases, and (b) leases for "mining purposes."

Mining leases are for either gold or minerals, the annual rent in each case being 5s. per acre, except in the case of leases for coal or shale, which are subject to a rental of 1s. per acre, and a royalty of 6d. per ton on all shale or large coal, and 3d. per ton on all small coal raised. The amount paid as rent may be deducted from the royalty.

Gold-mining leases are limited to 25 acres, mineral leases (other than coal, shale, or opal) to 80 acres, coal or shale leases to 640 acres, and opal leases to 10 acres; and the maximum term for which a lease may be granted is twenty years, with the right of renewal for a similar term.

Under special conditions, where there are exceptional difficulties in mining the land, leases for larger areas may be granted, subject to report by the Prospecting Board. Such special leases are subject to payment of a rent or royalty to be fixed by the Minister in each case.

The definition of "mining purposes" covers all operations in connection with mining, such as erecting buildings or machinery, conserving water, treatment of tailings, or any other purpose in connection with mining for gold or minerals. These leases for mining purposes are limited to the surface and to a specified depth, and do not authorise the holder to mine for any minerals contained in the land.

Mining on Private Lands.

Holders of miners' rights may obtain from Mining Wardens authority to enter upon any private land to prospect for gold, or upon land granted with the reservation of minerals to the Crown, to prospect for minerals other than coal or shale. The fee for such authority is 5s., and the holder must pay to the owner of the land such rent and compensation for surface damage as the Warden, after inquiry, may assess. Having obtained authority to enter, the holder may search for the specified mineral on the area granted (not more than 25 acres for gold nor 80 acres for minerals), and may apply for a lease of the whole or any part of the land. Such lease may be for any term not exceeding twenty years, with the right of renewal for a like term. The rent to the owner of the land is £1 per acre, payable in respect only of such part of the surface as is granted. A royalty of 1 per cent. on the gross value of the gold and minerals won is payable to the Crown. The owner of private land, or the occupier, with the owner's consent, may obtain authority to enter or lease any area, not exceeding that prescribed for an ordinary lease, and to mine for gold or for any minerals, without any payment of rent or compensation, and such owner or occupier may also obtain a lease of any area not exceeding 640 acres to mine for coal or shale. Such owners' leases are subject to the payment to the Crown of 1 per cent. royalty on gold or minerals, 6d. per ton on large coal or shale, and 3d. per ton on small coal.

The owner of any private land may enter into an agreement with the holder of a miner's right, giving him permission to mine for gold or minerals (if reserved to the Crown) on any area not exceeding that prescribed for an ordinary lease. Such agreement must be submitted for the Minister's concurrence, and is subject to the payment of 1 per cent. royalty to the Crown on all gold or minerals won. All agreements must be registered.

All lessees or holders of agreements are entitled to deduct rent paid from the amount of royalty payable.

Under special conditions, or where there are exceptional difficulties in mining the land, leases for extended areas may be granted, subject to report by the Prospecting Board.

The Closer Settlement (Amendment) Act, 1909, provides that all grants of land under that Act shall contain a reservation of all minerals in such land. The effect of this provision is to make such lands "private lands" within the meaning of the Mining Act, 1906.

Dredging.

Leases of Crown or of private land may be granted for the purpose of mining for gold or any mineral by dredging, sluicing, or other method. Such leases may cover any area not exceeding 100 acres, and continue for any term not exceeding twenty years, with the right of renewal for a similar term. The lessee is required to employ a certain number of men, and to expend a certain sum in the purchase and erection of machinery and appliances. The rent of Crown land is 2s. 6d. per acre, and of private land such amount as may be assessed by the Warden. A royalty of 1 per centum of the gross value of all gold or minerals won is payable to the Crown. Compensation for surface damage to private land may also be assessed by the Warden. Rent paid may be deducted from the royalty payable.

Labour Conditions.

The minimum labour conditions fixed by Regulation are as follow :—

For gold: 1 man to 5 acres for the first year, and thereafter 1 man to 2 acres.

For minerals other than gold, coal, or shale; 1 man to 20 acres for the first year, and thereafter 1 man to 10 acres.

For coal or shale: 2 men to 320 acres.

The Mining Act empowers the Warden to grant suspension of the labour conditions on any lease if the mine is unworkable, or if the lessee is physically or financially unable, for a limited period, to work the mine.

The Minister may grant suspension, for any period not exceeding six months, on the recommendation of the Warden, if the price of the product of the mine be low, or for any other adverse conditions; if a lessee has employed labour in excess of that required by the terms of his lease, he may obtain exemption from labour conditions to the extent of one month in respect of each six months during which excess labour has been employed.

Inspection of Mines.

The inspection of mines and collieries is conducted by Government inspectors appointed under the Mines Inspection and Coal Mines Regulation Acts. The regulations require the certification of managers and engine-drivers and other persons occupying positions of responsibility; restrict the hours of work of underground workers and persons in charge of machinery; and prescribe general regulations for the ventilation and safe-working of the Mines.

Examinations for Mine Managers, &c.

Certificates of competency are issued by examining boards to managers, under-managers, engine-drivers, and electricians.

The following statement shows the number of certificates, &c., issued during the years 1911-13:—

Class of Certificate.	1911.	1912.	1913.	Class of Certificate.	1911.	1912.	1913.
Coal Mines Regulation Act:—				Mines Inspection Act (continued)—			
First-class (Manager) ...	1	6	6	Permits to act as Managers, Section 54 ...	10	14	21
Second-class (Under-Manager) ...	5	6	7	Engine-drivers—			
Mine Electrician ...	10	6	10	Competency ...	208	204	269
Mines Inspection Act:—				Service ...	35	20	25
Manager—				Approved under Section 16 ...	49	67	71
Competency ...	3	10	12	Licenses to test and examine boilers, Section 46 ..	8	5	10
Service ...	1	1	...				
Approved under Section 9 ...	...	4	5				

Sludge Abatement.

The Sludge Abatement Board has been appointed under the Mining Act to administer the provisions for the prevention of the pollution or injury by mining operations of any stream, watercourse, &c., supplying water for domestic or stock purposes.

The Prospecting Board, constituted of the Under Secretary for Mines and Government Geologist, as Chairman, the Assistant Government Geologist, the Chief Inspector of Mines, and three Inspectors, the Chief Mining Surveyor, and a Geological Surveyor, deals with all applications for aid, and miners desiring a grant from the vote have to satisfy the Board that the locality to be prospected is likely to yield the mineral sought, and that the mode of operation is suitable for its discovery. Aid given may represent, as the maximum, 50 per cent. of the value of the developmental work done, inclusive of the cost of the necessary implements and materials. Assistance for sinking from the surface is not usually given, applicants being required generally to prove their *bona-fides* by carrying out a certain amount of work unassisted. Miners assisted from the vote are not entitled to claim any reward that may be offered for the discovery of a new gold or mineral field.

Under the regulations governing the distribution of the vote, the amount advanced must be refunded in the event of the discovery of payable mineral by means of the aid granted.

During 1907 provision was made by Parliament, to the extent of £5,000, for the erection of Government crushing batteries; and in 1911 arrangements were made to assist prospectors to erect plants. To procure the erection of a State battery, reasonable evidence must be adduced that the plant can be kept employed, or that there are prospects of new lodes being opened up as a result of the installation.

The proposal to make advances to prospectors to assist them to purchase plants was designed to meet the case of small mine-owners, as, while satisfying their requirements, it would relieve the Government of the cost of operating and maintaining State batteries. Assistance up to 75 per cent. of the cost of the plant and water supply may be advanced, and the prospector's contribution may be made up, either wholly or in part, of labour and material. No interest is chargeable for the advance, but the Government imposes a condition that the prospector shall crush parcels of ores for the public on a specified number of days, the maximum charges being fixed by regulation.

Amount granted to Prospectors.

During 1913 the total amount expended from the prospecting vote was £10,302, out of £15,046 allotted to eligible applicants. Of 394 applications for aid dealt with during the year, 161 were considered as satisfactory.

The following statement summarises the prospecting votes and the amount of the grants made therefrom for the various minerals:—

Period.	Amount Available.	Amounts granted to Prospectors for—						Total.
		Gold.	Silver and Lead.	Copper.	T'n.	Coal.	Other Minerals.	
	£	£	£	£	£	£	£	£
1887-9	55,000	26,332	886	138	34	338	283	28,011
1890-4	130,000	111,878	7,254	1,367	1,261	3,752	3,283	128,795
1895-1900	120,673	107,581	4,886	7,762	3,389	.....	4,021	127,639
1901-1905	101,122	80,636	5,108	10,136	7,828	40	1,430	105,178
1905-1910	75,000	38,822	7,986	20,765	3,146	310	871	71,900
1911	15,000	8,470	1,200	2,635	543	.....	451	13,379
1912	15,000	7,040	2,429	1,929	1,854	.....	382	13,634
1913	15,000	12,405	1,733	1,541	1,194	.....	1,006	17,884
1914	15,900	12,057	1,205	995	1,250	.....	614	16,121

No large payable field has yet been discovered through the agency of the prospecting vote; but several rich mines have been opened up with the aid granted, notably the Mount Boppy Mine, which is now the premier gold-mine of the State.

In addition to the employment of labour, the proving of a lode or reef invariably leads to the development of large areas of adjoining land under the Mining Act, from which increased revenue is derived by the State.

BORES AND DRILLS.

Since 1882 boring operations by diamond drills have been conducted by the Department of Mines at minimum charges, in order to encourage the development of the mineral resources of the State.

During 1913 thirty bores were sunk, the total footage bored being 1,689 feet.

EMPLOYMENT IN MINES.

The extent to which mining industries provide employment is indicated in the following statement of the approximate number of men employed in the various groups during each of the years 1902-1913:—

Year.	Metalliferous.						Coal and Shale.	Total number of men employed.
	Gold.	Silver, Lead, and Zinc.	Copper.	Tin.	Other.	Total.		
1902	10,610	5,382	1,699	1,288	1,602	20,581	13,114	33,695
1903	11,247	6,035	1,816	2,502	1,842	23,442	14,117	37,559
1904	10,648	7,071	1,850	2,745	1,377	23,691	14,146	37,837
1905	10,309	7,887	2,171	2,884	1,544	24,795	14,137	38,932
1906	8,816	9,414	3,047	3,795	2,275	27,347	15,199	42,546
1907	7,463	10,021	3,764	3,173	1,976	26,402	17,356	43,758
1908	6,363	7,560	2,745	2,453	1,757	20,881	18,084	38,965
1909	5,585	6,207	2,024	2,037	1,983	17,836	18,569	36,405
1910	5,247	7,999	2,286	2,028	1,801	19,369	18,044	37,413
1911	4,650	8,495	2,151	2,225	1,839	19,360	17,657	37,017
1912	3,893	9,062	2,384	2,646	1,817	19,807	18,051	37,858
1913	3,570	9,357	2,629	2,362	1,996	19,914	18,966	38,880

These figures do not include persons employed in works manufacturing lime, cement, or coke.

The outstanding feature of this statement is a considerable and persistent decline in the numbers employed in gold-mining. In other branches of metalliferous mining the movement, over the whole period, has been rather progressive than otherwise, as may be more clearly evidenced by comparison of quinquennial averages for 1902-6 and 1907-1911, with the numbers for 1912 and 1913:—

Per. od.	Annual Average Number Employed.							Coal and Shale.	Total all Mines.
	Metalliferous.						Total Metalliferous.		
	Gold.	Silver, Lead, Zinc.	Copper.	Tin.	Other.	Total Metalliferous.			
1902-6	10,326	7,158	2,116	2,643	1,728	23,971	14,143	38,114	
1907-11	5,863	8,066	2,594	2,384	1,873	20,770	17,942	38,712	
1912	3,893	9,062	2,384	2,646	1,817	19,807	18,051	37,858	
1913	3,570	9,357	2,629	2,362	1,996	19,914	18,966	38,880	

Metal Mines.

In gold-mining, the decrease in the numbers employed in the last ten years has been most noticeable as regards the alluvial mining:—

Year.	Gold Miners.				Year.	Gold Miners.			
	Alluvial.		Quartz.	Total Persons Employed.		Alluvial.		Quartz.	Total Persons Employed.
	European.	Chinese.				European.	Chinese.		
1904	4,926	327	5,395	10,618	1909	2,176	208	3,201	5,585
1905	4,786	305	5,218	10,309	1910	2,230	125	2,892	5,247
1906	3,948	307	4,561	8,816	1911	1,706	130	2,814	4,650
1907	3,006	244	4,218	7,468	1912	1,424	58	2,416	3,898
1908	2,640	211	3,512	6,363	1913	1,213	91	2,266	3,570

In tin-mining the number of Chinese engaged has decreased, as the following statement of the persons employed since 1902 will show:—

Year.	Tin Miners.			Year.	Tin Miners.		
	European.	Chinese.	Total.		European.	Chinese.	Total.
1902	936	302	1,238	1908	2,076	380	2,456
1903	2,047	455	2,502	1909	1,688	349	2,037
1904	2,150	595	2,745	1910	1,863	160	2,028
1905	2,212	672	2,884	1911	2,040	185	2,225
1906	3,157	638	3,795	1912	2,418	228	2,646
1907	2,739	434	3,173	1913	2,255	107	2,362

Coal and Shale Mines.

Coal and shale mines are subject to supervision under the Coal Mines Regulation Act, and during the year 1913 there were 111 coal mines and 4 shale mines, a total of 115, working under the provisions of the Statute. The following statement shows the number of mines in operation during the last ten years in each mining district, and the employees on surface work and underground:—

Year.	Northern.				Southern..				Western.				Total, New South Wales.		
	Mines Operating.	Employees.		Mines Operating.	Employees.		Mines Operating.	Employees.		Mines Operating.	Employees.		Total.		
		Below ground.	Sur-face.		Below ground.	Sur-face.		Below ground.	Sur-face.		Below ground.	Sur-face.			
1904	63	8,217	2,233	15	2,450	594	18	527	125	96	11,194	2,952	14,146		
1905	67	8,265	2,240	15	2,397	653	23	469	113	105	11,131	3,006	14,137		
1906	73	8,482	2,532	15	2,540	709	23	751	185	111	11,773	3,426	15,199		
1907	71	9,697	2,806	17	2,673	739	25	1,187	254	113	13,557	3,799	17,356		
1908	80	10,072	3,171	16	2,863	724	24	988	266	120	13,923	4,161	18,084		
1909	81	10,102	3,186	19	2,896	819	27	1,112	351	127	14,213	4,356	18,569		
1910	98	9,425	3,380	21	3,024	870	29	1,037	308	148	13,486	4,518	18,004		
1911	88	8,809	3,583	22	2,995	894	25	1,068	306	135	12,872	4,785	17,657		
1912	78	9,203	3,617	18	3,030	923	27	950	233	123	13,278	4,773	18,051		
1913	76	9,986	3,523	17	3,299	957	22	971	230	115	14,256	4,710	18,966		

The employment of boys under 14 years of age or of women and girls in or about a mine is prohibited, and restrictions are placed upon the employment of youths. The following statement shows the number of boys between 14 and 16 years of age included in the above table:—

Year.	Northern.		Southern.		Western.		Total.		
	Below ground.	Surface.	Below ground.	Surface.	Below ground.	Surface.	Below ground.	Surface.	Total.
1904	229	206	93	39	4	11	326	256	582
1905	259	257	77	44	6	5	342	306	648
1906	251	261	93	57	6	6	350	324	674
1907	371	277	104	49	14	13	489	339	828
1908	341	314	78	38	9	9	428	361	789
1909	246	285	78	45	26	21	350	351	701
1910	271	246	70	44	22	11	363	301	664
1911	229	234	85	42	19	13	333	289	622
1912	199	235	76	51	16	19	291	305	596
1913	243	230	76	57	25	18	344	305	649

Full particulars are not available to show the number of days worked in all coal and shale mines, but the following figures relating to sixty-nine of the more important collieries may be taken as representative of operations in the State during 1913:—

District.	Collieries Recording.	Days Worked.	Average days worked per Colliery.
Northern	47	10,636	226
Southern	11	2,478	223
Western	11	2,661	242
Total	69	15,755	228

WAGES.

In the more important branches of mining the wages are fixed for the most part by Boards constituted under the Industrial Disputes Act, 1908, and the Industrial Arbitration Act, 1912. Details are given in the chapter relating to Employment and Industrial Arbitration. The following summary may be taken as illustrative of all the branches of the mining industry:—

Trade or Calling.	1900.		1905.		1910.		1911.		1912.		1913.	
Coal-mining—	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Miners per ton	1 10	to 3 2	1 9½	to 3 0	2 0½	to 4 2	2 0½	to 4 2	2 0½	to 4 2	2 2½	to 4 2
Wheelers .. per day	7 0	„ 8 6	6 6	„ 9 0	7 0	„ 9 6	8 0	„ 9 6	8 0	„ 9 6	8 0	„ 10 0
Screenmen ..	6 6	„ 7 6	6 6	„ 7 6	7 0	„ 9 6	8 0	„ 9 0	8 0	„ 9 0	8 0	„ 9 0
Engine-drivers ..	11 0	„ 12 6	11 0	„ 12 6	8 9	„ 13 0	8 9	„ 11 0	8 9	„ 11 0	10 0	„ 12 0
Labourers	6 6	„ 7 6	6 6	„ 7 6	7 0	„ 8 0	s. d.	8 0	s. d.	8 0	8 0	„ 9 0
Metal-mining—	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Miners	9 0	„ 9 0	9 0	„ 9 0	11 0	„ 11 0	11 0	„ 11 0	11 0	„ 11 0	11 0	„ 11 0
Truckers	7 6	„ 7 6	7 6	„ 7 6	9 6	„ 9 6	9 6	„ 9 6	9 6	„ 9 6	9 6	„ 9 6
Engine-drivers ..	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Labourers	9 0	to 10 0	9 0	to 10 0	11 0	to 12 0	11 0	to 14 0	11 0	to 14 0	11 0	to 14 0
Truckers	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Labourers	7 6	„ 7 6	7 6	„ 7 6	9 6	„ 9 6	9 6	„ 9 6	9 6	„ 9 6	9 6	„ 9 6

MINERAL PRODUCTION.

The incompleteness of the statistics of production, as evidenced by the fact that in many instances the export trade is taken as the measure of the output, is to be regretted.

Moreover, the variety of the units of measurement employed in the different branches of the mining industry militates against comparison of the output of the several minerals, except by the standard of value of the products. And, even in measuring the production by the standard of value, it is necessary to remember that these values are taken at different stages of production; for instance, the value of the tin output represents the values of ingots and ore; with some metals also, the export trade, which is accepted as representing the total production, is mainly in ore.

The summary given below shows the value of the production of the various minerals, exclusive of iron made from scrap, and stone other than that exported, and Portland cement and lime, during the last five years:—

Minerals.	Value.				
	1909.	1910.	1911.	1912.	1913.
<i>Metals.</i>					
Gold—domestic ores	£ 869,546	£ 802,211	£ 769,353	£ 702,129	£ 635,703
Silver and silver-lead† ...	1,653,615	1,861,479	2,442,764	3,481,266	3,508,125
Lead†—pig, &c.	186,073	248,561	209,784	264,530	365,742
Zinc†—Spelter and Concentrates	1,041,280	1,289,634	1,414,980	1,766,242	1,547,987
Copper†—Ingots, matte, and ore	424,737	486,257	590,102	579,791	598,733
Tin†—Ingots and ore	211,029	228,156	307,689	338,074	421,202
Iron—					
Pig-iron	100,357	161,948	145,416	130,708	186,252
Iron oxide†	4,948	714	2,377	4,763	3,563
Ironstone flux	3,471	1,321	861	761	.....
Tungsten—					
Wolfram†	11,249	16,258	29,991	16,584	13,037
Scheelite†	14,618	15,747	11,342	4,963	4,457
Platinum	1,720	1,418	2,999	3,880	3,135
Molybdenite†	3,249	5,667	2,591	3,706	6,802
Antimony † Metal and Ore ...	711	1,450	2,010	355	407
Bismuth metal and Ore† ...	1,624	2,004	1,800	1,210	1,202
Chrome† ... ..	.....	.....	300	60	500
Cobalt†	55	55	.....	.....	.....
<i>Non-metals.</i>					
Fuels—					
Coal	2,618,596	3,009,657	3,167,165	3,660,015	3,770,375
Coke	137,194	189,069	184,337	162,454	208,989
Shale (oil)	23,617	33,896	36,980	34,770	7,339
Structural Materials*—					
Limestone—flux	13,851	16,946	12,541	11,066	10,686
Stone, building†	378	2,792	2,417	559	1,156
Marble	1,700	2,134	1,610	1,340	991
Chemical material—					
Alunite†	8,791	2,840	3,795	13,700	8,940
Gem Stones—					
Noble Opal	61,800	66,200	57,300	35,003	29,493
Diamonds	3,959	2,881	4,064	2,601	5,141
Abrasives—Grindstones† ...	192	325	191	176	170
Other Minerals and Ores† ...	4,850	5,550	5,560	8,556	11,189
Total*	£ 7,403,210	£ 8,455,170	9,409,519	11,228,677	11,651,406

* See following tables as to value of Portland cement and lime manufactured. † Exports only.

The production of minerals can be shown to better advantage by the standard of values as given in the previous table. The following return of quantities, in conjunction with values, will prove interesting. The figures are for the years 1912-13:—

Minerals.	1912.		1913.	
	Quantity.	Value.	Quantity.	Value.
<i>Metals.</i>				
Gold—domestic ores	oz. fine. 165,295	£ 702,129	oz. fine. 149,657	£ 635,763
Silver†—	oz.		oz.	
Silver Ingots and matte ...	2,389,195	251,652	2,193,871	244,321
Lead ore, concentrates, &c. ...	tons. 315,397	3,229,614	tons. 391,262	3,563,804
Lead†—pig, &c.	17,251	264,530	23,554	365,742
Zinc†—Spelter and concentrates	520,518	1,766,242	506,661	1,547,987
Copper†—Ingots, matte, and ore	11,034	579,791	9,461	598,733
Tin†—Ingots and ore	2,075	338,074	3,021	421,292
Iron—				
Pig iron	32,677	130,708	46,563	186,252
Iron oxide†	3,757	4,763	3,204	3,563
Ironstone flux	1,093	761	.....	.....
Tungsten—				
Wolfram†	172	16,584	126	13,037
Scheelite†	56	4,963	44	4,457
Platinum				
... ..	oz. 610	3,880	oz. 442	3,135
Molybdenite†	tons. 57	3,706	tons. 79	6,802
Antimony†—Metal and ore ...	63	355	18	407
Bismuth†—Metal and ore ...	6	1,210	9	1,202
Chromet†	23	60	500	£00
<i>Non-metals.</i>				
Fuels—				
Coal	9,885,815	3,660,015	10,414,165	3,770,375
Coke	241,159	162,454	293,612	208,969
Shale (oil)	£6,018	34,770	16,985	7,339
Structural Materials*—				
Limestone—flux	33,186	11,066	42,663	10,686
Stone (building)† ... ..	.....	559	.....	1,156
Marble ... ..	.....	1,340	.....	991
Chemical material—Alunitet† ...	3,425	13,700	2,235	8,940
Gem Stones—				
Noble Opal ... ..	.....	35,008	.....	29,493
Diamonds	cts. 2,240	2,001	cts. 5,573	5,141
Abrasives—Grindstones† ... ..	.....	176	.....	170
Other minerals and ores† ... ..	.....	8,566	.....	11,189
Total value ... ..	.....	11,228,677*	.....	11,651,406*

* Portland cement and lime have been omitted from the table. The figures are: Portland cement, 1912, value, £368,290; 1913, £402,249. Lime, 1912, quantity 35,657 tons; value, £44,478; 1913, 23,272 tons, £41,428. † Exports only.

The value of the mineral production, exclusive of Portland cement and lime, during 1913 represents the maximum for any year in the history of the State, and exceeds that of the year 1912 by £422,730. The very satisfactory condition of the mining industry during 1913 is due to the absence of serious industrial troubles, so that the various mines were almost continually employed; also the metal market was favourable.

The totals quoted in the tables of production are exclusive of iron made from scrap, Portland cement, and lime, which, for statistical purposes, are included in the returns of the manufacturing industry. The following shows the value of production of each of these items for the last five years, and to the end of 1913:—

Product.	Annual Production.					Aggregate Production to end of 1913.
	1909.	1910.	1911.	1912.	1913.	
	£	£	£	£	£	£
Iron made from scrap ...	6,000	.....	.....	.....	.....	1,416,030
Portland cement ...	202,200	251,110	315,569	368,280	402,249	2,241,933
Lime	24,283	30,189	32,918	44,478	41,428	319,355
Total ...	232,483	281,299	348,487	412,758	443,677	3,977,318

The value of the mineral production in quinquennial periods since 1856 is shown in the following statement; the figures are exclusive of iron made from scrap, Portland cement, and lime:—

Period.	Value of Production.	Period.	Value of Production.
	£		£
1856-60	6,069,118	1891-95	26,324,780
1861-65	9,980,397	1896-1900	26,159,491
1866-70	7,001,454	1901-05	29,880,914
1871-75	10,768,230	1906-10	42,450,535
1876-80	9,184,015	1911	9,409,519
1881-85	12,381,842	1912	11,228,677
1886-90	18,681,548	1913	11,051,406

To the end of 1913 the aggregate value of the mineral output of the State was approximately £242,000,000. The following statement shows the aggregate quantity and value to the end of 1913 for each of the minerals; the figures are exclusive of iron made from scrap, and stone, other than that exported, Portland cement, and lime:—

Minerals.	Production to end of 1913.	
	Quantity.	Value.
<i>Metals.</i>		
		£
Gold oz. fine	14,148,432	60,098,678
Silver*—		
Ingots and matte oz.	28,389,373	} 62,029,114
Concentrates and ore tons	7,270,293	
Sulphide and silver-lead "	562,976	
Lead*—		
Pig, &c. "	161,746	2,366,653
Zinc*—		
Spelter and Concentrates "	3,326,385	9,087,900
Copper*—		
Ingots and Matte "	200,149	} 12,392,835
Ore "	25,385	
Tin*—		
Ingots "	79,379	} 9,748,901
Ore "	28,786	
Iron—		
Pig-iron—from domestic ore "	231,867	884,008
Iron oxide* "	26,900	34,311
Ironstone flux "	106,917	81,618
Tungsten ores—		
Wolfram* "	1,483	145,554
Scheelite* "	1,174	105,305
Platinum oz.	13,432	32,145
Molybdenite* tons	383	42,838
Antimony* "	16,672	505,632
Bismuth* "	550	129,739
Chrome* "	31,335	101,968
Cobalt* "	885	8,065
Manganese* "	577	1,662
Quicksilver lb.	1,010	126
<i>Non-metals.</i>		
Coal tons	192,010,145	72,858,063
Coke "	3,310,696	2,347,656
Shale (Oil) "	1,668,419	2,330,170
Limestone flux "	1,167,334	713,500
Stone (Building)* ... .. "	.....	25,332
Marble† ... .. "	.....	24,055
Slates* No.	79,234	890
Alunite* tons	41,271	128,483
Noble Opal ... .. "	.....	1,359,700
Diamonds cts.	184,543	125,549
Grindstones* ... .. "	.....	3,012
Other Minerals and Ores* ... .. "	.....	133,273
Total ... .. £	.....	237,636,735

* Exports only.

† Up to end of 1901 includes exports only.

Measured by the aggregate output, coal is the most valuable mineral in New South Wales, followed closely by gold and silver,

Related to the number of men employed, the output in the different branches of mining varies greatly. Following are the average values per head of miners for the last five years:—

Year.	Gold.	Silver, Lead, and Zinc.	Copper.	Tin.	Coal.
	£	£	£	£	£
1909	156	464	210	104	144
1910	153	425	213	113	171
1911	165	479	275	138	182
1912	180	608	243	128	206
1913	178	612	228	178	200

As an offset to the relatively high values of silver, lead, zinc, and copper, it is to be noted that these ores require expensive treatment, which compensates the larger output per head as compared with coal, gold, or tin.

VALUE OF MACHINERY.

The following statement shows the estimated value of the machinery used in mining during the years 1911 to 1913:—

Classification.	1911.	1912.	1913.
	£	£	£
Coal and Shale	2,803,000	2,890,000	3,209,000
Gold	683,922	639,459	608,912
Silver, Lead, and Zinc	2,015,157	1,912,754	1,990,230
Copper	577,381	666,384	762,216
Tin	193,599	189,845	170,817
Other Minerals	390,178	436,376	488,143
Total	6,653,237	6,734,818	7,229,318

QUARRIES.

The quantities and values of building stones, except stone exported, do not appear in the statements of mineral production, but are given hereunder in a return of quarries for the year 1913:—

Description of Quarry.	Quantity of Stone raised.	Value of Stone raised.
Building Stone—	tons.	£
Sandstone	93,044	37,109
Granite	51,950	9,843
Syenite (Trachyte)	1,165	1,697
Limestone	1,460	110
Marble	820	2,050
Other	5,102	3,472
Macadam, Ballast, &c.—		
Sandstone	184,411	32,889
Bluestone, Basalt, &c.	746,974	131,014
Limestone	42,288	8,136
Gravel	71,844	8,081
Sand	39,239	3,919
Ironstone	37,232	6,115
Shale and Clay	37,028	4,102
Limestone, crude	225,164	35,801
Clays—		
Brick clays	120,000	240
Kaolin	1,200	1,200

PRICES OF MINERALS.

In the case of all the minerals which contribute any considerable value to the New South Wales production, prices are regulated by the world's production in relation to the world's demands, as, with the exception of coal, the local demand is small.

Practically the whole of the gold mined in New South Wales and Queensland, and a large proportion of the output of the other Australian States and of New Zealand, is sent to the Sydney Mint for melting, assaying, and coining, and is accounted for at the rate of £3 17s. 10½d. per oz. standard, or sovereign gold—22 carats fineness. Pure gold, or 24 carat, is worth £4 4s. 11 $\frac{5}{11}$ d. per oz.

According to the reports of the Royal Mint, in 1890 the price of silver in the London Market was 47¾d. per oz. standard; in 1893, when the Indian mints were closed, the price was 35½d., falling to 29d. in 1894; since 1894 that average has been exceeded only in the years 1895, 1896, 1906, and 1907, when it was slightly over 30d. In 1911 the average for the year was only 24 $\frac{2}{3}$ d. per oz., in 1912 it was 28 $\frac{1}{6}$ d., and in 1913 the average was 27¾d.

The variations in the price of lead have affected the value of the output. From 1904 nearly to the end of 1907 the price rose with corresponding benefit to the industry; but in 1908 the prices of silver, lead, tin, and zinc dropped considerably. With zinc and tin the average prices have risen steadily in the last five years, but the improvement in silver and lead did not take place until the latter months of 1911.

The prices of copper have shown considerable fluctuation; the average was very low in 1894, and remained unfavourable for some years. Satisfactory prices were obtainable in the periods 1899-1901 and 1905-7, but a decline took place in 1908. During the year 1912 the prices advanced steadily, and the average was considerably higher than in the previous four years.

The average prices shown in the following table for silver, lead, copper, and tin relate to the f.o.b. prices, Sydney, based on the London prices. In the case of zinc, the averages are those quoted by the Department of Mines in connection with the Broken Hill field:—

Year.	Silver.	Lead.	Zinc.	Copper.	Tin.
	per oz.	per ton.	per ton.	per ton.	per ton.
	s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1904	2 14½	11 0 0	22 13 1	55 18 4	123 16 8
1905	2 3½	12 13 4	25 7 8	66 18 4	141 0 0
1906	2 6¾	16 10 0	27 1 4	85 10 0	178 18 4
1907	2 6½	18 10 0	25 15 9	85 1 8	170 10 0
1908	2 0 $\frac{5}{6}$	13 1 8	20 3 5	57 18 4	131 5 0
1909	1 11½	12 11 3	22 3 0	57 9 2	133 1 8
1910	2 1	12 13 4	23 0 0	56 3 4	153 3 4
1911	2 0¾	13 3 4	25 3 2	54 18 4	188 1 8
1912	2 4	17 13 4	26 3 4	72 10 0	209 1 8
1913	2 6	18 5 11	22 13 6	73 17 5	201 14 0

In regard to coal, average prices are quoted in connection with the values of production elsewhere in this chapter.

METALS AND METALLIC ORES.

The value of the output from metalliferous mines, and mines other than coal and shale mines, in the last five years, is summarised in the following statement:—

Minerals.	1909.	1910.	1911.	1912.	1913.	Value of Output per Person Employed, 1913.
	£	£	£	£	£	£
Gold	869,546	802,211	769,353	702,129	635,703	178
Silver, lead, zinc	2,880,968	3,399,674	4,667,528	5,512,038	5,721,854	612
Copper	424,737	486,257	590,102	579,791	598,733	228
Tin	211,029	228,156	307,089	338,074	421,192	178
Other	237,523	306,250	286,965	239,406	287,121	144
Total	4,023,803	5,222,548	6,021,037	7,371,438	7,664,703	385

Even in these five years the dwindling gold yield is noticeable, and in comparison with other metals the value of the output per person employed is low.

GOLD.

Amongst the metals which occur in the State, gold occupies an important place, both on account of the quantity which has been raised and of the influence of its discovery on the settlement of the country.

Early Discoveries.

The first definite record of the discovery of gold in New South Wales was made by Assistant Surveyor Jas. McBrien, in February, 1823. He found numerous particles of gold while surveying in the Fish River district, between Rydal and Bathurst, a locality where, in recent years, surface operations have secured considerable amounts of gold.

In 1839, Count Strzelecki, while engaged in geological exploration, discovered auriferous pyrites in the Vale of Clwydd, but to avoid serious consequences to the colony, the discovery was not advertised by the Government. Between 1841 and 1851 various other discoveries were made, leading to a systematic investigation by Hargraves, who proved the existence of gold in payable quantities, principally in the localities of Wellington and Dubbo. Prospecting operations resulted in the discovery, during 1851, of the principal gold-fields of New South Wales and Victoria. Subsequently, rich alluvial leads were discovered at Forbes in 1862, in beach sands on the North Coast in 1870, at Mount Drysdale in 1892, and at Wyalong in 1893.

Occurrence.

Gold is traceable in rocks of almost every geological age throughout New South Wales. The deposits which have been worked profitably include the following types:—

- (1) Alluvial or detrital gold.
- (2) Auriferous reefs or lodes.
- (3) Impregnations in stratified deposits and igneous rocks.
- (4) Irregular deposits, as in auriferous ironstone.

Payable deposits of detrital gold have been found in the Recent and Pleistocene alluvials, in Tertiary and Cretaceous alluvial leads, in the Permo-Carboniferous conglomerates, in the north coastal beach sands, and in gravel beds of running streams. The oldest payable alluvial deposits worked are at Mudgee; and the important centres of alluvial gold-

mining at the present time are the Bathurst and Mudgee districts, the country watered by the various feeders of the Upper Lachlan, Araluen, Braidwood, Tumut, and Adelong districts, and the New England district.

Auriferous reefs are numerous in the Silurian and Carboniferous rocks, but generally the gold occurs in chutes, productive ore alternating with unproductive zones of quartz, which is the principal vein-stuff in auriferous lodes, though gold may be found in association with potash mica, as at Hill End, and with calcite, barytes, iron and copper pyrites, galena, &c. Gold-bearing quartz veins occur as fissure veins, as at Temora, Grenfell, Wyalong, and Parkes; as bedded veins, at Hargraves; and as contact veins at Gundagai. The extraction of gold from quartz veins requires extensive machinery and gold-saving appliances, involving a large capital outlay, consequently this branch of mining is generally controlled by companies.

Impregnations of gold have been found in slate, quartzite, and volcanic tuff, the discoveries being made in localities widely separated, as at Mount Allen, Narrandera, and Cobar. At Gundagai, Albury, and Orange, talc, mica, and chlorite schists were found to be auriferous, and in the locality of Bathurst, bunches and impregnations of auriferous mispickel, pyrrhotine, and iron pyrites were found to be analogous to deposits at Tamworth in tuffs and claystones. In igneous rocks gold has been found in granite, invariably in association with hornblende; also in quartz porphyry, diorite, serpentine, felsite, and garnet rock.

Irregular deposits of auriferous ironstone have been worked at Mount Allen, the deposits, first opened up for the ironstone as a flux for silicious copper ores, being worked since 1891 as a gold mine.

Production of Gold.

The following table shows the quantity and value of the gold produced during each quinquennial period between 1851 and 1910, and for the last three years. New South Wales gold which was received at the Sydney Mint for coinage in 1913 amounted to 124,012 oz., of the gross value of £406,336, the average price being £3 5s. 6d. per oz.:-

Period.	Quantity.	Equivalent in oz. fine.	Value.
	oz. crude.	oz. fine.	£
1851—1855	1,920,200	1,492,154	6,338,257
1856—1860	1,360,763	1,222,377	5,192,326
1861—1865	2,233,001	2,026,093	8,606,290
1866—1870	1,309,911	1,193,535	5,069,812
1871—1875	1,613,049	1,462,040	6,210,345
1876—1880	640,210	557,076	2,366,310
1881—1885	626,931	549,319	2,333,358
1886—1890	546,954	464,527	1,973,183
1891—1895	1,176,325	1,002,527	4,258,462
1896—1900	1,691,012	1,429,860	6,073,658
1901—1905	1,353,526	1,133,143	4,813,285
1906—1910	1,316,144	1,119,708	4,756,207
1911	215,274	181,121	769,353
1912	200,243	165,295	702,129
1913	183,773	149,657	635,703

The value recorded for this State for 1913 is the lowest since 1902, when the output was valued at £684,970. Prospecting for gold has been neglected owing to the remunerative employment to be obtained in connection with other branches of the mining industries, and during the last eight years there has been a persistent decline in the value of the gold production.

The crude quantities of quartz and alluvial gold won during each of the last ten years are estimated as follows:—

Year.	Production.			Year.	Production.		
	Alluvial.	Quartz.	Total.		Alluvial.	Quartz.	Total.
	oz. crude.	oz. crude.	oz. crude.		oz. crude.	oz. crude.	oz. crude.
1904	79,040	245,956	324,996	1909	55,435	182,612	238,047
1905	80,512	248,235	328,747	1910	51,681	173,134	224,815
1906	78,690	223,866	302,556	1911	43,326	171,948	215,274
1907	76,478	212,565	289,043	1912	33,893	166,350	200,243
1908	62,390	199,293	261,683	1913	36,203	147,570	183,773

As before stated, the value of the gold of domestic production received at the Sydney Mint during 1913 was £406,336, representing rather more than half the gold won in the State. The following statement shows the gross weight of the gold received at the Mint from the more important mining districts during 1913:—

Mining District.	Ounces.	Mining District.	Ounces.
Bathurst	4,953	Southern	13,272
Cobar	44,310	Tambaroora and Turon ...	3,987
Lachlan	16,663	Tumut and Adelong ...	17,666
Mudgee	13,302	Other... ..	1,682
Peel and Uralla	8,147		
		Total	124,012

Of the aggregate production of domestic ores during 1913, more than half, viz., 70,526 oz., valued at £290,761, was obtained from the mines of the Cobar district, as may be seen from the available records of the chief mining districts contributing to the aggregate production during the year:—

Mining District.	Quantities.				Total Value.
	Alluvial.		Quartz.	Total Quantity.	
	By Dredging.	Otherwise.			
	oz. crude.	oz. crude.	oz. crude.	oz. crude.	£
Bathurst ... ..	.....	815	4,222	5,037	15,868
Cobar ... ..	.....	.....	70,526	70,526	290,761
Lachlan	49	62	13,389	13,560	49,061
Mudgee ... ..	.....	659	8,155	8,814	26,508
Peel and Uralla... ..	2,449	1,148	5,318	8,915	32,819
Southern... ..	11,591	746	4,714	17,051	63,551
Tambaroora and Turon	4,440	786	1,484	6,710	26,496
Tumut and Adelong ...	5,039	778	7,503	13,320	50,371

In the Cobar district the Mount Drysdale gold-field was discovered in 1892, and for many years contributed a large proportion of the output, but more recently the Mount Boppy mine, near Canbelego, has become the premier gold-mine of the State. A most important find was made at Wyalong, in the Lachlan district, in 1893, and for the period 1897-9 the production of Wyalong was the highest from any gold-field; but since 1900 the annual output of the Cobar district has been the highest. In 1908 there was a marked decrease in the output from the Wyalong mines, and the yield has fallen below those from the Adelong, Wellington, Araluen, and Hillgrove districts.

The annual gold yield for the Cobar district since 1900 is shown below:—

Year.	Quantity.	Value.	Year.	Quantity.	Value.
	oz. crude.	£		oz. crude.	£
1900	44,676	157,108	1907	58,399	228,981
1901	42,299	145,146	1908	82,474	271,682
1902	26,956	90,209	1909	78,206	246,567
1903	79,860	266,355	1910	68,534	260,254
1904	69,140	262,213	1911	69,054	265,870
1905	70,109	230,386	1912	63,690	283,751
1906	68,685	224,052	1913	70,526	290,761

The low yield in 1902 was due to the cessation of work at most of the mines for varying periods on account of drought, and the decreases exhibited in 1904 and subsequent years, as compared with 1903, are attributable to the restricted operations of the Cobar gold-mines, where the number of persons employed was considerably reduced, pending the adoption of new methods for economically treating the gold-copper ore in sight. For this purpose additional machinery was erected, and the result is shown in the increased output since 1908. The figures for the years 1909 and 1913 were affected by the cessation of smelting operations at the Great Cobar mine. In connection with the operations of the Cobar mining field, some further details are given in relation to the production of copper, which is the principal metal obtained.

DREDGING.

Development.

During 1899 great interest was displayed in the introduction of dredging, to turn over alluvial flats which, from the point of view of the individual miner, were already exploited. The Macquarie was the first stream on which operations were tried, the success achieved resulting in the extension of operations to the Clarence, Araluen, and other rivers, so that dredging is now in operation on practically all the rivers of New South Wales, which drain auriferous country. In addition to dredging for gold only, as elsewhere in Australia and in New Zealand, the alluvial tin deposits known to exist in New South Wales were exploited also, and the value of stream-tin won annually now exceeds the value of gold recovered by dredging. The Gold and Mineral Dredging Act, passed in the latter part of 1899, assured security of tenure, and greatly facilitated dredging operations over leased areas; and an amending Act passed in 1902 fixed the rental of Crown lands leased for dredging operations at 2s. 6d. per acre per annum, with a tax of 1 per cent. on the net profits of such operations. Thenceforward dredging has maintained its importance as a branch of the mining industry.

At the end of 1913 the total area held for dredging purposes was 8,976 acres.

Plant.

Three dredges were at work during 1899, but at the end of 1900, 22 were operating, and applications had been received for 21,331 acres under dredging leases. At the end of 1901 the dredges operating, and in course of construction numbered 43, their value being estimated at

£289,333; 40 of them were equipped for gold dredging, 2 for tin dredging, and 1 was arranged to treat both gold and tin. The following statement shows the type, number, and aggregate value of dredges and pumping plants in operation at the end of each of the last ten years:—

Year.	Dredging Plants.				Value of Plants.	Year.	Dredging Plants.				Value of Plants.
	Gold.		Tin.				Bucket.	Pump.	Bucket.	Pump.	
	Bucket.	Pump.	Bucket.	Pump.							
					£						£
1904	23	12	1	6	235,576	1909	18	13	2	33	309,833
1905	24	9	1	15	261,934	1910	23	15	3	29	364,255
1906	25	11	2	30	315,537	1911	21	14	4	32	388,991
1907	22	10	2	35	335,000	1912	17	11	4	35	355,096
1908	23	8	1	31	345,555	1913	19	12	5	41	330,160

The plants equipped for tin as well as gold dredging have been classified as for gold dredging.

Output of Dredges.

The records of nineteen "bucket" dredges working for gold in 1913 shows that 4,302,911 cubic yards of material were treated, the gold won amounting to 20,468 oz., valued at £80,832, or an average of 2.28 grains, worth 4.51d. for every cubic yard. The records of twelve "pump" dredges show that 711,197 cubic yards of material treated yielded 4,354 oz. of gold, valued at £16,750, or an average of 2.94 grains, worth 5.65d. per cubic yard.

Dredging for tin, five bucket dredges treated 579,391 cubic yards of material, recovering 201 tons of ore, valued at £27,639, the average yield being .78 lb., valued at 9.38d. per cubic yard treated. The records of forty-one pump dredges show that 3,371,687 cubic yards of material treated yielded 1,618 tons of ore, valued at £212,319, the average being 1.07 lb., valued at 15.11d. per cubic yard of material treated.

The following table demonstrates the value of the metals recovered by dredging since the inauguration of dredging in this State:—

Year.	Area under Lease at 31st Dec.	Gold Dredged.			Stream-tin Dredged.	
		Quantity.		Value.	Quantity.	Value.
		acres.	oz. crude	oz. fine.	£	tons.
1900	6,943	8,882	7,924	33,060	.....	.....
1901	8,702	23,585	21,100	89,628	49	3,542
1902	11,709	25,473	23,046	97,891	110	8,300
1903	9,015	27,237	24,555	104,303	244	20,100
1904	9,855	32,345	29,111	123,656	319	26,180
1905	13,571	35,388	32,038	136,090	532	50,904
1906	15,595	36,649	33,218	141,101	1,032	120,661
1907	16,614	39,946	36,136	153,498	1,692	176,212
1908	16,117	40,890	37,917	161,059	1,562	129,952
1909	11,132	36,168	32,635	138,626	1,677	146,842
1910	16,442	31,487	28,660	121,741	1,607	158,467
1911	10,392	25,509	23,364	99,245	1,742	208,095
1912	10,419	20,649	18,899	80,276	1,621	223,813
1913	8,976	26,517	24,525	104,177	1,819	239,958

SILVER, LEAD, AND ZINC.

The output of lead and zinc in New South Wales is obtained principally from the silver-lead mines of the Broken Hill district, and for this reason the mining of these metals is discussed conjointly in this chapter.

Silver.

The principal ores from which silver is obtained in New South Wales are argentiferous galena, cerussite, zinc-blende, mispickel, iron and copper pyrites, and limonite (gossan), resulting from the decomposition of pyrites; the important minerals located in various argentiferous lodes include, in New South Wales, native silver, antimonial silver, silver chloride, silver bromide, silver iodide, silver chlorobromide, and several other compositions. The progress of silver-ore development has been so considerable in recent years that the value of the output greatly exceeds that of other metals, even with a persistently low price for silver.

The earliest mention of the discovery of silver in the rocks of New South Wales was made in 1839 by Count Strzelecki, who, following up his geological investigations, recorded the further discovery, in 1845, of native silver at Piper's Flat. In connection with the southern gold-fields of the State, references were made by Rev. W. B. Clarke in 1860 to the presence of silver in alluvial drifts; but the first effort to test the commercial value of the argentiferous ores consisted of a shipment to London for smelting, in 1864, of 120 tons of ore from the Moruya Silver Mine. This ore, although extremely refractory, gave 22 oz. of silver and 1 oz. 8 dwt. of gold per ton; but costs of freight and treatment rendered the venture unprofitable, and the quantity of silver raised in New South Wales was very small until the year 1882, when extensive discoveries of the metal, associated principally with lead and copper ores, were made in various parts of the State, notably at Boorook, in the New England district, and later at Sunny Corner, near Bathurst, at Thackaringa, Silverton, Broken Hill, the Barrier Range generally, and in the Burragorang Valley.

Lead.

Mining for the lead product alone has not been pursued extensively, because all the lead ores have contained more or less silver; and naturally the ores richest in silver were exploited first, since the market price of lead was not high enough to encourage its production except as a by-product, or in simplifying smelting operations.

The earliest record of lead-mining in the State relates to a mine which was opened at Yass in 1848, but closed as unprofitable after a brief period. The principal ores of lead are galena and cerussite; but less common ores, viz., oxide, sulphate, phosphate, arseniate, molybdate, and tungstate of lead have been found in varying quantities in several localities. The chief source of lead supplies is the Broken Hill silver lode; its ores consist mainly of argentiferous cerussite in the upper oxidised zone, and in the lower portion, of argentiferous sulphides of lead and zinc, consisting of a crystalline mixture of galena and zinc-blende. As the ore from the lower workings of the Broken Hill lode showed in recent years a decreasing proportion of silver, and as the price of silver declined, while the value of lead improved, the production of the latter has increased in quantity and in value.

Zinc.

Ores of zinc have been located in various parts, viz., red oxide of zinc in the Vegetable Creek district, carbonate of zinc in the Cooma district, and the oxidised ores of the Broken Hill silver lode. Although zinc-blende, the most common ore of zinc, is found in association with galena in the majority of the silver mines of the State, it is not mined specially for the

production of metallic zinc. On the contrary, till recently its occurrence was regarded as militating against the successful extraction of the silver and lead with which the zinc-blende is associated, and for several years after the opening of the Broken Hill mines the zinc content of the ore was lost in smelting. Improvements in methods of treatment, however, resulted in the saving of a proportion of the zinc concentrates, and subsequently rendered possible the profitable extraction of zinc from the tailings accumulated since the opening of the mines. The formation of companies to recover the zinc contents of large quantities of tailings, and the installation by mining companies of treatment plants, have added greatly to the vast wealth of minerals extracted from this field, and indicate this State as one of the principal producers of spelter in the future.

Production.

Assessment of the total output and value of production of silver-lead ores mined in New South Wales is hampered by the fact that the process of extracting the metallic contents has been conducted for the most part outside the boundaries of the State, a proportion being treated within the Commonwealth, while large quantities of concentrates are exported to Europe for treatment. For this reason the value of the output credited to New South Wales does not represent the value of the finished product, but the estimated net value of the ore, concentrates, bullion, &c., as declared by the several companies to the Customs Department at the date of export from the State.

Calculated on this basis the quantity and value of New South Wales silver and silver-lead ore exported to the end of 1913 are shown in the following table:—

Period.	Silver.		Silver-sulphide, Silver-lead, and Ore.			Total Value Exported.
	Quantity.	Value.	Quantity.		Value.	
			Ore.	Metal.		
	oz.	£	tons.	tons.	£	£
To 1885	1,730,297	382,884	7,074	191	237,810	620,694
1886-1890	2,481,253	464,081	165,756	94,002	6,478,515	6,942,599
1891-1895	3,009,187	445,873	663,754	231,847	12,615,432	13,061,305
1896-1900	2,352,092	269,663	1,771,983	86,005	9,592,856	9,862,519
1901-1905	4,154,020	445,051	1,877,515	108,353	8,910,586	9,355,637
1906	284,994	36,431	349,720	22,218	2,826,542	2,862,973
1907	2,043,887	257,314	413,720	*20,360	3,658,632	3,915,946
1908	2,490,163	253,920	358,730	.....	1,906,275	2,160,195
1909	1,718,005	168,974	269,306	.....	1,484,641	1,653,615
1910	1,773,913	175,775	317,697	.....	1,685,704	1,861,479
1911	1,767,496	177,095	338,469	.....	2,265,669	2,442,764
1912	2,359,195	251,652	345,307	.....	3,229,614	3,481,266
1913	2,194,871	244,321	391,262	.....	3,563,804	3,808,125

* Lead contents shown in the following table.

Similar information regarding the export of lead (pig, in matte, also lead-carbonate and lead-chloride), the product of New South Wales, is shown below; the quantity as stated for 1907 and subsequent years represents the contents, based on average assays, of bullion produced within the State.

Period.	Quantity.	Value.	Period.	Quantity.	Value.
	tons.	£		tons.	£
1889-1890	648	8,298	1908	14,956	186,746
1891-1895	738	7,413	1909	15,476	186,073
1896-1900	13,293	258,874	1910	21,195	248,561
1901-1905	17,550	255,366	1911	17,276	209,784
1906	59	1,084	1912	17,251	264,530
1907	19,768	374,182	1913	23,554	365,742

The following statement shows the quantity and value of zinc (spelter and concentrates), the product of domestic ores, exported, since 1889. These exports represent practically the total production :—

Period.	Quantity.	Value.	Period.	Quantity.	Value.
	tons.	£		tons.	£
1889-1890	307	3,366	1908	276,720	603,883
1891-1895	633	7,677	1909	373,906	1,041,280
1896-1900	137,931	146,023	1910	438,627	1,289,634
1901-1905	133,782	440,402	1911	516,378	1,414,980
1906	103,666	292,806	1912	520,518	1,766,242
1907	237,219	536,620	1913	506,661	1,547,987

The steady increase in the production of silver, lead, and zinc is seen in the following summary of the values during the last ten years :—

Year.	Silver, Silver-lead, Concentrates, Ores, &c.	Lead (Pig, &c.)	Zinc (Spelter and Concentrates).	Total Production.
	£	£	£	£
1904	2,065,540	65,954	117,978	2,249,482
1905	2,491,052	2,657	221,155	2,717,864
1906	2,862,973	1,084	292,806	3,156,863
1907	3,915,946	374,182	536,620	4,826,748
1908	2,160,195	186,746	600,883	2,947,824
1909	1,653,615	186,073	1,011,280	2,880,968
1910	1,861,479	248,561	1,289,634	3,399,674
1911	2,442,764	207,784	1,414,980	4,067,528
1912	3,481,266	264,530	1,766,242	5,512,038
1913	3,808,125	365,742	1,547,987	5,721,854

In 1908 the output was affected by a fall in the prices of silver and lead, and in 1909 by a strike of the Broken Hill miners. In 1913 the value of production was the highest on record owing to the favourable metal market and more settled industrial conditions which prevailed throughout the year.

In regard to zinc concentrates, the failure of the water supply during portion of the year 1913, and an industrial dislocation in connection with the Silverton tramway, interfered considerably with the operations of a zinc company. During 1913 the Horwood process was successfully established at the Zinc Corporation's works. This process effects the separation of the constituent minerals in the slimes into two products, one suitable for zinc distillation, and the other for sale to lead smelters.

As previously stated, the bulk of the ores produced in the silver-lead mines are exported for treatment outside the State and the figures shown in the preceding tables do not convey an adequate idea of the importance of these mines. During the last eleven years, however, the Department of Mines has collected independent records from the various mining and smelting companies and ore-buyers with the object of ascertaining the actual value accruing to the Commonwealth from the silver-lead mines. Thus particulars have been obtained regarding the quantity and value of the silver, lead, and zinc extracted within the Commonwealth, and the gross metallic contents of concentrates exported oversea have been estimated on the basis of average assays as follows:—

Year.	Metal obtained within Commonwealth from ores raised in New South Wales.				Concentrates exported.						Total Value of Production from Silver-lead Ores of New South Wales.
	Silver.	Lead.	Spelter.	Aggregate Value.	Quantity.	Contents by average assay.			Assessed Value.		
						Silver.	Lead.	Zinc.			
	oz. fine.	tons.	tons.	£	tons.	oz. fine.	tons.	tons.	£	£	
1904	7,751,667	106,038	290	2,058,784	140,464	2,945,058	59,507	22,318	642,125	2,730,509	
1905	6,804,934	93,122	544	2,131,317	270,474	3,450,561	69,044	30,637	1,181,720	3,313,037	
1906	5,575,410	79,925	1,003	2,112,977	165,151	3,111,013	58,633	33,427	1,876,834	3,989,811	
1907	5,921,457	79,370	984	2,223,420	337,823	6,228,225	111,830	76,645	3,574,775	5,503,195	
1908	6,484,288	103,371	1,665	2,008,410	330,312	5,490,331	69,501	113,853	2,400,997	4,409,407	
1909	3,717,016	64,321	..	1,176,394	406,433	6,367,775	90,207	144,013	2,707,630	3,834,074	
1910	5,196,323	94,818	439	1,755,220	506,959	7,008,336	85,035	134,403	3,180,530	4,926,070	
1911	5,731,468	94,966	1,703	1,949,271	559,591	8,797,677	111,795	138,669	3,259,246	5,208,517	
1912	5,220,538	101,311	2,545	2,477,442	537,733	8,293,711	97,736	194,214	3,692,352	6,169,734	
1913	5,908,638	106,432	4,121	2,709,167	517,388	8,596,231	117,003	184,149	3,739,691	6,463,578	

In connection with the above figures, although the metallic contents are based on average assays, it is impossible to say what proportion of the bulk quantities was recovered. In the case of the lead and zinc contents, the quantities have been estimated only when payment is allowed for them.

It is estimated that the quantity of silver yielded by the mines of New South Wales to the end of 1913 amounted to 307,346,965 oz. fine, valued at £46,377,574:—

	oz. fine.	£
Metal obtained in Commonwealth ...	141,259,143	20,770,745
Contained in concentrates, &c., exported ...	166,037,822	25,606,829
Total ...	307,346,965	46,377,574

Broken Hill Field.

The mines on the Broken Hill field are the chief contributors to the silver and silver-lead and zinc output of Australia. The argentiferous lead ores of the Barrier Ranges and Broken Hill districts were discovered in 1883. The field extends over 2,500 square miles of country, and has developed into one of the principal mining centres of the world. It is situated in western New South Wales, beyond the River Darling, and on the confines of South Australia.

In the Barrier Range district, the lodes occur in Silurian metamorphic micaceous schists and banded gneisses, intruded by granite, porphyry, and diorite, and traversed by numerous quartz reefs, some of which are gold-bearing.

The Broken Hill lode is the largest yet discovered; it varies in width from 10 feet to 200 feet, and may be traced for several miles, the country having been taken up all along the line of lode, and subdivided into numerous leases, held by mining companies and syndicates.

The output of ore from the Broken Hill mines for each of the last ten years is shown in the following statement:—

Year.	Oxidised Ore.	Sulphide Ore.	Total.
	tons.	tons.	tons.
1904	14,895	1,327,381	1,342,276
1905	11,157	1,327,877	1,339,034
1906	20,943	1,231,193	1,252,136
1907	32,142	1,620,749	1,652,891
1908	33,241	1,409,263	1,447,504
1909	23,478	1,006,809	1,030,287
1910	24,102	1,219,582	1,243,684
1911	26,501	1,457,896	1,484,397
1912	28,057	1,611,602	1,639,659
1913	27,876	1,716,301	1,744,177

During the year 1913 remarkable activity prevailed on the Broken Hill field; no serious industrial disputes occurred, and the output from the mines was the largest in the history of the field.

The most satisfactory results have been obtained in the production of zinc concentrates. The quantity of these concentrates exported during each of the last ten years may be seen in the following statement:—

Year.	Zinc Concentrates Exported.	Year.	Zinc Concentrates Exported.
	tons.		tons.
1904	57,602	1909	373,903
1905	103,532	1910	463,627
1906	102,664	1911	516,378
1907	236,251	1912	520,518
1908	275,932	1913	506,661

In the enormous deposits of sulphide ores at Broken Hill, zinc-blende is a principal constituent.

In the utilisation of tailings three companies were actively engaged during 1913, and the Broken Hill Proprietary Company conducted smelting operations at Port Pirie, South Australia.

The total value of the mineral output of the Barrier district during 1913 was estimated at £4,967,659, as compared with £4,436,759 in 1912. In addition, the treatment of zinc tailings in 1913 yielded an output valued at

£776,228, and returned to shareholders £347,285, bringing the total production of the Broken Hill field to £5,743,887 for the year and the distribution to shareholders to £1,483,235.

The following statement summarises the recorded operations of the companies engaged in mining on the Broken Hill field, and the dividends paid during the years 1912 and 1913:—

Name of Company.	Value of Output.		Dividends paid.	
	1912.	1913.	1912.	1913.
	£	£	£	£
Proprietary	716,000*	1,301,144*	264,000	216,000
Block 14	95,310	75,812	28,000	23,000
British	406,133	296,502	106,600	114,450
Block 10	136,847	166,545	25,000	50,000
Sulphide Corporation	1,269,864	1,063,485	288,750	192,500
South	665,000	634,000	290,000	300,000
North	702,272	794,308	253,750	240,000
Junction	25,514	71,043	.....	.....
Junction North	205,362	295,709	.....	.....
Zinc Corporation Mining Department (formerly South Blocks)	214,452	267,938	†	†
South Extended (formerly Consols) ... ..	.....	1,173	.....	.....
Total	4,436,759	4,967,659	1,256,100	1,135,950

* The value of the ores purchased is not included. † Since amalgamation with Zinc Corporation separate figures regarding dividends of Mining Department are not available.

To the end of the year 1913 the value of production by the mines on the Broken Hill field from the inception of operations was £74,119,522, and the dividends and bonuses paid were £16,992,068; if output by companies engaged in treating the tailings be added the output was £74,895,750, and the dividends £17,339,353.

The value of the machinery and plant on the Broken Hill field is estimated at £1,927,706.

The average number of men employed in and about the silver-lead mines on the Broken Hill field during 1913 was 8,788—4,182 surface and 4,606 underground. Compared with the previous year there was an increase of 569 men.

Yerranderie Division.

Next in importance to the Broken Hill field are the Burragorang silver lodes, in the Yerranderie Division. In this field rich galena occurs in bunches, but the deposits are very variable in width and composition. Owing to the

excessive cost of transport, only high-grade ore is sent away, and a considerable quantity of second-grade is left in the mines or dumped at the surface for future treatment. The operations of the mines on this field since 1900 are shown in the following statement:—

Year.	Ore raised and sold.	Metallic contents of Ore.			Net value received.
		Gold.	Silver.	Lead.	
	tons.	oz.	oz.	tons	£
1900	616	101	58,527	118	9,125
1901	152	174	85,017	125	11,600
1902	1,553	306	146,018	229	18,373
1903	1,293	308	145,275	217	18,304
1904	3,733	550	263,621	448	32,068
1905	3,527	707	243,403	451	37,599
1906	2,473	557	223,572	430	39,156
1907	4,469	862	479,243	1,005	80,582
1908	7,402	1,293	828,129	1,892	114,029
1909	6,650	1,231	719,264	1,654	99,374
1910	7,338	1,399	783,295	1,873	113,071
1911	6,606	1,025	728,340	1,674	105,600
1912	7,055	1,438	676,095	1,906	121,859
1913	5,163	1,070	475,863	1,458	77,546

On an average 290 miners were employed in the division during last year, and the machinery on the field is valued at £26,000.

Other Fields.

The other fields which contributed to the output of silver-lead ores include the Kangiara mines, in the Yass Division, where 2,602 tons of ore were raised in 1913. The metallic contents were estimated as follows:—Silver, 12,620 oz.; gold, 162 oz.; lead, 151 tons; and copper 101 tons. The gross value of the ore was £12,220.

In the Condobolin Division during 1913 the Iodide (Mineral Hill) Company raised 2,892 tons of ore, estimated to contain, gold 318 oz.; silver, 114,045 oz.; and lead, 396 tons, the total value being given as £20,240.

The Cobar copper mines, of which details are given in connection with copper mining, yield large quantities of silver and lead, the figures for 1913 being silver 125,297 oz., and lead 1,475 tons.

COPPER.

Ores of copper are worked chiefly in the central part of the State, between the Macquarie, Bogan, and Darling Rivers. Deposits occur also in the New England and Southern districts, as well as at Broken Hill, thus showing a wide distribution.

The principal useful ores are native copper, found in most of the cupriferous deposits; red and black oxides; grey and yellow sulphides; and green and blue carbonates of copper.

The earliest effort to develop copper-mining in this State dates from 1844, and in 1851 the first geological examination of the known copper deposits of the State was made by Surveyor Stutchbury. As with the development of mining generally, but particularly with the copper-mining industry, disadvantages of distance from commercial centres, and lack of transport facilities, militated against steady development, and in the majority of cases, after the extraction of the richest oxidised ores in the upper levels, the mines closed down, especially when the market value of the metal showed any

tendency to depreciate. Since 1894 an increasing demand for copper for industrial purposes has assured a fair price, and with extension of transport facilities and improvement in methods of treatment, particularly of low-grade sulphide ores, copper has advanced to third place in the aggregate value of production from the metal mines of the State, the total output of metal and ore being assessed at nearly 12½ millions at December, 1913.

Production of Copper.

The copper lodes of New South Wales contain ores of a high grade as compared with those of many well-known mines worked in other parts of the world; and, given a fair price and transportation facilities, are capable of yielding satisfactory returns. The net export of copper ingots, matte, regulus, and ore is taken as the production of the State. The quantities and values are shown below from the year 1858 to the present time:—

Period.	Quantity.		Value.
	Ingots, Matte, and Regulus.	Ore.	
	tons.	tons.	£
1858-1879	14,876	2,102	1,067,670
1880-1884	23,715	19	1,554,326
1885-1889	15,169	537	778,804
1890-1894	10,195	1,738	454,765
1895-1899	25,408	852	1,286,094
1900-1904	32,173	8,791	2,014,040
1905-1909	41,425	3,057	2,972,253
1910	8,435	4,455	486,257
1911	10,618	1,482	590,102
1912	8,990	2,044	579,791
1913	9,153	508	598,733

For the year 1913 the total value, £598,733, represents £595,826, value of ingots, matte, and regulus, and £2,907, value of copper ore.

The copper-mining industry reached its highest point of production in 1906, when the value of the output was £789,527. The year of highest production previously was 1883, when copper to the value of £472,982 was obtained; but in the following years the industry rapidly declined through the heavy fall in the price of the metal, till in 1894 the year's production was valued at £63,617, the average price of the metal for the year being only £40 per ton. During the last decade the average production has been maintained on a high level, far in advance of that of any other decennial period.

At Great Cobar the furnaces were idle for about two months of the year 1913 on account of failure of the water supply, consequently the production of copper was not so great as it would otherwise have been at these mines.

In 1913 the Cadia Copper Mine produced 832 tons of copper, valued at £54,159, and the Lloyd Mine, Burruga, furnished a satisfactory output valued at £92,070, although at this mine there was a shortage of miners, boollers, and truckers.

At the Crowl Creek-Shuttleton Mines in 1913 the ore smelting amounted to 4,513 tons, which yielded 118 tons of copper valued at £6,743. The Mouramba Copper Mines at Nymagee smelted 2,813 tons of ore estimated to contain 101 tons of copper valued at £6,868. The estimated output from the Kylee Copper Mine during four months of the year 1913 amounted to 153 tons valued at £9,710. In the Dandaloo Division the various mines were worked during the year.

Upon reference to the return of the smelting and refining works it will be seen that during 1913 the metals produced at the works of the Electrolytic Refining and Smelting Company, Port Kembla, included 14,388 tons of copper valued at £944,160, obtained, however, principally from mattes and ores imported from other States, chiefly from Queensland. 463 tons of copper, valued at £30,385, were obtained at the smelting works at Waratah from 1,803 tons of purchased ore mined in New South Wales.

Cobar Field.

The Cobar mines constitute the chief centre of the copper-mining industry, contributing over 65 per cent. of the value of the year's production. From the point of view of combined output, the gold-copper mines worked in the Cobar district rank next, in value of production, to the silver-lead mines of the Broken Hill field. The following statement shows the quantities and values of the minerals taken from the Cobar field in each of the last ten years:—

Year.	Quantity.				Value.				
	Gold.	Silver.	Copper, Metal, and Ore.	Lead.	Gold.	Silver.	Copper, Metal and Ore.	Lead.	Total.
	oz. fine.	oz.	tons.	tons.	£	£	£	£	£
1904	61,730	50,334	3,825	...	262,213	5,033	233,510	...	503,756
1905	54,480	91,440	6,303	225	231,418	9,366	444,858	3,000	688,642
1906	52,746	80,751	5,950	957	224,052	10,034	516,320	17,416	767,822
1907	53,946	84,375	5,647	317	229,150	10,117	474,681	4,258	718,206
1908	64,082	90,218	6,099	...	272,204	9,343	347,429	...	628,976
1909	58,047	79,887	5,680	...	246,567	5,991	253,378	...	505,926
1910	61,328	114,467	6,270	37	200,506	8,710	282,318	485	552,049
1911	62,591	125,276	6,611	147	265,870	9,463	370,109	1,911	647,353
1912	66,801	275,861	6,848	1,420	283,751	28,784	410,155	23,393	746,083
1913	63,414	125,297	6,405	1,475	269,367	13,633	391,914	19,950	694,864

The history of development of the Cobar lode dates from 1869, when specimens of copper were discovered in the district. In 1870 a mineral conditional purchase of 40 acres was worked; and between 1870 and 1876, when the Great Cobar Copper Mining Co. (Limited) was formed, some 3,000 tons of ore were sent *via* Bourke and Darling River to Port Adelaide for smelting. In 1889 the collapse of the world-wide copper boom interrupted a period of progressive development, and operations were suspended; in 1891 a branch of the main Western railway was extended to Cobar; and two years later the Great Cobar Mine was let on tribute to a syndicate, who successfully introduced a cheaper and more rapid blast-furnace method of reduction. In 1900 the syndicate purchased the mine, and in 1906 sold it to an English company—the Great Cobar (Limited)—which now controls the principal mines of the district.

The Cobar lode forms a low ridge, having a north and south trend, in a country of sandstone and slate, the elevated areas being the direct result of mineralisation, the principal indurating agencies in the high metalliferous areas being silica and iron. The copper sulphides are eminently suitable for pyritic smelting, but up till 1901 the ores as they came from the stopes were roasted.

An assay of Cobar copper made in 1881 revealed 92.65 per cent. copper, also some silver and gold; but, though gold was a known content of the copper ores, no attempt at recovery was made till 1893-4, the copper ore being exported and sold at lower prices than Chilian copper, notwithstanding the gold and silver.

The following statement shows the quantity of ore treated, and the amount of the copper output of the Great Cobar Mine since 1895:—

Period.	Ore treated.	Copper produced.	Period.	Ore treated.	Copper produced.
	tons.	tons.		tons.	tons.
1895-9	401,116	14,160	1911	352,149	6,548
1900-4	599,891	16,010	1912	361,298	6,650
1905-9	934,934	22,432	1913	334,187	5,985
1910	293,324	6,248			

Since 1904 quantities of ore obtained from subsidiary mines controlled by the Great Cobar (Limited), and also purchased ores, are included; to facilitate smelting, the different furnace ores are blended.

Operations at the Great Cobar Mine were hampered during 1913 owing to the difficulty of obtaining skilled labour, and the furnaces worked only for a little over ten months on account of the failure of the coke supply.

TIN.

Tin, unlike copper, is restricted in its geographical and petrological range, and is the rarest of the common metals in commerce.

In addition to alluvial deposits, tin ore occurs *in situ* in granite and adjacent contact rocks, usually occupying fissures or penetrating walls; the majority of the tin lodes yet discovered in the State are on a small scale, but the lodes, developed or undeveloped, are very numerous. The maximum depth attained in the tin lodes of New South Wales is about 360 feet.

Tin is usually contaminated by iron, arsenic, antimony, lead, copper, tungsten, molybdenum, and stannous oxide, but the impurities are removable readily if advantage be taken of the high specific gravity of tinstone, its stability at red heat, and its insolubility in acids. Samples of native tin have been reported in this State, but the common tin ores are cassiterite and stannite. The latter ore was, till the location of deposits at Howell, and later at Tolwong, New South Wales, and at Zeehan, Tasmania, too rare to be commercially valuable. Other ores of tin, caufieldite, cylindrite, franckeite, stokesite, and tealite are comparatively rare.

Tin ore occurs in the extreme Northern, Southern, and Western divisions, but the proved area of workable quantities is limited practically to the western fall of the New England Tableland, with Emmaville and Tingha as the chief centres. It has been discovered also in small quantities in the Barrier district, at Poolamacca and Euriowie; near Bombala, in the Monaro district; at Gundle, near Kempsey; at Jingellic and Dora Dora, on the Upper Murray; in the valley of the Lachlan; and in fine particles in beach sands along the coast, in association with gold, platinum, and monazite.

The earliest reference to tin in Australia was made in September, 1788, by Governor Phillip, who suggested the probability of mining development; and the first record of local occurrence of the mineral was noted by Josiah Wedgwood, in 1790, in a rock specimen sent to him by Governor Phillip. In 1824 W. C. Wentworth included tin as a fossil production of New South Wales; the Rev. W. B. Clarke, writing in 1849, predicted the discovery of tin in abundance; in 1851 he recorded his first authentic discovery of tin ore in the Snowy Range, near Jindabyne; in 1853 he followed up his predictions and discovery by reporting the occurrence of tin in the New England Range.

In subsequent years discoveries were made in various localities, and specimens of tin ore and stream tin were exhibited, but till 1871 the discoveries had no commercial value. In that year large deposits of tin ore were opened up near Inverell; numerous companies were formed, and in 1872 tin ore was smelted at Newcastle.

Much interest was aroused in 1912 by the discovery of stanniferous lodes at Ardlethan, and a large number of claims were taken up. A report by the Government Geologist shows that the lodes occur in granite close to its junction with Silurian slates, and are lenticular in form, varying in width from an inch to several feet. The developmental work was insufficient to serve as a basis of a reliable estimate as to the permanence of the lodes, but surface indications favoured the occurrence of rich deposits of ore separated by patches more or less unproductive. The accumulations have resulted from denudation of the upper portions of the lode; in some cases large masses of ore found on the surface consisted of cassiterite encrusted with a considerable proportion of iron oxide, and yielded from 40 to 50 per cent. of metallic tin. Similar occurrences were worked in neighbouring districts, but have been abandoned owing to the exhaustion of payable ore.

As the available sources of the world's tin supplies are comparatively restricted, and no known important fields await development, the necessity for preserving stanniferous areas for legitimate mining is apparent. In New South Wales these areas are usually rugged and unfit for close settlement, but their grazing capacity can be fully developed without hampering mining activities. In regard to alluvial deposits, the possibility of redredging, after they have been exploited by the modern system of dredging or hydraulic sluicing, is not alluring. As to lode-tin mining, the majority of the innumerable lodes are small, and the tin ore capricious in occurrence; but the principal lodes certainly offer inducement for systematic development work.

Output of Tin.

From the opening of the fields, in 1872, the annual output of tin increased rapidly until 1881, when its value was £568,795, being almost equal to the output of gold for the year, and but slightly behind coal. From 1881 to 1902 the effects of periods of dry weather, and consequent restriction of water supplies combined with fluctuations in the price of metal, tended to make the output very variable from year to year, the minimum output being £45,638 for 1898. Since 1902 the activity which has characterised tin-mining on the various fields throughout the State, owing to the satisfactory prices obtained, has resulted in a steadily increased output value, so that tin has contributed in a very considerable degree to the total production of the mineral wealth of the State, its aggregate yield, in point of value, standing in the fifth place, after coal, gold, silver, and copper.

The output and the value of production of tin since 1872 have been as follows :—

Period.	Ingots.	Ore.	Aggregate Value.
	tons.	tons.	£
1872-1879	18,364	12,996	2,015,407
1880-1884	22,842	2,700	2,194,533
1885-1889	12,974	1,635	1,415,374
1890-1894	7,196	1,040	677,392
1895-1899	4,608	197	342,503
1900-1904	4,220	1,222	617,446
1905-1909	5,567	3,712	1,191,635
1910	847	1,021	228,156
1911	958	971	307,089
1912	900	1,175	338,074
1913	903	2,118	421,292

The figures for 1913 show value of ingots £182,800, and ore £238,492, making the total as above, £421,292.

In the years 1908 and 1909 the value of the output showed a decrease below the records of the preceding years, due to a drop in the market price and to the lesser output of ore principally from the dredges in the Tingha division. Since 1910 the price has risen steadily, and as a result the value of the output has increased, though the quantity is but slightly higher. In 1913 the value of production was £421,292, as compared with £338,074 in the previous year.

The proportion of ore to ingots, as may be seen, has been very variable; and the output of dressed ore from the tin lodes of the State has been comparatively small. Local treatment plants are neither numerous nor extensive, and the industry of tin-dressing has been intermittent and relatively unimportant; the recovery and cleaning of alluvial tin ore form a simple process in the early stages, but become more complicated in the final steaming stage. In the first year of tin-mining, the crude product of the mines was exported, but with the introduction of local auction sales, penalties for depreciation below a minimum standard forced sellers to remove the heavy associates of tin in the ore. Though the first tin ore from Elsmore, New England, was smelted in 1872, smelting has not been carried on extensively; but, as dressed tin ore is sufficiently pure, very valuable, and of relatively small bulk in proportion to its metallic content, the absence of local smelting facilities does not seriously handicap the export trade.

Dredging for Tin.

Tin dredging was commenced in New South Wales in 1900, at Cope's Creek, near Tingha, and since that year 14,006 tons of tin, valued at £1,513,026, have been recovered by dredges. In the winning of stream tin there were, during 1913, five bucket dredges and forty-one pumping plants employed, and dredging plants furnished a yield of 1,819 tons, valued at £239,958, representing 57 per cent. of the total output. Figures in detail in regard to tin dredging have been given in connection with gold-dredging operations.

The principal leads worked during the year were at Vegetable Creek, near Emmaville; at Tingha; at Wilson's Downfall; and at Deepwater.

During 1913 the plants operating in the Emmaville Division obtained 820 tons of stream tin, valued at £106,444, as the result of the year's work. In the Tingha Division the dredges recovered 711 tons of stream tin valued

at £93,431; the dredges operating in the Wilson's Downfall division recovered 136 tons, worth £20,082. There were also several smaller plants operating in the Bendemeer Division, recovering 43 tons, valued at £6,296; in Glen Innes Division 93 tons, valued at £11,626, were obtained; in the Deepwater Division 16 tons were obtained, valued at £2,080; and a quantity of stream tin was saved by several of the gold dredges.

The following statement shows the growing importance of the Emmaville division in relation to the aggregate output of the dredges during the past five years:—

Year.	Emmaville Division.			Value of Stream Tin won in New South Wales.	Proportion from Emmaville Division of Total Output Value.
	Material treated.	Stream Tin recovered.	Value.		
	cubic yards.	tons.	£	£	per cent.
1909	494,060	405	36,923	146,842	25·1
1910	1,086,200	702	69,074	158,467	43·6
1911	1,183,804	713	83,308	203,095	40·0
1912	1,039,789	744	101,043	223,813	45·5
1913	1,341,977	820	106,441	239,958	44·4

Stannite-bearing Lodes.

As the discovery of the stannite-bearing lodes of New South Wales brought the previously rare ore of stannite into the arena of commercial ores, those lodes are worthy of further notice. At Howell, the stannite ore is associated with galena, zinc-blende, and mispickel; at Towlong also with chalcopyrite.

The Tolwong lode was located in 1904, and an average sample of the best copper ore from all openings yielded copper, 10·23 per cent.; tin, 2·10 per cent.; arsenic, 8·78 per cent.; silver, 2 oz. 15 dwt. 13 grs. per ton; gold, several grains per ton. Mining is still in the developmental stage.

IRON AND IRON ORES.

The commercial ores of iron are classified as follows:—

Magnetic or magnetite.	Spathic.
Red or hematite.	Aluminous.
Brown or limonite.	Chrome.

Apart from the chemical composition and mechanical structure of an ore, and the nature and proportion of impurities it contains, the question of commercial value depends upon the position of deposits, relative to fuel, limestone, and water, and the cost of raising the ore and the means of transport available.

Iron is known to occur throughout New South Wales, principally in the form of magnetite, hematite or goethite, limonite, and bog-iron; deposits of chrome iron are also found. Magnetite, as the richest of the iron ores, contains, when pure, a little over 72 per cent. of available metallic iron. Of a number of analyses made from deposits at Brown's Creek, in the county of Bathurst, where veins of this ore have been opened out, the samples of ore yielded from 48·83 to 61·30 per cent. of metallic iron.

Hematite or goethite occurs in very extensive deposits in the Blue Mountains and Macquarie Ranges, the principal centres explored being situated at Mittagong, Picton, Berrima, Cadia, Lithgow Valley, Wallerawang; in the Rylstone and Mudgee districts; and in the

vicinity of Port Stephens. The results of a number of analyses of this kind of ore denote that it is very rich in metallic iron, containing a proportion of 42·69 to 64·48 per cent., and in the majority of cases over 45 per cent. of metal. A sample of hematite from the Maitland district contained 60·83 per cent. of metallic iron, and another from Mount Pleasant, near Wollongong, analysed during 1891, gave 54·28 per cent. of iron. The value of these deposits is enhanced by their almost invariable occurrence in proximity to limestone and coal beds. It is fortunate, also, that the main lines of railway pass through the regions where the deposits are most easily worked.

Limonite—a variety of brown hematite—occurs principally at Lithgow, Eskbank, and Bowenfels, in the Blue Mountains; in several parts of the Hunter River coal-field; and at Bulli, in the Illawarra district. This ore is usually found very rich in metal, and contains an average of over 50 per cent. of iron, while English clay bands, which are mostly carbonates, contain only about 30 per cent. of metallic substance. It occurs in lenticular layers of no great extent, in the Coal Measures. Bog-iron ore, which is impure limonite, is found principally at Mittagong; and assays of this ore gave a percentage of metal of more than 45 per cent.

Iron Ore Supplies.

Estimates made during 1905 in the Geological Survey Department give the description and quantity of iron-ore then available in the various districts of New South Wales, where the deposits occur. The estimates were prepared on the basis of superficial area, depth to which the ore extends, and average weight of a unit of ore, and were regarded as conservative approximations:—

District.	Description of Ore.	Estimated minimum quantity of Ore.
Bredalbane	Brown ore and hematite	700,000 tons.
Cadia	Specular hematite, magnetite, and carbonate ore.	39,000,000
Carcoar	Hematite and brown ore	3,000,000
Chalybeate Spring Deposits of Southern District.	Brown ore	1,510,000
Cowra	Magnetite	100,000
Goulburn	Brown ore	1,022,000
Gulgong	Magnetite	120,000
Mandurama and Woodstock	Brown ore	609,000
Marulan	Brown ore and hematite	40,000
Mudgee	Brown ore with manganese... ..	150,000
Newbridge, Blayney, and Orange	Brown ore and magnetic ore	150,000
Queanbeyan	Magnetic ore	1,000,000
Rylstone and Cudgegong	Brown ore	443,000
Wallerawang and Piper's Flat	Brown ore	200,000
Williams and Karuah Rivers... ..	Titaniferous magnetite	1,973,000
Wingello	Aluminous ore	3,000,000
	Total	53,017,000

It is noticeable that practically all the known iron-ore permanent deposits of New South Wales are to be found west of the Great Dividing Range.

Of these deposits, the Cadia ironstone beds, 14 miles from Orange, have proved the most extensive yet examined. The ore consists of two classes, oxidised and unoxidised, the former, being chiefly hematite and magnetite, containing from 57 to 65 per cent. of metallic iron. A large

proportion of the ore is of excellent quality, and suitable for the manufacture of steel by the ordinary Bessemer and other acid processes, and compares favourably with some of the best American ores with an admixture of limonite.

The deposits at Carcoar include hematite and magnetite, which contains about 52.67 per cent. of metallic iron, with 11 per cent. silica, but is slightly deficient in phosphorus.

Particular value attaches to these deposits on account of their proximity to the coal supplies of Lithgow and the limestone deposits of Portland.

A large amount of iron ore has been raised from the deposits situated in the Marulan, Goulburn, Bredalbane, Mittagong, and Carcoar districts. At Mittagong, Moss Vale, Picton, and in the Illawarra district, some of the shale and sandstones are highly ferruginous; and in these localities there are also quantities of iron ores deposited through the action of chalybeate springs, which are still active, so that the process of deposition of iron oxide can be seen. The ore is limonite, partly ochreous and powdery and partly compact.

In the Mudgee district there are manganiferous deposits suitable for the production of ferro-manganese.

Apart from the Cadia deposits already mentioned, magnetite, though found in numerous localities, has not been located in deposits capable of yielding great quantities of ore; but particular interest attaches to the titaniferous magnetite deposits in the vicinity of the Williams and Karuah Rivers, on account of their proximity to the northern coal-fields, and to the occurrence of limestone in the locality.

The ore contains from 36 to 52 per cent. of metallic iron, and from 3 to 16 per cent. of titanitic acid, in addition to silica and phosphorus, thus militating against the profitable employment of the ore.

Another magnetic iron ore deposit of importance is that at Queanbeyan, containing, approximately, 1,000,000 tons. With the opening of the Federal Capital railway, this deposit would rank as the second best in New South Wales.

Aluminous iron ores and bauxites have been examined, at Wingello chiefly, but ferruginous bauxites are known to be widely distributed throughout New South Wales, as at Moss Vale, Inverell, and Emmaville; and these are of considerable economic value as furnace charges when rich hematites and other ores are being smelted.

The clayband iron ores of the upper coal measures do not extend over wide areas. They are shales containing varying percentages of ferric and ferrous oxides, and where the shale has become thoroughly impregnated with the iron salts an economic iron ore is obtainable. Spathic ores have not been located in commercial quantities in New South Wales.

In 1911 a Royal Commission was appointed to investigate the iron and steel industry in New South Wales, particularly as to domestic ores for the manufacture of iron and steel, the costs of production, and the approximate cost of a plant capable of producing the whole of the iron and steel likely to be required by the Governments within the Commonwealth. The Commission found that the known iron ore deposits in New South Wales, and in the other States of Australia, are ample in quantity and quality to warrant the outlay of capital in the equipment of blast furnaces, and iron and steel works for manufacturing; that the coalfields in the northern and southern districts of New South Wales can supply suitable coke to meet the maximum demand.

Iron and steel works are in course of construction by the Broken Hill Proprietary Company near Newcastle.

Ironstone Flux.

Varying quantities of iron ore have been despatched from the different producing centres to the smelting works at Dapto and Cockle Creek, and to the ironworks at Lithgow, for use as flux, the gold contents of the ore helping to defray the cost of railway carriage. The estimated quantity of ironstone flux raised during the last ten years is shown in the following table:—

Year.	Quantity.	Value.	Year.	Quantity.	Value.
	tons.	£		tons.	£
1904	8,661	6,628	1909	4,339	3,471
1905	6,801	4,525	1910	1,648	1,321
1906	935	723	1911	1,216	861
1907	10,659	7,707	1912	1,093	761
1908	8,987	6,199	1913	.....	.....

The establishment of ironworks at Eskbank resulted in a greatly increased output in 1907. Owing to suitable ores being obtained, the requirements of the smelting companies have decreased steadily, and in 1913 no ironstone was raised for fluxing purposes.

Iron Oxide.

Parcels of iron oxide are sent from the Port Macquarie, Mittagong, and Goulburn districts to various gas-works for use in purifying gas, the output of iron oxide for the last ten years being as follows:—

Year.	Quantity.	Value.	Year.	Quantity.	Value.
	tons.	£		tons.	£
1904	415	239	1909	4,900	4,948
1905	542	417	1910	1,351	714
1906	584	336	1911	1,586	2,377
1907	1,595	1,961	1912	3,757	4,763
1908	1,827	1,857	1913	3,204	3,563

The total recorded output to the end of 1913 was 26,900 tons, valued at £34,310.

Production of Iron and Steel, and Bounty paid.

Under the Manufactures Encouragement Act, 1908, the Commonwealth Government has provided a bounty, to a total amount of £150,000, on all pig-iron made from Australian ore, and on puddled bar-iron and steel made from Australian pig-iron within the Commonwealth, from 1st January, 1909, to 30th June, 1914; the bounty is payable at the rate of 12s. per ton produced, and the maximum amount payable in any year is £30,000. The bounty paid under these terms, on the output of New South Wales, during the years 1909-13, is as follows:—

Year.	Pig-iron.		Puddled Bar-iron.		Steel.	
	Production.	Bounty Paid.	Production.	Bounty Paid.	Production.	Bounty Paid.
	tons.	£	tons.	£	tons.	£
1909	23,180	13,908	1,930	1,163	1,855	1,113
1910	40,326	24,196	3,334	2,036	3,410	2,046
1911	24,658	14,795	1,789	1,073	2,631	1,580
1912	31,101	18,663	519	329	.....	.....
1913	40,490	24,294	.....	.....	1,038	653

During the year ended 30th June, 1914, an amount of £7,136 was paid as bounty on steel made at Lithgow from Australian pig-iron, and £40,121 as bounty on pig-iron made at Lithgow from Australian ore.

In regard to the bounties paid for production of galvanized iron and wire netting, figures are given in the chapter "Manufacturing Industry" of this Year Book.

The output and value of finished iron, pig-iron, &c., for the last ten years are shown in the following statement:—

Year.	Quantity.	Value.	Year.	Quantity.	Value.
	tons.	£		tons.	£
1904	6,303	80,504	1909	29,762	106,357
1905	4,447	85,693	1910	40,487	161,948
1906	8,000	112,848	1911	36,354	145,416
1907	29,902	178,632	1912	32,677	130,708
1908	40,207	118,224	1913	46,563	186,252

The recorded output of pig-iron, &c., to the end of 1913, was 384,008 tons, valued at £2,300,038. The bulk was made from scrap-iron, but in 1907 the smelting of iron ore was resumed, and the figures given above include the following production from domestic ores:—

Year.	Minerals Used.			Pig-iron.		Steel Ingots.
	Iron Ore.	Coke.	Limestone.	Production.	Value.	
	tons.	tons.	tons.	tons.	£	tons.
1907	31,500	20,873	13,433	18,631	60,550	5,700
1908	51,206	36,134	22,467	30,393	98,777	3,946
1909	46,740	34,785	21,649	26,762	100,357	4,958
1910	72,825	54,619	31,890	40,487	161,948	7,815
1911	58,266	45,178	23,921	36,354	145,416	4,835
1912	55,170	51,102	20,399	32,677	130,708	.....
1913	71,577	60,854	26,251	46,563	186,252	13,608

For the last four years the output was wholly from ores raised in New South Wales; in 1907, 2,831 tons, and in 1908, 5,637 tons of slag were used, in addition to the coke and limestone shown above.

TUNGSTEN ORES.

Tungsten minerals occurring as ores are hubnerite, wolframite, ferberite, and scheelite; and though tungsten is of wide occurrence, the individual deposits in any part of the world are rarely large enough to be commercially important. Australia ranks as one of the chief producers of tungsten ores, which in this State are generally associated with tinstone (cassiterite), bismuth, and molybdenite. The deposits are patchy, but a steady demand during recent years has stimulated the search for payable deposits, especially in the Peel, Uralla, and New England districts.

Hillgrove is the only district in which scheelite is known to exist in commercial quantities; the deposits occur as thin veins and small lenses, and the mining is restricted to comparatively limited enterprises; the ore is of good quality, and carries a large percentage of tungstic acid. The principal deposits of wolfram are situated in the Torrington Division. During 1913 mining for wolfram was carried on in the Yalgogrin Division, and in the Wagga Wagga and Frogmore Divisions; prospecting took place near the Rocky River, in the Tenterfield Division, where some rich wolfram and bismuth ores were obtained.

Scheelite and Wolfram.

The output of scheelite and wolfram in the last ten years is shown in the following statement:—

Year.	Scheelite.		Wolfram.	
	Quantity.	Value.	Quantity.	Value.
	tons.	£	tons.	£
1904	16	1,406	89	8,432
1905	138	10,122	87	7,361
1906	110	7,647	132	9,057
1907	196	23,781	207	26,235
1908	154	11,032	86	6,742
1909	193	14,618	127	11,249
1910	151	15,747	163	16,258
1911	103	11,342	283	29,991
1912	56	4,963	172	16,584
1913	44	4,457	126	13,037

Since the year 1903 the exports of scheelite and wolfram from New South Wales were as follow:—Scheelite, 1,174 tons, value £105,305; wolfram, 1,483 tons, value £145,554.

ANTIMONY.

Ores of antimony are of common occurrence in New South Wales, but the best are located in the Armidale, Bathurst, and Rylstone districts; and at Bowraville, on the North Coast. The principal source of supplies is at Hillgrove, near Armidale, where the lodes occur near the junction of slate and granite. The antimony ore is obtained principally in the course of mining for gold or scheelite, with which it is associated. The chief ore worked is antimonite or stibnite, which occurs frequently in lodes with a quartz gangue; native antimony and occasionally stibnite have been found at the Lucknow mines, near Orange, and other ores occurring frequently are cervanite, jamesonite, dyscrasite, tetrahedrite, and antimonial silver chloride.

Prospectors have been successful in obtaining small quantities of ore in the Kookabookra, Uralla, Maitland, and Barraba divisions, and in the Copmanhurst district; and lodes have been opened and partly worked near Nambucca, Drake, Gulgong, and Razorback. Analyses of antimony ore show from 16.5 to 79.5 per cent. of metal; but the working of the mines is intermittent owing to the unstable market conditions. The output was increased as the result of favourable prices in the periods 1889-92 and 1890-94; in May, 1906, a rise in the price caused the reopening of numerous claims, and mining operations were carried on with great activity throughout the year on the Hillgrove field, and at Bowraville. During the succeeding year, however, the value receded, and has since remained low.

The following statement of the quantity and value of the output of antimony metal and ore during the last ten years will show the fluctuating nature of the industry:—

Year.	Quantity.	Value.	Year.	Quantity.	Value.
	tons.	£		tons.	£
1904	109	503	1909	96	711
1905	388	5,221	1910	97	1,450
1906	2,451	52,615	1911	106	2,010
1907	1,752	46,278	1912	63	355
1908	117	1,141	1913	18	407

The value of antimony ore raised during 1910 was enhanced by gold contents. Owing to the low price ruling for antimony during late years mining for this metal has been practically neglected. The total output of antimony to the end of 1913 is estimated at 16,672 tons, valued at £305,631.

MANGANESE.

Manganese ores have been discovered in various places in New South Wales, but generally in localities lacking transport facilities. Pyrolusite, a manganese dioxide, and psilomelane or wad, are the commonest ores. Other ores, as manganite and diallogite, have been found in the Bathurst district; rhodonite and braunite have been found in several widely-separated districts. Specimens analysed have yielded a very high percentage of metal; but the demand in the State for manganese is small, and prices are unremunerative. Manganiferous iron ores have been located in the Mudgee district.

The value of manganese raised to the end of 1913 is stated at £1,662, the last year of production being 1908, when only 2 tons, valued at £7, were raised.

Assays made during 1911 of samples from Carcoar, Rockley, and Grafton showed 35.49 per cent. manganese. A sample from Trundle gave 47 per cent. metallic manganese, equal to 74 per cent. manganese dioxide; and another from Tilbuster gave 53 per cent. metallic manganese, equivalent to 84 per cent. manganese dioxide.

BISMUTH.

Ores of bismuth, which is a rare metal, have been located in various districts in New South Wales. In workable quantities bismuth has been found, associated with molybdenite, tin, and gold, in quartz-veins, chiefly in the neighbourhood of Glen Innes, the principal mines being situated at Kingsgate. Rich argentiferous ores have been obtained, the lode consisting of soft granular felspar matrix, impregnated with blotches of bismuth, molybdenum, and chloride of silver. At the Ten-mile, and on Cadell's property, in the Deepwater Division, bismuth is present in association with molybdenite and wolfram ores. The total bismuth metal and ore exported during the last ten years is shown below:—

Year.	Quantity.	Value.	Year.	Quantity.	Value.
	tons.	£		tons.	£
1904	40	12,329	1909	9	1,624
1905	55	20,763	1910	6	2,304
1906	25	5,700	1911	8	1,800
1907	16	5,268	1912	6	1,210
1908	9	2,017	1913	9	1,202

The total value of bismuth, the product of New South Wales, exported up to the end of 1913 was £129,739, representing 550 tons of metal and ore. At Whipstick, in the locality of Pambula, 55 tons of bismuth ore raised and treated in 1913 yielded 4 tons of concentrates, valued at £739.

MOLYBDENUM.

Molybdenum is used chiefly in the preparation of special steels, its influence being similar to that of tungsten, but it gives greater toughness, and the steel so treated is more readily worked when hot, and stands hardening better than tungsten steel. Molybdenite, the principal ore of molybdenum, occurs most plentifully in pipe-veins at Kingsgate, near Glen Innes, and at

Whipstick, near Pambula; in both these localities, and in the locality of Deepwater, it is associated with ores of bismuth. In 1913 a promising discovery of molybdenite, associated with other minerals, was made in the Tenterfield Division.

The following statement shows the quantity and value of molybdenite exported during the last ten years:—

Year.	Quantity.	Value.	Year.	Quantity.	Value.
	tons.	£		tons.	£
1904	25	2,726	1909	28	3,219
1905	20	2,507	1910	48	5,667
1906	33	4,798	1911	21	2,591
1907	22	3,564	1912	57	3,705
1908	9	920	1913	79	6,802

The total quantity of molybdenite exported since 1902 was 383 tons, valued at £42,838.

PLATINUM.

Platinum occurs in several districts of New South Wales, but platinum mining, in comparison with other branches of mining, and for less valuable ores, is unimportant. The productive deposits are, however, only of comparatively recent discovery. Platinum was traced in 1878 in the auriferous sands on the northern beaches, and in 1894 the beach sands of the Evans River were investigated, small quantities of platinum having been obtained from these beach deposits. On the Fifield gold-field, in the Parkes district, the metal is found associated with the gold in washdirt. The platinum occurs in coarse, shotty grains.

The following table shows the quantity and value of platinum won in New South Wales during the last ten years:—

Year.	Quantity.	Value.	Year.	Quantity.	Value.
	oz.	£		oz.	£
1904	535	1,070	1909	440	1,720
1905	398	825	1910	332	1,418
1906	205	623	1911	470	2,999
1907	276	1,014	1912	610	3,880
1908	135	439	1913	442	3,135

The quantity of platinum produced to the end of 1913 was 13,432 oz., valued at £32,145.

Iridium and osmium are metals closely allied to platinum; their occurrence has been noted in the alluvia of the goldfields and in the sands at Bingara, Mudgee, Bathurst, and other places.

CHROMIUM.

Chromite, or chromic iron ore, is the only commercially important ore of chromium which is an accessory constituent of a variety of minerals; it has been found usually associated with serpentine in the northern portion of New South Wales, in the Clarence and Tamworth districts, also near Gundagai; the principal mines are at Mount Lightning, in the Mooney Mooney Ranges, about 18 miles from Gundagai. The uses of chromium may be classified as follows:—Metallurgical—in the manufacture of alloys and furnace linings; chemical—as a constituent in colouring materials, mordants, oxidising agents, and tannages.

The chrome mining industry dates from 1882, the first attempt being made at the Peel River, but the low prices obtainable and the difficulty of transportation prejudicially affected the industry. The quantity produced during 1899—5,243 tons, valued at £17,416—is the highest recorded as the annual output. In 1900 the production fell to 3,285 tons, valued at £11,827, the decrease being due to the exhaustion of the smaller deposits. During 1907, 30 tons, valued at £105, were used in the lining of furnaces. The mines were not worked again till 1911, when 150 tons, valued at £300, were raised; in 1913 the output was 500 tons, valued at £500. The total production to the end of 1913 was 31,335 tons, valued at £101,968.

COBALT AND NICKEL.

Cobalt and nickel are usually associated in the same minerals, and traces of both metals have been found in several districts in New South Wales, but workable quantities have been located in very few places.

Deposits of cobaltiferous minerals have been found at Bungonia, Carcoar, and Port Macquarie; but the market for the metal is small. The only deposits worked during recent years are at Port Macquarie, where the ore occurs in nests or pockets in serpentine and the overlying clays resulting from its decomposition; but the irregularity of occurrence prohibits profitable working, and operations were discontinued in 1904. An average sample assayed cobalt oxide 7.48, and nickel oxide 2.39 per cent. The output of cobalt during 1910 was valued at £55, the ore being obtained from an abandoned side at Bungonia. During the last three years no ore was raised, and the value of the total production to the end of 1913 was £8,065, representing 885 tons of ore. No production of nickel is recorded.

MERCURY.

Cinnabar, the most important ore of mercury, occurs in numerous localities in New South Wales, but it has not been discovered in a sufficiently concentrated form to enable it to be profitably wrought. In 1869 a deposit near Rylstone was opened up, but extensive prospecting operations met with little success. Cinnabar has been discovered also at Bingara, Orange, and Broken Hill, and at Woolgoolga, Yulgilbar, and Pulganbar, in the North Coast division; recent operations have been confined to the last-mentioned two fields.

The total production of quicksilver is 1,010 lb., valued at £126, extracted in 1903 from 40 tons of ore raised at Yulgilbar, where there is an extensive occurrence of low-grade ore.

During the years 1908-11 assays of ores from Pulganbar disclosed, in many instances, a high percentage of mercury. At the end of 1912 it was estimated that 2,000 tons of ore had been raised, and experiments were being conducted with the object of reducing the heavy cost of treatment.

There is a considerable demand for mercury on account of its use in the metallurgy of gold and silver, especially in the recovery of gold by amalgamation.

As an encouragement in the search for quicksilver ores, the Government of New South Wales has offered a reward of £500 for the production of 50,000 lb. of quicksilver from domestic ores.

OTHER METALS.

A specimen of uranium ore was found some years ago in the dump at the old cobalt workings at Carcoar, and again, in 1912, radio-active ores were noted, but no exploratory work has been done.

Tellurium has been discovered at Bingara and other parts of the northern districts, as well as at Tarana, on the Western railway line,

though at present only in small quantities, which would not repay the cost of working. It has been found also at Captain's Flat in association with bismuth.

Selenium has been discovered at Mount Hope, also in association with bismuth.

Aluminium is not included in the specified mineral output, but, in view of its constantly increasing use in manufactures, it is interesting to note that the ores from which it is made occur in great abundance in New South Wales. All clays are composed mainly of hydrous silicate of alumina, and these are of common occurrence, but the metal may be obtained at less cost from some other minerals.

Bauxite, which is considered the most suitable mineral for the manufacture of aluminium and its alloys in commercial quantities, has been located in extensive deposits at Wingello, in the county of Camden, and in the Inverell and Emmaville districts. It is of volcanic origin, and is generally found capping small hills. Near Inverell bauxite has been used extensively for making roads, with very satisfactory results. Alunite also contains a high percentage of alumina, but the yield obtained in New South Wales is used chiefly in the manufacture of alum.

SMELTING AND REFINING.

Information in regard to smelting and ore dressing is given in connection with that section of the Manufacturing Industry of this Year Book which relates to metal works and machinery.

COAL.

The coal-fields of New South Wales are of much greater importance as to area and as to quality of the coal than in any other part of Australia. The coal-bearing rocks within the State have been classified as follows:—

Geological Age.	Maximum Thickness of Coal-bearing Strata (Approximate).	Locality.	Character of Coal.
Tertiary—Eocene to Pliocene.	ft. 100	Kiandra, Gulgong, Chouta Bay, &c.	Brown-coal or lignite.
Mesozoic—Triassic or Trias-Jura.	2,500	Clarence and Richmond Rivers.	Suitable for local use only.
Palaeozoic—Permo-Carboniferous.	13,000	Northern, Southern, and Western Coal-fields.	Suitable for gas-making, steam-raising, and household use.
Palaeozoic—Carboniferous.	10,000	Stroud, Bullahdelah ...	Inferior.

The coal deposits of the Tertiary rocks, which have been found in the deep alluvial leads of many of the gold-fields, are not of any commercial value.

The Mesozoic coal measures occupy a considerable area in the Clarence River basin, and extend into Southern Queensland, where valuable seams are worked at Ipswich. Within New South Wales, however, the seams are thin, and interspersed with shale bands. The Clarence River coal is remarkably free from sulphur, and comparatively smokeless; it contains a large proportion of fixed carbon, but on account of the high percentage of ash it is not of commercial value, and is suitable only for local use.

The Permo-Carboniferous rocks, which contain the productive coal seams, are estimated to extend over an area of 28,000 square miles, north, west, and south of Sydney, the coal measures occupying about 16,550 square miles. It

is impossible to determine the quantity of available fuel in these measures, but it has been estimated by the Government Geologist that, within a depth of 4,000 feet, there are 115,347 millions of tons of coal. This estimate allows for one-third loss in working, impurities, &c.

The main coal basin extends along the coast from Port Stephens on the north, to Ulladulla on the south, and thus has a seaboard of 200 miles, which enhances the value of the deposits by conducting to easy shipment and the development of oversea trade. From Ulladulla the basin trends inland to the west, and north-west as far as Rylstone, whence the boundary line extends northwards beyond Gunnedah, and then runs in a south-easterly direction to Port Stephens. The widest part of this area is between Rylstone and Newcastle—100 miles; the basin is deepest in the neighbourhood of Sydney, where the uppermost seam is nearly 3,000 feet below the surface.

From Sydney the measures rise gradually in all directions, and emerge to the surface at Newcastle on the north, at Bulli in the Illawarra district to the south and at Lithgow in the Blue Mountain region to the west.

The Permo-Carboniferous rocks have been classified in descending order as follows:—

Classification.	Thickness.	Coal Content Workable (approximate).
	feet.	feet.
1. Upper or Newcastle Coal Measures	1,400-1,500	35-40
2. Dempsey Series (freshwater beds)	2,200	.....
3. Middle, or Tomago, or East Maitland, Coal Measures...	500-1,800	18
4. Upper Marine Series... ..	5,000-6,400	.....
5. Lower or Greta Coal Measures	100-300	20
6. Lower Marine Series... ..	4,800	.....

The upper or Newcastle coal measures show the greatest surface development. Their seams outcrop at Newcastle, Bulli, and Lithgow, and extend continuously under Sydney, the deepest portion of the basin.

In the northern coal-field twelve seams have been discovered in these measures, five being worked; in the southern, five distinct seams are known, but two only have been worked; of the seven seams traced in the western field three only have proved of commercial value. After many unsuccessful boring operations, the uppermost seam of the Newcastle measures was located under Sydney Harbour in 1891, and is now worked at a depth of nearly 3,000 feet.

The coal obtained at Newcastle is specially suitable for gas making and for household use; the coal from Bulli and Lithgow is essentially steam coal—the southern produces a strong coke, specially suitable for smelting purposes by reason of its capacity for sustaining the weight of the ore burden in a blast furnace, and it contains less ash than the western. The coal obtained at the Sydney Harbour Colliery is also a good steam coal, and may be loaded direct into oversea steamers from a wharf near the pit's mouth.

In the western and southern fields the upper coal measures contain deposits of kerosene shale, a variety of torbanite, cannel coal, or boghead mineral. It is used extensively for the manufacture of kerosene oil, and for the production of gas. Deposits of kerosene shale, though much less extensive, occur in the upper and Greta measures of the northern coal-field.

The middle coal measures outcrop near East Maitland, but do not appear in the western field; their occurrence in the southern field has not been definitely proved.

The lower or Greta measures outcrop over an irregular area in the neighbourhood of Maitland, and have been traced with intervening breaks as far north as Wiugen; they occur as an isolated belt to the north of Inverell, and extend through Ashford, almost to the Queensland border. These measures have been located in the Clyde Valley, in the extreme southern portion of the Illawarra field, but do not occur in the western. The coal of the Greta measures is contained in two seams, and is the purest and generally the most useful obtained in the State, being of good quality, hard, and economical as regards working. The Greta seams are worked extensively between West Maitland and Cessnock, in the most important coal-mining district in Australasia, and yielded over one-third of the total output of New South Wales coal in 1913.

Development.

The earliest record of the location of coal in New South Wales dates back to August, 1797, the discovery being made at Coalcliff, near Wollongong, and was shortly followed by the discovery of seams of coal in the cliffs at Newcastle; the total quantity of coal raised between that date and 1829 is estimated at 50,000 tons.

In 1826, the Australian Agricultural Society obtained from the Crown a grant of 1,000,000 acres of land, with the sole right of working the coal-seams known to exist in the Newcastle district, and several mines were opened with profitable results for a number of years; but it was not until the expiration, in 1847, of the monopoly enjoyed by the company, that the coal-mining industry showed signs of extensive development.

During the latter year the output of coal reached a total of 40,732 tons only, valued at £13,750. Six years afterwards the production was doubled, and the output increased rapidly year by year, exceeding 1,000,000 tons in 1872, and thereafter steadily increasing till the production for the year 1913 amounted to 10,414,165 tons, valued at £3,770,375, being a record in the history of the State's coal-mining industry. The average price secured at the pit's mouth in 1913 was 7s. 3d. per ton.

Production of Coal.

The following table shows, in quinquennial periods since 1880, the quantity and value of coal raised in New South Wales from the earliest record to the close of 1913 the total production being 192,010,145 tons, valued at £72,858,063.

The figures are exclusive of coal used in the manufacture of coke, particulars as to which are quoted elsewhere in this chapter:—

Period.	Quantity.	Value at Pit's Mouth.	Average per ton.
	tons.	£	s. d.
Prior to 1880	20,697,747	11,056,723	10 8
1880-4	10,615,625	4,672,569	8 10
1885-9	15,490,611	7,077,864	9 2
1890-4	17,830,177	6,811,568	7 8
1895-9	21,334,976	6,048,281	5 8
1900-4	29,792,589	10,369,050	7 0
1905-9	39,083,328	13,234,796	6 9
1910	8,173,508	3,009,657	7 4
1911	8,691,604	3,167,165	7 3
1912	3,885,815	3,660,015	7 5
1913	10,414,165	3,770,375	7 3

The following statement shows the quantity of New South Wales coal consumed in Australia, including bunker coal taken by interstate vessels, and the oversea exports, during the last eight years:—

Year.	Consumed within Commonwealth.			Exported Oversea—			Total Production.
	Domestic Consumption	Sent to other Australian States.	Total.	As Cargo.	As Bunker Coal.	Total.	
	tons.	tons.	tons.	tons.	tons.	tons.	tons.
1906	2,664,822	1,902,712	4,567,534	2,057,381	1,001,447	3,058,828	7,626,362
1907	2,914,417	2,019,959	4,934,376	2,644,507	1,079,041	3,723,548	8,657,924
1908	3,048,319	2,267,218	5,315,567	2,558,366	1,273,092	3,831,458	9,147,025
1909	2,626,276	1,814,705	4,440,981	1,580,564	998,334	2,578,898	7,019,879
1910	3,483,075	2,098,742	5,581,817	1,700,184	891,507	2,591,691	8,173,508
1911	3,667,524	2,149,630	5,817,154	1,686,482	1,187,968	2,874,450	8,691,604
1912	3,832,697	2,514,970	6,347,667	2,150,600	1,387,548	3,538,148	9,885,815
1913	4,182,441	2,762,186	6,944,627	2,097,097	1,372,441	3,469,538	10,414,165

The variation in the proportion of the total production used for domestic consumption is shown in the following percentages:—

Year.	Proportion of Output.		Oversea Exports.
	Used for Domestic Consumption.	Sent to other Australian States.	
	Per cent.	Per cent.	Per cent.
1906	34·94	24·95	40·11
1907	33·66	23·33	43·01
1908	33·32	24·79	41·89
1909	37·41	25·85	36·74
1910	42·61	25·68	31·71
1911	42·20	24·73	33·07
1912	38·77	25·34	35·89
1913	40·16	26·52	33·32

Coal-cutting by Machinery.

The machine-cut coal in 1913 represented 27 per cent. of the total output. Of the machines in use, 153 were driven by electricity, and 80 by compressed air; though not so cheap or convenient as electricity, compressed air is safer where there is any possibility of explosions of fire-damp and coal-dust.

Following are the records of machines operating and coal obtained during the last five years:—

Year.	Machines driven by—			Coal obtained by machines driven by—		
	Electricity.	Compressed Air.	Total.	Electricity.	Compressed Air.	Total.
				tons.	tons.	tons.
1909	96	67	163	1,169,203	507,338	1,676,541
1910	112	69	181	1,691,986	558,284	2,250,270
1911	128	74	202	2,074,767	562,905	2,637,672
1912	135	79	214	2,189,968	706,644	2,896,612
1913	153	80	233	2,203,265	633,451	2,836,716

Coal Exports.

The decrease apparent in the export trade during the years 1909-11 is attributable in great part to strikes and industrial difficulties. The proportion of the production consumed in Australia in 1913 was 67 per cent., and the overseas exports amounted to 33 per cent.; the local consumption is advancing with the growth of population, the increasing use of electric-power plants, the extension of railways, manufactures, smelting, and other industries, and the multiplication of gas works. The quantity exported to each oversea country, in the last six years, is shown below; only the coal taken as cargo has been included:—

Country.	1908.	1909.	1910.	1911.	1912.	1913.
	tons.	tons.	tons.	tons.	tons.	tons.
New Zealand	285,043	240,345	228,023	211,160	387,391	477,605
Fiji	44,649	31,623	36,267	32,453	30,256	35,386
Straits Settlements	217,809	150,380	140,620	131,029	113,376	155,393
India	164,352	68,027	67,763	38,165	123,330	63,324
Hong Kong	86,632	40,277	9,584	.....	294	.....
Manritius	791	3,475	5,020	.....	3,243	416
Union of South Africa	1,249	1	947	.....	.....	.....
Canada ... .. .	.....	1,841	.....	.....	53	16,538
United Kingdom	48	29	.....	.....	30	81
Papua	422	691	404	.....	1,185	2,709
Ocean Island	10	.....	621	4,631	5,906	6,211
Other British Possessions	23,946	69	.....	1,530	7,141	.....
Total, British Possessions	824,951	536,758	489,249	419,968	672,205	757,663
Chile	789,620	469,420	553,302	619,806	850,017	688,578
United States of America	188,498	106,777	202,474	180,769	103,609	93,755
Philippine Islands	351,441	224,651	199,509	156,280	104,570	49,502
Hawaiian Islands... .. .	65,918	65,769	64,016	53,201	61,979	87,518
Peru	78,223	41,450	41,796	64,559	65,447	53,926
Java	87,226	64,160	92,343	134,742	211,316	267,382
Mexico	55,732	18,522	20,202	22,659	20,858	44,629
Panama	15,528	.....	.....	.....	.....	.....
New Caledonia	10,079	6,228	7,712	16,683	21,706	12,329
South Sea Islands... .. .	5,911	6,019	1,825	870	1,273	13,623
Ecuador	36,092	12,734	6,927	4,235	9,876	8,433
China	43,394	15,608	2,105	6,125	788	1,553
Other Foreign Countries...	5,753	12,468	18,724	6,585	26,956	18,206
Total, Foreign Countries	1,733,415	1,043,806	1,210,935	1,266,514	1,478,395	1,339,434
Total, Export Oversea	2,558,366	1,580,564	1,700,184	1,686,482	2,150,600	2,097,097

The largest exports are to Chile, New Zealand, Java, the Straits Settlements, United States of America, Hawaiian Islands, and India, in the order mentioned.

Coal—Divisional Records.

Northern District.—It has been shown that the northern coalfield contains all three systems of the coal measures, viz.:—Upper or Newcastle, East Maitland or Tomago, and Lower or Greta.

In the vicinity of Newcastle the recently-proved upward rise of the working seams, towards the bed of the ocean, means a definite restriction on the coal supplies available from that locality, and a curtailment of the lives of several mines, as the coal workings beneath the ocean-bed must have a minimum cover of 120 feet of solid rock.

The collieries working in the Maitland-Cessnock district on the Greta seams, located in 1886, have raised some 21,000,000 tons of coal. In nearly all these collieries coal-cutting machines are in use. Geologically, the seams on this area are thick, varying, over many thousand acres, between 15 and 33 feet; the commercially workable portions of the seams average 13 feet.

In the collieries in operation in the Northern district, including the Sydney Harbour Colliery, the quantity of coal raised during 1913 was 7,402,627 tons; the value was £2,892,256.

The following table shows the growth of the coal industry in the Northern district within the last ten years; the number of men employed and the quantity of coal raised have increased steadily during the period:—

Year.	Persons employed.		Quantity of Coal raised.		Value of Coal raised.		
	Above and below ground.	Below ground.	Total.	Per person employed below ground	Total value.	Average value per ton.	Average value per person employed below ground.
	No.	No.	tons.	tons.	£	s. d.	£
1904	10,450	8,217	4,012,739	492	1,450,360	7 2	176
1905	10,595	8,265	4,645,742	562	1,473,995	6 4	178
1906	11,005	8,478	5,336,188	629	1,718,178	6 5	203
1907	12,486	9,692	6,058,550	625	2,231,901	7 4	230
1903	13,228	10,064	6,511,002	647	2,625,446	8 1	261
1909	13,286	10,102	4,891,361	475	1,990,217	8 3	197
1910	12,629	9,401	5,366,975	571	2,178,953	8 1	232
1911	12,334	8,769	5,793,646	661	2,320,673	8 0	265
1912	12,816	9,231	6,913,810	749	2,798,764	8 1	303
1913	13,469	9,959	7,402,627	743	2,892,256	7 10	290

Southern District.—Owing to the demand for southern coal for steam purposes, the trade of this district has greatly improved during recent years, and the increase would doubtless have been more pronounced but for the difficulty experienced in loading vessels. To remove this drawback, the Government is making a harbour at Port Kembla, a few miles south of Wollongong, which, when complete, will enclose an area of 334 acres.

Detail geological survey work is proceeding in the Southern district with a view to greater development. The production during the last ten years is shown in the following table:—

Year.	Persons employed.		Quantity of Coal raised.		Value of Coal raised.		
	Above and below ground.	Below ground.	Total.	Per person employed below ground.	Total value.	Average value per ton.	Average value per person employed below ground.
	No.	No.	tons.	tons.	£	s. d.	£
1904	3,044	2,450	1,558,383	636	436,640	5 7	178
1905	3,050	2,397	1,556,678	649	421,768	5 5	176
1906	3,249	2,510	1,783,395	702	494,871	5 7	195
1907	3,410	2,671	1,835,425	687	515,786	5 7	193
1903	3,587	2,863	1,929,236	674	570,022	5 11	199
1909	3,818	2,999	1,619,675	510	485,300	6 0	162
1910	3,894	3,024	1,875,009	620	576,261	6 2	191
1911	3,889	2,995	2,066,621	630	636,163	6 2	212
1912	3,953	3,030	2,172,800	717	661,512	6 1	218
1913	4,256	3,299	2,031,472	631	638,425	6 1	194

The decreased quantity for the year 1913 was due to the stoppage of work for about seven weeks at the collieries on the South Coast, in consequence of some industrial trouble.

Western District.—The output from this district has expanded largely during the period under review, the increase being due to more regular work, and to the absence of labour troubles. In the early part of 1910 the coal from this district was in great demand, as mines in the other districts were closed.

The average quantity of coal raised per miner is much greater in the Western collieries than elsewhere in the State. This is due to a variety of causes, but chiefly to the greater thickness of the seams, the friable character of the coal, and the accessibility of the coal beds. In some cases the coal is worked by means of adits or tunnels, so that the facilities for winning the mineral are much greater than in the Newcastle mines, where shafts must be sunk in most instances. But though the output is greater per miner than in the other coal-mining districts, the price for hewing is lower, so that the earnings of the individual miner do not differ greatly wherever the mine is situated.

The following table shows the growth of coal production in the Western district during the last ten years. Situated in close proximity to the principal iron-fields of New South Wales, the prospects of these mines are extremely favourable since the manufacture of iron from the ore is now carried on in this part of the State:—

Year.	Persons employed.		Quantity of Coal raised.		Value of Coal raised.		
	Above and below ground.	Below ground.	Total.	Per person employed below ground.	Total value.	Average value per ton.	Average value per person employed below ground.
	No.	No.	tons.	tons.	£	s. d.	£
1904	540	455	418,687	920	108,012	5 2	237
1905	464	392	429,718	1,096	107,698	5 0	275
1906	675	570	506,779	889	124,178	4 11	218
1907	1,184	1,006	763,919	759	174,732	4 7	174
1908	919	737	706,787	959	157,625	4 6	214
1909	1,064	814	593,843	736	143,079	4 9	175
1910	1,098	862	931,524	1,081	254,443	5 6	295
1911	1,152	915	831,337	909	210,329	5 1	230
1912	1,026	828	799,205	965	199,730	5 0	241
1913	1,118	903	930,066	1,026	239,694	5 2	265

Summary—New South Wales.

In New South Wales, calculated on the total value of the production during the decade, the average quantity of 641 tons extracted yearly by each person employed underground represents a value of £223. In 1913 the average value of production was £266 for each person employed below ground.

Year.	Persons employed.		Quantity of Coal raised.		Value of Coal raised.		
	Above and below ground.	Below ground.	Total.	Per person employed below ground.	Total value.	Average value per ton.	Average value per person employed below ground.
	No.	No.	tons.	tons.	£	s. d.	£
1904	14,034	11,122	6,019,809	541	1,994,952	6 8	179
1905	14,019	11,054	6,632,138	600	2,003,461	6 1	181
1906	14,929	11,588	7,026,362	658	2,337,227	6 2	202
1907	17,080	13,360	8,657,924	648	2,922,419	6 9	219
1908	17,734	13,664	9,147,025	669	3,353,093	7 4	245
1909	18,168	13,915	7,019,879	504	2,618,596	7 5	186
1910	17,618	13,290	8,173,508	615	3,009,677	7 4	226
1911	17,375	12,679	8,691,604	686	3,167,165	7 3	250
1912	17,795	13,089	9,885,815	755	3,660,015	7 5	280
1913	18,843	14,164	10,414,165	735	3,770,375	7 3	266

State Coal Mines.

The State Coal Mines Act, 1912, empowers the Government to purchase or resume coal-bearing lands or coal mines and to open and work coal mines upon Crown land or private land containing coal reserved to the Crown, but up to the end of the year 1913 no coal mines were worked by the State.

The coal obtained from a State mine is to be used only by the State Departments.

Prices of Coal.

The average price of coal per ton in the various districts for the last ten years is shown below; in the average for New South Wales, allowance has been made for the quantity raised in each district:—

District.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Northern ...	7 2	6 4	6 5	7 4	8 0	8 3	8 1	8 0	8 1	7 10
Southern ...	5 7	5 5	5 7	5 7	5 11	6 0	6 2	6 2	6 1	6 1
Western ...	5 2	5 0	4 11	4 7	4 6	4 9	5 6	5 1	5 0	5 2
New South Wales	6 8	6 1	6 2	6 9	7 4	7 5	7 4	7 3	7 5	7 3

Proximate Analyses.

Proximate analyses have been made of 194 thoroughly representative samples of coal taken during the three months September-November, 1911, from all the collieries then working in the State. In the larger collieries, at least two samples were taken from working faces as far apart as possible, and in many cases samples were taken also from portions of seams not then being worked.

In the following statement are presented the results of these proximate analyses for the various districts of New South Wales:—

Districts.	Coal Measure.	Samples.	Composition.				Sulphur.	Calorific Value.
			Hygroscopic Moisture.	Volatile Hydrocarbons.	Fixed Carbon.	Ash.		
		No.	per cent.	per cent.	per cent.	per cent.	per cent.	
Northern	Upper, Newcastle	78	2.01	36.01	53.27	8.71	0.468	12.7
„	Middle, Tomago ...	5	1.88	35.71	52.77	9.64	1.185	12.5
„	Lower, Greta ...	51	1.84	41.61	49.52	7.03	1.291	13.1
Southern	Upper ...	35	0.71	23.65	63.98	11.66	0.470	12.7
Western...	Upper ...	25	2.05	32.31	53.08	12.56	0.672	11.9

The average composition of thirty-one samples of coal from seams actually being worked in the Greta coal measures was shown as follows:—

		Per cent.
Hygroscopic Moisture	...	1.89
Volatile Hydrocarbons	...	41.35
Fixed Carbons	...	50.51
Ash	...	6.25
		100.00
Sulphur	...	1.014
Calorific Value	...	13.2

Coal Dust Committee.

In November, 1913, a Committee was appointed by the Government to consider what means could best be adopted to prevent explosions of coal dust being initiated and afterwards carried through the workings of the collieries.

For many years the question of coal dust in relation to colliery explosions has been a subject of controversy, and the report of the investigations of the Committee will be of great value.

COKE.

The quantities of coke manufactured in New South Wales during the last ten years were as follows:—

Year.	Quantity.				Total Value at Ovens.
	Northern District.	Southern District.	Western District.	Total.	
	tons.	tons.	tons.	tons.	£
1904	31,825	139,181	.....	171,006	110,692
1905	25,329	137,632	.....	162,961	100,306
1906	55,991	130,069	.....	186,060	110,607
1907	31,453	210,614	12,542	254,609	159,316
1908	29,132	228,778	25,963	283,873	199,933
1909	23,564	155,443	25,267	204,274	137,194
1910	24,352	207,760	50,225	282,337	189,069
1911	26,376	201,451	36,860	264,687	184,337
1912	27,217	193,893	20,049	241,159	162,454
1913	29,659	239,183	29,770	298,612	208,989

The various districts contributed as follows to the total value of coke manufactured during the year 1913:—Northern, £25,797; Southern, £161,096; Western, £22,096; total, £208,989.

Since 1890, when the value per ton of coke at the ovens was £1 6s. 5d., the price has fallen gradually. The variations in the last twenty years are shown in the following table:—

Year.	Price per Ton.	Year.	Price per Ton.	Year.	Price per Ton.
	s. d.		s. d.		s. d.
1894	19 3	1901	16 5	1908	14 1
1895	17 10	1902	14 2	1909	13 5
1896	16 7	1903	13 7	1910	13 5
1897	14 1	1904	12 11	1911	13 11
1898	15 7	1905	12 4	1912	13 6
1899	16 0	1906	11 11	1913	14 0
1900	17 4	1907	12 6		

In 1913 the average values per ton at the ovens were—Northern, 17s. 4d.; Southern, 13s. 6d.; Western, 14s. 10d.

Coke-making is carried on in each of the three coal-mining districts of the State, but the bulk of the output comes from the southern district, where it is manufactured from coal drawn from the mines in the locality of Wollongong.

All the coke produced is suitable for use in blast furnaces, but the products of the northern and southern districts are harder, better able to carry a load in the furnace, and contain less ash than the coke of

the western district. The plants in the southern district being closer to Sydney, have advantage in railway transit of a lower transport cost than the plants in the northern and western districts.

The following statement shows the number of coke ovens, and the persons engaged in the manufacture of coke in each district during 1913:—

District.	Coke Ovens.				Persons engaged in manufacture of coke.
	Working.	Built, but not Working.	In course of building.	Total Number.	
Northern ...	150	91	...	241	72
Southern ...	470	7	6	483	313
Western ...	148	94	...	242	61

During the year 1913 the coke trade was in a flourishing condition, although production was retarded by the stoppage of work at the collieries on the South Coast from 17th March to 5th May.

The Broken Hill Proprietary Company's coke works at Bellambi, on the South Coast railway line, supply a large proportion of the company's requirements, and are capable of considerable extension. The Mount Lyell Copper Mining Company's coke works are at Port Kembla, also on the South Coast railway line.

In the northern district forty-eight by-product ovens of the "Coppée" and "Otto" principle, the first in New South Wales, have been erected.

In the western district a bunch of eighty rectangular ovens, in connection with the Lithgow ironworks, were working during portion of the year.

OIL SHALE.

Discovery.

Oil-bearing "shale" is found on several horizons and at a number of localities in New South Wales. It has been worked principally at Hartley, Katoomba, Torbane (Airly), Joadja Creek (Mittagong), Mount Kembla, Greta, Colley Creek (Murrurundi), in the Capertee, Jamieson, and Wolgan Valleys. The shale occurs in the same manner as seam coal, but the deposits are confined to smaller areas, the largest hitherto discovered not exceeding 1 mile in length, and varying in thickness from a few inches to 6 feet. Frequently the upper and lower portions of a seam are composed of bituminous coal, the kerosene shale being confined to the central band. The shale is really torbanite or cannel-coal, similar to the boghead mineral of Scotland, but yielding a much larger percentage of volatile hydro-carbon. Its discovery in New South Wales antedated by many years the Scotch discovery which brought the oil-bearing minerals into prominence, the Hartley deposits being located about 1824; in 1854, the natural and industrial products of New South Wales, at the Paris Exhibition, included a sample of brown coal or lignite, highly inflammable, found near Hartley. Again, in 1862, at the London International Exhibition, a combustible schist from Murrurundi, and a bituminous schist from Hartley were exhibited. The first effort to distil oil and other products from the oil-bearing mineral was made in 1863 at Stony Creek, Maitland district. Thereafter, samples of minerals from many localities were investigated, and the question of oil production attracted commercial interest.

Supplies and Quality.

Quantitative estimation of possible kerosene shale supplies in New South Wales is hampered by irregularity of form and capriciousness of occurrence of the known deposits. The remarkable feature about the geographical distribution of deposits is their marginal occurrence in relation to the coal-bearing area, and the comparative abundance of the typical kerosene shale as compared with other countries, *e.g.*, France and Scotland. The known deposits are all in the vicinity of railway lines, and the geological range of kerosene shale may be gathered from the table given previously in connection with the Permo-Carboniferous rocks in the State.

Every known deposit in this State has been discovered by its shed or slipped blocks, and the diamond-drill is the best adapted boring tool for locating the shale, the physical characteristics of which show a wide range; colour varies from brownish to greenish-black, with a streak yellowish to brown, and a lustre dull to satiny in highest grades, and disappearing proportionately with the depreciating quality. The texture also is exceptionally fine, almost amorphous, approaching vulcanite in appearance in the richest grades, and showing coarseness and roughness with depreciation. The shale fractures conchoidally across the planes of bedding, but is capable of being easily split, approximately along planes of deposition, so facilitating trimming and removal. Fusibility varies with the grade of material.

The richest shale at the Joadja mine, near Mittagong, yields about 130 gallons of crude oil per ton, or about 15,400 cubic feet of gas, with an illuminating power equal to forty-eight sperm candles when gas only is extracted from the shale; it has a specific gravity of 1.098, while the best shale from Hartley Vale yields from 150 to 160 gallons of crude oil, or 18,000 cubic feet of gas of 40 candle-power per ton. Its specific gravity is 1.06, the amount of sulphur 0.49 per cent., and the yield of tar 40 gallons per ton. The shale is suitable for mixing with ordinary coal in the manufacture of gas, and is exported to Great Britain, America, and other countries, as well as to the neighbouring States.

Production of Oil Shale.

The production of oil shale, from the opening of the mines in 1865 to the end of 1913, is shown in the following table:—

Period.	Quantity.	Total Value at Mines.	Average Price per ton at Mines.	Year.	Quantity.	Total Value at Mines.	Average Price per ton at Mines.
	tons.	£	£ s. d.		tons.	£	£ s. d.
1865-84	370,217	828,194	2 4 9	1910	68,293	33,896	0 9 11
1885-89	186,465	406,255	2 3 7	1911	75,104	36,980	0 9 10
1890-94	247,387	451,344	1 16 6	1912	86,018	34,770	0 8 1
1895-99	191,763	222,690	1 3 3	1913	16,985	7,339	0 10 9
1900-04	213,163	177,246	0 16 8				
1905-09	213,024	131,456	0 12 . 4	Total ...	1,668,419	2,330,170	1 8 0

The small output in 1913 was due to the fact that no shale was obtained from the Wolgan and Capertee Mines, owned by the Commonwealth Oil

Corporation, and the works of the British Australian Oil Company were closed down for the greater portion of the year, and only a small quantity of shale was raised from their Temi Mine at Murrurundi.

The Shale Oils Bounties Act, passed by the Commonwealth Government during 1910, makes provision for the payment of bounties on the manufacture of kerosene and paraffin wax from Australian shale, under the following conditions:—

Description of Product.	Rate of Bounty.	Maximum amounts which may be paid during the year 1910-11.	Maximum amounts which may be paid during each of the years 1911-12 and 1912-13.	Date of Expiry of Bounty.
Kerosene, the product of shale, having a flashing point of not lower than 73 degrees Fahrenheit	2d. per gallon	£ 8,000	£ 16,600	} 30th June, 1913.
Refined Paraffin Wax	2s. 6d. per cwt.	£ 2,000	£ 4,000	

The following statement shows the total amount of bounties paid in New South Wales during the years 1911-13 under the Shale Oils Bounties Act:—

Description of Product.	Quantity on which Bounty was paid.			Amount of Bounties paid.		
	1911.	1912.	1913.	1911.	1912.	1913.
Kerosene, the product of shale, having a flashing point of not lower than 73 degrees Fahrenheit	gals. 178,920	gals. 452,050	gals. 118,236	£ 1,491	£ 4,017	£ 995
Refined Paraffin Wax	cwt. 6,256	cwt. 6,760	cwt. 6,480	£ 782	£ 848	£ 809

During the year ended 30th June, 1914, the Commonwealth Oil Corporation, Ltd., at Hartley Vale and Newnes, was paid £152 as bounty for kerosene, and £126 for refined paraffin wax; and the British-Australian Oil Co., Ltd., at Hamilton, was paid £51 for refined paraffin wax, the total bounty paid for the year being £329.

The products derivable from kerosene shale vary, according to the temperature and methods of distillation and refining, from heavy lubricating greases and solid paraffins, machine and burning oils, to volatile, naphthaline, gasoline, and permanent gases. In New South Wales oil for the enrichment of water gas, paraffin, and lubricating grease have constituted the principal products prepared, but the value of oil as fuel, in comparison with coal, chiefly in connection with shipping, has so much appreciated in recent years that many steamships trading to this State have been fitted to use oil-fuel, and consequently the demand for the local product should increase considerably. Large quantities of oil manufactured at Hartley Vale have been supplied to the Australian war-ships.

As regards the possibility of locating oil springs in Australia, the absence of any recognisable evidence of oil-bearing strata in the Palæozoic systems of New South Wales induces speculation as to the possibility of locating such strata, *e.g.*, in the north-west, in areas not yet tested by

artesian water bores. In several bores, notably the abandoned artesian bore at Grafton, in the Clarence series, a considerable flow of natural gas has been liberated, and petroleum has been recognised, especially in dry seasons.

DIAMONDS.

Diamonds and other gem-stones in New South Wales were noted as early as 1851 by both Hargraves and Stutchbury, and have since been found to be widely distributed, but no extensive industry has yet been developed, mining operations being restricted to a very few localities. Diamonds occur in old Tertiary river drifts, and in the more recent drifts derived from them. The deposits in the Inverell, Bingara, Mittagong, Cudgegong, Delegate, and Narrabri districts are extensive, but have not yet been thoroughly prospected, the stones found being usually discovered by miners engaged in washing alluvial gravels for gold. The finest of the New South Wales diamonds are harder and whiter than the South African diamonds, and are classified as on a par with the best Brazilian gems. Till 1904 only small stones were obtained, the largest recorded weighing $6\frac{1}{4}$ carats, and though many thousand stones were obtained at Bingara and Cope's Creek, the absence of large sized stones raised doubts as to whether gems of sufficient value would be obtained to render the industry profitable. However, during 1905, at Werong, 30 miles from Oberon, a fine straw-coloured flawless stone was found weighing $28\frac{5}{8}$ carats. Sapphires and zircons are numerous in the wash where this diamond was discovered. During 1904 diamonds were discovered at Oakey Creek, locality of Inverell, embedded in solid dolerite, this being the first known instance of dolerite having been found in any part of the world as the matrix of the diamond.

There is a difficulty in obtaining exact statistics of the production of diamonds in New South Wales. The following table, compiled from the available information, is believed to understate considerably the actual output. The majority of the diamonds have been obtained from the mines in the Bingara and Copeton (Tingha) districts; in recent years the whole output is from the latter district.

Period.	Carats.	Value.	Period.	Carats.	Value.
		£			£
1867-1885	2,856	2,952	1906-1910	16,651	12,374
1886-1890	8,120	6,390	1911	5,771	4,064
1891-1895	19,743	18,245	1912	2,240	2,001
1896-1900	69,384	27,948	1913	5,573	5,141
1901-1905	54,206	46,434			

OPAL.

Common opals occur in many parts of New South Wales, and particularly in the locality of Orange. No commercial value attaches, however, to any variety but the precious or noble opal, which has been found in two geological formations in New South Wales, viz., in vesicular basalt, and in sedimentary rocks of the Upper Cretaceous age. Only from the latter formation have gems in quantity and value been obtained hitherto, the finest opal

known being located in the Upper Cretaceous formation at White Cliffs, near Wilcannia. The following table shows the estimated value of precious opal won in New South Wales to the end of 1913:—

Year.	Value.	Year.	Value.
	£		£
1890	15,600	1902	140,000
1891	.....	1903	100,000
1892	2,000	1904	57,000
1893	12,315	1905	59,000
1894	5,684	1906	56,500
1895	6,030	1907	79,000
1896	45,000	1908	41,800
1897	75,000	1909	61,800
1898	80,000	1910	66,200
1899	135,000	1911	57,300
1900	80,000	1912	35,003
1901	120,000	1913	29,493

The first discovery of precious opal was made in the vicinity of the Abercrombie River in 1877, but the most important find was at White Cliffs in 1889.

In 1896, opal was discovered at Purnanga, about 40 miles north-east of White Cliffs, but the scarcity of water has retarded development. Some very fine parcels of stone have been raised in this locality, and it is considered that Purnanga is the nucleus of a fine opal field should a good water supply become available. A field more recently opened up, Lightning Ridge, near the Queensland border, and known as "Wallangulla," produces black opal remarkable for colour, fire, and brilliancy.

The output during 1913 from the Lightning Ridge field was valued at £19,372, and from White Cliffs £10,121.

Since 1907 the market price for this gem-stone has decreased. During 1912 rich finds were reported from Lightning Ridge, and prospecting was carried on vigorously. There was a ready demand for opal of all grades, the good black variety commanding the highest price.

BERYL AND CORUNDUM AND OTHER GEM STONES.

The emerald is a variety of beryl. So also is the aquamarine. In 1890 emeralds were located in a deposit originally taken up for tin in the vicinity of Emmaville. The emeralds were intercrystallised with topaz, and had a specific gravity of 2.67; beryl has also been found at Elsmore in association with quartz and tiestone; in the locality of Wellington in association with felspar, quartz, and mica; and in alluvial deposits, as at Tingha and Cope's Creek. After the occurrence of emeralds at Emmaville was recognised, a trial shipment of 2,225 carats was sent to London, and some of the gems realised £4 per carat. In 1891 and 1892, gems to the extent of 25,000 carats were raised in each year. Thenceforward, except in 1908, when 1,000 carats of emeralds, valued at £1,700, were obtained in the same locality of The Glen, in the Emmaville division, no further production was recorded. The largest stone in the rough weighed 60 carats.

Varieties of pure corundum include the sapphire, the oriental ruby, topaz, emerald, and amethyst. Specimens of these and other gem-stones, including the ruby, garnet, chrysolite, zircon, &c., have been found in gold and tin-bearing drifts and river gravels in numerous localities throughout the State. Cairngorm and onyx, with other varieties of agate, are found occasionally.

The topaz is obtained at Oban, in the Glen Innes district, but the price realised for the output is low.

Turquoises were discovered in the vicinity of Bodalla in 1894, and developmental work was carried on during 1895 by means of aid granted from the Prospecting Vote. In 1896, however, the mine was closed.

ALUNITE.

Alunite, or alumstone, occurs at Bullahdelah, about 35 miles from Port Stephens, in a narrow mountain range which for more than a mile of its length is composed almost entirely of alunite, of greater or less purity.

Four varieties of alunite are recognised at the mines:—

1. Light pink containing	...	...	1·7 per cent. silica.
2. Chalk-white	...	...	16·4 „
3. Purple	...	...	19·5 „
4. Granular	...	...	39·5 „

Working is confined mainly to the light-pink ore, the yield averaging about 80 per cent. of alum. The stone can be treated more cheaply in England than locally; 2,235 tons, valued at £8,940, were exported during 1913. The quantity and value of alunite, the produce of this State, exported to the end of 1913, is shown in the following statement:—

Period.	Quantity.	Value.	Period.	Quantity.	Value.
	tons.	£		tons	£
1890-4	3,891	16,756	1910	1,136	2,840
1895-9	6,791	21,202	1911	1,006	3,795
1900-4	11,559	33,252	1912	3,425	13,700
1905-9	11,227	27,998	1913	2,235	8,540

During 1910 and 1911, prospecting by means of diamond drilling was carried on at Bullahdelah, with a view to locating further bodies of alunite of payable grade, so as to maintain the export trade; as a result there was a large increase in the quantity exported. Since the year 1890 the quantities and values of alunite, the produce of New South Wales, exported were 41,270 tons, value £128,483. Particulars are not available as to the amount of alum of local production used within the State.

ARSENIC.

In connection with the treatment of small test parcels of gold and silver ores from Moruya, by Oxy-Hydro process, some 2 tons of arsenic were obtained in 1909. In 1910, 200 tons, valued at £950, and in 1911, 300 tons of arsenic were produced in the treatment of ores from the Conrad mine at Howell. The quantity obtained in the last two years was not recorded.

MARBLE AND BUILDING STONE.

New South Wales possesses abundant materials for building purposes, and considerable use is made of domestic supplies, but quarries generally are not subject to mining legislation. Complete records of operations are not readily available, but a return of quarries given on a previous page contains information as to the quantity and value of building stone raised in 1913.

MARBLE.

Beds of marble of great variety of colouring, and with highly ornamental markings, are located in many districts of New South Wales. Much of the marble is eminently suitable for decorative work, and in recent years has won the favour of local builders.

Costs of quarrying and of carriage to Sydney are heavy, and handicap the local marble considerably as compared with importations, which have the advantage of cheaper sea carriage, while most of the quarries worked or proved in New South Wales, being in the western district, have to pay the heavier costs of rail carriage.

During 1913 marble valued at £991 was obtained, principally from quarries at Caloola and Rockley, and from Borenore, in the Orange division.

The total value, at the place of production, of the marble raised to the end of 1913, amounted only to £24,055.

STONE.

Sandstone (Building).

The Hawkesbury formation, which underlies the city of Sydney and outcrops all round Port Jackson, provides an inexhaustible supply of sandstone of the highest quality for building purposes. This stone, which varies in colour from white to light-brown, is admirably adapted for architectural use, being of fine grain, durable, and easily worked. Sandstone is quarried in many suburbs of Sydney.

In the north-west of New South Wales, a good building stone (desert sandstone of Upper Cretaceous age), resembling Hawkesbury sandstone, is used, and somewhat similar freestones are obtained in the Permian-Carboniferous coal measures at Morpeth and elsewhere north of Sydney.

State Sandstone Quarry.

A State freestone quarry was established in 1913 at Maroubra, near Sydney, where a deposit of good "yellow block" stone suitable for the construction of large public buildings has been located.

Syenite.

Syenite, commonly called trachyte, is found at Bowral; as a building material it is equal to granite in solidity, and takes a beautiful polish. It is a fine-grained, hard, crystalline rock, though difficult to dress; in colouring it is light-grey or dark-grey. For building purposes, the short distance from the metropolis at which it is to be found enables it to be used for large structures on comparatively favourable terms.

Granite.

Granite is found at Bathurst, Moruya, Trial Bay, and on Montagu Island, and at many other places throughout the State. Most of the granite hitherto used in Sydney has been obtained from Moruya, a port

141 miles south of Sydney, where the deposits are of dark-grey granite, and are so located as to derive advantage from cheap water carriage. This applies also to the pale-pink granite of Trial Bay and the red granite of Gabo Island.

Road Metal.

Basalt, or "blue metal," suitable for road metal, for the ballasting of railway lines, and for making concrete, is obtained at Kiama, Prospect, and Pennant Hills. From the Prospect quarry the rock can be hewn in large blocks, and sawn into slabs for paving stones.

At Coolabah, Tertiary gravels provide suitable material for roads and pathways, viz., uncompacted gravel to a depth of 3 feet below the surface, and, lower still, a type of cemented gravel. Of the uncompacted superficial gravel, some 25 per cent, is of quartzose material of shape and size suitable for a resilient railway ballast.

Within the metropolitan area, prismatic sandstones occurring in different localities have been worked for road material; but the irregular manner in which the sandstones are altered into quartzites militates against safe estimates, from surface indications, of the quantities available.

State Metal Quarries.

The operations at the Kiama State Metal Quarry resulted during the year 1913 in the production of 100,000 tons of broken stone, 75 per cent. of which was despatched by steamer, and the balance by rail, to the metropolitan area for use by State Departments, municipalities, and contractors. Over 100 men are employed at this quarry, and two colliers of 300 and 370 tons carrying capacity are engaged.

At Port Kembla, 45 miles from Sydney, a large quarry is being worked by the State. During the year 1913 about 30,000 tons of crushed stone was sent away by rail. The plant is being extended to increase the output to 120,000 tons per annum.

Quarry Licenses and Permits.

During the year 1913 there were 1,256 quarry licenses, and 16 permits issued at the Department of Lands, the total revenue received being £389.

LIME, LIMESTONE, AND PORTLAND CEMENT.

Beds of limestone of different geological ages are distributed widely over New South Wales, the best known being in the eastern and central parts of the State. The limestones are worked for the preparation of quicklime as flux in metallurgical processes, for building stones, and for the manufacture of cement.

Limestone flux was supplied to the Broken Hill silver mines from quarries at Torrowangee, about 30 miles distant; but with the transfer of the Broken Hill Proprietary Company's smelting operations to Port Pirie, in April, 1898, the demand for flux ceased, and the quarries closed. Since 1900 considerable activity has been displayed in the mining of limestone for the manufacture of lime and cement at Portland, in the Mudgee district, and in the Rockley division, and at Marulan, Broken Hill, Bulladelah, Taree, Barraba, Parkes, and Peak Hill, where also lime has been produced and a quantity of limestone obtained for flux.

There is a deposit of magnesium limestone (dolerite) in the locality of Mudgee, which was regarded by the Iron and Steel Commission as unique.

The following table shows the quantity of limestone raised for flux in the last ten years:—

Year.	Limestone Flux.		Year.	Limestone Flux.	
	Quantity.	Value at Smelting Works.		Quantity.	Value at Smelting Works.
1934	tons. 24,975	£ 14,434	1909	tons. 45,078	£ 13,851
1905	14,941	9,519	1910	56,933	16,946
1936	12,788	7,463	1911	46,237	12,541
1907	41,667	16,162	1912	33,186	11,066
1938	53,663	14,779	1913	42,664	10,686

The total value of the limestone raised for flux to the end of 1913 was £713,500, representing 1,167,334 tons, and the total value of lime produced to the end of 1913 was £319,355.

Prepared lime for building and other purposes is manufactured at various localities, the largest quantities being supplied by the kilns in the Goulburn and Capertee Divisions; lime was also manufactured in the divisions of Taree, Molong, Grenfell, and Parkes.

Limestone for the manufacture of cement is obtained from quarries in the Capertee division, and the principal works are at Granville and Portland, near Wallerawang. Cement to the value of £2,241,933 has been manufactured to the end of the year 1913. Further details regarding lime and cement works may be found in the chapter "Manufacturing Industry."

State Limeworks and Brickworks.

Information regarding the State Limeworks and Brickworks is furnished in Part "Manufacturing Industry" of this Year Book.

CLAYS, PIGMENTS, &C.

Fireclays.

Fireclays of good quality are found in the Wianamatta shales and in the Permo-Carboniferous measures; and in every part of the State excellent clays, well adapted for brick-making purposes, are worked extensively. During 1913 100 tons of fireclay were raised in the Bathurst division, and used in the manufacture of firebricks, valued at £50.

From Hartley a good output of high-grade silica bricks has been maintained, the approximate value of the output being £3,500 in 1910, and £2,800 in 1911. During 1912, 1,820 tons of quartzite were used in the manufacture of silica bricks, valued at £3,600; during 1913, 3,500 tons of silica were raised, and 780,000 bricks, valued at £7,850, were manufactured. A deposit of silica in the locality of Goulburn is judged suitable for the manufacture of metal polish.

State Brickworks, Homebush Bay.

Particulars regarding the State Brickworks may be found upon reference to Part "Manufacturing Industry."

Kaolin.

Kaolin, or China clay, derived from the decomposition of the felspars in granite, is found in many granitic districts, such as Bathurst, Gulgong, Uralla, and Tichborne, near Parkes. The clay is of excellent quality and superior to the best obtained in England and France.

The output of kaolin from the Mudgee, Cootamundra, Parkes, and Goulburn divisions for 1913 was 1,654 tons, valued at £1,670.

From a deposit in the Goulburn division 200 tons of pottery clay, valued at £115, were raised.

Deposits of pigments are found near Mudgee and Dubbo, and also in the Orange district, where a fair quantity of the raw material, consisting principally of purple oxide and yellow ochre, has been produced. During 1913 20 tons of ochre from the Dubbo district realised £300.

Fuller's Earth.

Fuller's Earth has been located at Boggabri, in the Narrabri division. Trial parcels of the earth, after treatment, realised from £4 to £6 10s. a ton in Sydney. From surface indications, there are some 5 acres of actual outcrop showing Fuller's Earth, but the total extent of the deposit, proved to a depth of between 20 and 30 feet, is considerable; and during 1911 mining operations were commenced, 120 tons of crude earth being raised and dried at the mine. The factory for treatment of the crude earth at Darling Harbour treated 75 tons of earth by levigation and grinding, the product, valued at £5 12s. 6d. per ton, being sold for use in the refining of paraffin wax for candle-making. During 1912, 53 tons of earth were raised in the Narrabri division, and, after treatment, realised £287. No production was recorded during 1913.

In the locality of the Boggabri Fuller's Earth deposits, an extensive deposit of earthy limestone, examined during 1911, proved to consist mainly of carbonate of lime (87·76 per cent.), with a little magnesium carbonate (2·15 per cent.), and some gangue sand and clay. This material is in demand for paint manufacture. A sample of "natural cement" from the same locality showed 38·78 per cent. silica; alumina, 8·18 per cent.; lime, 18 per cent.; and carbon-dioxide, 14·7 per cent.

Steatite.

A deposit of steatite was opened up at Wallendbeen during 1910, and 98 tons were sold; in 1911, 83 tons of powdered material were obtained; and 1 ton of steatite was raised in the Mudgee district. In 1912, 168 tons were quarried at Wallendbeen—57 tons were powdered, and the remainder sold as rough lumps; some parcels of the crude material were shipped to Europe. The Wallendbeen mine yielded 54 tons, valued at £45, in 1913. The local demand has increased since the imposition of a Customs duty on white foundry facing and French chalk, and experiments are being carried out to test the suitability of the Wallendbeen deposits for the manufacture of fire-bricks.

Barytes.

During 1913, 398 tons of barytes, valued at £728, were raised at Lue, in the Mudgee Division and at Cobargo a large quantity was raised, of which 20 tons were sold, realising £20. At Bunyan, in the Cooma Division, 20 tons were obtained. The total quantity of barytes raised in the State during the year 1913 was 438 tons of the value of £748.

A sample of barytes from the vicinity of Gundagai, in 1912, yielded, on analysis, 98 per cent. of barium sulphate; samples from Candelo and Cooma each showed 97 per cent.; and from Germanton and Macksville 95 per cent.

Magnesite.

Magnesite has been found at Fifield, and a large quantity is easily procurable. During 1911, 5,700 tons of stone, estimated to contain 1,950 tons of magnesite, and during 1913 material weighing 7,000 tons were raised, but owing to absence of demand the ore was not treated.

Graphite.

Graphite, or plumbago, occurs in the Walcha division, and at Undercliffe, in the Wilson's Downfall division, where there are several lodes, one of which is 6 feet wide, but of inferior quality. During 1911 60 tons of ore were dispatched from the latter division for shipment to England to test its commercial value.

Slates.

Slates occur at Gundagai, Bathurst, and Moruya. They are commercially worked at Chatsbury in the Goulburn district.

Asbestos.

Asbestos has been found in veins in serpentine in the Gundagai, Rockley, and Barrier Range districts—in the last-named in considerable quantities.

Mica.

Mica is known to exist in many parts of New South Wales, but has not yet been worked, although there is a considerable demand for the article, especially if in blocks of fairly large size that could be split easily into thin plates. It is to be obtained in the numerous granitic areas which occur in various parts of the State, especially in the coarsely-crystalline granitic formations in the Silverton district, and elsewhere in the Barrier Ranges.

ABRASIVES.

Grindstones.

The output of grindstones for 1913 was valued at £170, making a total output value to date of £3,012, and representing practically the value of the export trade.

Diatomaceous Earth.

Diatomaceous earth occurs in extensive deposits at Barraba, Cooma, Wyrallah, on the Richmond River, and at several localities in the Warrumbungle Mountains. Very little work has been done on these deposits owing to the diminished demand for this material. During 1913, 25 tons, valued at £106, were raised at Bunyan, in the Cooma Division.

Emery.

A sample of emery from the locality of Quirindi was analysed in 1911, the result being—alumina, 54.54 per cent.; iron oxide, 31.61 per cent.; titanium dioxide, 4.60 per cent.; phosphoric anhydride, 1.10 per cent.

ROCK PHOSPHATE.

Under the Commonwealth Wood Pulp and Rock Phosphate Bounties Act, 1912, a reward of £1,000 may be granted under certain conditions to the discoverer of any deposit or vein of rock phosphate suitable for making phosphatic manure, provided the deposit or vein be worked, and 10,000 tons of rock phosphate be produced and used in the manufacture of marketable phosphatic manure.

Although an occurrence of phosphatic rock was recorded during 1913 at Wellington Caves, 5 miles south of Wellington, New South Wales, it does not appear to be of economic importance, on account of the presence only of

small nodules of the material in a valueless earthy matrix, the proportion of the latter to the valuable phosphate being approximately 60 to 1. Analysis of certain of these particles yielded in the laboratory at the Department of Mines 28.8 per cent. phosphoric anhydride.

MINING ACCIDENTS.

The number of fatalities during the last five years in the more important branches of mining and the rates per 1,000 employees are shown below:—

Year.	Metalliferous Mines.						Coal and Shale Mines.	Total.
	Gold.	Silver, Lead, and Zinc.	Copper.	Tin.	Other.	Total Metalliferous		
<i>Number of Fatalities.</i>								
1909	4	11	4	...	1	20	14	34
1910	4	17	7	1	...	29	21	50
1911	1	23	10	...	1	35	15	50
1912	8	17	5	1	...	31	30	61
1913	6	30	7	1	1	45	18	63

Per 1,000 Employees.

1909	.72	1.77	1.98	...	.50	1.12	.75	.93
1910	.76	2.12	3.06	.49	...	1.50	1.16	1.34
1911	.22	2.71	4.65	...	.54	1.81	.85	1.35
1912	2.05	1.88	2.10	.38	...	1.66	1.66	1.61
1913	1.68	3.21	2.66	.42	.50	2.26	.95	1.62

During the year 1912 the number of fatalities in connection with gold-mining was much higher than usual, in consequence of an accident at Wyalong, where six miners were asphyxiated by inhalation of carbon dioxide. During 1913 there were eighteen fatalities in coal and shale mines, the result of eighteen separate accidents. In proportion to the number of persons employed the rates were highest in silver-lead and copper mines.

The number of persons seriously injured in mining operations during the last five years, and the ratio per 1,000 persons employed, are shown in the following statement:—

Year.	Metalliferous Mines.						Coal and Shale Mines.	Total.
	Gold.	Silver, Lead and Zinc.	Copper.	Tin.	Other.	Total Metalliferous		
<i>Number of Persons Seriously Injured.</i>								
1909	10	17	14	2	...	43	59	102
1910	7	20	9	...	...	36	109	145
1911	6	20	5	1	...	32	92	124
1912	3	22	6	1	...	32	81	113
1913	1	29	5	1	1	37	74	111

Per 1,000 Employees.

1909	1.79	2.74	6.92	.98	...	2.41	3.18	2.80
1910	1.33	2.50	3.94	...	...	1.86	6.04	3.88
1911	1.29	2.35	2.32	.45	...	1.65	5.21	3.35
1912	.77	2.43	2.59	.38	...	1.61	4.49	2.98
1913	.28	3.10	1.90	.42	.50	1.86	3.90	2.85

In 1913 the coal and shale mines show the highest rates of serious accidents, being 3·9 per 1,000; the rate in silver, lead, and zinc mines was 3·10 per 1,000.

Many of these accidents and fatalities occurring on the surface can scarcely be regarded as true mining accidents. The following table shows the number of surface and under surface accidents in connection with metalliferous mining. As might be expected, the greater number of accidents occur under surface:—

Metalliferous Mines.	Under-surface Accidents.		Surface Accidents.	
	Fatal.	Serious.	Fatal.	Serious.
Gold (quartz)	2	1	3	...
„ (alluvial) ... ..	...	...	1	...
Silver and Lead	23	27	7	2
Copper	3	4	4	1
Tin	1	...	...	1
Other	1	1	...	...
Total	30	33	15	4

In connection with coal mines, in 1913 eight fatal accidents underground resulted from falls in the mines; four were classified as miscellaneous underground accidents, of five surface accidents, one was in connection with machinery and two on railways, &c. During 1913 no accidents resulted from ignition of fire-damp or coal dust, but fire-damp was seen and reported in collieries in the northern and southern districts.

The number of persons killed and seriously injured in the coal and shale mines of New South Wales during the last ten years with the proportion of miners and the quantity of mineral raised, is given below:—

Year	Coal and Shale Mines.					
	Number of persons.		Number of employees per person—		Quantity of Mineral raised to each person—	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1904	12	65	1,180	218	tons. 504,807	tons. 93,195
1905	24	68	589	208	277,932	93,094
1906	21	72	723	211	364,705	105,922
1907	17	99	1,021	175	512,074	87,932
1908	21	111	861	163	435,573	82,523
1909	14	59	1,326	314	504,900	119,807
1910	21	109	859	166	392,467	75,613
1911	15	92	1,177	192	584,447	95,290
1912	30	81	602	223	332,394	123,109
1913	18	74	1,053	256	579,508	140,961

The experience of coal-mining in this State with respect to accidents bears very favourable comparison with that of other countries.

A recent estimate shows that 48·5 per cent. of the total output of coal in New South Wales is obtained from collieries where miners use safety-lamps; and as the workings get deeper this proportion is likely to increase, since with greater depth there is more likelihood of fire-damp.

Considerable improvements have been made in portable electric safety-lamps during late years, and several having passed the necessary tests in Great Britain, their use for underground purposes has been much increased.

Ambulance classes are trained and corps exist in New South Wales for the purpose of promoting among miners a knowledge of first-aid principles. From 1897-1913, 116 classes were enrolled, the minimum membership being ten. The classes formed during 1913 numbered nine.

Interesting information regarding the sickness experience of Friendly Societies in mining districts is given in a later chapter of this Year Book.

LEAD POISONING.

The following return shows the cases of lead poisoning recorded under the Mines Inspection Act during the years 1902-1913:—

All the cases, with the exception of one in the year 1909 from Condobolin, and two in 1912 from Mineral Hill, were reported from the mines in the Broken Hill district. No cases were recorded in 1910, nor in 1911.

Year.	Broken Hill District.		Year.	Broken Hill District.	
	Cases of lead-poisoning.	Total men employed in Silver-lead Mines.		Cases of lead-poisoning.	Total men employed in Silver-lead Mines.
1902	56	4,983	1907	3	8,923
1903	40	5,626	1908	1	6,869
1904	26	6,758	1909	1	5,265
1905	11	7,407	1912	3	8,219
1906	16	8,457	1913	1	8,788

MINERS' ACCIDENT RELIEF FUND.

The New South Wales Miners' Accident Relief Act, 1900, operative since 1st January, 1901, applied originally to all mines in or about which fifteen or more persons were employed; but under an amending Act passed in 1910, it is now applicable also to mines employing less than fifteen but more than five persons.

The Miners' Accident Relief Fund is administered by a board of six members, viz., a chairman and a representative each of (1) owners of coal and shale mines, (2) owners of other mines, (3) persons employed in or about coal and shale mines, (4) persons employed in or about other mines, and (5) the Department of Mines.

The fund is maintained by contributions (1) from each employee, amounting to 4½d. per week, (2) from mine-owners equal to 50 per cent. of the aggregate amount contributed by employees, and (3) a subsidy from the Consolidated Revenue Fund equal to the amount contributed by the owners.

The benefits payable are as follows:—

(a) In cases of fatal accident—(1) Funeral allowance, £12; (2) a weekly allowance of 10s. to the widow or other adult dependent upon the deceased for support; and (3) a weekly allowance of 3s. in respect of each child of the deceased or of each child of an adult dependent, payable until such child attains the age of 14 years.

(b) In cases of disablement—(1) A weekly allowance of 15s. until able to resume work, and, where disablement is adjudged permanent; (2) a weekly allowance of 3s. in respect of each child under the age of 14 years.

The number of distinct mines subject to the Act during 1913 was 202, and at the end of the year 190; the deaths reported as the result of fatal accidents numbered 77, and the disablements 6,184. The allowances to beneficiaries during 1913 were:—Funeral allowances, £844; relief to relatives of deceased persons, £17,080; and to persons disabled, £32,239; the total amount being £50,163.

The beneficiaries on the fund, at 31st December, 1913, in respect of fatal accidents, were 409 adults and 552 children, and in respect of non-fatal accidents, 258 persons permanently disabled, and 221 children.

The allowances payable at 31st December, 1913, in respect of fatal accidents and cases of permanent disablement were at the rate of £30,836 per annum.

A detailed account of the Miners' Accident Relief Fund may be found in another chapter of this Year Book.

SHIPPING.

LEGISLATION AND SUPERVISION.

THE general principle of merchant shipping legislation that a ship is subject to the law of the country in which it is registered is modified by the fact that the various parts of the British Empire have power to regulate their own coasting trade, and further that as regards ships other than those registered locally, and engaged in coastal trade, the legislative powers are restricted to territorial limits, and are therefore inoperative on the high seas. Under the Commonwealth of Australia Constitution Act the laws of the Commonwealth are in force on all British ships whose first port of clearance and port of destination are in the Commonwealth.

Prior to the inauguration of the Commonwealth of Australia in 1901, the shipping of the State was controlled partly by Imperial enactment, the Merchant Shipping Act, 1894, and partly by enactments of the Legislature of New South Wales.

The Commonwealth Constitution Act empowered the Commonwealth Government to make laws with respect to trade and commerce, and to lighthouses, light-ships, beacons and buoys, and quarantine; also in relation to navigation and shipping, and enactments were made accordingly in regard to Sea Carriage of Goods, 1904, and Seamen's Compensation, 1909. Specific legislation in regard to navigation and shipping was introduced in the Commonwealth Parliament (Senate) in 1904, and a Royal Commission was appointed subsequently to investigate matters incidental to the Bill. An amended Bill, embodying the results of the British-Australasian Conference held in London in 1907, was introduced in September, 1907, but did not become law. In the 1912 Session of the Federal Parliament a new Navigation Bill of 424 clauses, which had been passed by the Senate, was among the first taken by the House of Representatives. This Bill, which passed the final stages in December, 1912, is awaiting formal proclamation to come into effect. The Act is drafted on the lines of the Merchant Shipping Act, and of the local Navigation Acts of New South Wales and New Zealand.

Meanwhile the shipping trade of the State remains under the general supervision of the Navigation Department of New South Wales, administering the Navigation Act, 1901, and its amendments, on the basis of Imperial enactments; while within Port Jackson, control of shipping, and matters incidental thereto, is vested in the Sydney Harbour Trust.

THE NAVIGATION DEPARTMENT.

Under the Navigation Act, 1901, the jurisdiction of the Superintendent of the Department of Navigation extends to the navigable waters lying within one nautical league of the coast, and to the inland navigable waters of New South Wales. It includes all ports and harbours except the port of Sydney, which is administered by the Sydney Harbour Trust. The Superintendent of Navigation has general superintendence of all matters within

the Jurisdiction relating to the issue, suspension, and cancellation of certificates of competency and of service; the preservation of ports, harbours, havens, and navigable creeks and rivers; the licensing, appointment, and removal of pilots; the regulation of lighthouses, and superintendence of lights, and other sea, harbour, or river marks; the placing or removing of moorings; the granting to and regulation of licenses for ballast lighters; the licensing and regulation of watermen, boatmen, and boats plying for hire, and the determination of fees and rates chargeable for such services; steam and other ferry boats; harbour and river steamers; safety and prevention of accidents; unseaworthy ships; life-saving appliances, lights, fog-signals, and sailing rules; and the accommodation for seamen. The Department also administers the Wharfage and Tonnage Rates Act, 1901, in all gazetted ports within New South Wales, except Port Jackson.

PORT DUES.

Shipping charges payable on account of vessels entering ports of New South Wales include pilotage rates (unless the Master holds an exemption certificate) harbour removal dues, harbour and light rates, wharfage rates, and tonnage rates. In addition to these charges, regulations under the Navigation Act, 1901, stipulate the fees for swinging ships in the adjustment of compasses, and for surveys and the issue of certificates, &c. Fees for engagement and discharge of seamen are fixed by the Seamen's Act, 1898. The Customs Acts impose upon the master of every ship the duty of reporting the ship and cargo.

Pilotage Rates are 2d. per ton on entry or clearance, except in the following cases :—

Ships entering or clearing in ballast, or entering for docking or refitting, 1d. per ton.

Ships compelled to enter port for repairs, provisions, orders, &c., or to coal, 1d. per ton on arrival or departure.

Minimum fee, Sydney or Newcastle, £2 10s.; other ports, £1 5s.; maximum fee £20.

Harbour Removal Dues.—Ships of 300 tons, £1; increasing 5s. per 100 tons to 600 tons. Thereafter 600–800 tons, £2; 800–1,000 tons, £2 10s.; increasing £1 per 500 tons to a maximum of 2,000 tons.

Harbour and Light Rates.—Half-yearly charges 4d. per ton. Payment at one port carries exemption for the half year for all other ports of the State. Rates are not enforced against vessels engaged in the whaling trade, nor vessels compelled to enter a port for repairs, orders, provisions, &c.

Inward Wharfage and Harbour Rate.—Payable by owners on goods entering the port, except goods belonging to H.M. Government and passengers' luggage. On general merchandise the rate is 2s. 6d. per ton, weight or measurement, but there are a number of special rates lower than the general rate and certain scheduled exceptions.

Outward Wharfage and Harbour Rate.—Payable by owners on goods, chargeable with outward rates, leaving the port. The general rate is 10d. per ton on the leading lines of primary products, but there is a special rate of 6d. per bale on wool, 6d. per ton on wheat, 3d. per ton on coal and coke, and 4½d. per ton on ore.

Transshipment Rates.—There is a general rate of 5d. per ton on all goods in respect of which a transshipment entry is passed within 48 hours of vessel reporting, either at the Customs or with the Commissioners, and which are removed from wharves within fourteen days of landing thereon. There are a number of special rates, ranging down to $\frac{1}{2}$ d. per ton. Failure to pass entries or to remove goods within the stipulated time entails the penalty of double rates. As some cargo (notably timber) accumulates on wharves for a considerable period before it is transhipped into the outgoing vessel, the Commissioners extend the period of fourteen days whenever good reason for so doing is adduced. No charge is made by the Commissioners on over-carried cargo.

Tonnage.—Tonnage is levied on all vessels, over 240 tons register, berthed at the wharves, &c., in the port of Sydney, vested in the Sydney Harbour Trust Commissioners. The rate is $\frac{1}{2}$ d. per ton per day, for the first six days, on the registered tonnage of the vessel up to 5,000 tons, and $\frac{1}{4}$ d. per ton per day for the first six days on tonnage in excess of 5,000 tons, but, when the period during which the wharf, &c., is occupied exceeds six days, half these rates are leviable. In calculating tonnage, portions of a day are charged a proportion of one-quarter, one-half, and three-quarters respectively, of the amount leviable for the whole day.

Berthing Charges.—On vessels under 240 tons register, berthing charges are levied at rates ranging from a minimum of 2s. 6d. to a maximum of 10s. per vessel, according to the tonnage thereof.

OVERSEA AND INTERSTATE SHIPPING.

The following statement shows in comparative form the number and tonnage of vessels, oversea and interstate, entered and cleared from the various ports of the State during the last ten years, and the aggregate for all ports over the same period:—

Year.	Sydney.		Newcastle.		Kembla.		Twofold Bay (Eden.)		Other Ports.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
ENTRIES.												
1904	1,872	3,320,953	692	1,022,066	30	37,297	68	33,300	56	5,563	2,718	4,419,179
1905	1,831	3,401,013	717	1,182,267	57	74,085	34	30,772	86	9,374	2,725	4,697,511
1906	1,919	3,751,458	815	1,404,844	68	85,324	35	33,276	56	8,817	2,803	5,283,719
1907	2,163	4,273,925	909	1,637,234	76	92,320	32	31,644	58	15,760	3,238	6,070,953
1908	2,128	4,409,021	908	1,746,070	39	58,910	50	54,908	71	29,875	3,196	6,208,784
1909	2,062	4,507,187	620	1,182,091	42	72,994	71	86,468	66	21,354	2,861	5,870,039
1910	2,021	4,791,029	694	1,303,133	64	87,831	69	78,340	89	29,786	2,937	6,290,119
1911	2,181	5,246,351	701	1,357,132	64	102,866	55	63,145	126	52,641	3,127	6,822,135
1912	2,333	5,732,055	806	1,570,581	65	85,148	49	58,793	101	43,464	3,354	7,490,046
1913	2,275	6,174,321	906	1,771,032	67	87,488	57	63,139	88	21,521	3,393	8,117,501
CLEARANCES.												
1904	1,527	2,893,831	1,005	1,405,112	84	111,710	69	35,871	82	10,690	2,767	4,460,014
1905	1,413	2,922,461	1,062	1,536,134	103	135,193	30	31,479	80	8,841	2,694	4,684,108
1906	1,516	3,277,907	1,115	1,762,472	140	185,793	38	37,486	74	11,373	2,883	5,275,031
1907	1,718	3,717,792	1,221	2,044,706	155	197,832	32	31,957	79	16,995	3,205	6,009,282
1908	1,592	3,442,793	1,372	2,408,946	106	154,111	49	51,235	100	46,040	3,219	6,303,125
1909	1,559	3,795,231	979	1,676,759	93	123,761	49	61,417	87	32,258	2,767	5,689,426
1910	1,676	4,294,857	1,382	1,915,312	115	145,656	54	64,619	108	45,411	3,035	6,471,855
1911	1,691	4,459,030	1,151	2,106,013	104	141,332	51	61,330	149	66,027	3,146	6,833,782
1912	1,787	4,822,299	1,293	2,395,874	107	124,531	48	58,509	111	51,402	3,346	7,453,005
1913	1,716	5,230,913	1,388	2,617,578	97	122,554	55	66,829	119	43,227	3,375	8,071,101

Of "Other Ports," grouped together in the above table, the more important are Bellambi, and Ballina, Richmond River. Following are the figures for each of the "Other Ports," for 1913 :—

Port.	Entries.		Clearances.	
	Vessels.	Tonnage.	Vessels.	Tonnage.
Tweed River	26	690	24	624
Richmond River (Ballina) ...	32	4,295	31	4,195
Clarence River... ..	7	863	15	3,416
Bellinger River	3	391	2	337
Nambucca	2	288	4	519
Port Macquarie	1	22	...	.....
Camden Haven ... ..	...	.....	1	185
Cape Hawke ... ..	...	.....	1	185
Port Stephens	1	132	14	6,776
Bellambi	14	14,638	25	26,838
Merimbula	2	152	2	152
	88	21,521	119	43,227

In these shipping records the total voyages of vessels are included, but account is not taken of ships of war, cable-laying vessels, and yachts, nor of vessels trading between ports in New South Wales. The tonnage quoted is net. Vessels are entered at the first port of call in New South Wales, and cleared at the port from which final departure is taken from the State.

The aggregate number and tonnage of interstate and oversea vessels arriving in and departing from all ports of New South Wales, with the average tonnage per vessel, at intervals of five years since 1860, are as follows :—

Year.	Entries.		Clearances.		Average Tonnage per Vessel.
	Vessels.	Tonnage.	Vessels.	Tonnage.	
1860	1,424	427,835	1,438	431,484	300
1865	1,912	635,888	2,120	690,294	329
1870	1,858	689,820	2,066	771,942	373
1875	2,376	1,109,086	2,294	1,059,101	464
1880	2,108	1,242,458	2,043	1,190,321	586
1885	2,601	2,088,307	2,583	2,044,770	797
1890	2,326	2,340,470	2,317	2,294,911	998
1895	2,390	2,851,546	2,405	2,854,705	1,190
1900	2,784	4,014,755	2,714	3,855,748	1,432
1905	2,725	4,697,511	2,694	4,684,108	1,731
1910	2,937	6,290,119	3,035	6,471,855	2,137
1911	3,127	6,822,135	3,146	6,833,782	2,177
1912	3,354	7,490,046	3,346	7,453,005	2,230
1913	3,393	8,117,501	3,375	8,071,101	2,392

Between 1860 and 1913, the number of vessels engaged in the trade of the State has more than doubled, the entries increasing from 1,424 to 3,393. In the same period the tonnage of the vessels increased nineteen times.

The average tonnage has advanced steadily, and in the last twenty years very rapidly. In 1905 the average was 1,731, representing the highest figure recorded at that date; but in each subsequent year a new record has been made, the average for 1913 being 2,392, which is almost eight times the average for 1860, and nearly 40 per cent. greater than the average of

1905. And side by side with an advance in tonnage has been an improvement in the class of accommodation provided both on passenger and on cargo steamers, special provision being made on the latter steamers for refrigerating space, to assure carriage in good condition of meat, fruit, butter, and other perishable produce.

Compared with other Australian States the shipping tonnage of New South Wales is greatest. The relative positions may be seen in the following statement of shipping entries from oversea, direct and indirect (*via States*), for 1913 :—

State.	Entries Oversea.			
	Direct.		Via States.	
	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales	739	1,771,794	604	2,212,820
Victoria	264	742,849	434	1,698,048
Queensland	189	336,076	219	890,842
South Australia	225	708,600	230	951,213
Western Australia	413	1,338,114	14	27,698
Tasmania	98	397,951	8	22,951
Northern Territory	36	76,147	.....	.....

The figures relating to clearances oversea, direct and indirect, correspond closely with the entries, and emphasise the importance of the New South Wales shipping trade. Summarising oversea and interstate trade, the following figures are obtained for entries and clearances for the different States and the Northern Territory of Australia during 1913, and show the relative pre-eminence of New South Wales :—

State.	Oversea and Interstate.			
	Entries.		Clearances.	
	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales	3,393	8,117,501	3,375	8,071,101
Victoria	2,481	5,950,035	2,469	5,902,277
Queensland	974	2,247,434	983	2,251,503
South Australia	1,304	4,067,175	1,303	4,061,458
Western Australia	879	3,032,521	873	3,022,958
Tasmania	1,003	1,338,118	1,000	1,328,004
Northern Territory	83	171,504	84	171,594

That Sydney is one of the chief ports of the world is evident from a comparison of its oversea and interstate shipping entries (entirely exclusive of coastal trade) with the returns of other ports, as shown by the following table. The figures quoted relate to the latest years available, viz., 1913 for Australasian, and 1912 for other ports:—

Port.	Tonnage Entered excl. Coastwise.	Port.	Tonnage. Entered excl. Coastwise.
<i>Sydney</i>	6,174,321	Malta	5,208,478
Melbourne	5,770,349	Aden	3,685,056
Brisbane	1,901,357	Singapore	8,223,272
Port Adelaide	3,505,443	Penang	4,284,658
Fremantle	2,272,302	Hong Kong*	12,929,911
Hobart	821,036	Cape Town	2,620,388
Auckland	356,317	Durban	2,272,168
London	12,985,658	Montreal*	1,809,544
Liverpool (including Birkenhead)	11,809,923	Halifax*	1,677,755
Cardiff	6,681,491	Victoria (B.C.)	1,852,008
Newcastle and North and South Shields... ..	6,737,768	Hamburg	12,346,600
Hull	4,360,006	Marseilles	7,986,609
Southampton	5,818,404	Havre	3,631,849
Glasgow	3,219,721	Antwerp	13,686,297
Leith	1,726,657	Rotterdam	11,559,443
Cork (including Queenstown)	3,685,651	Copenhagen	3,440,901
Calcutta	2,093,771	New York	13,673,765
Bombay	2,083,208	Boston	2,948,244
Colombo	7,343,900	Shanghai	4,471,447
Gibraltar	6,055,645	Monte Video	8,598,326
		Rio de Janeiro	6,387,400

* For year 1913.

The total shipping tonnage—oversea, interstate, and coastwise—shows Sydney even to greater advantage, at least as far as Australian ports are concerned.

Appended are the figures, including coastwise, for the principal ports of Australasia, for 1913, and the United Kingdom, for the year 1912:—

Port.	Tonnage. Entered incl. Coastwise.	Port.	Tonnage. Entered incl. Coastwise.
<i>Australia—</i>		<i>England—</i>	
Sydney	9,018,785	London	18,746,936
Melbourne	6,128,266	Liverpool (including Birkenhead)	15,147,198
Newcastle	4,661,703	Cardiff	11,493,422
Port Adelaide	3,505,443*	Southampton	7,288,261
Brisbane	2,832,819	Hull	5,469,490
Fremantle	2,399,275	Plymouth	4,665,488
Townsville	1,597,173		
Albany	1,403,135	<i>Scotland—</i>	
Hobart	850,424	Glasgow	5,529,820
		Leith	2,493,183
<i>New Zealand—</i>			
Wellington	3,006,439	<i>Ireland—</i>	
Lyttelton	2,068,038	Cork (including Queenstown)	4,185,795
Auckland	1,865,037	Belfast	3,347,588
Dunedin	982,180	Dublin	2,628,542

* Exclusive of Coastwise Shipping—not available.

The year 1913 was marked by the visit of the three largest trading vessels to enter the port of Sydney to date, the "Niagara" (13,415 tons), the "Nestor" (14,501 tons), and the "Ceramic" (18,600 tons). The deepest draft ship berthed was the steamer "Anglo-Egyptian," carrying 9,300 tons of wheat and drawing 29 feet 10 inches.

The new tonnage projected for 1914 included forty-five oversea vessels ranging between 6,000 and 20,000 tons, aggregating approximately 400,000 tons.

The rate of progress of the shipping trade of Sydney has been uniform, and the vessels registered as entered at Sydney considerably exceed in tonnage those cleared. This is caused by vessels, leaving Sydney for Newcastle for the purpose of shipping coal, being reckoned as departures from Newcastle, and not from Sydney. For this reason the clearances of Newcastle always exceed the arrivals, as will be noticed in the following statement, which shows the shipping entered from and cleared to countries outside New South Wales at both Sydney and Newcastle for quinquennial periods from 1860 to 1910, and for 1911 to 1913 inclusive :—

Year.	Oversea and Interstate.			
	Sydney.		Newcastle.	
	Entered.	Cleared.	Entered.	Cleared.
	tons.	tons.	tons.	tons.
1860	292,213	275,630	111,274	134,480
1865	423,570	421,049	189,620	248,769
1870	385,616	364,758	283,091	383,242
1875	590,700	468,423	510,902	573,626
1880	827,738	641,996	400,598	516,480
1885	1,608,169	1,283,888	452,946	722,865
1890	1,644,589	1,356,632	625,398	842,180
1895	2,027,951	1,669,654	727,834	1,048,400
1900	2,716,651	2,109,739	1,160,758	1,523,976
1905	3,401,013	2,922,461	1,182,267	1,586,134
1910	4,791,029	4,299,857	1,303,133	1,915,312
1911	5,246,351	4,459,030	1,357,132	2,106,013
1912	5,732,055	4,822,889	1,570,581	2,355,674
1913	6,174,321	5,220,913	1,771,032	2,617,578

NATIONALITIES OF VESSELS.

The trade of the State of New South Wales is carried, to a very great extent, under the British flag, the deep-sea trade with the mother country and British Possessions being controlled by shipowners of the United Kingdom, and the interstate trade chiefly by local shipowners. Foreign-owned shipping

has become increasingly important in the last thirty years, and the greater portion of the direct trade transacted with foreign ports is now carried in non-British vessels. In the Australian trade the steamers of the Messageries Maritimes have been engaged since 1883, those of two German lines commenced later, and more recently the vessels of American, Japanese, and Dutch companies. From the table given below, distinguishing British and foreign shipping during the last fifty-three years, it will be seen that the British tonnage entered and cleared in 1860 was 689,251, or 80·2 per cent. of the total of 859,319 tons; while in 1880 the proportion was as high as 92·9 per cent., British vessels representing 2,259,924 tons out of a total of 2,432,779. In 1913, however, the British shipping had fallen to 81·4 per cent., the foreign tonnage being 18·6 per cent. :—

Year.	Tonnage Entered and Cleared.			Percentage.	
	British.	Foreign.	Total.	British.	Foreign.
1860	689,251	170,068	859,319	80·21	19·79
1865	1,248,249	77,933	1,326,182	94·12	5·88
1870	1,333,410	128,352	1,461,762	91·22	8·78
1875	2,001,641	166,546	2,168,187	92·32	7·68
1880	2,259,924	172,855	2,432,779	92·89	7·11
1885	3,615,582	517,495	4,133,077	87·48	12·52
1890	4,030,472	604,909	4,635,381	86·95	13·05
1895	5,061,387	644,864	5,706,251	88·70	11·30
1900	6,702,106	1,168,397	7,870,503	85·15	14·85
1905	8,033,943	1,347,676	9,381,619	85·63	14·37
1910	10,723,040	2,038,934	12,761,974	84·02	15·98
1911	11,239,844	2,416,073	13,655,917	82·31	17·69
1912	11,983,698	2,959,353	14,943,051	80·20	19·80
1913	13,182,112	3,006,490	16,188,602	81·43	18·57

Of the tonnage included as British, a large proportion is owned or registered in Australia and New Zealand.

In 1870, out of 1,333,410 tons of shipping entered and cleared under the British flag, 964,718 tons, or 72·3 per cent., belonged to British possessions, the great bulk being Australasian. In 1880, out of 2,259,924 tons of British shipping entered and cleared, 1,499,236 tons, or 66·3 per cent., belonged to British colonies. In 1890, 60·9 per cent. of British shipping was owned and registered in Australasia. In 1900 the shipping of British nationality entered and cleared this State amounted to 6,702,106 tons (of which 3,590,284 tons, or 53·6 per cent., were Australasian) out of a total of 7,870,503. In 1901 the total tonnage of vessels trading with this State was 8,407,301 and of these the vessels owned in the Australian Commonwealth represented 3,348,502 tons, or 39·8 per cent. of the total; while in 1913,

35·3 per cent. of the total was Australian. The proportion of shipping belonging to the United Kingdom and other British Possessions has been fairly constant at about 47 per cent. during the last decennium.

The tonnage of the foreign vessels trading with New South Wales exhibits an advance during the last twenty years, increasing from 13 per cent. of the total to over 18 per cent. For the year 1913, the total tonnage of the principal nationalities is given below. Germany stands first with 9·47 per cent. of the total, then Norway with 2·19 per cent., and Japan with 2·05 per cent. The only other nation whose carrying trade with the State is important is France with 1·93 per cent.

The statement below shows the number and tonnage of shipping of the principal nationalities that entered and cleared the ports of New South Wales in 1911, 1912, and 1913, as well as the tonnage proportions per cent. :—

Nationality.	Entries and Clearances.						Tonnage— Percentage of each Nationality.		
	1911.		1912.		1913.		1911.	1912.	1913.
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.			
British—									
Australian	3,011	4,645,105	3,127	4,802,143	3,231	5,711,398	34·02	32·74	35·28
New Zealand	665	1,080,498	779	1,344,279	771	1,359,138	7·91	9·00	8·40
United Kingdom ..	1,519	5,475,280	1,539	5,709,379	1,589	6,081,117	40·09	38·21	37·56
Other British	32	38,871	31	37,897	22	30,459	·29	·25	·19
Total	5,227	11,239,644	5,476	11,983,698	5,613	13,182,112	82·31	80·26	81·43
Foreign—									
France	152	311,287	146	310,001	150	313,252	2·28	2·07	1·93
Germany	401	1,193,782	508	1,540,352	487	1,533,728	8·74	10·31	9·47
Norway	293	369,840	245	422,747	183	353,843	2·70	2·83	2·19
Sweden	28	70,772	23	57,662	23	57,643	·52	·39	·36
Netherlands	50	97,023	50	91,201	52	128,870	·71	·61	·80
Italy	32	49,415	27	42,462	29	47,770	·36	·28	·29
Japan	74	213,036	94	286,774	103	332,471	1·60	1·92	2·05
United States of America	76	70,527	61	95,279	76	148,853	·52	·64	·92
Other Nationalities	25	35,386	70	112,875	52	90,060	·26	·75	·50
Total	1,046	2,416,073	1,224	2,959,353	1,155	3,006,490	17·69	19·60	18·57
Grand Total	6,273	13,655,917	6,700	14,943,051	6,768	16,188,602	100·00	100·00	100·00

DIRECTION OF SHIPPING TRADE.

Of the tonnage engaged in the outward trade of New South Wales, approximately half goes to other Australian States. The following table shows, for the specified years in comparative form, the tonnage entered from and cleared for the countries within the British Empire, and the principal foreign

countries; the figures represent the nominal tonnage or cargo space of the vessels carrying the goods, and not the actual weight of the goods carried, which latter information cannot be obtained :—

Country.	Entered from and cleared for various Countries.					
	1890.		1900.		1913.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
British Empire—						
Australian States	2,974	2,544,905	3,082	3,861,154	3,931	8,087,899
United Kingdom	318	651,133	341	954,232	477	2,373,487
New Zealand	460	332,793	540	598,710	649	1,453,215
India and Ceylon	33	61,820	57	138,993	59	179,393
Hong Kong	64	92,523	68	121,933	28	44,318
Canada	4	5,103	41	76,477	52	205,650
Union of South Africa—						
Cape Colony	12	18,744	152	240,755	} 56	120,584
Natal ... ..	...	...	40	60,701		
Fiji	66	68,003	65	64,125	80	173,467
Straits Settlements	24	33,994	19	31,212	69	160,124
Papua ... ..	...	.....	14	11,448	24	21,544
Ocean Island ... ..	...	.....	...	.....	29	63,727
Other British Possessions	13	9,079	46	46,653	54	53,687
Total, British Countries ...	3,968	3,818,097	4,465	6,206,393	5,368	12,937,095
Foreign Countries—						
France	25	57,096	44	100,793	38	110,352
Germany	69	133,368	70	234,817	216	759,364
Belgium	10	14,426	13	28,129	29	92,631
United States of America	154	222,483	157	303,187	216	576,943
China	8	10,365	19	41,161	1	2,850
Japan	4	5,150	34	83,179	103	273,960
New Caledonia	100	97,823	118	143,867	75	164,538
Java	20	26,837	45	89,129	77	219,103
Philippine Islands	14	19,323	31	44,825	16	43,201
Hawaiian Islands ... ..	...	...	94	107,248	22	55,735
Peru	15	17,676	28	37,411	31	54,273
Chile	100	115,222	211	295,829	207	504,734
Other Foreign Countries	156	97,515	169	154,535	229	393,823
Total, Foreign Countries ...	675	817,284	1,033	1,664,110	1,260	3,251,507
Total	4,643	4,635,381	5,498	7,870,503	6,768	16,188,602

Out of a total tonnage amounting to 16,188,602 in 1913, vessels from other Australian States provided 8,087,899, or slightly less than 50 per cent., The United Kingdom furnished the next largest tonnage with 2,373,487 tons or 14·7 per cent., followed by New Zealand with 1,453,215 tons, equal to 9 per cent. Germany is first among foreign countries with 759,364 tons, or 4·7 per cent.; United States of America following with 576,943 tons, or 3·6 per cent; and Chile with 504,734 tons, or 3·1 per cent of the total.

During the period 1890–1913 the tonnage of the United Kingdom increased by 1,722,354 tons or 265 per cent., while the tonnage of ships trading with British dominions increased by 9,118,998, or 239 per cent.; and with Germany by 625,996 tons, or 469 per cent. Consequent on the discontinuance of the direct line of mail steamers between San Francisco and Sydney, there was a decrease in the tonnage of the United States between the years 1907 and

1911. In 1912, however, there was a decided increase, which was maintained in 1913, and as the opening of the Panama Canal will provide a direct sea-route to the east coast of America, further increases may be expected.

The growth of trade with Eastern Asia since 1900 is apparent from the large increase in the tonnage of vessels plying between this State and Japan, Java, and the Philippine Islands. A line of Dutch steamers to Java was established in 1907.

The tonnage for Chile shows a marvellous increase. Vessels from Chile and other South American countries arrive usually in ballast to load coal, which is the chief item of export from New South Wales to South America.

The great increase in German tonnage was due principally to the fact that large quantities of wool were purchased at the Sydney sales, and shipped in German steamers, to Germany direct, and not to London for transshipment.

The tables given above do not disclose the full extent of the shipping communication between New South Wales and other countries, since the records, relating only to terminal ports, entirely disregard the business of intermediate ports of call, which, being on the direct route of so many shipping lines, are visited regularly by vessels both on their outward and inward journeys. Some idea of the extent of the State's shipping facilities may be gathered from the lists given elsewhere in this chapter, of places having direct and indirect communication with New South Wales; and in the chapter relating to Commerce, the value of the trade of New South Wales with various countries is classified according to continents.

STEAM AND SAILING VESSELS.

Records prior to the year 1876 do not distinguish steamers from sailing vessels, but the tendency to supersede sailing vessels by steamers has been apparent since that year, when the steam tonnage was 912,554, as compared with 1,215,171 tons of sailing vessels, being 42·9 per cent and 57·1 per cent., respectively. The relative positions were transposed within the following ten years, and the tonnage of sailing ships in 1913 is the lowest recorded, being 643,791, or 4 per cent. of the total shipping, as compared with steam tonnage, 15,544,811, or 96 per cent. The steam tonnage in 1913 was seventeen times as great as in 1876. The progress of the tonnage of each class will be seen from the following table:—

Year.	Steam.		Sailing.		Ratio of Steam to Total Tonnage.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
	tons.	tons.	tons.	tons.	per cent.	per cent.
1876	473,821	438,733	600,604	614,567	44·10	41·65
1880	803,935	746,437	438,523	443,884	64·71	62·71
1885	1,413,551	1,378,292	674,756	666,478	67·69	67·41
1890	1,759,475	1,768,848	580,995	526,063	75·18	77·08
1895	2,132,753	2,161,176	718,793	693,529	74·79	75·71
1900	3,206,657	3,140,449	808,098	715,299	79·87	81·45
1905	4,051,884	4,042,703	645,627	641,405	86·26	86·31
1910	5,892,049	6,047,832	398,070	424,023	93·67	93·45
1911	6,427,442	6,424,865	394,693	408,917	94·71	94·02
1912	7,010,420	6,975,678	479,626	477,327	93·60	93·60
1913	7,800,389	7,744,422	317,112	326,679	96·09	95·95

VESSELS WITH CARGO, AND IN BALLAST.

The following statement evidences the relative importance of British shipping among the number of vessels, with cargo and in ballast, entered and cleared New South Wales ports during 1913 :—

Nationality.	Entries.				Clearances.			
	With Cargo.		In Ballast.		With Cargo.		In Ballast.	
	Steam.	Sailing.	Steam.	Sailing.	Steam.	Sailing.	Steam.	Sailing.
British—								
Australian ...	1,175	49	391	6	1,545	51	11	3
Other ...	875	38	240	43	1,052	83	50	1
Foreign ...	382	48	67	79	422	129	26	2
Total ...	2,432	135	698	128	3,019	263	87	6

The majority of sailing vessels entered and cleared are foreign-owned but the numbers are decreasing in proportion to the decline of sailing vessels among the world's shipping. Sailing vessels coming oversea to the port of Sydney are attracted by the chances of securing wheat cargoes, and the increasing equipment of sailing vessels with auxiliary engines, by facilitating regular timetables, may result in greater employment for sailing vessels in this particular trade.

VESSELS IN BALLAST.

The advantage offered by the New South Wales trade to shipowners is illustrated by the rather peculiar feature of the large amount of tonnage entries in ballast, and the small number of clearances without cargo. Many vessels arriving in ballast come from ports of neighbouring States, where they have delivered a general cargo, and, having been unable to obtain full return freight, have cleared for Newcastle, in this State, to load coal. The largest amount of tonnage entered in ballast in any one year since 1876 was in 1907, when it reached 1,980,322 tons. In 1913 the tonnage entered in ballast amounted to 1,477,568 tons. The tonnage entered and cleared in ballast at intervals since 1876, is shown below :—

Year.	Steam (Ballast).		Sailing (Ballast).		Proportion of Tonnage in Ballast to Total Tonnage.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
	tons.	tons.	tons.	tons.	per cent.	per cent.
1876	16,709	4,022	246,244	13,834	24·47	1·70
1880	73,006	3,015	144,757	13,204	17·53	1·36
1885	146,501	11,181	198,865	42,200	16·54	2·61
1890	309,780	3,767	228,699	18,620	23·01	·98
1895	375,589	26,802	466,401	6,630	29·53	1·17
1900	791,803	133,159	505,030	1,644	32·30	3·50
1905	882,539	127,268	466,774	16,956	28·72	3·08
1910	997,188	201,614	269,241	8,635	20·13	3·25
1911	891,978	110,474	275,779	4,690	16·12	1·68
1912	1,013,651	175,565	351,363	5,566	18·22	2·43
1913	1,275,704	227,283	201,864	1,031	18·20	2·83

Although the proportion of tonnage entered in ballast fluctuated between 16·5 per cent. in 1885, and 32·6 per cent. in 1907, the tendency in recent years is for the figure to stand at about one-fifth of the total tonnage entered.

The proportion of shipping clearing New South Wales is due to the great expansion of exports which is extending so rapidly that steamers have been constructed specially for its requirements.

SHIPPING AT EACH PORT.

Particulars of the shipping—oversea, interstate and coastwise which entered at each Port of New South Wales are contained in the following statement for the years 1912 and 1913 :—

Port.	1912.			1913.		
	Vessels.	Tonnage.	Crews.	Vessels.	Tonnage.	Crews.
Tweed River	116	16,390	1,342	109	13,449	1,319
Byron Bay	148	75,475	5,516	134	82,244	5,043
Richmond River	322	109,321	6,792	253	78,841	4,956
Clarence River	236	84,454	5,707	238	81,840	6,049
Woolgoolga	112	26,845	1,814	209	53,267	4,205
Coff's Harbour	407	124,840	8,194	436	151,875	9,980
Bellinger River	221	25,386	2,197	239	32,256	3,095
Nambucca River	136	16,500	1,527	169	19,828	1,953
Macleay River	165	38,237	3,090	144	34,685	2,867
Port Macquarie	180	29,384	2,408	174	28,990	2,458
Camden Haven	138	16,999	1,625	148	19,135	1,894
Manning River	243	38,238	3,137	231	30,641	3,186
Forster (Cape Hawke)	215	20,383	2,019	189	19,135	1,963
Port Stephens	588	62,333	4,941	537	64,970	5,088
Port Hunter (Newcastle)	4,955	4,326,438	26,532†	5,481	4,661,703	31,462†
Lake Macquarie	88	6,685	843	116	10,194	1,096
Port Jackson (Sydney)	9,675	8,494,059	160,891†	9,922	9,018,785	171,010†
Port Kembla—Wollongong	613	145,505	10,031	617	153,461	9,037
Shellharbour	40	3,596	437	25	1,475	225
Kiama	252	53,033	3,830	274	57,591	4,308
Eden	183	124,059	5,716	213	168,513	7,376
Bateman's Bay	72	19,454	1,475	82	20,495	1,475
Moruya	75	9,381	1,057	77	9,257	963
Narooma	80	8,115	1,100*	88	7,625	1,132
Shoalhaven	138	9,843	1,388	128	9,206	1,329

* Estimated. † Exclusive of Coastwise.

RIVER TRAFFIC.

The extent of the waterways of New South Wales has been shown in the portion of this Year Book relating to Geography. Relatively to other countries New South Wales has few inland waterways, but is dependent upon railways and ocean shipping as the principal agencies of transportation. On the coastal rivers, there is some traffic apart from the vessels trading between the river ports and Sydney, but the extent of this traffic is not recorded. On the Northern rivers the steamer trade is mostly engaged in transporting timber and cream.

On the inland rivers there is considerable traffic after a season of good rainfalls. The Murray River is navigable for some 150 miles above Albury, or 1,590 miles from its mouth. Its tributaries, the Kyalite or Edwards River and the Wakool River, are navigable for some 400 miles, as far as Deniliquin. The Murrumbidgee and the Lachlan Rivers combined provide some 900 miles of navigable waterway. The Darling is navigable in time of freshets as far as Walgett, 1,758 miles from its confluence with the Murray. Altogether, the Murray River system provides some 4,200 miles of waterway more or less navigable. The question of locking these waterways, especially the Darling, to make them permanently usable, has been mooted. The volume of traffic on these rivers is not now recorded.

CREWS.

In 1902, the crews of vessels entering New South Wales ports averaged 42 per vessel; in 1913, the average was 61. The following statement shows the aggregate crews of vessels, oversea and interstate, entered and cleared New South Wales ports, for 1902, and for the six years, 1908-1913:—

Nationality.	1902.	1908.	1909.	1910.	1911.	1912.	1913.
Entries :							
British—							
Australian ...	49,285	62,783	59,197	61,387	65,351	69,960	79,405
United Kingdom ...	41,214	58,292	54,739	61,199	66,100	69,963	74,547
Other Possessions...	10,298	15,365	16,128	16,336	17,825	21,559	21,099
Total British ...	100,797	136,440	130,064	138,922	149,276	161,482	175,051
Foreign ...	20,680	23,502	24,217	23,698	26,876	31,537	32,685
Total Crews ...	121,477	159,942	154,281	162,620	176,152	193,019	207,736
Clearances :							
British—							
Australian ...	48,530	61,943	57,356	62,898	65,827	69,468	79,352
United Kingdom ...	41,286	58,579	53,349	62,423	65,195	68,538	72,903
Other Possessions...	9,608	14,534	15,932	16,287	17,291	21,365	21,003
Total British ...	99,424	135,056	126,637	141,608	148,313	159,371	173,258
Foreign ...	20,496	23,723	23,890	23,788	26,864	31,176	32,845
Total Crews ...	119,920	158,779	150,527	165,396	175,177	190,547	206,103

The crews of shipping on the New South Wales register at December, 1913, numbered 6,991, viz., 5,104 on steamers, 405 on motor vessels, and 1,482 on sailing vessels. On the shipping added to the registers during 1913, the crews were 572, viz., steam, 336; motor, 42; sailing, 194.

CERTIFICATES AND LICENSES.

Department of Navigation.

During 1913, the Department of Navigation issued 376 certificates to masters and officers of vessels. During the ten years, 1904-13, the annual average of certificates issued was 309. Following are details regarding the certificates issued during 1913:—

Master—Extra ...	7	Engineer —1st ...	33
Foreign-going ...	41	—2nd ...	40
Coast Trade ...	7	—3rd ...	59
Harbours and Rivers ..	39	Marine Surveyor ...	1
Mate—Foreign-going —1st ...	22	Pilotage ...	97
—2nd ...	24	Compass Adjuster ...	3
Coast Trade —1st ...	3	Total ...	376

The qualifications of candidates, as to age and service, for the master's or mate's certificate, are—

Certificate.	Foreign-going.	Coast trade.
Master—	years.	years.
Minimum age ...	21	20
„ sea service ...	6	5
Mate—		
Minimum age ...	19	19
„ sea service ...	5	4

The certificates issued to trading vessels as at 31st December, 1913, numbered 346, distributed among coastal ports as follows:—

Port.	Vessels.	Tonnage.	Passenger capacity.	Port.	Vessels.	Tonnage.	Passenger capacity.
Sea-going Steamers				Harbour and River			
Sydney ...	184	352,455	15,287	Steamers (<i>contd.</i>)—			
				Port Stephens ...	4	198	392
				Richmond River	9	456	1,810
				Tweed River ...	4	237	799
Harbour and River				Total ...	126	15,612	52,589
Steamers—				Sailing Vessels—			
Sydney ...	76	12,840	43,921	Sydney ...	36	7,344	...
Newcastle ...	10	547	2,290				
Botany Bay ...	1	55	218	SUMMARY.			
Clarence River ...	11	497	1,900	Steamers ...	310	368,067	67,876
Darling River ...	2	190	27	Sailing Vessels ...	36	7,344	...
Hawkesbury				Total ...	346	375,411	67,876
River ...	2	154	387				
Lake Macquarie...	1	46	267				
Macleay River ...	3	226	356				
Manning River ..	2	56	113				
Port Macquarie...	1	110	109				

Certificates are issued to all trading vessels, passenger or cargo, and are renewable at maximum intervals of twelve months. Watermen licensed by the Department of Navigation for 1913 numbered 102; viz., 46 at Newcastle; 15 at Clarence River; 9 at Hawkesbury River; 7 at George's River; 8 at Tweed River; 6 at Port Stephens; 3 each at Botany Bay and Richmond River; 2 at Lake Macquarie; and 1 each at Bermagui, Merimbula, and Port Hacking.

Sydney Harbour Trust.

On the 30th June, 1914, there were 27 watermen licensed by the Sydney Harbour Trust to ply on Port Jackson, while the vessels and moorings licensed by the Trust included the following:—

License.	Vessels.	Tonnage.	License.	Vessels.	Tonnage.
Lighters ...	472	23,326	Water Boats ...	19	727
Ferry Steamers ...	68	8,232	Hulks ...	18	10,613
Tugs ...	56	1,453	Punts ...	12	163
Launches—Steam ...	8	102	Moorings ...	985	.....
Oil ...	100	.....		

STEAMSHIP SUBSIDIES.

At the Imperial Conference held in London in 1911, various resolutions related to Merchant Shipping, and to the advisableness of supporting efforts in favour of British manufactured goods and British shipping in the interests of the United Kingdom and of the British Dominions beyond the seas. The majority of steamship lines trading to New South Wales have the benefit of mail contracts with their Governments, but in addition many of the foreign lines are assisted by subventions and contributions from national exchequers, e.g., the Norddeutscher Lloyd received in 1913 an annual subsidy for the mail service between Australia and Germany. The French Government also subsidises steamers trading to Australia.

Of the British lines the Peninsular and Oriental Steam Navigation Company is in receipt of a subsidy from the Imperial Government for the conveyance

of mails to East India, China, and Australia. The Commonwealth Government has made a contract with the Orient Steam Navigation Company, Limited, for ten years from 1st February, 1910, by which the Commonwealth has agreed to pay a subsidy of £170,000 per annum for a fortnightly service between Australia and the United Kingdom, provided that each mailship is at least 11,000 tons gross registered tonnage, and capable of steaming at least 17 knots per hour. Space for certain cargo is to be provided, and each steamer fitted with wireless telegraphy installation. The flag of the Commonwealth of Australia is to be flown, only white labour is to be employed on the vessels, and the rates of freight payable on perishable produce are stipulated in the contract.

An annual subsidy of £2,000 is given to Burns, Philp, & Co. for the maintenance of a monthly service with Java ports and Singapore. For maintaining the Pacific Islands service this Company is subsidised by the Commonwealth to the extent of £19,850 per annum.

The Union Steamship Company is subsidised by the New Zealand Government for the carriage of mails from Australia.

For granting preferential cargo space and freight rates, and making Shanghai a regular port of call each month for their steamers, the Eastern and Australian Steamship Company are subsidised to the extent of £2,925 per annum.

Among the companies engaged in the Australian shipping trade are several subsidised lines of foreign steamers, whose vessels are, under agreement with their Governments, available for service in case of war. Some of these vessels are manned by trained naval reserve men.

ROUTES.

Practically the whole Coastal trade centralises in Sydney, and vessels trade from Sydney to all the coastal rivers and ports of the State.

As to Interstate trade the greater part is direct. Thus from Sydney there are direct routes to ports in Victoria, Queensland, South Australia, Western Australia, and Tasmania.

Oversea the New South Wales trade included during 1913 direct shipping to the following places within the British Empire:—

United Kingdom.*	Mauritius.
Canada.*	New Zealand.*
Fiji.*	Ocean Island.
Gilbert Islands	South African Union.*
India.*	Straits Settlements.*

To the countries marked * there was also considerable indirect shipping trade, as also to Hong Kong, Papua, and Solomon Islands.

To foreign ports the greater part of the trade goes direct:—

Africa—Portuguese East.*	Japan.*
Argentine Republic.	Java*
Belgium.*	Mexico.
Borneo*	New Caledonia.*
Brazil.	Peru.
Chile.	Philippine Islands.*
Dutch East Indies.*	South Sea Islands.
Ecuador.	Sweden.*
France.*	United States of America.*
Germany.*	Uruguay.
Hawaiian Islands.	

The countries marked * also have the benefit of indirect trade, as also have Austria-Hungary, China, Netherlands, &c.

In the New South Wales shipping trade the greater part of the business is conducted by regular liners. Those lines trading with ports outside Australia

are generally owned and controlled by companies registered outside the Commonwealth. Interstate and coastal companies are for the most part Australian-owned. In addition to the regular lines a considerable amount of cargo is carried in tramp steamers, and a smaller proportion in sailing vessels.

The opening of the Panama Canal will involve the re-arrangement of ocean routes and itineraries, and will lessen the journey from New York and East American ports to Sydney—*e.g.*, New York-Sydney *via* Cape of Good Hope, 13,306 miles; *via* Panama, 9,704 miles. It also supplies an alternative route between New South Wales and English ports. Following is a comparison of distances between Sydney and Plymouth (England) by various routes:—

Sydney-Plymouth, <i>via</i> —	miles.
Auckland, Tahiti, Panama	12,560
Cape of Good Hope	12,340
Wellington, Rapa, Panama	12,290
Suez Canal	11,200

In the English-Australian trade zone, these distances indicate that the possible freight for the Panama Canal must be mainly marginal, the extent of diversion of such traffic being dependent primarily on the canal toll rates.

RATES OF FREIGHTS.

Distance from foreign trading centres renders freight a large item in the cost of placing the products of the State on overseas markets. The rates are subject to great fluctuation, and show considerable increases during the last quinquennium. The following statement gives the rates per steamer from Sydney to London during the last two years as compared with 1905, and shows that the increases have affected all the principal articles of export:—

Article.	Freight rate.		
	1905.	1912.	1913.
Wool (greasy) lb.	$\frac{1}{4}$ d. to $\frac{1}{2}$ d.	$\frac{1}{2}$ d. to $\frac{3}{4}$ d.	$\frac{3}{4}$ d.
Wheat ton	16/3 to 23/9	10/- to 35/-	25/- to 37/6
Frozen meat lb.	$\frac{1}{2}$ d.	$\frac{1}{2}$ d. to $\frac{1}{4}$ d.	$\frac{1}{2}$ d. to $\frac{1}{4}$ d.
Preserved meat 40 cub. ft.	22/6 to 25/-	30/-	30/-
Rabbits "	25/- to 40/-	50/-	55/-
Butter 56 lb.	1/9 to 1/10	2/- to 2/6	2/- to 2/6
Tallow ton	22/6 to 35/-	42/6	47/6
Leather "	25/- to 40/-	60/-	80/-
Hides "	27/6 to 32/6	40/- to 52/6	50/- to 60/-
Timber 100 sup. ft.	4/- to 5/-	6/-	6/9
Copra ton	20/- to 37/6	40/-	42/6
Measurement goods 40 cub. ft.	25/- to 45/-	35/-	40/- to 45/-

During 1913 the rates remained firm throughout, and on account of the bounteous seasons the supply of cargo was ample to fill the space available. Cargo is carried by sailing vessels at a cheaper rate, but this class of carrier is being rapidly replaced by large modern steamers designed specially for the Australian trade.

To European ports, *e.g.*, in France, Germany, and Belgium, the freights for products such as wool (greasy) were practically the same as to London, though the goods were transhipped at London for the European ports.

Freights to the East Coast of the United States of America by various routes are typified by the rates for wool (greasy) thus :—

Route.	Freight rate.		
	1905.	1912.	1913.
Via London or Liverpool	$\frac{1}{2}$ d. to $\frac{3}{4}$ d.	$\frac{3}{4}$ d. to $1\frac{1}{4}$ d.	$\frac{3}{4}$ d. to $\frac{7}{8}$ d.
„ San Francisco	$\frac{3}{4}$ d.	$\frac{3}{4}$ d.	$\frac{3}{4}$ d. to $\frac{7}{8}$ d.
To Boston, direct... ..	.....	$\frac{3}{4}$ d. to $1\frac{1}{4}$ d.	$\frac{3}{4}$ d. to $\frac{7}{8}$ d.

The steamer rate for wool (greasy) from Sydney to Japan is $\frac{1}{2}$ d. per lb.

In connection with the question of freights, it is of interest to note that associated lines have been able to affect freights to such an extent that, as given in evidence before the Imperial Conference of 1911, in the case of wool the freight rate from South Africa is practically the same as from Australasia, double the distance.

For sheepskins, another substantial export item both of Australia and of South Africa, the position is similar; but for scoured wools the Australasian rates are less by some 5 per cent. than the South African rates.

COASTAL AND HARBOUR LIGHTS.

Lighthouses and Signal Stations.

The transfer to the Commonwealth of the control of lighthouses on the Australian coast has been in contemplation for some time, and the necessary legislation has been introduced in the Federal Parliament. Reports have been obtained on the lighting of the various sections of the coast-line of Australia embodying recommendations regarding existing lights and additional lights. Perhaps the most important proposal is the attachment to the various sections of the coast, of vessels specially fitted, to act as store supply ships to the lighthouses, also as relief ships for vessels in distress, the equipment to include wireless telegraphy, derricks, &c., and workshops for minor lighthouse repairs.

The coast of New South Wales, which is about 700 miles in length, has been well provided with lighthouses and signal stations, the number of lighthouses at the end of 1913 being 28, averaging one light to 25 miles of coast line :—

Location of Lighthouse.	South Latitude.	Description of Light.	Colour of Light.	Distance visible (See note).
M. Green Cape	37 16	Revolving—Flash 50 sec.	White	19
Two-fold Bay (Eden) (Lookout Point).	37 4	Fixed	Red	7
M. Montagu Island—Summit.	36 15	Fixed and Flashing—Fixed 33 sec., eclipse 16 sec., flash 5 sec., eclipse 16 sec.	White (Incandescent petroleum vapour).	20
Ulladulla (Warden Head)	35 22	Fixed	White	12
M. Jervis Bay (Point Perpendicular).	35 5	Group Flashing—Flash $\frac{3}{4}$ sec., eclipse 2 sec., flash $1\frac{1}{4}$ sec., eclipse 2 sec., flash $\frac{3}{4}$ sec., eclipse $13\frac{1}{4}$ sec.	White (Incandescent petroleum vapour).	24

Location of Lighthouse.	South Latitude.	Description of Light.	Colour of Light.	Distance visible (See note).
	°			Nautical miles.
Crookhaven River ...	34 54	Fixed	Red	8
Kiama	34 40	„	Green (gas) ...	9
Wollongong	34 25	„	White (gas)† ...	10
Bellambi**	34 22	„	White and Red	8
M. Port Jackson, Sydney— Macquarie (Outer South Head).	33 51	Revolving—Flash every min.	White (Incandescent kerosene vapour).	25
Hornby (Inner South Head).	33 50	Fixed	White (gas) ...	14
Broken Bay (Barrenjoey)	33 35	„	Red	10
M. Norah Head	33 17	Flashing—Flash $\frac{1}{2}$ sec. duration, eclipse $4\frac{1}{2}$ sec.	White	18
M. Port Hunter, Newcastle— Nobbys Head (Summit).	32 55	Occulting	„ (Incandescent petroleum vapour).	17
M. Port Stephens—Stephens Point.	32 45	Revolving—Red & white light alternately, short eclipse between the two colours.	Red and White alternately.	W. 14 R. 8
Nelson Head (Summit)...	...	Fixed	White and Red*	8
M. Sugarloaf Point (Seal Rocks)	32 26	Revolving—Flash every $\frac{1}{2}$ min.	White (Incandescent petroleum)	22
„ (same Tower) ...	...	Fixed	Green§	3
Forster, Cape Hawke (anchorage).	32 11	„	Green (acetylene gas).	6
Crowdy Head (Summit)	31 51	„	White and Red†	12
Tacking Point	31 29	„	White	12
M. Smoky Cape	30 56	Group Flashing—Flash 2 sec., eclipse 2 sec., flash 2 sec., eclipse 2 sec., flash 2 sec., eclipse 20 sec.; triple flash every 30 sec.	„	28
Monument Rock, Trial Bay.	30 53	Fixed	White and Red ...	6
Coff's Harbour Jetty ...	30 18	„	Red	3
M. South Solitary Island (Summit).	30 12	Revolving—Flash every $\frac{1}{2}$ min.	Red	5
Clarence River	29 26	Fixed	White (Incandescent petroleum)	20
Richmond River (2) ...	28 52	{ „	White	12
M. Cape Byron	28 38	{ „	„	12
„ (same Tower) ...	...	Flashing—Flash $\frac{1}{2}$ sec. duration, eclipse $4\frac{1}{2}$ sec.	„	7
Tweed River (Fingal Head)	28 11	Fixed	Red || ... ..	26
		„	White	12

Distance visible.—The distance is calculated visible to an observer whose eye is elevated 15 feet from the sea level.

* The light shows white to seaward, and over Entrance Shoal, red within the shoal, and up the Channel as far as Nelson Head, white up the Harbour.

† Showing red over Mermaid Reef.

‡ Shows red over Bellambi Reef.

§ Visible between N. and N. 62 deg. W., covering Seal Rocks and adjacent dangers. This arc does not include Edith Breaker, from which the green light cannot be seen.

|| Showing over the Juan and Julia rocks.

** Maintained by Bellambi Coal Company.

The lighthouses marked M above are equipped with Morse signalling lamps, and messages may be sent to them according to the rules laid down in the British Signal Manual from vessels passing during night-time. At Newcastle and at South Head (Port Jackson) the Morse signalling equipments are at the signal stations adjacent to the lighthouses.

Lighted beacons and leading lights are placed for the safety of harbour navigation in the ports of Sydney, Newcastle, Ulladulla, Clarence River, Botany Bay, Wollongong, and Kiama. The Smoky Cape group-flashing light (visible 28 miles at sea), and the Cape Byron group-flashing light (visible 26 miles), and the Macquarie revolving light, on the South Head of Port Jackson, are amongst the most powerful lights in the world. In addition, the light on Point Perpendicular is visible 24 miles; at Seal Rocks, visible 22 miles; and at Montagu Island, visible 20 miles. An annual inspection is made of all lighthouses.

Harbour Lights.

In Port Jackson the question of efficient lighting has received considerable attention. A conference of ship-masters (representing oversea, interstate, and coastal shipping companies) with the Harbour Trust Commissioners met in July, 1909, with the result that leading lights were erected at the entrance to the port, with occulting lights to mark the channels. Most of the lights are provided by acetylene installations. The harbour lights include two leading lights in the Eastern channel, and fourteen lights at points up to Goat Island, where also are two leading lights. On Shark Island a lighthouse, built in sections, of reinforced concrete, has been completed, and a new light has been placed on Fort Denison. Fog-bells are placed on the more prominent positions along ferry routes.

In Port Hunter, leading lights (two each) are placed off Stockton and in the fairway; there is also a leading light on the South Breakwater. Lights are placed at five other points, and there are also two fog-bells.

For Ulladulla harbour, Kiama breakwater, and Wollongong, there are two leading lights each, and for navigation of the Clarence River leading lights are exhibited at Maclean, Lawrence, Elizabeth Island, and Ulmarra. Also at Sugarloaf Point (Seal Rocks) there is, in addition to the dioptric light, a catadioptric, fixed, green light visible at three miles; and at Cape Byron there is a fixed red light (dioptric) showing over Juan and Julia rocks.

PILOT AND ROCKET STATIONS.

Pilotage on the coast of New South Wales is a State service, the pilots being salaried officers appointed by the Government. Their services must be engaged for all vessels not specifically exempted, and certificates of exemption from pilotage for the various ports of the State are granted, after examination, only to British subjects, and are usable only in respect of British ships registered in Australia or in New Zealand, and engaged in trade in Australasia and the South Sea Islands, or in whaling.

The following statement shows the pilot stations along the coast from north to south, the pilot staff at December, 1913, and the number of vessels piloted in and out of port during each of the last five years. All the stations

except Camden Haven, Lake Macquarie, and Moruya River, are also rocket stations; Port Jackson and Macleay River have two stations each, Port Hunter four, and each of the other ports one:—

Port and Pilot Station.	Pilots.	Crew.	Vessels Piloted In and Out.				
			1900.	1910.	1911.	1912.	1913.
Tweed River	1	2	4	18	32	9	8
Richmond River—Ballina	1	5	...	17	3	...	8
Clarence River—Yamba	1	5	13	13	10	22	5
Bellinger River	1	2	13	4	4	18	5
Nambucca River	1	2	15	7	2	20	9
Macleay River	1	4	8	11	...	13	8
Port Macquarie	1	3	6	1	7	16	8
Camden Haven	1	2	4	4	14	...	19
Manning River—Harrington	1	4	10	6	7	26	16
Forster—Cape Hawke	1	2	15	11	8	15	16
Port Hunter—Newcastle	10	23	1,008	1,042	1,113	1,231	1,194
Port Jackson—Sydney	10	23	1,540	1,731	1,844	1,939	2,012
Port Kembla—Wollongong	1	2	9	11	12	...	19
Kiama	1	...	...	...	...	...	...
Shoalhaven River—Crookhaven	1	3	7	4	4	21	10
Moruya ... ..	...	1	4	7	10	8	7
Twofold Bay—Eden	1	3	16	19	34	26	19

The number of pilotage certificates is shown elsewhere.

The pilot vessel at Port Jackson is the Government steamer "Captain Cook," a main-deck vessel 156 ft. x 25 ft. x 13 ft., having a gross tonnage of 396, under-deck 376, net 172, and nominal horse-power 86. At Port Hunter the pilot vessel is the Government steamer "Ajax," an awning-deck vessel 129 ft. x 21 ft. x 12 ft. to main deck, and 19 ft. to awning deck, having a gross tonnage 344, net 189, and nominal horse-power 72. The Government has lately purchased the tug "Alexandra" for pilot service at Clarence River. At each of the northern stations there are subsidised tugs for the use of pilots.

SAFETY EQUIPMENT FOR VESSELS.

Regulations for safety under the Navigation Act make the following stipulations of equipment to be carried:—

Sea-going Vessels.

Sufficient boat and raft accommodation and life-jackets for passengers and crew up to the numbers for which the vessel is certificated.

Life-buoys in proportion to boats carried, the minimum number being ten.

Blue lights (12), deck flare lights (2), rocket distress signals (24), rockets (12).

Harbour and River Steamers.

Sufficient buoyant apparatus, flotation seats, and rafts, also life-jackets to accommodate all persons on board.

At least four life-buoys.

Approved signals of distress.

Regulations proclaimed in July, 1913, under the Navigation Act, compel a lifejacket to be provided for each passenger, even on ferry boats.

CHARTS AND COASTAL SURVEYS.

The British Admiralty have two surveying ships employed—H.M.S. "Fantome," constantly, and H.M.S. "Sealark," occasionally—on the Australian Coast, and during recent years they have been engaged principally on the northern and north-western portions of the continent. The importance of the Torres Strait route from Australia to Eastern Asiatic and Indian ports, and the opening up of the Northern Territory of Australia by the Commonwealth Government, have rendered such surveys necessary, so that the shores of the Arafura and Timor Seas will shortly be as well charted as the more settled and better known southern and eastern shores of Australia.

The importance of a properly equipped and organised Hydrographic Department has not yet been fully realised by the Australian States, and with the exception of the work done on the New South Wales coast, comparatively little is known of the set of the ocean currents, with their seasonal or other variations, the meteorological influence on tidal flow, or the changes in temperature, density, velocity, or direction of the many currents on the Australian littoral. These currents are subject to change at various seasons of the year, as well as to secular changes, and a knowledge of them is of prime importance in connection with the mercantile marine. The effect of these changes is also of the greatest importance to the fishing industry, as without a knowledge of the currents which are the means by which fish and their food are transported from place to place, all investigations of fish-life are futile.

In the other Australian States, harbours and river entrances are surveyed by State officers, as in New South Wales, but nothing is done in the way of investigating ocean-currents beyond the immediate vicinity of the entrances. In New South Wales some work of this description has been undertaken, and a considerable amount of useful material has been collected; the observations can be regarded only as items in a series, and their full value will not be apparent until that series is complete.

Measured distances have been marked on the coast for the use of high-speed vessels, such as torpedo destroyers, when running their speed trials. Two sets of obelisks, 1 nautical mile apart, are set up at Maroubra Bay, and another set near Cape Solander, Botany Bay, 4 nautical miles to the southward. By keeping a due magnetic north course, and noting the times of transit for each set of obelisks, distances of 5, 4, or 1 miles may be accurately timed, and by timing and running the same distances, steering due magnetic south, the effect of current and wind may be eliminated. The obelisks are conspicuous, easily picked up, and the transits well marked, at distances of from 1 to 3 miles off shore.

DREDGING.

The dredging service is controlled by the Department of Public Works for the ports and rivers other than Port Jackson, where the Sydney Harbour Trust is in control.

The following statement summarises the operations of the Dredge service for the year 1912-13, in the effort to prevent the shoaling of entrances, and to deepen existing channels wherever necessary :—

Class of Dredge.	Number of Dredges.	Tons Dredged.	Hours Dredging.	Expenditure.				
				Dredging only.			Dredging and Towing.	
				Total.	Per Ton.	Per Hour.	Total.	Per Ton.
Harbours and Rivers—				£	pence.	£ s. d.	£	pence.
Ladder	6	1,389,535	8,501	23,171	4'00	2 14 6	24,856	6'02
Sand-pump	12	5,027,871	9,635	56,325	4'46	5 16 11	59,495	4'72
Combined Grab and Sand-pump	8	758,911	12,159	18,623	5'89	1 10 8	18,911	5'68
Grab	11	175,873	12,756	10,962	14'96	0 17 2	13,093	17'87
Total	37	5,352,190	43,051	109,081	4'89	2 10 8	126,355	5'67
Sydney Harbour Trust—								
Sand-pump and Grab	9	1,875,925	11,989	22,721	2'01	1 17 11	23,697	3'65

In the towing of dredged material from harbours and rivers seventeen tugs were engaged for the year 1912-13. For the Sydney Harbour Trust, five tugs were engaged in towing during the year, in addition to one tug engaged on special service. The following statement shows the expenditure on dredging and towing services at each port for the last three years :—

Locality.	Cost of Dredging and Towing.		
	1910-11.	1911-12.	1912-13.
	£	£	£
Tweed River	7,603	7,062	7,015
Richmond River	9,841	16,106	12,823
Clarence River	9,605	8,440	10,509
Coff's Harbour ... ..	.....	.....	582
Bellinger River	2,372	2,874	4,511
Nambucca River	2,950	5,755	5,152
Macleay River	6,648	2,358	3,054
Port Macquarie	3,255	2,245	4,003
Camden Haven	2,964	2,693	2,006
Manning River	4,717	15,098	11,633
Forster (Cape Hawke)	2,462	2,953	2,315
Port Stephens	3,598	2,770	1,283
Hunter River	2,682	.....	835
Paterson (Port Hunter)	1,048	.....	.....
Newcastle Harbour	37,639	41,072	46,424
Lake Macquarie	827	1,709	.....
Tuggerah Lakes	363	.....	.....
Hawkesbury River and Brisbane Water	1,925	4,970	2,679
Parramatta River ... ..	.....	.....	1,155
Cook's River and George's River	2,648	3,439	3,592
Port Hacking	30	1,209	755
Wollongong	810	51	510
Port Kembla	537	.....	.....
Shoalhaven and Crookhaven ... ..	.....	709	2,131
Bateman's Bay ... ..	.....	.....	1,602
Moruya River	2,481	.....	1,020
Wagonga Inlet ... ..	.....	1,893	856
Twofold Bay ... ..	.....	2,915	.....
Total	£ 107,005	126,321	126,355
Port Jackson (Sydney Harbour Trust) £	22,893	24,470	28,697

DOCKS AND SLIPS.

As the shipping traffic employing vessels of considerable size is concentrated at Sydney and Newcastle, accommodation, provided both by the Government and by private enterprise, for building, fitting, and repairing ships in the State, is concentrated at these ports. At Sydney there are four graving docks, five floating docks, and six patent slips; at Newcastle there are three patent slips, and an Act passed in October, 1913, sanctioned the construction of a floating dock designed to lift vessels having a displacement of 8,500 tons, at an estimated cost of £110,000. Other docking and building yards are established along the coast to meet the necessities of the smaller vessels engaged in coastal trade.

Particulars as to dock accommodation at Sydney and at Newcastle at the end of 1913, are supplied in the following table:—

Name of Dock.	Where situated.	Length.	Breadth.	Draught limits.	Lifting-power of Floating Dock or Patent slip.
SYDNEY HARBOUR—(PORT JACKSON).					
Graving Docks— Commonwealth Government— No. 1 (Sutherland) No. 2 (Fitzroy)	Cockatoo Island.	ft. From outer caisson, 633	ft. 84	ft. 30	tons.
		" inner " 603	" outer " 506	" inner " 484	.....
Private— Mort's ...	Mort's Bay, Balmain	640	69 at cope, 69 at entrance, 59 on floor.	18 high water 13½ low "	.....
Woolwich ...	Parramatta River.	750 present; but in course of extension to 780.	109 at cope, 83 at entrance, 75 on floor.	28 high water 23 low "	.....
Floating Docks— Private— Ward's ... Drake's ...	Waterview Bay White Bay, Balmain.	163 150	42 60	11½ 7½	400 300
Woolwich Pon- toon Dock. Jubilee ...	Woolwich, Parramatta.	195	56 between altars.	12	1,400
Small ...	Johnson's Bay.	317	55; 44 at en- trance.	15	1,200
		100	23	7½	120
Patent Slips— Commonwealth Government— No. 1	Cockatoo	105	{ Arms, 28 ... Cradle, 29 ... }	{ 9	{ 300
No. 2	Island.	33	{ Arms, 10 ... Cradle, 6 ... }	{ 4	{ 5
N.S.W. Government Boatslid.	Dawes' Point	82	{ Arms, 17 ... Cradle, 10 ... }	{ 6	{ 100
Private— Mort's No. 1	Mort's Bay, Balmain.	270	30	11 ft. forwd. 17 ft. aft.	1,500
" No. 2		200	25	8 ft. forwd. 14 ft. aft.	800
" No. 3		58	15	5½ ft. forwd. 10 ft. aft.	40
NEWCASTLE HARBOUR—(PORT HUNTER).					
Patent Slips— Private— O'Sullivan's ...	Stockton ...	220	40	9 ft. forwd. 12 ft. aft. up to 170 ft. 7 ft. forwd. if 220 ft. long.	1,000
Callen's No. 1	Stockton ...	150	30	8	100
" No. 2		150	30	8	100

Particulars as to the Government graving docks elsewhere along the coast are as follow :—

Locality.	Length on Top.		Breadth at Gates.		Draught limits.	
	ft.	ft.	ft.	ft.	ft.	ft.
Tweed River	115		42		10	
Richmond River	214½		45		10	
Clarence River	115		42		10	
Macleay River	121		32		7	
Manning River	128½		40		6½	
Shoalhaven River	130		26		6	

Sutherland Graving Dock at Cockatoo Island, Port Jackson, is one of the largest single docks in the world. Woolwich Dock will be, when the present extensions are completed, the largest dock in the southern hemisphere—the pumps empty it in four hours, discharging 13,000 tons per hour. Fitzroy Dock is capable of receiving vessels drawing 19 feet 6 inches of water. Considerable extensions have been made recently at the Government Dockyard, including the construction of two building-slips, adjacent to Fitzroy Dock, commanded by cantilever electrically-driven cranes. One of the berths is capable of allowing the construction of a vessel of 50 feet beam, 450 feet in length, and 30 feet moulded depth, the other is capable of taking a vessel of a similar beam and depth and 350 feet in length. During 1913 the Docks at Cockatoo Island were transferred to the Commonwealth for naval purposes, and eight ships of the British Navy and four of the Australian Navy were docked or shipped. At the present time war vessels for the Australian Navy are under construction at the dock.

Transactions at all Government docks for the last ten years are recorded in the following statement of vessels docked :—

Year.	Port Jackson.		Tweed River.		Richmond River.		Clarence River.		Macleay River.		Manning River.		Shoalhaven River.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
1904	71	70,429	6	1,120	8	1,400	9	740	6	480	10	580	1	50
1905	89	64,185	13	1,577	11	1,590	17	1,530	8	740	9	345	...	...
1906	85	81,403	6	809	9	1,525	7	664	5	410	12	1,152	...	...
1907	78	62,639	4	239	8	1,155	9	749	...	...	6	370	...	...
1908	80	103,026	6	492	13	1,477	9	656	6	400	10	699	3	250
1909	59	79,170	9	770	9	1,540	10	645	6	640	4	598	3	260
1910	68	102,161	11	1,002	9	1,961	13	1,058	3	348	5	298	1	100
1911	60	79,243	8	497	10	2,376	16	900	6	1,038	6	496	...	...
1912	70	95,367	12	609	4	390	14	1,338	11	633	8	525	1	120
1913	33	43,939	10	772	7	1,500	10	732	...	...	8	566	...	...

At the coastal docks the majority of vessels docked are Government dredges, tugs, and punts.

SHIP-BUILDING.

The numbers and tonnage of steam and sailing vessels built in New South Wales are shown in the following statement for quinquennial periods from 1876 to 1905, and for each of the last three years separately:—

Years.	Sailing.		Steam.		Motor.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
1876-1880	155	9,319	106	7,232	.....	.....	261	16,551
1881-1885	173	7,403	191	17,546	.....	.....	364	24,949
1886-1890	68	2,877	87	5,169	.....	.....	155	8,046
1891-1895	76	2,865	42	2,042	.....	.....	118	4,907
1896-1900	97	4,015	50	3,419	.....	.....	147	7,434
1901-1905	63	3,145	87	5,110	.....	.....	150	8,255
1906-1910	15	656	91	4,458	.....	.....	106	5,114
1911	1	18	10	891	4	77	15	986
1912	2	145	8	1,185	10	140	20	1,470
1913	2	112	10	678	6	100	18	890

Although the Merchant Shipping Act, which controls the registration of shipping in New South Wales, does not require the registration of vessels under 15 tons burthen, few of such vessels remain unregistered. The rules of yachting clubs ensure the registration of the yachts, steamers, and motor boats of the members; and, for the purpose of sale or mortgage, business is facilitated by such registration.

In the first ten years of the period for which figures are given, the rate of construction averaged sixty-three vessels per annum—sailing, thirty-three; steam, thirty. Taken on the tonnage, the construction was at the rate of 4,150 tons per annum,—sailing, 1,672; steam, 2,478. The replacement of sailing vessels by steamers, and the increasing size of the latter, were the evident tendencies of the period, in which the years 1883 and 1884 were characterised by the maximum activity in construction, both of sailing and steam vessels, fifty sailing and fifty-two steam vessels having been built in 1883, and thirty-nine sailing vessels and sixty-four steamers in 1884. But the promise, indicated by the extent of operations in this period, of a localised ship-building industry was not fulfilled, as is evident from the figures for subsequent years. Ketches and schooners were the principal types of sailing vessel constructed, and operations were restricted practically to the building of vessels with wooden frames and hull.

SHIPPING REGISTERS.

The only ports in New South Wales at which shipping registers are maintained by the Navigation Department are Sydney and Newcastle, and the following statement shows the registrations at these ports on 31st December, 1913, classified according to tonnage :—

Tonnage.	Sydney.				Newcastle.			
	Steam.		Sailing.		Steam.		Sailing.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
Under 50*	395	7,181	249	3,642	41	936	21	565
50 and under 100†	106	7,670	62	4,640	10	685	13	926
100 " 200 ...	64	8,937	19	2,734	2	217	2	244
200 " 300 ...	27	6,432	9	2,284	...	...	2	510
300 " 400 ...	20	6,868	12	4,219	...	...	4	1,393
400 " 500 ...	9	4,020	1	467	...	...	2	900
500 " 600 ...	10	5,557	2	1,103	2	1,136	...	900
600 " 1,000 ...	12	9,087	10	8,043	...	...	2	1,436
1,000 " 1,400 ...	10	11,570	4	4,678	...	...	1	1,292
1,400 " 1,800 ...	8	12,570	...	...	1	1,653	1	1,453
1,800 and over... ..	7	16,820	...	...	1	1,835	...	...
Total	668‡	96,712	368	31,815	57§	6,462	48	8,719

* Includes under steam, Sydney, 150 motor vessels, tonnage 1,534; and under steam, Newcastle, 3 motor vessels, tonnage 45.

† Includes under steam, Sydney, 5 motor vessels, tonnage 344.

‡ Includes 155 motor vessels, tonnage 1,378.

§ Includes 3 motor vessels, tonnage 45.

The total tonnage registered at the end of 1913 was 143,708,—steam, 101,251, motor 1,923, and sailing, 40,534. These figures are exclusive of lighters.

The aggregate numbers and tonnage of steam and sailing vessels on the register at each port at the close of each of the last eight years are shown in the following statement :—

Year.	Sydney.				Newcastle.			
	Steam.*		Sailing.		Steam.*		Sailing.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
1906	542	70,301	435	43,740	54	6,691	46	6,771
1907	555	72,226	416	43,674	56	5,116	46	6,771
1908	582	73,022	418	45,475	55	5,071	48	7,840
1909	627	74,784	408	43,207	55	3,732	48	7,840
1910	616	77,257	399	41,707	55	2,959	48	7,840
1911	610	76,589	374	37,048	57	4,820	48	7,840
1912	643	93,738	371	32,966	57	6,462	48	7,839
1913	663	93,712	368	31,815	57	6,462	48	8,719

* The figures include motor vessels. In 1913 there were at Sydney 155 motor vessels, tonnage 1,378; and at Newcastle, 3 motor vessels, tonnage 45.

The number of steam vessels registered at Sydney in 1913 increased by 4 per cent., as compared with the previous year, and the tonnage per vessel remained constant. At Newcastle the average tonnage of steam vessels registered rose from 85 in 1911, to 113 in 1912 and 1913. For sailing vessels at both ports the figures were fairly constant.

The new tonnage registered in New South Wales during each of the last ten years is summarised in the following table. The figures for steam tonnage, 1912, is far in excess of previous years, being due to depletions in inter-state shipping having been filled by the purchase and transfer of vessels registered outside of Australia. The tonnage for 1913 is normal, and, considering the uncertainty of the units forming it, the table shows a remarkable degree of stability.

Year.	Steam.*		Sailing.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
1904	23	6,082	20	716	43	6,798
1905	37	3,018	11	1,103	48	4,121
1906	40	11,249	14	3,243	54	14,492
1907	35	7,664	15	3,294	50	10,958
1908	42	4,660	14	4,798	56	9,458
1909	43	6,646	5	1,783	48	8,429
1910	35	9,951	4	1,377	39	11,328
1911	36	7,502	10	1,945	46	9,447
1912	60	22,394	11	988	71	23,382
1913	45	8,613	29	2,220	74	10,833

* Includes motor vessels. During the year 1913 there were registered 16 motor vessels, tonnage 246.

The number of vessels built outside New South Wales, which are included in these registrations, is as follows:—

Year.	Steam.*		Sailing.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
1904	6	5,411	...	...	6	5,411
1905	7	1,511	6	827	13	2,338
1906	6	10,261	4	2,831	10	13,092
1907	9	6,487	7	3,144	16	9,631
1908	13	3,392	10	4,648	23	8,040
1909	7	5,525	4	1,780	11	7,305
1910	12	8,741	2	1,285	14	10,026
1911	10	6,085	7	1,813	17	7,898
1912	30	20,753	7	683	37	21,436
1913	15	7,260	25†	2,096	40	9,356

* Includes motor vessels. During the year 1913 there were 2 motor vessels, tonnage 50.
† Mostly small pearl fishing boats, transferred from another Register.

In connection with this statement of the origin of vessels registered, it is of interest to record the number and value of vessels, built abroad and brought into New South Wales for the local trade, in the last nine years:—

Year.	From United Kingdom.		From Other Countries.		Total.	
	Vessels.	Aggregate Value.	Vessels.	Aggregate Value.	Vessels.	Aggregate Value.
		£		£		£
1905	4	33,000	3	10,165	7	46,165
1906	6	160,000	3	8,300	9	168,300
1907	9	234,760	6	24,940	15	259,700
1908	10	179,000	7	10,450	17	189,450
1909	8	191,750	2	4,150	10	195,900
1910	9	304,000	2	23,750	11	327,750
1911	6	172,300	7	30,000	13	202,300
1912	22	573,515	5	22,405	27	595,920
1913	10	228,938	6	21,932	15	250,950

Changes on the register by sales are summarised as follows, for the last ten years. Sales to foreign buyers, of course, result in removal of the vessels from the registers :—

Year.	To British Buyers.				To Foreign Buyers.			
	Steam.*		Sailing.		Steam.*		Sailing.	
	Vessels.	Tonnage.	Vessels	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
1904	56	8,180	26	3,574	2	1,850	2	90
1905	43	4,100	37	2,898	4	2,468	1	54
1906	47	3,159	32	3,059	...	...	52	1,287
1907	38	3,161	29	2,269	2	1,849	21	443
1908	68	5,964	23	3,745	...	...	1	13
1909	36	4,137	32	3,749	...	...	2	1,939
1910	54	5,146	31	5,650	2	1,530	...	...
1911	57	5,072	31	2,466	2	50	3	57
1912	59	9,148	30	4,098	2	7	4	138
1913	43	10,813	43	2,561	...	...	4	138

* Includes motor vessels. During the year 1913, 13 motor vessels, tonnage 190, were sold to British buyers

HARBOUR REMOVALS.

In addition to piloting vessels in and out of ports, pilots are required to superintend removals of vessels, except such as are exempted within Port Jackson and Port Hunter. Following are the records of harbour removals for the last ten years :—

Year.	Port Jackson (Sydney).		Port Hunter (Newcastle).	
	Vessels.	Tonnage.	Vessels.	Tonnage.
1904	854	1,747,717	423	700,796
1905	676	1,682,809	565	1,066,047
1906	814	1,992,845	634	1,256,393
1907	1,178	2,704,323	710	1,448,843
1908	783	2,030,751	641	1,364,667
1909	698	1,795,286	389	786,733
1910	913	2,661,064	415	903,764
1911	991	3,009,123	426	960,718
1912	941	2,981,329	516	1,200,765
1913	1,027	3,174,714	1,223*	2,684,912*

* Figures for this year represent the multiple removals of ships, and are not comparable with previous years.

TUGS.

To ensure an efficient and ready service in towing vessels in and out of port as required, the Department of Navigation subsidises one tug at each of nine stations for the ten ports named below; for the Nambucca and Macleay Rivers there is a joint service by one tug. The tonnage of the tugs ranges from 32 at Forster (Cape Hawke), to 59 at Richmond River; the special sanction of the Department must be given before the tugs may be removed from their stations. The masters must be in readiness to

take all vessels out of port, and must render assistance promptly in case of any vessels in danger; they are required also to convey pilots to vessels signalling for the services of a pilot. The maximum towing rate is fixed at 4d. per registered ton, with a minimum fee of £1 10s., and the annual subsidy varies for each station.

The following statement shows the vessels towed in and out of each port and the amount of the subsidy for each of the last ten years :—

Year.	Tweed and Brunswick Rivers.*		Richmond River.			Clarence River.			Bellinger River			Nambucca River.†		Macleay River.†	
	In.	Out.	In.	Out.	Subsidy.	In.	Out.	Subsidy.	In.	Out.	Subsidy.	In.	Out.	In.	Out.
1904	89	90	8	23	£ 1,717	13	13	£ 900	104	114	£ 1,008	58	79	6	7
1905	84	94	1	18	1,360	10	9	900	92	139	1,008	70	107	...	1
1906	65	81	6	15	1,560	13	15	900	91	136	1,008	50	87	6	1
1907	61	79	4	8	1,560	13	13	900	154	177	1,008	48	114	3	5
1908	88	93	3	5	1,560	13	13	900	156	197	1,008	163	113	5	8
1909	82	93	...	4	1,560	13	12	900	140	194	1,008	76	129	5	4
1910	78	100	1	7	1,560	9	8	‡	126	212	1,008	57	113	3	3
1911	84	82	6	24	1,560	10	9	‡	118	200	912	64	132	...	...
1912	97	103	...	...	1,560	3	3	‡	128	202	912	52	97	...	...
1913	82	94	5	5	1,560	3	6	‡	135	203	912	122	164	...	...

Year.	Port Macquarie.			Camden Haven.			Manning River.			Forster, Cape Hawke.			Total.§		
	In.	Out.	Subsidy.	In.	Out.	Subsidy.	In.	Out.	Subsidy.	In.	Out.	Subsidy.	In.	Out.	Subsidy.
1904	108	114	£ 420	148	206	£ 600	204	209	£ 400	83	168	£ 400	829	1,046	£ 7,754
1905	84	96	420	203	205	600	280	280	500	81	254	400	908	1,203	6,997
1906	73	104	420	203	207	600	64	64	500	130	274	400	701	984	7,197
1907	56	92	420	115	171	600	19	100	500	132	240	400	605	999	7,197
1908	43	82	540	5	8	960	112	163	500	239	239	400	832	921	7,077
1909	39	57	840	165	190	960	300	300	500	67	144	540	887	1,127	8,117
1910	37	38	840	152	178	960	249	247	600	62	107	540	774	1,013	7,317
1911	24	31	840	115	150	960	235	240	840	49	112	660	705	980	7,581
1912	53	61	840	53	104	960	124	138	840	51	110	660	561	818	7,581
1913	34	46	840	36	93	960	100	112	840	46	89	660	563	812	7,521

* For the Tweed and Brunswick station the subsidy has remained at £849 per annum throughout the ten years.

† For the joint service of the Nambucca and Macleay Rivers station the subsidy until 1913 was £960 per annum. In 1913 it was £903 per annum.

‡ The tug was purchased by the Government, and the service is conducted by the Department of Navigation.

§ Includes Wollongong for the year 1904, viz., eight vessels In, twenty-three Out, subsidy £500.

QUARANTINE.

Since 1st July, 1909, the administration of all matters relating to seaboard quarantine—till then controlled in New South Wales by the Government of the State—has been under control of the Federal Minister for Trade

and Customs. The Commonwealth Quarantine Act, 1908-1912, defines the vessels which shall be subject to quarantine, and provides for the exclusion, detention, observation, segregation, isolation, protection, sanitary regulation, and disinfection of vessels, persons, goods, things, animals, or plants, so as to prevent the introduction or spread of diseases or pests into the Commonwealth. Particulars of vessels examined by the Government Port Health Officers at Sydney and Newcastle during the last ten years are shown in the following table:—

Year.	Vessels.		Persons.		
	Ex- amined.	Detained for special action.	Passengers.	Crews.	Total.
1901	762	153	8,602	34,723	43,325
1905	655	159	8,700	29,737	38,437
1906	871	141	12,016	42,376	54,392
1907	969	160	9,656	39,298	48,954
1908	740	44	7,300	31,477	38,777
1909	628	67	8,227	29,075	37,302
1910	655	71	11,313	30,328	41,641
1911	737	196	25,160	38,755	63,915
1912	639	*878	23,668	37,719	61,387
1913	773	*1,016	27,474	46,354	73,828

* Represents vessels fumigated.

Vessels arriving in Australian ports from oversea are examined at the first port of call, and also, in the case of vessels from places north of Australia, at the last port of call, and pratique is given ordinarily for the whole of the Commonwealth. The quarantine station at North Head, Port Jackson, as maintained by the State Government, was transferred to the Commonwealth for the purpose of human quarantine.

Stock quarantine is undertaken at Athol Bay, Port Jackson, where 66 horses, 34 head of cattle, 17 sheep, 49 dogs, 5 donkeys, 2 mules, and several other animals, were detained during the year ended 30th June, 1914.

Administration of the Federal Act, in relation to animals and plants from oversea, is undertaken by the Department of Agriculture of New South Wales.

Quarantine diseases under the Commonwealth Act include smallpox, plague, cholera, yellow fever, typhus fever, leprosy, and such other diseases as may be declared, and quarantine includes all measures inspired by medical science for the purpose of preventing the introduction of communicable disease to, or its spread from, specific localities.

The Commonwealth Government in 1912 became a party to the Paris Convention of 1912, to which the United States of America, and the chief States of Europe are signatories, but this adherence was qualified by certain conditions intended to secure to Australia even greater protection than the terms of the Convention assure. The most important article of the Convention stipulates that every signatory country shall provide at least one

port on each of its seaboard with an organisation and equipment sufficient for the reception of a ship whatever its health conditions may be. The necessary organisation and equipment include—

- (1) A properly organised port medical service, and permanent medical supervision of the health conditions of the crews and of the population of the port.
- (2) Suitable accommodation for isolation and observation.
- (3) Bacteriological laboratories to facilitate diagnosis of quarantinable disease.
- (4) Water supply and sanitary systems.

The Paris Convention relates particularly to plague, cholera, and yellow fever; but, as indicated above, the Commonwealth legislation has a somewhat wider scope.

The accepted standard of quarantine accommodation for isolation is one bed per 1,000 of population, which would mean approximately 1,800 beds for New South Wales. As the chief terminal port in Australia, the necessity for extensive accommodation at Sydney is very evident.

The present accommodation of the Quarantine Station at Sydney is practically 700 beds; while the estimate of requirements under Federal control was 1,130 beds, viz., 100 for first-class passengers, 250 for second-class passengers, 750 for steerage passengers and crew, and 30 for observation cases.

Before incurring the heavy expense attendant on projected works at the Station, the Director of Quarantine visited other countries. Vigorous progress has been made with the works, and the Quarantine Station should soon be fully equipped.

WRECKS AND DISASTERS.

Casualties.

Wrecks and shipping casualties occurring to British merchant shipping on or near the coast of the State are subjects of investigation by Courts of Marine Inquiry, of which some account is given in the Chapter of this Year Book relating to Law Courts. The following statement shows such wrecks and casualties reported in each of the last ten years:—

Year.	British Vessels.			Total Tonnage.	Value of Vessels and Cargoes.	Crews and Passengers.	Lives Lost.
	Steam.	Sailing.	Total.				
1904	5	7	12	5,509	£52,862	286	36
1905	4	4	8	974	†22,672	52	8
1906	4	...	4	89	4,063	22	3
1907	4	1	5	716	17,945	55	...
1908	9	3	12	5,898	139,082	209	10
1909	4	...	4	520	18,750	60	1
1910	6	...	6	3,291	111,765	191	2
1911	7	2	9	2,546	50,600	112	41
*1912	8	2	10	1,033	38,056	142	36
1913	3	4	7	372	†10,834	40	1

* Figures for this year include one steam vessel of 41 tons, trading on the Murray River.
 † Complete information not available.

The majority of the vessels reported are small coasters under 200 tons, *i.e.*, out of 80 vessels wrecked in the ten years, only twelve were of 500 tons and over. As regards foreign shipping, inquiries as to vessels lost are made by foreign consuls. Following is the record for the last ten years:—

Year.	Foreign Vessels.			Total Tonnage.	Crews and Passengers.	Lives Lost.
	Steam.	Sailing.	Total.			
1904	...	1	1	2,413	32	...
1905	...	1	1	1,299	14	...
1906	1	2	3	6,367	62	...
1907	1	2	3	2,293	47	7
1908	1	1	2	3,605	40	...
1909	...	1	1	1,364	22	17
1910	...	...	...	...	...	...
1911	...	1	1	1,543	20	...
1912	...	...	...	...	...	...
1913	...	...	...	...	...	...

Particulars as to value of vessels (which were all, except one, over 500 tons burden) and cargo lost are not obtainable for each year. During the years 1910, 1912, and 1913 there were no inquiries on wrecks.

The figures given in the two tables above do not include vessels which left the ports of the State and were not reported subsequently.

Relief.

Two lifeboat stations are maintained on the coast one at the Sydney Heads, and the other at Newcastle; and the whaleboats at the pilot stations are fitted for rescue service. The steam tugs subsidised for the towing of ships in and out of port also are available for the purpose of rendering assistance to vessels in distress; and life-saving appliances are kept at certain places along the coast. A considerable number of vessels trading in Australian waters are fitted with wireless telegraphy apparatus, by which aid may be summoned to vessels in distress.

The Royal Shipwreck Relief and Humane Society of New South Wales is maintained by public subscriptions, unsubsidised by the State, to afford relief in cases of distress to dependents of New South Wales seamen who have lost their lives or sustained injury in the discharge of their duties, to relieve crews of vessels and necessitous passengers wrecked in New South Wales waters, and to encourage acts of bravery by granting awards for meritorious deeds in saving human life. The relief granted on account of maritime disasters during the year ended 30th June, 1914, amounted to £639, in addition to £112 expended on account of awards. The revenue of the Society for the year included £1,413, derived from public subscriptions and legacies, while the invested funds of the society amounted to £19,500.

Under the auspices of the religious denominations, several missions are interested in the welfare of seamen, such as the Sydney Mission to Seamen, the Catholic Mission, and the Central Methodist Mission, each of which maintains an institute in Sydney for the use of seafaring men while in the port.

GOVERNMENT SHIPPING OFFICES.

Government Shipping Offices are maintained at Sydney and Newcastle to deal with matters relating to the engagement and discharge of seamen of British vessels. Following are the records for the last six years of transactions at each of these shipping offices:—

Year.	Engagements registered.			Discharges registered.			Licenses to ship.		
	Sydney.	New-castle.	Total.	Sydney.	Newcastle.	Total.	Sydney.	New-castle.	Total.
1908	22,845	3,995	26,840	22,829	2,875	25,704	3,726	746	4,472
1909	19,420	2,447	21,867	21,020	2,166	23,186	2,989	436	3,425
1910	22,791	2,989	25,780	20,939	2,014	22,953	3,405	732	4,137
1911	25,293	2,653	27,946	24,971	1,898	26,869	4,143	715	4,858
1912	30,332	3,619	33,951	31,085	2,885	33,970	3,112	667	3,779
1913	31,054	3,670	34,724	31,977	2,712	34,689	1,855	628	2,483

For 1913, seamen reported as deserters from British vessels trading on foreign voyages numbered 841, viz., 489 at Sydney, and 352 at Newcastle. The wages paid to seamen through the shipping offices amounted to £156,033, of which £138,827 was paid at Sydney. Wages issued in advance notes amounted to £2,984, of which the greater part, £2,449, was recorded for Newcastle.

Masters of foreign vessels engage and discharge seamen at the offices of the consuls representing the countries to which the vessels belong, and no particulars are available in regard to these transactions.

FERRY SERVICES.

Linking up the highways in every direction are ferry services provided free by the State. At the end of 1912, there were 129 of these ferries, of which 14 were classed as national works, 112 were controlled by municipalities and shires, and 3 were in the unincorporated Western Division. These services are not to be regarded in any way as coming under the classification of shipping, being merely a necessary connection between roadways broken by rivers.

Sydney Harbour Ferries.

In Sydney Harbour extensive ferry services are provided by various private companies, which, unlike the river ferries noted above, are not considered in the light of necessary links in the system of road communication, and the companies, therefore, are permitted to charge fares for these services. The total estimated number of passengers carried on the Sydney Harbour ferries during 1913 was 35,600,000.

FARES FROM SYDNEY.

The passenger fares current in December, 1914, between Sydney and Australasian ports were as follows:—

Ports.	Single Fares.		Ports.	Single Fares.	
	First Class.	Second Class.		First Class.	Second Class.
New South Wales—	£ s. d.	£ s. d.	Queensland—	£ s. d.	£ s. d.
Ballina ...	1 15 0	0 17 6	Brisbane ...	3 7 6	1 15 0
Bateman's Bay ...	1 2 0	...	Bowen ...	9 5 0	6 7 0
Bellinger River ...	1 12 6	0 17 6	Burketown ...	17 10 0	7 5 0
Bermagui ...	1 7 6	0 13 9	Bundaberg ...	4 7 6	2 7 6
Berry ...	0 8 3	...	Cairns ...	10 19 0	7 10 0
Bomaderry ...	0 8 3	...	Cardwell ...	10 19 0	7 10 0
Booral ...	0 13 0	...	Cooktown ...	12 3 0	8 13 0
Bulahdelah ...	0 14 6	...	Innisfail ...	10 19 0	7 10 0
Byron Bay ...	1 17 6	1 10 0	Gladstone ...	5 14 0	3 4 0
Camden Haven ...	1 0 0	...	Lucinda ...	10 14 0	7 4 0
Cape Hawke ...	1 0 0	...	Mackay ...	8 13 0	5 16 0
Clarence River—			Maryborough ...	4 5 0	2 9 0
Macleay ...	1 15 0	0 17 6	Mourilyan Harbour	10 19 0	7 10 0
Grafton ...	1 17 6	1 0 0	Normanton ...	15 10 0	6 15 0
Coff's Harbour ...	1 15 0	1 0 0	Port Douglas ...	11 17 0	8 2 0
Coraki ...	1 17 6	1 0 0	Rockhampton ...	6 1 0	3 9 0
Eden ...	1 13 0	0 15 0	Townsville ...	9 16 0	6 13 0
Hastings River ...	1 7 6	...	Thursday Island ...	14 0 0	6 5 0
Jervis Bay ...	0 15 0	...			
Kiama ...	0 6 6	...	South Australia—		
Kioloa ...	1 1 0	...	Adelaide ...	£3 19s.—	3 3 0
Lismore ...	1 17 6	1 2 6		£4 14s. 6d.	
Macleay River ...	1 12 6	0 17 6	Northern Territory—		
Manning River ...	0 17 6	0 12 6	Darwin ...	18 0 0	9 0 0
Merimbula ...	1 13 0	0 16 6	Western Australia—		
Montagu Island ...	1 15 0	...	Albany ...	11 0 0	7 15 0
Moruya ...	0 19 3	...	Fremantle ...	11 0 0	7 15 0
Nambucca River ...	1 12 6	...	Geraldton ...	£11 11s.—	6 6 0
Narooma ...	1 5 0	...		£12 10s.	
Nelligen (Clyde R.)...	1 2 0	...	Tasmania—		
Newcastle ...	0 6 0	0 3 6	Hobart ...	3 0 0	1 17 6
Nowra ...	0 8 3	...	New Zealand—		
Port Kembla ...	0 6 6	...	Auckland ...	7 15 0	4 10 0
Port Macquarie ...	1 7 6	...	Gisborne ...	8 17 6	5 1 0
Port Stephens ...	0 11 0	...	Napier—		
Tathra ...	1 13 0	0 16 6	Via Auckland ...	9 8 0	5 6 0
Trial Bay ...	1 12 6	0 17 6	Via Wellington...	8 10 6	4 16 0
Tweed River ...	1 10 0	...	Wellington ...	7 15 0	4 10 0
Ulladulla ...	0 16 6	...	Lyttelton ...	8 10 6	4 16 0
Wagonga ...	1 5 0	...	Dunedin ...	9 8 0	5 6 0
Wilson River ...	1 7 6	...	Bluff ...	9 18 0	5 16 0
Wollongong ...	0 4 6	...			
Lord Howe Island...	3 0 0	2 0 0			
Norfolk Island ...	6 0 0	4 0 0			
Victoria—					
Melbourne ...	£2 2s.—	1 15 0			
	£2 17s. 6d.				

Between Sydney and other ports the fares were as follows :—

Ports.	Single Fares.		
	First Class.	Second Class.	Third Class.
	£ s. d.	£ s. d.	£ s. d.
Antwerp	71 10 0	40 0 0	£17—£21
Bremen	£67 2s.—£78 2s.	£39 12s.—£44	£15—£19
Toulon	£67 2s.—£78 2s.	£44—£48 8s.	.....
Erindisi	£67 10s.—£78 2s.	£38—£44	£15—£19
Genoa	£71 10s.—£82 10s.	£40—£46 4s.	£15—£21
London	£67 10s.—£78 2s.	£38—£44	.....
Marseilles	£67 10s.—£78 2s.	£38—£44	£15—£19
Naples	71 10 0	40 0 0	£15—£19
Southampton	83 10 0	.....	.....
Venice	£62 14s.—£73 14s.	£37 8s.—£41 16s.	.....
Aden	38 10 0	30 16 0	£12 5s.—£14 5s.
Bombay	38 10 0	30 16 0	£12 5s.—£14 5s.
Calcutta	35 4 0	28 12 0	£8 5s.—£10 5s.
Colombo	£30—£40	£19 10s.—£26	15 0 0
Hong Kong	£28 10s.—£38	£18 15s.—£25	£14 10s.—£15
Manila	38 10 0	30 16 0	.....
Madras	45 2 0	35 4 0	15 15 0
Penang	12 0 0	10 0 0	8 0 0
Port Moresby	30 0 0	20 0 0	15 0 0
Scourabaya	31 0 0	20 15 0	15 10 0
Samarang	32 0 0	21 10 0	16 0 0
Batavia	28 0 0	18 15 0	.....
Maccassar	44 0 0	28 0 0	16 10 0
Shanghai	35 0 0	23 10 0	17 10 0
Singapore, <i>via</i> Brisbane	28 0 0	.....	18 5 0
Singapore, <i>via</i> Fremantle	£35 13s.—£50 13s.	.....	18 7 6
Mauritius	£62 14s.—£73 14s.	£37 8s.—£41 16s.	120 9 6
Port Said	47 0 0	30 0 0	£15—£19
Yokohama	11 0 0	.....	18 0 0
Fiji (Suva)... ..	30 0 0	20 0 0	6 15 0
Honolulu	10 0 0	7 0 0	12 10 0
Noumea	15 0 0	.....	4 0 0
Samoa Islands	40 0 0	25 0 0	9 0 0
San Francisco	13 10 0	.....	16 0 0
Tonga Islands (Nukualofa)	40 0 0	25 0 0	8 0 0
Vancouver... ..	£30—£37	.....	16 0 0
Cape Town	£22—£37	.....	£13 13s.—£17 17s.
Natal	50 0 0	30 0 0	£11 11s.—£17 17s.
Monte Video			17 17 0

DISTANCES FROM SYDNEY.

The distances by water between Sydney and some of the principal ports of the world are as follows :—

Sydney to—	Miles.	Sydney to—	Miles.
Adelaide	1,080	London, <i>via</i> Suez direct... ..	11,863
Albany	2,090	London, <i>via</i> Cape Horn	13,970
Auckland	1,281	London, <i>via</i> Cape of Good Hope... ..	12,500
Brisbane	503	London <i>via</i> Panama	12,222
Capetown	6,774	Melbourne... ..	576
Darwin	2,540	New York, <i>via</i> Panama... ..	9,704
Fremantle	2,450	San Francisco	6,445
Hobart	623	Singapore	4,300
Hong Kong	4,130	Suva	1,743
Honolulu	4,523	Vancouver... ..	6,715
London, <i>via</i> Vancouver	11,550	Wellington	1,239

INDUSTRIAL ORGANISATIONS.

The following organisations of employees in connection with shipping have been registered under the Commonwealth Conciliation and Arbitration Acts :—

- Australasian Institute of Marine Engineers.
- Federated Marine Stewards and Pantry-men's Association of Australasia.
- Federated Masters and Engineers Association of Australasia.
- Federated Seamen's Union of Australia.
- Federated Stewards and Cooks' Union of Australasia.
- Merchant Service Guild of Australasia.
- Waterside Workers' Federation of Australia.

The Commonwealth Steamship Owners' Association is registered as an organisation of employers.

All these organisations, except the Federated Masters and Engineers Association of Australasia, are bound as to hours, wages, and conditions of employment, by awards of the Court, or by agreements certified in pursuance of section 24 of the Act.

WAGES AND AWARDS.

Australian Trade.

Minimum rates of wages payable to navigating officers, seamen, cooks, and stewards of vessels engaged in Interstate trade by the six companies which comprise the Commonwealth Steamship Owners' Association are fixed by awards of the Commonwealth Court of Conciliation and Arbitration.

Under the award relating to the masters and navigating officers of steamers in the Australian trade, and delivered on the 14th November, 1913, the minimum rates of wages per calendar month are graded, according to the size of the vessels, for the Interstate trade as follows :—

Gross Registered Tonnage.	Master.	Navigating Officers.			
		Chief.	Second.	Third.	Fourth or Fifth.
Passenger vessels (Interstate)	£	£	£	£	£
250 tons and under ...	21	15	12	...	...
251- 500 ...	23	16	13	...	...
501-1,000 ...	25	16	13	11	10
1,001-2,000 ...	28	17	14	12	10
2,001-3,000 ...	32	18	15	12	10
3,001-4,000 ...	37	19	16	13	10
Over 4,000 ...	43	20	17	14	10
Cargo vessels (Interstate)—					
250 tons and under ...	20	14	12	...	...
251- 500 ...	22	15	12	...	...
501-1,000 ...	24	15	12	11	10
1,001-2,000 ...	27	16	13	12	10
2,001-3,000 ...	30	17	14	12	10
3,001-4,000 ...	33	18	15	13	10
Over 4,000 ...	36	18	15	13	10

For coastal trade within a State the rates for Masters and Navigating Officers are fixed as follows, per month :—

Gross Registered Tonnage.	Master.	Navigating Officers.			
		Chief.	Second.	Third.	Fourth or Fifth.
Passenger vessels (within a State—	£	£	£	£	£
125 tons and under... ..	20	14	11	...	...
126- 250	21	15	12	11	10
251- 500	23	16	13	11	10
501-1,000	25	16	13	11	10
1,001-1,500	27	17	14	12	10
1,501-2,000	28	17	14	12	10
2,001-3,000	32	18	15	12	10
3,001-4,000	37	19	16	13	10
Over 4,000 tons	43	20	17	14	10
Cargo vessels (within a State)					
125 tons and under... ..	19	13	11	...	...
126- 250	20	14	12	11	10
251- 500	22	15	12	11	10
501-1,000	24	15	12	11	10
1,001-1,500	26	16	13	12	10
1,501-2,000	27	16	13	12	10
2,001-3,000	30	17	14	12	10
3,001-4,000	33	18	15	13	10
Over 4,000 tons	36	18	15	13	10

Leave of absence for a continuous period on full pay has also been awarded—the masters being allowed from 21 to 28 days, and the officers 14 days per annum. In addition, five intervals of twenty-four hours in each month must be given free from duty at the master's or officer's home port, or on Sundays or holidays at other ports. If required to do duty at his home port from the expiration of one hour after the vessel has been berthed till two hours before its departure, or for more than eight hours per day in any other port, overtime must be paid to a master at the rate of 5s. per hour, and to an officer 2s. 6d. per hour.

Masters and officers, after three months' continuous service, are entitled to one month's notice or one month's pay on discharge, except in the case of dismissal for misconduct or of transfer from one ship of the employer to another. Pay does not cease during transfer.

For marine engineers, the minimum monthly rates were, by judgment given in May, 1909, fixed as follows :—

Nominal Horse-power of Vessels.	Engineers.			
	Chief.	Second.	Third.	Fourth.
With 100 n.h.-p.	£ 20	£ 16	£ 14	£ ...
100-149	21	16	14	...
150-199	22	17	14	...
200-249	24	18	15	12
250-349	25	18	15	12
350-449	27½	19	16	13
450 and over	29	20	16	13

For fifth, sixth, and seventh engineers on vessels over 450 n.h.-p., the minimum rates are respectively £12, £11, and £10 per month.

In 1912 the Australasian Institute of Marine Engineers completed industrial agreements with certain steamship owners in respect to their interstate trade, as between the members of the Institute and their respective employers.

The award relating to seamen became operative at the end of 1911. The minimum rates of wages per month are :—

	£		£
Boatswain	9	Donkeyman... ..	11
A.B., employed as lamp-trimmer ...	9	Greaser	10
A.B.	8	Fireman	10
Ordinary seamen, 18 years and over	6	Trimmer	8
„ under 18 years... ..	5		

Working hours in port for seamen are fixed as between 7 a.m. and 5 p.m., the maximum being eight per day. At sea the hours for stokehold men have been fixed at eight per day, this provision having been extended to deckhands from 1st July, 1912.

Seamen are not required to work on Sundays or holidays if in port, except for overtime pay, and each seaman is entitled to an extra day's pay or a day off ashore at his home port for each holiday spent at sea.

An agreement certified in pursuance of Sec. 24 of the Act and relating to marine cooks, bakers, and butchers came into force as from the 1st August, 1914, the minimum wages per month being—

Passenger vessels of over 4,000 tons gross register—	£ s.		£ s.
Chief cook	16 0	Sculleryman	6 10
Second cook	10 0	Assistant sculleryman... ..	4 0
Extra second cook	9 10	Passenger vessels of 4,000 tons gross register and under—	
Third cook	7 10	Chief cook	14 10
Ship's cook	9 0	Second cook	10 0
Assistant ship's cook	5 10	Third cook	7 10
Steerage cook	9 0	Baker	11 0
Assistant steerage cook	5 10	Butcher	8 0
Baker	12 0	Sculleryman	4 0
Assistant baker	7 10	Cargo and collier vessels—	
Butcher	9 0	Chief cook	11 0
Assistant butcher	6 10	Assistant cook	5 0

Extra payment at the rate of 1s. per hour is made to each member of the galley staff for work in port after 5.30 p.m. when there are no passengers on board, or after 6.30 p.m. when passengers are on board.

Stewards and pantrymen are under an award made in May, 1910. The minimum rates of pay per month are :—

	£ s.		£ s.
Second steward	7 10	Stewards of second grade—	
Steward in charge of second saloon	7 10	under 17 years... ..	2 0
Pantryman	6 10	„ 17-19 years	3 0
Fore cabin steward... ..	6 10	„ 19-21 years	4 0
Chief saloon steward	6 0	„ 21 years or over	5 0
Barman and storekeeper	5 10	Night-watchman	£7 to £8
Other stewards of first grade	5 10	Cargo or collier steward	10 0

The rate of overtime is 10d. per hour for stewards of second grade, and 1s. per hour for others. Overtime is payable for all work in port after 5 p.m., and at terminal ports for work after 10 a.m., or one hour after arrival, whichever is the later.

For marine engineers on interstate vessels the minimum rates of wages per calendar month were fixed by award of the Court on the 1st October, 1912, on the basis of the nominal horse-power of each vessel as follows:—

Nominal Horse-power of Vessel.	Engineers.				
	Chief.	Second.	Third.	Fourth.	Fifth, Sixth, Seventh, Eight.
	£	£ s.	£ s.	£	£
Under 100 n.h.-p. ...	22	17 10	15 10	.....	.....
100-149 ...	23	17 10	15 10	.....	.....
150-199 ...	24	19 0	16 0	.....	.....
200-249 ...	26	20 0	17 0	14	12
250-349 ...	28	23 0	17 0	14	12
350-449 ...	30	21 0	18 0	15	12
450-599 ...	32	22 0	18 0	15	12
600 or more ...	34	22 0	18 0	15	12

Leave of absence for a continuous period on full pay has also been awarded—the chief engineer being allowed 21 to 28 days, and other engineers 14 days. Each engineer is also entitled to be off duty in each calendar month for 24 hours continuously on a working day or days at his home port or at one of the principal ports.

The wages paid to able seamen at the Shipping Master's Office, Sydney, during the year 1913 were as follows:—

Sailing Vessels—	£ s.	Steamships—	£ s.
Foreign	8 0	Foreign	£4 10s. to 8 0
Interstate	5 0	Interstate ... ..	... .. 8 0
Coast	6 10	Coast ... ..	... .. 8 15

For Interstate and State trade the wages were as follows:—

	£	Mates (First) ...	£	£ s.
Engineers (First)	14 to 34	.. (Second)	13	23 10
.. (Second)	15 to 23	.. (Third)	12	17 0
.. (Third)	14 to 19	.. (Third)	12	14 0

Firemen, £10; and Trimmers, £8.

In the foreign trade firemen received £5 to £10, and trimmers £4 10s. to £8

SEAMEN'S COMPENSATION ACT.

The Seamen's Compensation Act, 1911, applies to ships in the service of the Commonwealth (exclusive of naval or military service), and to ships trading with Australia, or engaged in any occupation in Australian waters, or in trade and commerce with other countries or among the States. The schedules to the Act indicate the amount of compensation payable, in case of death or total or partial incapacity, resulting from personal injury by accident to seamen in the course of their employment. Regulations also indicate methods of procedure for recovery of compensation.

WATERSIDE WORKERS.

Under an award of the Court made on the 1st May, 1914, the minimum rate of wages to be paid to waterside workers, members of the Waterside Workers Federation, was fixed, with some exceptions, which apply to the State of Queensland, at the rate of one shilling and ninepence per hour. For "overtime" extra wages are paid at prescribed rates. For special cargoes as defined in the agreements, and for explosives (all ports) extra wages are payable at the minimum rate of 3d. per hour. Included in the several agreements it is provided that all winches and hoisting gear for a hold shall be stopped while men are changing for relief in that hold, and no employee working at coal or coke may be required to handle a bag of coal or coke exceeding 200 lbs. in weight.

COMMERCE.

UNDER the Constitution Act, power to make laws with respect "to trade and commerce with other countries and among the States," was vested in the Federal Parliament, and control of the Customs and Excise Department, was transferred from the State to the Commonwealth at the commencement of the Federation in 1901; and the duty of collecting statistics of the trade of the States, oversea and interstate, has devolved since that date on the Commonwealth Government. Following on alterations in the financial arrangements between the Commonwealth and the States, the Federal Government ceased to collect particulars of the interstate trade from 13th September, 1910; consequently the figures shown in this chapter relate only to oversea trade—that is, the trade of New South Wales with countries outside the Commonwealth.

DETERMINATION OF VALUES.

The recorded value of goods imported, as shown in the tables throughout this chapter, represents the amount on which duty is payable, or would be payable if the duty were *ad valorem*. The value of goods subject to duty is taken to be the fair market value in the principal markets of the country whence exported, plus 10 per cent. to cover the cost of packing, insurance, freight, and all other charges. The value of goods exported is the value in the principal markets of the State.

CUSTOMS AND TARIFFS.

The first Customs Act provided for the necessary machinery to administer matters relating to Customs, and prescribed the manner in which duties were to be computed and paid. The Customs Act, No. 9 of 1910, relates to interstate accounts and to dutiable goods passing between the States. Act No. 36 of 1910 assigns to the Customs Department control over all goods for export, and, subject to restrictions under any enactment, extends the provisions of earlier Acts in regard to prohibited goods, payments of duty, weight and measurement, &c. It provides also for supervision of preparation or manufacture for export of articles used for or with food or drink for human consumption, and establishes conditions as to purity, soundness, and freedom from disease of goods designed for export.

The various Customs Tariff Acts provide general and special tariffs, uniform for all the States. Preferential rates of duty apply to certain goods imported from and being produced within the Union of South Africa.

SEA CARRIAGE OF GOODS.

The Sea Carriage of Goods Act nullifies any clause in a Bill of Lading or similar document, covenanting or agreeing—(a) that the owner, charterer, master, or agent of any ship, or the ship itself, is relieved from liability for loss or damage to goods arising from the harmful or improper condition of the ship's hold or any other part of the ship in which the goods are carried, or arising from negligence, fault, or failure in the proper loading, stowage, custody, care, or delivery of goods received . . . to be carried in or by the ship; (b) to lessen any obligations of owner or charterer to exercise due diligence, and to properly man, equip, and supply the ship, to make and keep it seaworthy, and to make and keep the hold, refrigerating and cool

chambers, and all other parts of the ship in which goods are carried, fit and safe for their reception, carriage, and preservation; (c) or to lessen the obligations of master, officers, agents, and servants of any ship carefully to handle and stow goods, and to care for, preserve, and properly deliver them.

SECRET COMMISSIONS.

The Secret Commissions Act in regard to agencies and contracts, prohibits any gift or consideration as an inducement or reward, in matters affecting the principal's affairs or business.

TRADE DESCRIPTIONS AND SUPERVISION OF EXPORTS.

Regulations under the Commerce (Trade Descriptions) Act, 1905, prohibit the import and export of specified goods unless a trade description is applied to such goods. A high standard of the quality of goods is assured by the enforcement of the Regulations.

Goods are inspected and examined, and in certain cases a declaration by the exporter must also accompany the notice of intention to export.

Approved goods for export are marked with an official stamp, butter and cheese are graded, and carcase meat, rabbits, and hares are classified and marked.

Special instructions are issued to meat inspectors regarding the supervision and inspection of meat for export, under the Commerce Act, and standard requirements are set for abattoirs and premises where meat is preserved for export.

At 30th June, 1914, there were employed in the frozen meat trade between Australia and the United Kingdom and European countries at least 67 steamers with a carrying capacity aggregating 3,410,000 carcasses. All of these vessels visit the State of New South Wales.

LOCAL INDUSTRIES.

Preservation and Encouragement.

The enactments relating to the preservation of Australian industries extend also to the repression of destructive monopolies, so that it is an offence for any person or corporation to make or engage or continue in any combination "to restrain trade or commerce to the detriment of the public, or to destroy or injure by means of unfair competition any Australian industry, the preservation of which is advantageous to the Commonwealth, having due regard to the interests of the producers, workers, or consumers." Monopoly of, or attempt or conspiracy to monopolise, any part of the trade of the Commonwealth, so as to control to the detriment of the public the supply or price of any service, merchandise, or commodity, is an offence, as also the payment of rebates or the refusal to sell so as to promote exclusive dealing.

BOUNTIES ON EXPORTS.

To encourage local industries, general and specific legislation has been passed by the Commonwealth Parliament. The Bounties Act, 1907, provides for the payment of bounties on exports of combed wool or wool tops, also on dried fruits (currants and raisins excepted). The bounty

on wool tops for the three years from 1st July, 1909, was 1½d. per lb., and from July, 1912, to July, 1916, will be 1d. per lb. for the first million lbs. by one manufacturer, and ¾d. per lb. in excess of this amount. The bounty paid for wool tops for the year 1913-14 amounted to £12,706, the whole of the production coming from Works at Botany.

CUSTOMS AND EXCISE REVENUE.

Between 1st January, 1901, when the Department of Customs and Excise was transferred to the control of the Commonwealth, and 8th October, 1901, when the first uniform Federal tariff was introduced in the Federal Parliament, the State tariff, which had been on a freetrade basis, was administered by the Commonwealth. On 8th August, 1907, a new tariff superseded that of 1901, the duties in many cases being increased considerably. Duties of Customs and Excise are now collected under the Customs Act, 1901-10 (No. 36 of 1910), the Customs Tariff, 1908-1911, the Excise Tariff (No. 8 of 1908), the Excise Tariff (Starch) Act (No. 14 of 1908), and the Excise (Sugar) Acts No. 17 of 1910, and No. 6 of 1913.

The following statement shows the gross amounts collected in New South Wales under each division of the tariff during the year ended 31st December, 1913, and shows the drawbacks, refunds, and the net revenue:—

Division.	Article.	Gross Collections paid into Revenue.	Draw-backs Paid.	Refunds.	Net Revenue.
		£	£	£	£
I.	Ale, Spirits, and Beverages	1,241,089	40	525	1,240,524
II.	Tobacco and Manufactures thereof	680,017	..	102,189	577,828
III.	Sugar	63,822	2,326	4	61,592
IV.	Agricultural Products and Groceries	407,734	10,354	3,332	394,048
V.	Textiles, Felts, and Furs, and Manufactures thereof, and Attire	971,349	14,245	5,155	951,949
VI.	Metals and Machinery	722,359	12,411	9,671	700,277
VII.	Oils, Paints, and Varnishes	126,804	5,511	851	120,442
VIII.	Earthenware, Cement, China, Glass, and Stone	186,125	2,016	1,870	182,239
IX.	Drugs and Chemicals	58,018	3,048	229	54,741
X.	Wood, Wicker, and Cane	226,182	2,498	1,209	222,475
XI.	Jewellery and Fancy Goods	130,178	5,808	874	123,696
XII.	Leather and Rubber	174,824	4,712	1,248	168,874
XIII.	Paper and Stationery	105,432	1,236	644	103,552
XIV.	Vehicles	109,429	1,826	1,487	106,106
XV.	Musical Instruments	70,448	1,133	195	69,120
XVI.	Miscellaneous	136,421	4,064	995	131,362
	Total, Customs Duties	£ 5,410,231	71,118	130,288	5,208,825
	Excise—				
	Beer, viz. :—Ale, Porter, and other Beer	282,502	185	..	282,367
	Spirits	188,542	61	200	188,281
	Sugar	301,030	150	12	300,877
	Tobacco	204,805	..	..	204,805
	Cigars	1,083	..	..	1,083
	Cigarettes	383,989	..	..	383,989
	Total, Excise Duties	£ 1,361,960	346	212	1,361,402
	Miscellaneous Receipts—				
	Customs	13,877	..	25	13,852
	Excise	2,236	..	9	2,227
	Total, Customs and Excise Duties,	£ 6,788,304	71,464	130,534	6,586,306

The amounts collected in New South Wales from customs and excise, and the proportion per head of population during the last ten years, have been as follows:—

Year ended 31st December.	Net Amount collected from—		Total.	Per Head of Population.		Total.
	Customs.	Excise.		Customs.	Excise.	
	£	£	£	£ s. d.	£ s. d.	£ s. d.
1904	2,465,738	626,160	3,091,898	1 14 6	0 8 9	2 3 3
1905	2,451,564	658,010	3,109,574	1 13 8	0 9 0	2 2 8
1906	2,654,366	685,160	3,339,526	1 15 9	0 9 3	2 5 0
1907	3,367,286	898,827	4,176,113	2 4 4	0 10 8	2 15 0
1908	3,475,773	819,036	4,294,809	2 5 0	0 10 7	2 15 7
1909	3,642,297	744,138	4,386,435	2 6 2	0 9 5	2 15 7
1910	4,097,870	901,522	4,999,392	2 10 9	0 11 2	3 1 11
1911	4,600,628	1,082,546	5,683,174	2 15 3	0 13 0	3 8 3
1912	5,532,875	1,129,469	6,662,344	3 3 8	0 13 0	3 16 8
1913	5,222,677	1,363,620	6,586,297	2 17 9	0 15 1	3 12 10

It will be seen that the customs revenue for the last four years shows a considerable increase over that received for the year 1909, both in the aggregate and per head of population.

While the general prosperity of the State would account for increases in the quantities of dutiable goods imported in late years, it should be noted that in 1910 the system ceased by which, with the aid of interstate debits and credits, accurate accounts for each State could be compiled to show the actual revenue received for goods imported by each State for its own home consumption.

As Sydney is a distributing centre for the whole of Australia, it follows that the customs revenue received at this port during the four years 1910–13 was large, and the figures for the State of New South Wales consequently include customs receipts for goods which were, in the course of trade, transferred to and consumed in other States.

The following statement shows the quantities of spirits, beer, and tobacco on which excise duty was paid in New South Wales during 1912 and 1913:—

Article.	Rate of Excise Duty.	Quantity on which Excise Duty was Paid.	
		1912.	1913.
Spirits—	Per proof gal.	Gal.	Gal.
Brandy (pure Australian standard brandy)	10s.	51,008	59,338
Brandy (blended wine brandy, &c.)	11s.	6,793	3,880
Gin (distilled from barley, malt, grain, or grape wine)	12s.	865	208
Whisky (Australian standard malt whisky)	10s.	25,434	21,050
Whisky (Australian blended whisky)	12s.	135	62
Rum (Australian standard rum)	12s.	142,478	189,930
Rum (spirits, n.e.i.)	13s.	2,325	658
Spirits, n.e.i.	13s.	22,046	17,236
Spirits for industrial or scientific purposes	13s.	30,080	29,525
Do fortifying wine or making vinegar	6d.	44,200	53,080
Total, spirits		325,364	374,967

Article.	Rate of Excise Duty.	Quantity on which Excise Duty was Paid.	
		1912.	1913.
Beer, n.e.i.	Per gal. 3d.	Gal. 19,939,520	Gal. 21,931,360
Beer, brewed from malt and hops	2d.	827,760	1,042,080
Total, beer		20,767,280	22,973,440
Tobacco—Manufactured, n.e.i.	Per lb. 1s.	lb. 3,842,000	lb. 4,012,120
Tobacco—Hand-made	9d.	112,000	112,000
Total, tobacco		3,954,000	4,124,120
Cigars—Hand-made	Per lb. 3d.	81,520	86,640
Total, cigars		81,520	86,640
Cigarettes	Per lb. 3s.	2,310,033	2,550,000
Cigarettes—Hand-made	2s. 9d.	12,189	10,829
Total, cigarettes		2,322,222	2,560,829

The following table shows the oversea trade at each port and customs station in New South Wales, with gross collections thereat, for the year 1913:—

Port or Station.	Oversea Trade.			Gross Revenue Collected.		
	Imports.	Exports.	Total.	Customs.	Excise.	Total.
	£	£	£	£	£	£
Sydney	31,212,690	31,105,773	62,318,463	5,231,040	1,320,779	6,551,819
Newcastle	1,074,582	1,705,641	2,780,223	165,141	30,918	196,059
Clarence River ... ..	.....	13,007	13,007	.....	.....	.....
Morpeth ... ..	.....	.....	.....	5,950	140	6,090
Port Stephens ... ..	.....	15,368	15,368	.....	.....	.....
Albury	14,486	.....	14,486	4,663	773	5,436
Allandale ... ..	.....	.....	.....	.....	286	286
Broadwater ... ..	.....	.....	.....	.....	6	6
Broken Hill	48,905	.....	48,905	17,735	11,152	28,887
Corowa (Wahg'ny'h) ... ..	.....	.....	.....	.....	238	238
Harwood ... ..	.....	.....	.....	.....	4	4
New South Wales	£32,350,663	32,839,789	65,190,452	5,424,529	1,364,296	6,788,825*

The total revenue collections £6,788,825, shown above, differ from those in a previous page representing the total for each division of the tariff, viz., £6,768,304. The explanation is that the amount £6,788,825 represents collections during the year 1913, whilst £6,768,304 was the amount paid into Revenue during that year.

IMPORTS AND EXPORTS.

The average annual values of imports and exports over the quinquennial periods between 1885 and 1909 are here quoted, as are the actual annual values between 1910 and 1913:—

Period.	Imports (Average Annual Value).	Exports (Average Annual Value).	Per head of Population.		
			Imports.	Exports.	Total Oversea Trade.
	£	£	£ s. d.	£ s. d.	£ s. d.
1885-89	13,514,534	10,624,323	13 10 2	10 12 6	24 2 8
1890-94	11,689,109	13,138,884	9 19 9	11 4 7	21 4 4
1895-99	12,233,446	16,985,808	9 9 5	13 3 0	22 12 5
1900-04	15,418,701	18,879,740	11 0 5	13 9 11	24 10 4
1905-09	18,733,104	28,264,999	12 7 1	18 12 11	31 0 0
1910	23,238,993	32,035,451	14 7 7	19 16 5	34 4 0
1911	27,343,428	32,161,401	16 8 7	19 6 5	35 15 0
1912	32,303,630	32,958,529	18 11 7	18 19 1	37 10 8
1913	32,350,663	32,839,789	17 17 7	18 3 0	36 0 7

From 1904 onwards the annual increases in the volume of trade have been considerable, with the exception of 1908 and 1909, and the figures for 1912 being particularly noticeable with a record of £65,262,159, or £37 10s. 8d., per head of population.

The value of the exports from year to year forms a sure index of the progress of this country, the result of a rise or fall in the value of the staple commodities, or of a depression in production, being readily traceable in the corresponding rise or fall in the export values. Oversea exports in 1912 were the highest for any year over the whole period, but 1913 shows a reduction. There was a decrease in value in 1908 and 1909, caused by the decline in the prices of pastoral and mineral products, but in 1910 and 1911, the values show a sharp rise. The volume of imports has a close connection with State finances, as loans raised outside the State reach the State in the form of goods, which are shown in the import returns. Thus 1881 to 1891, and 1899 to 1902, were years of large borrowing. In the years 1900 and 1901 also the imports underwent abnormal expansion on account of loading-up by merchants in anticipation of the Federal tariff. The value of oversea imports in 1913 was greater than that of the previous year, and is the highest for the whole period.

DISTRIBUTION OF TRADE.

The table following shows the distribution of the oversea trade of New South Wales, also the values of imports according to country of origin. It is not possible to trace exports to their ultimate destination.

The outstanding feature of the table is the extent of the trade with the United Kingdom. Its relative magnitude is demonstrated in the figures showing the proportion which the trade of each of the countries named bears to the total oversea trade of New South Wales for the year 1913:—

Country.	Values of				Proportion to Total.		
	Imports according to Country—		Exports.	Total Trade.	Imports according to Country—		Exports.
	Of Origin.	Whence Imported.			Of Origin.	Whence Imported.	
	£	£	£	£	%	%	%
Europe—							
United Kingdom	15,367,428	18,107,138	11,904,424	30,011,562	47.50	55.97	46.04
Austria	153,472	25,995	339,680	365,675	.48	.08	.56
Belgium	455,503	1,078,518	2,769,661	3,848,179	1.41	3.33	5.90
France	894,086	310,050	4,649,474	4,959,524	2.77	.96	7.61
Germany	2,834,038	1,880,042	3,659,076	5,539,718	8.76	5.81	8.50
Italy	243,184	192,876	510,433	709,309	.75	.82	1.09
Netherlands	149,599	104,996	99,261	204,257	.46	.32	.31
Norway	254,019	208,590	38	205,628	.79	.64	.32
Portugal	29,828	6,627	2,237	8,864	.09	.02	.01
Russia	35,212	677	47,689	48,366	.11	...	.07
Spain	40,197	5,526	42,195	47,721	.12	.02	.07
Sweden	344,833	279,059	4,825	283,684	1.07	.86	.44
Switzerland	469,858	1,010	3,190	4,800	1.45	.01	.01
Turkey	26,032	5	98	103	.08	...	...
Rest of Europe	20,283	3,476	29,199	32,675	.06	.01	.05
Total	21,318,522	22,208,185	24,062,080	46,270,265	65.90	68.65	70.98
Asia—							
Ceylon	419,395	440,467	170,651	611,118	1.29	1.36	.94
Hong Kong	5,504	165,604	553,740	719,404	.02	.51	1.10
India	1,221,849	1,175,707	220,260	1,395,967	3.78	3.64	2.14
Straits Settlements	59,778	153,791	467,796	621,567	.18	.48	.95
Arabia	29,868	223	...	293	.09	...	...
Asia Minor	5,958	9,938	97	10,035	.02	.03	...
China	194,680	41,055	114,121	155,776	.60	.13	.24
Japan	467,066	464,057	1,113,915	1,577,972	1.45	1.43	2.42
Java	253,157	259,482	353,837	613,319	.78	.80	.94
Philippine Islands	50,325	51,281	162,675	243,956	.15	.16	.38
Rest of Asia	137,066	54,218	65,006	119,224	.43	.17	.18
Total	2,844,843	2,816,483	3,252,098	6,068,581	8.79	8.71	9.31
Africa—							
Union of South Africa	196,206	53,350	339,207	392,557	.61	.17	.60
Egypt	9,134	12,028	48,098	60,126	.03	.04	.09
Portuguese East Africa ... ..	...	1,320	35,641	36,961	...	...	.06
Rest of Africa	10,674	139	162,942	153,081	.03	...	.23
Total	216,014	66,837	575,888	642,725	.67	.21	.98
America, North—							
Canada	359,022	675,502	145,875	821,377	1.11	2.09	1.25
United States of America	5,329,850	4,251,641	1,831,470	6,083,011	16.47	13.14	9.33
Rest of North America	2,046	...	9,401	9,401	.01	...	.01
Total	5,690,918	4,927,043	1,986,746	6,913,789	17.59	15.23	10.60
America, Central and South—							
British West Indies	47,025	...	...	...	.15	...	...
Brazil	9,843	...	...	...	.03	...	...
Chile	14,905	17,900	370,309	388,209	.05	.05	.60
Cuba	23,529	1,642	2	1,644	.08	.01	...
Mexico	370	...	22,614	22,614	...	...	.08
Peru	1,823	...	29,614	29,614	...	...	.05
West Indies	1,240	...	...	...	...	...	...
Rest of Central and South America	36,241	56	5,648	5,704	.11	...	.01
Total	134,476	19,598	428,187	447,785	.42	.06	.69
Australasia—							
Australian States	19,892	...	...	...	.06	...	...
New Zealand	1,457,935	1,632,184	1,321,989	2,954,173	4.51	5.04	4.53
Norfolk Island	958	996	7,623	8,619	...	...	.01
Papua	78,610	80,012	97,243	177,255	.24	.25	.23
Total	1,556,795	1,713,192	1,426,855	3,140,047	4.81	5.29	4.82

Country.	Values of				Proportion to Total.		
	Imports according to Country—		Exports.	Total Trade.	Imports according to Country—		Exports.
	Of Origin.	Whence Imported.			Of Origin.	Whence Imported.	
Polynesia—	£	£	£	£	%	%	%
Fiji	333,653	403,623	379,476	733,099	1.20	1.25	1.20
Ocean Island	16,208	16,254	26,108	42,362	.05	.04	.07
Hawaii	145	768	108,518	109,236	...	...	.17
Marshall Islands	332	5,091	23,639	33,730	...	.02	.05
New Caledonia	23,045	33,184	144,107	177,291	.09	.10	.27
New Hebrides	23,853	24,109	93,346	120,455	.07	.03	.18
South Sea Islands	109,342	95,028	249,488	344,516	.34	.29	.53
Rest of Polynesia	22,512	21,268	75,253	96,521	.07	.07	.15
Total	599,095	599,325	1,107,935	1,707,260	1.82	1.85	2.62
Grand Total	£ 32,350,663	32,350,663	32,839,789	65,190,452	100.00	100.00	100.00

The tables just given show that, between the imports according to country of origin and country whence shipped, there were appreciable differences in the cases of the United Kingdom, Belgium, France, Germany, Switzerland, China, the Union of South Africa, and the United States of America, and smaller differences in the cases of other countries.

THE BRITISH EMPIRE AND FOREIGN COUNTRIES.

The distribution of the oversea trade of New South Wales for 1913, as between British and foreign countries, is summarised in the following statement:—

Countries.	Imports by Country—		Exports.	Total Trade.
	Of Origin.	Whence Shipped.		
Europe—	£	£	£	£
British	15,370,181	18,107,607	11,932,857	30,040,464
Foreign	5,948,441	4,100,578	12,129,223	16,229,801
Total	21,318,622	22,208,185	24,062,080	46,270,265
Asia—				
British	1,705,585	1,941,602	1,413,152	3,354,754
Foreign	1,139,258	874,881	1,838,946	2,713,827
Total	2,844,843	2,816,483	3,252,098	6,068,581
Africa—				
British	201,209	53,399	340,658	394,057
Foreign	14,805	13,438	235,230	248,668
Total	216,014	66,837	575,888	642,725
America, North—				
British	359,581	675,502	145,875	821,377
Foreign	5,331,337	4,251,541	1,840,871	6,092,412
Total	5,690,918	4,927,043	1,986,746	6,913,789
America, Central and South—				
British	54,513	.....	4	4
Foreign	79,863	19,598	428,183	447,781
Total	134,376	19,598	428,187	447,785
Australasia—				
British	1,556,795	1,713,192	1,426,855	3,140,047
Foreign ... ..	.....	.....	.....	.....
Total	1,556,795	1,713,192	1,426,855	3,140,047

Countries.	Imports by Country—		Exports.	Total Trade.
	Of Origin.	Whence Shipped.		
Polynesia—	£	£	£	£
British	404,872	419,877	406,657	826,534
Foreign	184,223	179,448	701,278	880,726
Total	589,095	599,325	1,107,935	1,707,260
Totals—				
British	19,652,736	22,911,179	15,666,058	38,577,237
Foreign	12,697,927	9,439,484	17,173,731	26,613,215
Grand Total ...	£ 32,350,663	32,350,663	32,839,789	65,190,452
British per cent. of total ...	60·75	70·82	47·70	59·18
Foreign	39 25	29·18	52·30	40·82

The proportion of British to total trade affords satisfactory evidence of the continued cohesion of Empire trade. Of oversea imports, according to country of origin, approximately 61 per cent. are of British manufacture or production, thus leaving only 39 per cent. of foreign origin. But approximately 56 per cent. of the total imports were shipped from the United Kingdom, 15 per cent. from British Possessions, or a total of 71 per cent. from British countries, the difference of 10 per cent. in favour of British shipments as against those of foreign countries being attributable to the advantages of Great Britain as a transshipping country. The imports from foreign countries represented 29 per cent. of the total. Of the exports from New South Wales, 48 per cent. are shipped to British countries, while of the total trade about 59 per cent. is British.

The trade of the State is greater with the United Kingdom than with any other country. The real trade with the United Kingdom is not shown, however, because, in addition to foreign goods sent to Australia *via* London, a proportion of the exports from New South Wales to Victoria and South Australia is shipped eventually to the United Kingdom, also some of the goods shipped to the United Kingdom are destined for transshipment to foreign ports. The extent of the export trade with the United Kingdom may be gauged by the relation between the values of goods originating in, and the values of goods shipped from, the United Kingdom.

In quinquennial periods, since 1880, the volume of oversea imports divided under the heads of (a) British Empire—*i.e.*, United Kingdom and other British territory—and (b) Foreign countries, shows that in the last fifteen years, while the volume of trade with the British countries has increased absolutely year by year, yet relatively to foreign countries the position is not so satisfactory. Following are the import figures:—

Period.	Imports from—			Total Imports.
	British Empire.		Foreign Countries.	
	United Kingdom.	Other British Countries.		
	£	£	£	£
1880-84	48,726,544	7,092,661	9,502,846	65,322,051
1885-89	48,279,604	8,134,224	11,063,225	67,477,053
1890-94	41,293,833	6,943,513	10,208,197	58,445,543
1895-99	37,123,060	7,775,602	16,271,863	61,170,525
1900-04	43,118,128	10,147,402	23,827,977	77,093,507
1905-09	55,312,612	15,422,106	22,930,804	93,665,522
1910	14,385,633	3,240,358	5,613,002	23,238,993
1911	15,740,509	4,284,578	7,318,346	27,343,428
1912	18,093,957	4,970,893	9,238,780	32,303,630
1913	18,107,138	4,804,041	9,439,484	32,350,663

Stated as proportions per cent. of the total imports the following results are obtained :—

Period.	British Empire.			Foreign Countries.
	United Kingdom.	Other British Countries.	Total.	
	per cent.	per cent.	per cent.	per cent.
1880-84	74·59	10·86	85·45	14·55
1885-89	71·55	12·05	83·60	16·40
1890-94	70·65	11·88	82·53	17·47
1895-99	60·69	12·71	73·40	26·60
1900-04	55·93	13·16	69·09	30·91
1905-09	59·05	16·47	75·52	24·48
1910	61·90	13·95	75·85	24·15
1911	57·57	15·67	73·24	26·76
1912	56·01	15·39	71·40	28·60
1913	55·97	14·85	70·82	29·18

The oversea exports from New South Wales are shown under the same heads and for the same periods as in the preceding tables, and exhibit changes similar to these in the imports :—

Period.	Exports to—			Total Exports.
	British Empire.		Foreign Countries.	
	United Kingdom.	Other British Countries.		
	£	£	£	£
1880-84	39,964,529	5,449,726	5,925,747	51,340,002
1885-89	37,727,437	4,508,809	10,885,370	53,121,616
1890-94	39,358,695	4,742,725	21,592,966	65,694,386
1895-99	43,203,489	6,137,642	35,585,823	84,926,954
1900-04	40,732,026	14,441,877	39,224,800	94,398,703
1905-09	57,950,739	18,737,850	64,636,404	141,324,993
1910	13,318,099	3,081,387	15,635,965	32,035,451
1911	12,261,971	5,830,179	14,069,251	32,161,401
1912	10,316,918	6,096,078	16,545,533	32,958,529
1913	11,904,424	3,761,634	17,173,731	32,839,789

The proportions per cent. of the total exports are as follow :—

Period.	British Empire.			Foreign Countries.
	United Kingdom.	Other British Countries.	Total.	
	per cent.	per cent.	per cent.	per cent.
1880-84	77·84	10·62	88·46	11·54
1885-89	71·02	8·49	79·51	20·49
1890-94	59·91	7·22	67·13	32·87
1895-99	50·87	7·23	58·10	41·90
1900-04	43·15	15·30	58·45	41·55
1905-09	41·00	13·26	54·26	45·74
1910	41·57	9·62	51·19	48·81
1911	38·12	18·13	56·25	43·75
1912	31·30	18·50	49·80	50·20
1913	36·25	11·45	47·70	52·30

Both absolutely and relatively the exports to foreign countries have increased continuously; so that the proportion of goods sent to the United Kingdom is now considerably less than to foreign countries. Direct communication with the various countries is largely the cause of this apparent diversion of trade, as it has obviated the necessity for much transshipment, so that even gold is shipped to different countries on account of the United Kingdom. The exports to British Possessions show remarkable fluctuations throughout the period, mainly on account of the variations in the shipments of gold and silver to India and Ceylon.

THE UNITED KINGDOM.

As the previous tables show, direct trade with the United Kingdom is not advancing relatively to the total trade, yet, nearly 56 per cent. of New South Wales imports are shipped from the United Kingdom, where 47 per cent. of the State's imports are manufactured or produced.

The total value of the produce of the United Kingdom imported into the State during 1912 was £15,342,225. In 1913 the value of these imports was £15,367,428; a classification of the principal articles is given below:—

Article.	Value.	Article.	Value.
	£		£
Ale and beer	131,928	Jewellery	103,258
Apparel and soft goods—		Leather and leatherware ...	67,601
Apparel and attire, n.e.i...	837,607	Machines and machinery ...	1,316,422
Cosies, cushions, &c. ...	133,595	Matches and vests	31,602
Piece goods	2,571,923	Medicines	103,971
Arms, ammunition, and explosives	333,833	Metals	41,151
Articles for Army and Navy ...	48,689	Metal manufactures	1,146,277
Articles for the Commonwealth	144,968	Oilmen's stores	112,751
Bags and purses	40,561	Oils	107,044
Books	220,342	Paints and colours	157,554
Boots and shoes	170,426	Paper	373,133
Brushware	37,692	Personal and household effects	30,527
Canvas and duck	146,590	Perfumery	65,831
Carpets and carpeting	131,539	Photographic materials ...	44,749
Cocoa and chocolate, &c. ...	49,549	Pickles, sauces, &c.	51,101
Confectionery	149,981	Pipes, smoking, and accessories	30,250
Copper	211,130	Rails, &c., for railways ...	261,743
Cordage and Twines—		Rubber and rubber manufactures	85,038
Metal	60,431	Specie—	
Sewing Silks, &c.	158,793	Bronze	7,950
Other	66,972	Gold	87,020
Cutlery	107,846	Silver	65,785
Drugs and chemicals	77,495	Spirits	410,637
Earthenware, &c.	102,669	Stationery	98,833
Electrical articles and materials	336,014	Stone, marble, slate	44,097
Fancy goods	83,967	Tinned plates and sheets ...	185,393
Fish (all kinds)	81,982	Tobacco, &c.	38,730
Floor cloths and linoleum ...	235,868	Tools of trade	123,794
Furniture... ..	78,005	Varnishes	40,935
Glass and glassware	77,086	Vehicles	394,742
Hats and caps	138,132	Vessels	245,900
Instruments	194,409	Yarns	70,587
Iron and steel	1,362,596		

FOREIGN COUNTRIES.

Taken absolutely, the trade between New South Wales and foreign countries has increased rapidly year by year; but, relatively to the total trade of New South Wales, the increase has been more gradual, especially in the sixteen years 1895-1910, when the trade with foreign countries increased

from 35.5 per cent., to 33.4 per cent. of the total trade. In 1911, the relative value of foreign trade fell back to 35.9 per cent. of the total, but recovered during 1912 and 1913, forming in the latter year 40.82 per cent. of the total.

Period.	Oversea Trade.			Proportion.	
	With Foreign Countries.	With British Countries.	Total.	Foreign.	British.
	£	£	£	per cent.	per cent.
1880-4	15,428,593	101,233,460	116,662,053	13.22	86.78
1885-9	21,948,595	98,650,074	120,598,669	18.20	81.80
1890-4	31,801,163	92,338,766	124,139,929	25.62	74.38
1895-9	51,857,686	94,239,793	146,097,479	35.50	64.50
1900-4	63,052,777	108,439,433	171,492,210	36.77	63.23
1905-9	87,567,208	147,423,307	234,990,515	37.26	62.74
1910	21,248,967	34,025,477	55,274,444	38.44	61.56
1911	21,387,597	38,117,232	59,504,829	35.94	64.06
1912	25,784,313	39,477,846	65,262,159	39.51	60.49
1913	26,613,215	38,577,237	65,190,452	40.82	59.18

The aggregate values of foreign imports, classified according to country of origin, are shown below for each of the last three years.

Country.	1911.	1912.	1913.
	£	£	£
Arabia	12,708	20,286	29,865
Austria	153,576	171,715	153,472
Belgium	372,049	365,666	456,503
Brazil	21,152	23,060	9,843
Chile	20,718	21,752	14,905
China	191,083	209,215	194,680
Cuba	37,486	32,270	23,529
Denmark	10,769	14,190	14,789
France	916,918	860,627	894,186
Germany	2,429,272	2,850,139	2,834,038
Italy	226,029	271,754	243,134
Japan	418,978	479,144	467,666
Netherlands	143,906	156,746	149,599
Netherlands India	370,408	844,829	378,542
New Caledonia	48,943	26,986	28,045
New Hebrides	35,407	23,175	23,858
Norway	186,590	249,637	254,019
Philippine Islands	38,854	43,613	50,325
Portugal	33,801	41,603	29,828
Russia	21,875	33,225	35,212
South Sea Islands	196,872	193,169	109,342
Spain	50,928	40,913	40,197
Sweden	262,642	266,859	344,833
Switzerland	401,800	482,786	469,858
Turkey	17,130	15,202	26,032
United States of America	4,017,778	4,833,042	5,329,850
West Indies	12,100	893	1,240
Other Foreign Countries	70,748	64,028	90,537
Total	£ 10,720,520	12,641,524	12,697,927

ARTICLES OF IMPORT.

To show concisely the class of goods imported into New South Wales, oversea imports during the last three years have been summarised as shown in the table below. The figures show direct imports only, as the interstate transfers are not available; goods of Australian produce re-imported from outside the Commonwealth, £20,896 for 1911, £27,239 for 1912, and £19,892 for 1913, have been excluded:—

Articles of Import.	1911.	1912.	1913.
Food, Drink, Narcotics, and Stimulants—	£	£	£
Animal food	304,850	355,355	342,010
Vegetable food	1,327,999	2,331,046	1,621,598
Drinks—alcoholic	808,685	884,313	927,627
„ non-alcoholic	6,800	11,853	10,558
Tobacco and other narcotics	434,557	519,871	609,531
Other stimulants and condiments	607,186	666,840	667,045
	3,490,077	4,769,278	4,178,369
Live Animals and Plants—			
Animals of all kinds	248,996	123,315	84,951
Plants	27,543	35,272	35,967
	276,539	158,587	120,918
Textile Fabrics, Dress, and Manufactured Fibrous Materials—			
Silk manufactures	431,633	421,362	409,299
Woollen manufactures	1,154,707	1,235,968	1,076,794
Cotton and flax manufactures	1,784,574	1,870,540	1,946,180
Manufactures of mixed materials	1,280,077	1,425,308	1,444,695
Dress	1,900,214	2,332,751	2,336,024
Manufactures of fibrous materials	490,912	509,917	883,972
	7,042,117	7,795,846	8,096,964
Products of Arts and Manufactures, n.e.i.—			
Books, stationery and paper	1,104,340	1,222,930	1,308,606
Musical instruments	279,124	308,516	223,690
Works of art and art materials	35,852	40,213	34,856
Fancy goods	590,182	614,893	476,145
Timepieces, jewellery, and plated ware	483,050	587,325	459,342
Surgical and scientific instruments	292,806	306,231	486,040
Machines, tools, and implements	4,509,946	5,173,151	5,455,313
Harness, vehicles, and equipment	762,845	889,415	1,010,601
Ships, boats, and equipment	208,367	598,065	252,904
Building materials	1,310,606	1,562,268	1,570,996
Furniture	187,178	281,068	272,579
Arms and explosives	289,543	309,438	398,354
Drugs, chemicals, and by-products	563,776	591,380	650,905
Glass and earthenware manufactures	401,876	418,196	473,799
Soap, candles, and paint	247,711	335,955	308,756
Other manufactures, n.e.i.	622,140	1,004,298	1,103,681
	11,889,342	14,243,342	14,486,567
Staple Animal and Vegetable Substances, including Mineral Oils—			
Animal substances	365,871	506,392	513,019
Vegetable substances... ..	470,223	492,401	393,808
Oils	658,341	765,514	758,111
	1,494,435	1,764,307	1,664,938
Staple Minerals and Metals, including Specie and Bullion—			
Specie and bullion	1,241,961	1,192,439	1,093,273
Iron and steel	1,119,349	1,593,983	1,642,703
Other metals	337,385	456,984	542,963
Coal and shale... ..	55	1,916	84
Stone, clay, and other minerals	152,411	70,462	93,000
	2,851,161	3,315,784	3,372,023
Indefinite articles	278,861	229,247	410,992
Total Imports	£ 27,322,532	32,276,391	32,330,771

In 1913 the principal articles imported from abroad were those in the class comprising the products of arts and manufactures. By far the largest item in this class was metal manufactures, including machines and machinery; then followed building materials; books, stationery, and paper; harness, vehicles, and equipment; drugs and chemicals; surgical and scientific instruments. fancy goods; glass and earthenware manufactures; timepieces, jewellery, and plated ware; arms and explosives, &c. The class next in importance comprised textile fabrics and dress, in which the most important items were dress manufactures, cotton and flax, manufactures of mixed materials, and woollen manufactures. The class including articles of food and drink came third, the largest item being vegetable food.

BRITISH PRODUCE.

The following table shows the imports oversea into New South Wales from the chief British Possessions at decennial periods since 1870, and in comparison the figures for 1913 :—

Country.	1870.	1880.	1890.	1900.	1910.	1913.
Canada	£ 1,726	£ 17,530	£ 18,784	£ 114,321	£ 356,593	£ 675,502
Union of South Africa--						
Cape Colony .. .. .	....	5	55	943	12,950	} 53,350
Natal .. .. .	....	....	....	70	7,362	
Transvaal .. .. .	....	....	....	....	....
Ceylon	210,114	13,668	43,702	213,195	357,522	440,467
Fiji .. .. .	....	54,135	99,853	60,831	161,894	403,623
Hong Kong	48,808	228,526	271,730	67,928	95,450	165,664
India (incl. Burma)	2,567	653	195,368	390,653	849,097	1,175,707
Mauritius	325,680	207,107	5,059	76,779	1,002	49
New Zealand.. .. .	298,951	460,735	932,073	1,348,605	1,180,011	1,632,184
Straits Settlements.. .. .	....	16,045	27,148	40,391	132,245	153,791
Aden .. .. .	....	....	....	432	2,302	5,973
Malta .. .. .	....	....	....	373	746	441
Papua .. .. .	....	....	....	33,474	50,411	80,012
Norfolk Island .. .. .	....	....	....	1,380	770	966
Ocean Island.. .. .	....	....	....	....	31,369	16,254
Other British Possessions	60	1,665	1,626	4,384	134	28
Total	£ 887,906	1,000,069	1,595,398	2,353,759	3,240,358	4,804,041

During the last twenty years there has been a considerable extension of the trade between New South Wales and New Zealand, both as to imports and exports. The value of imports fluctuates with the character of the season—a bad year in New South Wales being always attended with large importations of New Zealand oats and other produce.

Commercially, Hong Kong is a port of China, and a considerable portion of the Chinese trade with New South Wales is transacted *via* that port. The Indian trade has grown up almost entirely since 1880, but fluctuates largely owing to the variable exports of gold specie. The Fiji trade is valuable, and shows a remarkable increase in the last ten years.

The imports oversea from British Possessions, classified according to country of origin, are shown below for the last three years in comparison with 1904 :—

Country.	1904.	1911.	1912.	1913.
	£	£	£	£
Canada	131,487	331,585	386,485	359,022
Ceylon	252,609	329,832	389,253	419,395
Fiji	53,102	373,727	215,062	388,653
Hong Kong... ..	7,197	1,901	2,846	5,504
India (incl. Burma)	396,568	810,452	920,334	1,221,849
Jamaica	9,937	3,954	.....	.....
New Zealand	820,900	1,722,021	1,839,004	1,457,335
Ocean Island	6,986	16,919	29,752	16,208
Papua	40,012	72,001	69,630	78,610
Straits Settlements	33,382	62,995	54,586	58,778
Union of South Africa	3,227	173,670	339,994	196,206
Other British Possessions... ..	35,499	27,291	45,696	63,856
Total	£ 1,790,906	3,926,348	4,292,642	4,265,416

Detailed information regarding the country of origin of the various articles imported into this State can be obtained from the Part "Commerce," of the "New South Wales Statistical Register."

EXPORTS (Overseas).

Exports from New South Wales consist chiefly of goods produced or manufactured in the State.

Re-exports include produce of other Australian States, and produce of other countries.

For 1913, Australian produce represented 95 per cent., and other produce 5 per cent. of the total exports. The following statement shows, for each of the six years, 1906-1911, the values of oversea exports under the three heads of "New South Wales produce," "Produce of other Australian States," and of "Other countries," Subsequently the produce of New South Wales and the other Australian States is combined, to show the "Australian" Produce.

Year.	New South Wales Produce.	Produce of Other Australian States.	Produce of Other Countries.	Total.
	£	£	£	£
1906	20,642,867	7,749,852	2,594,169	30,986,888
1907	25,231,804	5,458,953	2,203,316	32,894,073
1908	21,602,424	3,537,814	1,740,471	26,880,709
1909	21,771,580	2,644,381	1,628,828	26,044,789
1910	27,677,088	2,660,263	1,698,100	32,035,451
1911	27,491,326	2,447,089	2,222,986	32,161,401
1912	30,661,028		2,297,501	32,958,529
1913	31,135,169		1,704,620	32,839,789
Proportion of total, 1913...	94.8%		5.2%	100%

RE-EXPORT TRADE.

The re-export trade of the State was of some importance until 1889, but for several years thereafter a marked decline was experienced till 1895, when an improvement was manifested. The shipping facilities of Sydney formerly

attracted to the port a large amount of trade from New Zealand, Queensland, and the South Seas, for transhipment to Europe; but the establishment of direct communication between these countries and Europe checked to some extent the expansion of the re-export trade.

Gold, consisting mainly of Queensland and New Zealand metal, coined at the Sydney branch of the Royal Mint, and shipped by the banks to London, the United States of America, and Eastern Asia forms a large proportion of the trade. There is also a large re-export of wool, chiefly the produce of Queensland, and a fairly large trade in provisions and manufactured articles of British and foreign production with New Zealand, New Caledonia, Fiji, and other islands of the Pacific.

The following statement summarises the British and foreign re-export trade for 1912 and 1913 :—

Article.	British and Foreign Produce.	
	1912.	1913.
Food and drink, &c.—	£	£
Animal food	17,661	16,775
Vegetable food	148,542	133,098
Drinks, alcoholic	37,139	34,501
„ non-alcoholic	202	327
Tobacco, &c.	49,495	50,963
Other stimulants, &c.	33,368	32,496
Total	286,407	273,160
Live animals and plants—		
Animals	2,815	1,551
Plants	2,723	2,715
Textile Fabrics, Dress, &c.	156,483	148,704
Arts and manufactures, n.e.i.	569,421	563,664
Staple products—		
Animal substances	25,859	28,464
Vegetable substances	47,967	18,694
Oils	43,536	53,678
Minerals and metals	78,511	52,105
Specie and bullion	1,065,933	533,093
Indefinite articles	17,835	31,792
Total	£ 2,297,501	1,704,620

SHIPS' STORES.

In addition to the values of oversea exports shown already, considerable quantities of goods are sent away from New South Wales each year in the form of ships' stores. The following statement shows the aggregate values of ships' stores exported in each of the last six years, classified as Australian produce, and other produce, being really re-exports :—

Year.	Value of Ships' Stores.		
	Australian Produce.	Other Produce.	Total.
	£	£	£
1908	846,672	72,378	919,050
1909	701,563	59,816	761,379
1910	654,068	69,935	724,003
1911	839,700	76,547	916,247
1912	996,048	85,285	1,081,333
1913	1,009,361	83,181	1,092,542

Practically the whole Australian produce is of New South Wales origin. Following are details of the most important items in the entries for 1913 of this Australian produce:—

	Quantity.	Value.
Bunker coal tons	1,372,441	£785,435
Meats "	...	83,626
Butter lb.	444,831	21,376
Flour centals	36,745	16,695
Potatoes cwt.	37,435	13,768
Fish "	...	7,409
Milk, preserved lb.	371,809	6,739

STOCKS IN BOND.

The following is a list showing the stocks of principal articles in bond in New South Wales on 31st December of each year, 1911-13.

Article.	1911.	1912.	1913.
Stimulants—			
Ale and beer gal.	139,606	152,464	130,147
Spirits—			
Brandy "	121,723	90,043	88,950
Gin and geneva "	40,465	35,928	33,808
Liqueurs and cordials "	4,368	4,117	4,723
Rum "	253,217	190,763	212,878
Schnapps "	38,294	40,199	43,988
Whisky "	320,882	347,907	344,563
White spirit "	109	99	165
Other "	3,245	3,268	2,833
Distilled in Commonwealth "	334,310	338,586	359,405
Wine—			
Sparkling "	9,082	10,468	11,954
Still "	20,876	21,906	19,315
Narcotics—			
Tobacco—			
Manufactured lb.	285,116	186,644	234,280
Unmanufactured "	4,036,433	5,248,997	7,646,560
Cigars "	54,488	22,018	35,304
Cigarettes "	31,879	31,659	42,030
Sugar—			
Raw and refined* cwt.	647,476	957,493	1,290,883
Glucose "	3,797	348	6,275
Other articles—			
Candles lb.	38,566	30,006	51,350
Cement cwt.	14,796	6,564	13,383
Cocoa and chocolate lb.	58,246	138,997	189,180
Coffee and chicory "	129,998	141,446	275,979
Coffee essence ... .. "	.....	.....	18,890
Fruits, dried—			
Currants "	99,980	40,246	10,745
Raisins "	25,448	26,595	34,347
Dates "	99,605	109,495	905,649
Other "	43,740	87,753	81,554
Grain and pulse (prepared)—			
Rice cntl.	98,103	206,848	180,894
Other "	10	12,979	3,133
Hops lb.	29,902	31,919	45,552
Iron, galvanised cwt.	640	160	3,770
Matches gross.	35,327	98,645	63,546
Milk lb.	21,187	12,229	16,872
Salt cwt.	130,658	55,133	68,607
Salt, rock "	2,690	92	.....
Vinegar gal.	13,718	20,008	34,544

* Including stocks in factories.

COMMERCIAL COMMISSIONERS.

In Eastern Asia.

New South Wales is represented in Eastern Asia by a Commercial Commissioner, with headquarters at Kobe, Japan. The Commissioner is engaged in fostering the trade of the State in the important markets of eastern countries, and makes periodical tours of Japan, China, India, Philippine Islands, Netherlands India, and other portions of the East, closely watching for new opportunities for trade as well as taking steps to ensure the maintenance of the existing trade.

Reports are furnished by the Commissioner, giving in much detail the market prices, &c., for each commodity exported from New South Wales and valuable advice to shippers and to the commercial community. These reports are published as Bulletins and may be obtained upon application to the Immigration and Tourist Bureau.

In addition to the valuable assistance given to commerce the Commissioner does useful work in diverting the stream of tourists in the East towards Australia.

In America and Canada.

During 1911, preliminary inquiries were made as to the possibility of improving the trade relations with the United States of America, and Canada, and as to the advantage of establishing a Trade Commissioner's Office on the West Coast of America. These inquiries disclosed an almost unlimited market for all pastoral primary products, and a considerable number of agricultural primary products, for hardwood timber, coal, cocoanut oil, for some fruits in all seasons, and for all fruits in the off season in America, and for such vegetables as will stand carrying, *e.g.*, onions and potatoes.

In 1914, New South Wales was represented in the United States and Canada by a Trade Commissioner, who is also Executive Commissioner to the Panama Pacific Exposition.

CHAMBERS OF COMMERCE.

Chambers of Commerce have been formed in New South Wales at important trading centres, such as Sydney, Newcastle, Parramatta, Lismore, and Grafton. The membership of the Sydney Chamber of Commerce as at June, 1914, was 1,070, including 104 firms and public companies.

MANUFACTURING INDUSTRY.

THE manufacturing establishments in New South Wales in the year 1810 included a pottery, tannery, brewery, manufactory for tobacco pipes, and another for coarse woollen cloths; and for the next twenty years the principal articles manufactured locally were cloths and woollens, cabbage-tree hats, salt, candles, leather, boots, drain-pipes, and other earthenware.

Naturally the development of manufacturing was influenced by sparseness of population, and the industries established were connected mainly with the preparation of foodstuffs for local consumption. Subsequently to 1851, economic and industrial conditions were altered materially, as compared with those existent in the years prior to the discovery of gold in payable quantities; and impetus was given to the establishment and extension of manufactures. A gauge of progress exists in the following records of the description and number of manufacturing establishments operating in New South Wales in 1829, in 1848, and in 1861:—

Class of Industry.	Establishments.			Class of Industry.	Establishments.		
	1829	1848	1861		1829	1848	1861
Treating Raw Material—				Food and Drink (<i>continued</i>)—			
Boiling Down ... ..	...	...	38	Bakeries (steam) ... ..	...	...	2
Tanneries	11	40	76	Coffee Mills (steam) ... ..	...	...	2
Oils and Fats—				Distilleries, Breweries	9	25	16
Soap and Candles	6	18	28	Tobacco & Snuff Factories ... ..	...	4	11
Stone, Clay, Glass, &c.—				Grain Mills	48	172	184
Potteries ... ..	...	7	5	Clothing and Textiles—			
Glassworks ... ..	...	1	...	Cloth Factories ... ..	...	6	6
Brickworks ... ..	...	...	118	Hat-Making ... ..	...	2	4
Stone-Crushing ... ..	...	...	1	Dye Works ... ..	...	...	4
Wood-working—				Rope Works ... ..	...	...	4
Saw-mills (steam & water) ... ..	...	...	61	Ship & Boat-building, &c.—			
Metal Works, Machinery, &c.				Docks and Slips ... ..	...	...	4
Type Foundries ... ..	...	...	1	Ship & Boat-building, &c. ... ..	...	...	56
Smelting ... ..	...	...	1	Drugs and Chemicals—			
Iron and Brass Foundries	13	13	...	Chemical Works ... ..	...	...	1
Food and Drink—				Heat, Light and Power—			
Sugar Refineries ... ..	...	2	5	Gasworks ... ..	...	...	1
Saltworks ... ..	...	2	1				
Meat Preserving ... ..	...	5	7	Total for the year	84	305	649

The following records at decennial intervals from 1871 indicate the aggregate number of establishments in operation, and the number of persons engaged. These records and their relation to the general population are shown in the following statement:—

Year.	Manufacturing Establishments.	Persons Employed in Factories, including Working Proprietors.				
		Males.	Females.	Total.	Per Factory.	Per cent. of General Population.
1871	1,813	...	...	13,583	7·5	2·7
1881	2,961	28,810	2,372	31,191	10·5	4·1
1891	3,056	43,203	7,676	50,879	16·6	4·5
1901	3,367	54,556	11,674	66,230	19·6	4·8
1911	5,039	82,083	26,541	108,624	21·6	6·5
1912	5,162	88,178	27,383	115,561	22·4	6·6
1913	5,346	93,036	27,364	120,400	22·5	6·6

EXPANSION OF INDUSTRIES.

The extent and importance of the manufacturing industries of New South Wales are indicated in the following statement, which shows for the last ten years the number of the establishments in operation, values of plant and machinery, wages and salaries paid to employees, and the corresponding annual output :—

Year	Establishments.	Persons Employed, including Working Proprietors.	Value of Plant and Machinery.	Salaries and Wages paid.*	Value of Goods Manufactured or work done.
			£	£	£
1904	3,632	68,036	7,648,903	5,012,758	27,159,230
1905	3,700	72,175	8,031,948	5,191,350	30,028,150
1906	3,861	77,822	8,407,337	5,591,888	34,796,169
1907	4,432	86,467	9,155,772	6,650,715	40,018,301
1908	4,453	89,098	9,718,842	7,218,556	40,163,826
1909	4,581	91,702	10,330,724	7,665,125	42,960,689
1910	4,821	99,711	11,578,620	8,687,007	49,615,643
1911	5,039	108,624	12,510,600	10,047,662	54,316,011
1912	5,162	115,561	13,795,195	11,592,052	61,163,328
1913	5,346	120,400	14,861,676	12,683,384	65,672,495
Increase per cent. 1904 to 1913 ...	47·2	77·0	94·3	153·0	141·8

* Excluding drawings by working proprietors.

The figures representing "Goods manufactured or work done" include the value of production of factories making butter and cheese.

During the last ten years additional plant and machinery, valued at over £7,000,000, have been introduced; the salaries and wages have increased by 162 per cent., and the output by 149 per cent. Comparing the figures for 1913 with those of the previous year, continued and remarkable expansion is apparent, every heading of the table showing substantial increases.

LEGISLATIVE REGULATION.

Between 1871 and 1881 manufacturing became an important part of the industrial life of the State, and attention was given to the development of the more highly organized branches. In 1891 the average number of persons engaged in manufacturing had increased to 16·6 per establishment. In 1895 the first measure of legislative regulation was initiated in New South Wales, the Factories and Shops Act, 1896, requiring the registration and inspection of factories and the inspection of shops, so as to secure the maximum advantage to the workers in the matter of safety to health and life. Substantially this Act remains the law of the present day, but it has been amended by Acts passed in 1908 and 1909, by the Early Closing Acts; 1899, 1900, 1906, and 1910, and by the Saturday Half-holiday Act, 1910. The Factories and Shops Act, 1896, the Minimum Wage Act, 1908, and the Factories and Shops (Amendment) Act, 1909, have been consolidated in the Factories and Shops Act, 1912. Any place is a factory in which at least one Chinaman or four other persons are engaged, directly or indirectly, in working at any handicraft, or in which steam or other mechanical power or appliance is used in manufacturing or in packing goods for transit. Each employer is

required to make returns showing the wages and piecework rates paid to all employees, whether engaged within or outside the factory; to keep records of employees, their ages, &c. The provisions of the Act are applicable only in proclaimed factory districts.

LEGISLATIVE ENCOURAGEMENT.

Under Section 51 (iii) of the Commonwealth of Australia Constitution Act, the Parliament of the Commonwealth is empowered to make laws with respect to the payment of bounties on the production or export of goods, but so that such bounties shall be uniform throughout the Commonwealth. The enactments made in this connection include: Sugar Bounty Acts, 1903-12, Bounties Act, 1907-12, Manufactures Encouragement Act, 1908-14, the Iron Bounty Act, 1914, the Shale Oils Bounties Act, 1910-12, and the Wood Pulp and Rock Phosphate Bounties Act, 1912.

BOUNTIES ON MANUFACTURED PRODUCTS.

Particulars regarding the bounties on sugar and agricultural products will be found in the chapter relating to Agriculture. For manufactured products the following have been provided:—

Item.	Period.	Rate of Bounty.
Under Bounties Act, 1907-12:—		
Fish, preserved	for 10 years from 1st July, 1907	½d per lb.
Combed wool or tops, exported	for 3 years from 1st July, 1909	1½d. per lb.
	for 2 years from 1st July, 1912	1d. per lb.
	for 2 years from 1st July, 1914	1d. per lb. for first 1,000,000 lb. made by any one manufacturer; ¾d. per lb. in excess of 1,000,000 lb. made by any one manufacturer.
Manufacturers Encouragement Act, 1908-14:—		
Pig iron	} from 1st Jan., 1903, to 30th June, 1915	12s. per ton.
Puddled bar iron		
Steel		
Galvanised sheet or plate iron or steel	} from 1st Jan. 1909, to 30th June, 1914	10 per cent. on value.
Wire netting (not being prison-made)		
Wire		
Iron and steel tubes or pipes (except riveted or cast) not more than 6in. internal diameter.)		
Iron Bounty Act, 1914:—		
Pig iron made from Australian ore	from 1st July, 1914 to 31st December, 1915	8s. per ton.
Shale Oil Bounties Act, 1910:—		
Kerosene, product of shale.	from 1st July, 1910, to 30th June, 1913	2d. per gal.
Refined paraffin wax	from 1st July, 1910, to 30th June, 1913	2s. 6d. per cwt.
Wood Pulp and Rock Phosphate Bounties Act, 1912:—		
Wood pulp	for 5 years from 1st Jan., 1913	15 per cent. on market value.
Rock phosphates (manufactured into marketable phosphatic manure)	for 5 years from 1st Jan., 1913	10 per cent. on market value.

Bounties are payable only on articles manufactured in Australia from Australian products, with the exception of wire-netting, on which bounty may be paid also if made from wire manufactured in the United Kingdom. The amounts paid in New South Wales during the financial years 1909-14, in respect of the bounties on manufactured products were as follows :—

Product.	1909.	1910.	1911.	1912.	1913.	1914.
	£	£	£	£	£	£
Combed wool or tops, exported.	.....	4,933	8,522	16,898	13,061	12,706
Pig iron	2,314	23,510	20,462	15,611	16,949	40,121
Puddled bar iron	568	1,254	2,090	873	88	.....
Steel	575	1,491	1,939	723	.....	7,196
Galvanised sheet iron	192	287	122	74	.....	.....
Wire-netting .. .. .	.....	6,036	4,824	5,968	1,110	4,554
Kerosene .. .. .	.....	.....	920	2,629	2,792	152
Refined paraffin wax .. .. .	.....	.....	553	739	967	176

NEW SOUTH WALES CHAMBER OF MANUFACTURES.

The New South Wales Chamber of Manufactures was constituted in 1895, to develop the manufactures, products, industries, and commerce of New South Wales, and generally to promote the manufacturing interests of the State, so as to assist in making Australia self-supporting. By means of co-operation towards scientific efficiency, and the encouragement of industrial education, efforts are being made to bring Australian goods to the highest standard of quality.

CLASSIFICATION OF MANUFACTORIES.

The manufacturing industries of New South Wales are classified for statistical and comparative purposes in nineteen groups according to a standardised classification adopted at a Conference of Statisticians.

The following table shows concisely the principal details respecting each class of industries in the State for the year 1913 :—

Class of Industry.	Establishments.	Average Number of Employees.			Average time worked per Employee.	Total Salaries and Wages, exclusive of Drawings of Working Proprietors.	Horse-power of Machinery—Average used.	Value of Machinery, Tools, and Plant.
		Males.	Females.	Total.				
Treating Raw Material, &c.	297	3,889	103	3,992	9-98	370,943	5,361	403,442
Oils and Fats, &c.	41	720	203	923	11-95	82,325	£75	232,062
Processes in Stone, Clay, Glass, &c.	313	6,503	60	6,563	11-47	754,291	13,736	1,054,918
Working in Wood	712	9,221	72	9,293	11-09	979,467	17,116	827,926
Metal Works, Machinery, &c.	553	27,385	294	27,619	11-87	3,676,626	31,616	3,447,776
Connected with Food and Drink, &c.	770	11,612	3,585	15,197	11-29	1,568,207	23,866	3,150,439
Clothing and Textile Fabrics, &c.	1,003	7,771	18,794	26,565	11-81	1,840,414	4,892	585,006
Books, Paper, Printing, &c.	447	7,395	2,614	10,009	11-93	1,099,656	4,718	1,141,588
Musical Instruments, &c.	13	366	40	406	12-00	50,618	248	15,230
Arms and Explosives	8	369	10	379	11-96	48,424	£38	95,710
Vehicles, Fittings, and Saddlery, &c.	434	4,475	75	4,550	11-72	450,123	1,368	132,708
Ship and Boat Building, &c.	46	3,357	1	3,358	11-94	464,912	3,682	616,383
Furniture, Bedding, and Upholstery	246	3,590	445	4,035	11-53	425,417	1,810	70,757
Drugs, Chemicals, and By-products	87	821	514	1,335	11-87	132,363	1,216	189,577
Surgical and other Scientific Instruments	13	79	18	97	11-35	11,170	18	5,057
Jewellery, Timepieces, and Plated Ware	55	729	87	816	11-54	93,784	256	28,190
Heat, Light, and Power	216	3,516	61	3,577	11-65	492,510	80,260	2,761,016
Leatherware, N.E.I.	23	415	110	525	11-86	49,190	166	11,433
Minor Wares, N.E.I.	69	823	808	1,131	11-89	92,947	955	92,458
Total	5,346	93,036	27,364	10,400	11-62	12,683,384	192,497	14,861,976

The metropolitan district is the centre of the chief manufacturing industries, particularly those connected with clothing, printing, wool-scouring

and fellmongering, ship and boat building and repairing, the manufacture of furniture, drugs, and musical instruments, and the production of light, heat, and power. The following table shows the particulars of each class of industry in the Metropolitan District during the year 1913:—

Class of Industry.	Establishments.	Average Number of Employees.			Average time worked per Employee.	Total Salaries and Wages, exclusive of Drawings of Working Proprietors.	Horse-power of Machinery—Average used.	Value of Machinery, Tools, and Plant.
		Males.	Females.	Total.				
					Months	£	H.-p.	£
Treating Raw Material, &c. ..	106	2,286	99	2,385	11.73	263,785	3,589	254,635
Oils and Fats, &c.	21	469	165	634	11.57	58,639	598	174,293
Processes in Stone, Clay, Glass, &c.	111	3,706	25	3,731	11.59	455,654	5,414	444,584
Working in Wood	201	4,254	43	4,297	11.83	495,830	7,932	329,367
Metal Works, Machinery, &c. ...	379	17,703	209	17,912	11.93	2,273,307	9,665	1,400,447
Connected with Food and Drink, &c.	198	6,442	3,243	9,685	11.77	970,529	11,040	1,729,932
Clothing and Textile Fabrics, &c. ...	714	6,520	16,732	23,261	11.80	1,620,599	4,295	491,782
Books, Paper, Printing, &c.	248	5,996	2,512	8,508	11.94	947,829	4,176	905,489
Musical Instruments, &c.	13	366	40	406	12.00	50,618	218	15,230
Arms and Explosives	6	39	8	47	11.81	3,941	28	1,150
Vehicles, Fittings, and Saddlery, &c.	177	2,420	63	2,483	11.84	262,433	826	64,711
Ship and Boat Building, &c.	32	3,234	1	3,235	11.99	451,777	3,604	611,194
Furniture, Bedding, and Upholstery	224	3,332	434	3,766	11.56	400,328	1,695	64,562
Drugs, Chemicals, and By-products	71	738	544	1,282	11.86	118,104	1,010	116,527
Surgical and other Scientific Instruments	12	77	18	95	11.34	11,142	17	4,907
Jewellery, Timepieces, and Plated Ware.	51	703	86	794	11.93	91,250	256	27,510
Heat, Light, and Power	92	2,081	54	2,135	11.87	298,907	62,976	1,815,807
Leatherware, N.E.I.	22	413	110	523	11.87	49,060	158	11,153
Minor Wares, N.E.I.	64	776	308	1,084	11.89	11,290	944	90,823
Total	2,751	61,569	24,694	86,263	11.60	8,915,057	118,672	8,553,143

The term establishment includes branches which, whether located in separate buildings or not, deal with separate branches of industry, and are therefore counted as separate establishments.

The value of production includes the value of products from manufacturing done in educational, charitable, or reformatory and other public institutions, excluding penal institutions. Power or lighting plants in all institutions is recorded.

ESTABLISHMENTS.

Number.

In the following table the number of establishments operating in each class of Industry is indicated at intervals since 1896 :—

Class of Industry.	Establishments.						
	1896	1901.	1906.	1910.	1911. E	1912.	1913.
Treating Raw Material, &c.	274	256	256	289	272	287	297
Oils and Fats, &c.	48	51	48	43	48	45	41
Processes in Stone, Clay, Glass, &c. ...	240	244	252	298	309	297	313
Working in Wood	399	430	457	620	662	684	712
Metal Works, Machinery, &c....	280	301	376	476	509	536	553
Connected with Food and Drink, &c.	753	673	707	767	769	765	770
Clothing and Textile Fabrics, &c. ...	394	538	724	936	981	994	1,003
Books, Paper, Printing, &c.	286	298	335	407	436	426	447
Musical Instruments, &c.	3	6	6	13	12	14	13
Arms and Explosives	1	2	3	5	5	6	8
Vehicles, Fittings, and Saddlery, &c....	176	246	259	361	384	393	434
Ship and Boat Building, &c.	16	25	34	42	41	47	46
Furniture, Bedding, and Upholstery...	87	115	119	176	197	220	246
Drugs, Chemicals, and By-products ...	28	19	48	76	82	87	87
Surgical and other Scientific Instru- ments	5	7	8	11	12	13	13
Jewellery, Timepieces, and Plated Ware	11	14	33	46	48	53	55
Heat, Light, and Power	76	106	139	176	191	203	216
Leatherware, N.E.I.	6	5	12	21	20	24	23
Minor Wares, N.E.I.	23	31	45	58	61	68	69
Total	3,106	3,367	3,861	4,821	5,039	5,162	5,346
Proportion to total for 1896	100	108	124	155	162	166	172

By relating the total for each period to the total for 1896 taken as 100, as shown above, the rapid increases in recent years are emphasised.

Reviewing the advances at five-year intervals, the increase between 1896 and 1901 was 261 establishments, representing a percentage increase of 8·4; between 1901 and 1906 the increase was 484, being 14·4 per cent., and between 1906 and 1911 the increase was 1,178, being 30·5 per cent. The advances in the last seven years have been most consistent and remarkable.

In 1913 the largest class numerically was that connected with clothing and textile fabrics, &c., the next classes in order being those relating to food and drink, working in wood, and metal works and machinery.

In 1901 the manufactories established outside the metropolitan area easily outnumbered those located within that area, the ratio being 1,952 to 1,415, but since that year a process of centralisation has been evident; more new factories have been established in the metropolitan than in the extra-metropolitan area, with the result that since 1912 the number of metropolitan factories is the greater. The following statement shows for the years 1901-1913 the distribution of manufactories as between the metropolitan district and the remainder of the State, and further, the number of establishments in which machinery was installed:—

Year.	Metropolitan District.			Remainder of State.			New South Wales.		
	With Machinery.	Without Machinery.	Total.	With Machinery.	Without Machinery.	Total.	With Machinery.	Without Machinery.	Total.
1901	754	661	1,415	1,215	737	1,952	1,969	1,398	3,367
1902	833	658	1,491	1,342	563	1,905	2,175	1,221	3,396
1903	874	676	1,550	1,300	626	1,926	2,174	1,302	3,476
1904	951	699	1,650	1,252	730	1,982	2,203	1,429	3,632
1905	1,035	645	1,680	1,291	729	2,020	2,326	1,374	3,700
1906	1,136	635	1,771	1,360	730	2,090	2,496	1,365	3,861
1907	1,249	746	1,995	1,512	925	2,437	2,761	1,671	4,432
1908	1,380	712	2,092	1,527	834	2,361	2,907	1,546	4,453
1909	1,496	709	2,205	1,593	783	2,376	3,089	1,492	4,581
1910	1,620	724	2,344	1,668	809	2,477	3,288	1,533	4,821
1911	1,793	717	2,510	1,757	772	2,529	3,550	1,489	5,039
1912	1,964	686	2,650	1,811	701	2,512	3,775	1,387	5,162
1913	2,093	658	2,751	1,881	714	2,595	3,974	1,372	5,346

Location.

Ease of communication with the world's commercial and industrial centres, proximity to coalfields, accessibility by rail or sea to the chief centres of the State in which raw material is produced, density of population, and a good water supply—these factors have promoted the concentration of nearly all the more important industries in the metropolitan area. During the last six years new manufacturing industries of considerable importance have been established in the larger towns outside Sydney, and even in Sydney itself there has been a tendency to remove manufacturing businesses from the

city to the outer suburbs. In country districts the principal establishments are sawmills, smelting works, sugar mills, grain mills, freezing works, and similar industries connected with the treatment of perishable produce.

Judged by classes the largest relative increase in the metropolitan area between 1901 and 1913 occurred in clothing and textile fabrics, &c.; metal works, machinery, &c.; furniture, bedding, and upholstery; books, paper, printing, &c.; working in wood; vehicles and fittings, &c.; drugs, chemicals, and by-products; heat, light, and power. Outside the metropolitan area the greatest advances were in classes working in wood; vehicles and fittings, saddlery, &c.; heat, light, and power; food, drink, &c. The greatest relative increases occur, of course, in those industries in which development is comparatively recent. The following table shows the distribution of establishments by classes for the metropolitan district and for the remainder of New South Wales at intervals since 1901:—

Class of Industry.	Metropolitan District.					Remainder of State.				
	1901.	1906.	1911.	1912.	1913.	1901.	1906.	1911.	1912.	1913.
Treating Raw Material, &c.	89	82	102	107	106	167	174	170	180	191
Oils and Fats, &c.	21	20	22	23	21	30	28	26	22	20
Processes in Stone, Clay, Glass, &c. ..	66	73	103	106	111	178	179	206	191	202
Working in Wood	86	114	182	187	201	344	343	480	497	511
Metal Works, Machinery, &c.	172	227	341	371	379	129	149	168	165	174
Connected with Food and Drink, &c. ..	160	159	188	192	198	513	548	581	573	572
Clothing and Textile Fabrics, &c. ..	372	495	689	706	714	166	229	292	288	289
Books, Paper, Printing, &c.	124	160	227	237	248	174	166	209	189	199
Musical Instruments, &c.	6	6	12	14	13	..	..	..	..	—
Arms and Explosives	2	3	4	4	6	..	..	1	2	2
Vehicles, Fittings and Saddlery, &c. ..	93	94	142	155	175	153	165	242	238	259
Ship and Boat Building, &c.	16	27	30	25	35	9	7	11	12	11
Furniture, Bedding, and Upholstery	99	105	180	198	224	16	14	17	22	22
Drugs, Chemicals, and By-products ..	12	43	74	80	79	7	5	8	7	8
Surgical and Other Scientific Instru- ments.	7	8	11	12	12	..	..	1	1	1
Jewellery, Timepieces, and Plated Ware	14	31	44	50	51	..	2	4	3	4
Heat, Light, and Power	42	61	84	87	92	64	72	107	116	124
Leatherware, N.E.I.	5	12	19	23	22	..	..	1	1	1
Minor Wares, N.E.I.	29	42	56	63	64	2	3	5	5	5
Total	1,415	1,771	2,510	2,650	2,751	1,952	2,090	2,529	2,512	2,595

As regards employment generally, the factories of the metropolitan district are more important than those of all other areas, as they provide employment for twice the number of persons. The average number of employees per establishment in the metropolitan district in 1913 was 31, as compared with 13 in the country; and this average has been fairly constant over a considerable period.

EMPLOYMENT.

The relative importance of the various classes of industry, as judged by the extent of employment offered, is evidenced in the following comparative statement of the average number of persons engaged in manufacturing:—

Class of Industry.	Persons engaged in manufacturing.*				
	1901.	1906.	1911.	1912.	1913.
Treating Raw Material, &c., Pastoral Products	2,981	3,209	3,890	3,872	3,992
Oils and Fats, Animal, Vegetable, &c. ...	698	681	889	895	923
Processes in Stone, Clay, Glass, &c. ...	3,007	3,877	5,695	5,932	6,563
Working in Wood ...	5,108	5,205	8,181	8,880	9,293
Metal Works, Machinery, &c. ...	13,926	15,339	22,862	25,550	27,619
Connected with Food and Drink, &c. ...	11,372	11,607	14,050	14,249	15,197
Clothing and Textile Fabrics, &c. ...	14,497	19,650	26,504	27,059	28,565
Books, Paper, Printing, &c. ...	5,573	6,061	9,134	9,441	10,009
Musical Instruments, &c. ...	226	338	387	416	406
Arms and Explosives ...	11	17	33	188	379
Vehicles, Fittings and Saddlery, &c. ...	2,541	2,667	4,416	4,415	4,550
Ship and Boat Building, &c. ...	1,541	1,595	2,429	3,169	3,358
Furniture, Bedding, and Upholstery ...	2,140	2,317	3,531	3,974	4,035
Drugs, Chemicals, and By-products ...	450	1,012	1,460	1,547	1,365
Surgical and other Scientific Instruments ...	69	86	96	97	97
Jewellery, Timepieces, and Plated Ware ...	165	457	753	863	816
Heat, Light, and Power ...	1,417	1,883	2,795	3,387	3,577
Leatherware, N.E.I. ...	117	240	461	495	525
Minor Wares, N.E.I. ...	391	681	1,055	1,132	1,131
Total ...	66,230	77,822	108,624	115,561	120,400

* Including working proprietors.

In the figures three classes stand out conspicuously, viz., the industries concerned with metal works and machinery, food and drink, clothing and textiles. In quinquennial periods the aggregate figures for all classes give the following increases:—

1896-1901	32.9 per cent.
1901-1906	17.5 „
1906-1911	39.6 „
1911-1913	11.1 „ (two years only).

The relatively small increase in the middle period is due, in a measure, to the fact that in the early half of the quinquennium the rainfall in several parts of the State was below normal, and the consequent restriction of production in the primary industries reacted upon the secondary industries. In the last seven years, however, the extension of employment in these industries has been remarkable.

The following table shows separately the average number of persons engaged in manufactures in the metropolis, as compared with the remainder of the State, for the last ten years :—

Year.	Employees (including working proprietors).			Year.	Employees (including working proprietors).		
	Metropolitan District.	Remainder of State.	Total.		Metropolitan District.	Remainder of State.	Total.
1904	45,409	22,627	68,036	1909	63,777	27,925	91,702
1905	48,842	23,333	72,175	1910	69,950	29,761	99,711
1906	52,605	25,217	77,822	1911	77,592	31,032	108,624
1907	57,247	29,220	86,467	1912	83,352	32,209	115,561
1908	60,974	28,124	89,098	1913	86,263	34,137	120,400

Under the classification of "Remainder of State" are included such urban centres as Newcastle, Broken Hill, Goulburn, Bathurst, Albury, Orange, constituting parts of declared factory districts; yet it is significant of the attractive power of Sydney and suburbs as a suitable manufacturing centre, that whereas the number of employees in the metropolitan district increased by 40,854, or 90 per cent. since 1904, the increase for all other parts of the State was only 11,510 persons, or 51 per cent. The following figures will demonstrate the increases in the employees of each sex :—

Year.	Metropolitan District.		Remainder of State.	
	Males.	Females.	Males.	Females.
1904	32,687	12,722	20,770	1,857
1913	61,569	24,694	31,467	2,670
Increase per cent.	88·4	94·1	51·5	43·8

SEX AND AGE DISTRIBUTION.

The following table shows the sex and age distribution of the persons engaged in manufactories for the last seven years :—

Year.	Persons Employed in Manufactories, including working proprietors.								
	Adults.			Children under 16 years of age.			Adults and Children.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
1907	63,547	18,634	82,181	2,406	1,880	4,286	65,953	20,514	86,467
1908	65,141	19,623	84,764	2,475	1,859	4,334	67,616	21,482	89,098
1909	66,751	20,545	87,296	2,433	1,973	4,406	69,184	22,518	91,702
1910	72,932	22,302	95,234	2,452	2,025	4,477	75,384	24,327	99,711
1911	79,609	24,274	103,883	2,474	2,267	4,741	82,083	26,541	108,624
1912	85,953	25,290	111,243	2,225	2,093	4,318	88,178	27,383	115,561
1913	90,651	25,278	115,929	2,385	2,086	4,471	93,036	27,364	120,400

The following statement shows the variations in the proportions of adults and children of each sex, to the total number employed in each year since 1907 :—

	1907.	1908.	1909.	1910.	1911.	1912.	1913.
Adults—	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
Males	73·49	73·11	72·79	73·14	73·29	74·37	75·29
Females	21·55	22·03	22·41	22·37	22·35	21·89	21·00
Total	95·04	95·14	95·20	95·51	95·64	96·26	96·29
Children under 16 years of age—							
Males	2·78	2·78	2·65	2·46	2·28	1·93	1·98
Females	2·18	2·08	2·15	2·03	2·08	1·81	1·73
Total	4·96	4·86	4·80	4·49	4·36	3·74	3·71
Grand Total.	100·00	100·00	100·00	100·00	100·00	100·00	100·00

The most satisfactory feature of this comparison is the decrease in the proportion of juvenile labour, which in 1913 was nearly 25 per cent. lower than in 1907.

WOMEN AND JUVENILES.

The average number of women and juveniles engaged in manufacturing has increased fourfold since 1896. In proportion to the total employment of men, women, and juveniles, the increase in the numbers of women and juveniles was much smaller, as the following table will indicate :—

Year.	Proportion to Total Average Employment.				
	Females.		Males— Juvenile.	Total— Women and Juveniles.	Adult Males.
	Adult.	Juvenile.			
	per cent.	per cent.	per cent.	per cent.	per cent.
1896	13·61	·30	1·09	15·00	85·00
1901	17·19	·44	1·19	18·82	81·18
1906	22·18	·75	1·13	24·06	75·94
1911	22·35	2·08	2·28	26·71	73·29
1912	21·89	1·81	1·93	25·63	74·37
1913	21·00	1·73	1·98	24·71	75·29

Even the raising of the age limit of so-called juvenile labour from 15 to 16 years does not account for the fall from 85·0 per cent. to 75·3 per cent. in the proportion of males above those ages to total employed, and coincidentally the increase of women and juvenile labour from 15·0 per cent. to 24·7 per cent. of the total since the year 1896.

The following table shows, at quinquennial intervals since 1896, the industries in which women and girls have been employed in greatest numbers, and for 1901, 1911 and 1913 the proportion to every hundred males employed in the same industries:—

Industry.	Average Number of Women and Girls.					Proportion per 100 Males.		
	1896.	1901.	1906.	1911.	1913.	1901.	1911.	1913.
Food, &c.—								
Aerated waters	34	49	43	152	139	4	11	10
Biscuits	136	350	522	705	846	71	108	113
Condiments, coffee, and spices ...	172	167	224	216	237	42	102	101
Confectionery	118	225	388	483	489	39	64	52
Cornflour, oatmeal... ..	16	71	139	199	256	46	73	89
Jam and fruit canning	81	140	214	449	396	28	114	105
Meat and fish preserving	2	24	42	121	157	3	13	15
Pickles, sauces, and vinegar ... ..	...	58	62	174	184	129	125	102
Tobacco	170	428	390	755	805	71	112	116
Clothing, &c.—								
Dressmaking and millinery ...	1,738	2,526	3,602	5,053	4,814	4,141	5,677	4,150
Hats and caps	50	198	694	1,029	975	150	192	171
Oilskins and waterproofs	94	290	129	98	77	203	377	233
Shirts and ties	56	337	1,028	1,655	1,950	1,021	1,191	1,089
Slop clothing	1,290	2,636	3,971	5,503	4,910	434	528	541
Tailoring	1,036	1,437	1,773	3,004	3,424	100	136	147
Woollen and tweed mills				389	416	} 44	{ 111	} 116
Hosiery and knitting factories ...	70	72	178	180	320				529	533
Sails, tents, and tarpaulins ...	15	86	127	245	272	88	147	131
Boots and shoes	849	1,118	1,589	1,593	1,559	39	57	58
Drugs and chemicals	32	66	199	365	329	20	79	71
Furnishing drapery, bedding &c. ...	43	128	143	271	357	7	58	63
Printing and bookbinding	394	703	915	1,539	1,821	16	26	27
Paper, paper bags, and boxes ...	150	148	495	754	778	149	157	154
Other industries	386	417	976	1,609	1,853	1	3	3
Total	6,932	11,674	17,843	26,541	27,364	21	32	29

The classes of industry in which women and children engage extensively are those connected with clothing and textiles, food and drink, books and paper, and, to a less degree, drugs and chemicals, furniture, bedding, oils and fat, metal works, and minor wares.

In 1896 the proportion of females to every hundred males employed was 16. Between 1901 and 1911 the increase in the proportion was greater relatively than in the years prior to 1901, and in the fifteen years 1896–1911 the proportion rose from 16 to 32. The proportion in 1913 was 29 females per 100 males.

CHILD LABOUR.

The law regulating primary education requires that children must attend school until they reach their fourteenth year, exception being made only in case of those who, prior to reaching that age, have obtained exemption certi-

creates. The Shops and Factories Act of 1896 prohibits the employment of children under age 14 in any factory, unless by special permission of the Minister for Labour and Industry; such special permission may not be given to a child under the age of 13 years. From 30th December, 1909, the Minister decided that permission would not be granted except under extreme circumstances to any girl under 14 years of age.

Out of 4,471 juveniles engaged in manufacturing, 3,512 were employed in factories within the metropolitan area. Reviewing the records of juveniles since 1896, it is noticeable that boys have formed consistently a larger body than girls. Over 90 per cent. of the girls employed are working in Sydney and suburbs, while a fair proportion (32 per cent.) of the boys are employed in establishments located outside the metropolitan area.

Certificates of Physical Fitness.

The employment of juveniles under age 16 is conditional upon a medical certificate as to physical fitness being secured by the factory occupier under the Factories and Shops Acts. Particulars regarding such certificates issued in each year since 1905, are as follows:—

Year.	Metropolitan.		Newcastle.		Western.		Broken Hill.		Goulburn.	Albury.	Total.		
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Males.	Males.	Females.	Total.
1905	1,261	591	169	39	39	3	1	...	...	...	1,470	633	2,103
1906	1,751	686	209	52	46	4	27	...	...	...	2,033	742	2,775
1907	1,924	838	297	84	46	...	...	...	3	...	2,270	922	3,192
1908	2,182	1,172	229	57	27	...	...	...	6	...	2,444	1,229	3,673
1909	2,265	1,282	206	58	36	...	...	...	4	...	2,511	1,340	3,851
1910	2,221	1,709	276	59	42	...	...	...	11	1	2,556	1,769	4,325
1911	2,475	2,229	265	50	37	1	...	...	6	...	2,783	2,280	5,063
1912	2,513	2,201	248	146	30	3	14	2	4	3	2,815	2,355	5,170
1913	2,201	2,014	277	152	48	14	5	1	16	2	2,547	2,183	4,730

Permits to Work.

As to special permits issued to children between ages 13 and 14, following are the records of each factory district for the last ten years:—

Year.	Metropolitan.		Newcastle.		Western.	Broken Hill.	Goulburn.	Albury.	Total.		
	Males.	Females.	Males.	Females.	Males.	Males.	Males.	Males.	Males.	Females.	Total.
1904	190	95	36	7	...	...	...	...	226	102	328
1905	165	93	17	9	3	1	...	...	186	102	288
1906	212	77	19	6	1	...	...	...	232	83	315
1907	287	128	17	7	2	...	...	...	306	135	441
1908	213	121	12	...	...	...	...	...	225	121	346
1909	231	145	16	3	1	...	...	...	248	148	396
1910	158	7	19	...	1	...	...	1	179	7	186
1911	175	6	5	...	2	...	...	...	182	6	188
1912	147	4	3	...	3	...	...	1	154	4	158
1913	149	9	10	...	1	...	...	...	160	9	169

OCCUPATIONAL STATUS.

Of all the persons engaged in the manufactories in 1913, approximately 85 per cent. were actually engaged in the different processes of manufacture, or in the sorting and packing of finished articles. The following statement shows the occupational status of the persons engaged in each class of industry for 1913 :—

Class of Industry.	Working Proprietors, Managers, and Overseers.	Clerks, &c.	Engine-drivers, &c.	Workers in Factory, Mill, &c.	Carters, Messengers, and others.	Persons regularly employed at their own homes.	Total.
Treating Raw Material, &c. ...	442	90	193	3,078	187	2	3,992
Oils and Fats, &c. ...	69	81	25	724	24	...	923
Processes in Stone, Clay, Glass, &c. ...	438	216	196	5,452	261	...	6,563
Working in Wood ...	1,028	460	474	6,871	460	...	9,293
Metal Works, Machinery, &c. ...	1,156	344	408	24,837	374	...	27,619
Connected with Food and Drink, &c. ...	1,049	891	726	11,994	537	...	15,197
Clothing and Textile Fabrics, &c. ...	1,578	418	44	23,668	155	702	26,565
Books, Paper, Printing, &c. ...	908	729	33	8,162	175	2	10,009
Musical Instruments, &c. ...	19	29	2	354	2	...	406
Arms and Explosives ...	23	19	3	330	4	...	379
Vehicles, Fittings, and Saddlery, &c. ...	590	166	16	3,716	60	2	4,550
Ship and Boat-building, &c. ...	126	117	37	2,995	83	...	3,358
Furniture, Bedding, and Upholstery ...	381	69	13	3,515	48	9	4,035
Drugs, Chemicals, and By-products ...	127	108	33	1,063	34	...	1,365
Surgical and other Scientific Instruments ...	17	7	...	66	7	...	97
Jewellery, Timepieces, and Plated Ware... ..	79	60	...	663	8	6	846
Heat, Light, and Power ...	240	180	540	2,263	354	...	3,577
Leatherware, N.E.I. ...	41	61	2	420	1	...	525
Minor Wares, N.E.I. ...	112	37	16	948	17	1	1,131
Total ...	8,423	4,582	2,761	101,119	2,791	724	120,400

CAPITAL INVESTED IN PREMISES.

In regard to the capital invested in manufacturing industries, only scanty particulars are available. Where the land, buildings, and fixtures in use for manufacturing purposes are the property of the occupier the estimated value is recorded; otherwise the rental value is stated. The following statement serves to show the extent to which, in the last six years, the capital value and the rental value of premises have both increased, and have been accompanied by an increase in the value of plant and machinery installed :—

Year.	Premises.		Value of Machinery, Tools, and Plant.
	Capital Value when occupier is owner.	Annual Rental Value when leased or rented.	
1908	£ 6,508,164	£ 245,756	£ 9,718,342
1909	6,625,066	274,331	10,330,724
1910	7,208,392	306,274	11,573,620
1911	8,126,487	334,248	12,510,600
1912	8,833,266	370,784	13,795,195
1913	9,598,713	387,087	14,861,676
Percentage increases, 1908-1913 ...	47.49	57.51	52.92

Allowing for interest on owned premises at 5 per cent. net, the aggregate annual income value from land, buildings, and fixtures, used in manufacturing in 1913, was £867,000; or capitalising rentals paid on a basis of 15 years' purchase, the aggregate value of all premises was £15,405,000.

The value of the land, buildings, and fixtures used in connection with manufactories and works, when owned by occupier, and amount of rent paid, when not owned by occupier, comparing the metropolis, with the remainder of the State for each class of industry, is shown in the following table for the year 1913:—

Class of Industry.	Metropolitan District.			Remainder of State.		
	Land, Buildings, and Fixtures.		Value of Machinery, Tools, and Plant.	Land, Buildings, and Fixtures.		Value of Machinery, Tools, and Plant.
	Capital value.	Rental value.		Capital value.	Rental value.	
	£	£	£	£	£	£
Treating Raw Material, &c....	185,238	6,624	254,665	81,543	1,649	148,777
Oils and Fats, &c. ...	192,465	976	174,293	21,545	361	57,769
Stone, Clay, Glass, &c. ...	473,531	5,598	444,584	297,395	3,429	610,334
Working in Wood ...	355,554	19,383	329,397	211,326	8,671	498,529
Metal Works, Machinery, &c.	1,508,131	34,994	1,400,447	557,357	4,679	2,047,329
Food and Drink, &c....	1,247,187	30,983	1,728,932	873,515	10,719	1,421,507
Clothing, Textile Fabrics, &c.	407,834	94,674	491,782	86,239	13,649	93,224
Books, Paper, Printing, &c....	444,254	49,111	905,489	77,378	7,908	236,099
Musical Instruments, &c. ...	26,708	1,898	15,230	.....	.....	.....
Arms and Explosives... ..	4,500	310	1,150	67,462	100	94,560
Vehicles, Fittings, Saddlery, &c.	147,620	20,803	64,711	101,024	9,977	67,997
Ship and Boat-building, &c..	776,284	1,992	611,194	6,607	478	5,189
Furniture, Bedding, &c. ...	90,096	24,652	64,562	10,484	709	6,195
Drugs, Chemicals, &c. ...	140,098	7,813	6,527	17,050	198	73,050
Surgical Instruments, &c. ...	.....	2,046	4,907	.....	75	150
Jewellery, Timepieces, and Plated Ware, &c.	14,463	8,424	27,510	750	291	680
Heat, Light, and Power ...	816,754	5,898	1,815,807	269,521	888	945,209
Leatherware, N.E.I. ...	41,258	1,144	11,133	500	...	300
Minor Wares, N.E.I. ...	44,484	5,941	90,823	2,558	39	1,635
Total	6,916,459	323,267	8,553,143	2,682,254	63,820	6,308,533

Class of Industry.	State of New South Wales.		
	Capital value.	Rental value.	Value of Machinery, Tools, and Plant.
	£	£	£
Treating Raw Material, product of Pastoral pursuits, &c.	266,781	8,273	403,442
Oils and Fats, Animal, Vegetable, &c.	214,010	1,337	232,062
Processes in Stone, Clay, Glass, &c.	770,926	9,027	1,054,918
Working in Wood	566,880	28,054	827,926
Metal Works, Machinery, &c.	2,065,488	39,673	3,447,776
Connected with Food and Drink, &c.	2,120,702	41,702	3,150,439
Clothing and Textile Fabrics and Materials	494,073	108,323	585,006
Books, Paper, Printing, &c....	521,632	57,019	1,141,588
Musical Instruments, &c.	26,708	1,898	15,230
Arms and Explosives... ..	71,962	410	95,710
Vehicles and Fittings, Saddlery, &c.	248,644	30,780	132,708
Ship and Boat Building, &c.	782,891	2,470	616,383
Furniture, Bedding, and Upholstery	100,580	25,361	70,757
Drugs, Chemicals, and By-products	157,148	8,011	189,577
Surgical and other Scientific Instruments ... ..	.....	2,124	5,057
Jewellery, Timepieces, and Plated Ware... ..	15,213	8,715	28,190
Heat, Light, and Power	1,086,275	6,786	2,761,016
Leatherware, N.E.I.	41,758	1,144	11,433
Minor Wares, N.E.I.	47,042	5,980	92,458
Total	9,598,713	387,087	14,861,676

MACHINERY AND PLANT.

In 1896, the value of machinery and plant used in manufacturing, including machinery and engines of indicated horse-power, in addition to all other tools and implements used in the various processes of manufacture, as well as the conveyance plant, was assessed at £5,035,905. The value had increased to £5,860,725 in 1901, and was £14,861,676 in 1913.

Particulars have been given in a previous table of the number of establishments in which machinery was installed, as compared with those not so equipped. The most powerful machinery is used in the supply of heat, light and power, in the manufacture of metals, and in the preparation of foods and drink, while in the clothing industries machinery enters into use only to a minor degree.

In the table given below are shown comparative figures for each of the last ten years, as to the number of establishments using machinery, with the aggregate value of the plant and machinery, and the indicated and developed horse-power. By the term "full capacity" is understood the power which can be generated by the boilers or machinery, while "average used" represents the power generally used in carrying on the process of manufacture :—

Year.	Establishments equipped with Machinery.	Value of Machinery, Tools, and Plant.	Power of Engines.	
			Full Capacity.	Average Used.
		£	h.-p.	h.-p.
1904	2,203	7,648,903	86,878	62,407
1905	2,326	8,031,948	90,896	70,054
1906	2,496	8,407,337	97,244	74,756
1907	2,761	9,155,772	108,257	81,293
1908	2,907	9,718,842	116,571	88,109
1909	3,089	10,330,724	145,349	99,327
1910	3,288	11,578,620	155,590	114,871
1911	3,550	12,510,600	185,089	127,547
1912	3,775	13,795,195	212,561	147,961
1913	3,974	14,861,676	220,779	156,612

The capacity of engines as shown is exclusive of electrical power which is dependent on steam or other engines for its development, as the power is credited to their agency. The figures relating to establishments and value of machinery, &c., are inclusive of electric-generating machinery.

For manufacturing purposes, the power used for a very considerable amount of driving machinery is derived from steam; in some instances, chiefly in the metropolitan district, gas is employed. Other power is used only to a limited extent, and although there are electric engines of considerable power, they are used mainly for lighting and tramway purposes, and their power is usually dependent upon some other class of engine for its development.

Year.	Horse-power of Machinery (Average used).				
	Steam.	Gas.	Electricity.	Water.	Oil.
1902	50,659	2,010	8,820	66	78
1907	66,620	4,901	10,072	101	429
1908	80,894	6,578	10,937	154	483
1909	89,917	8,658	11,773	209	543
1910	103,857	10,123	15,991	197	649
1911	113,939	12,201	20,671	222	1,185
1912	130,479	16,028	26,652	273	1,181
1913	141,025	13,802	35,885	307	1,478

The source of the power used in 1902 and during the years 1911-13 is given below.

Source.	Developed Horse-power.				Proportion of Total.			
	1902.	1911.	1912.	1913.	1902.	1911.	1912.	1913.
Steam ...	50,659	113,939	130,479	141,025	per cent. 82.19	per cent. 76.87	per cent. 74.72	per cent. 73.26
Gas ...	2,010	12,201	16,028	13,802	3.26	8.23	9.18	7.17
Electricity ...	8,820	20,671	26,652	35,885	14.31	13.95	15.26	18.64
Water ...	66	222	273	307	.11	.15	.16	.16
Oil ...	78	1,185	1,181	1,478	.13	.80	.68	.77
Total ...	61,633	148,218	174,613	192,497	100.00	100.00	100.00	100.00

The distribution of the various kinds of power, and the value of fuel used and power rented, among the different classes of industries, in 1913, was as follows:—

Class of Industry.	Horse-power of Machinery in use.										Value of Fuel Consumed, including Motive Power rented.
	Full Capacity.					Average used.					
	Steam.	Gas.	Electricity	Water.	Oil.	Steam.	Gas.	Electricity.	Water.	Oil.	
Treating Raw Material, Product of Pastoral Pursuits, &c. ...	4,815	881	1,421	20	91	3,422	632	1,216	15	76	£ 42,208
Oils and Fats, Animal, Vegetable ..	732	£6	£29	..	..	482	70	£23	..	..	15,633
Processes in Stone, Clay, Glass, &c. .	11,519	2,497	4,473	..	80	8,392	1,657	3,128	..	59	208,064
Working in Wood ..	15,223	1,272	5,360	54	189	11,667	1,006	4,267	44	132	21,230
Metal Works, Machinery, &c. ...	20,274	3,180	19,864	9	245	15,906	2,458	13,057	6	189	475,477
Connected with Food and Drink, &c.	23,120	3,728	5,136	20	383	16,730	2,740	4,135	10	251	188,564
Clothing and Textile Fabrics, and Materials ..	2,144	1,422	2,467	..	18	1,657	1,140	2,079	..	16	34,803
Books, Paper, Printing, &c. ...	879	1,435	3,476	5	217	689	1,065	2,803	2	159	32,967
Musical Instruments, &c. ...	..	75	178	..	..	..	75	173	..	..	910
Arms and Explosives ..	430	4	30	..	..	310	3	25	..	..	1,894
Vehicles and Fittings, Saddlery &c.	277	505	750	..	215	237	340	648	..	148	12,866
Ship and Boat Building, &c. ...	3,107	51	3,613	..	85	2,574	47	990	..	81	13,062
Furniture, Bedding, and Upholstery	259	515	1,528	..	45	197	346	1,234	..	31	6,917
Drugs, Chemicals, and By-Products	411	260	867	..	..	309	216	691	..	..	15,860
Surgical and other Scientific Instruments ..	..	1	18	..	..	..	1	17	..	..	217
Jewellery, Timepieces, and Plated Ware ..	..	57	242	..	..	..	43	213	..	..	1,757
Heat, Light, and Power ..	115,996	2,375	532	330	438	77,463	1,770	461	230	336	293,245
Leatherware, N.E.L. ..	24	166	38	..	..	9	128	29	..	..	811
Minor Wares, N.E.L. ..	494	106	500	..	..	481	63	411	..	..	4,790
Total ..	199,709	18,625	50,822	436	2,009	141,025	13,802	35,885	307	1,478	1,871,425

SALARIES AND WAGES.

The figures representing salaries and wages, as stated throughout this chapter, are exclusive of amounts drawn by working proprietors.

The salaries and wages paid to employees in manufactories and works amounted in 1913 to £12,683,384; male workers received £11,323,791 or, £127 15s. 4d. per head; and females £1,359,593, or £50 5s. 10d. per head.

MANUFACTURING INDUSTRY.

365

A comparison of the total amount of salaries and wages paid during each year of the decennium, 1904-13, is shown below, also the average amount received and the average time worked per employee.

Year.	Salaries and Wages (excluding drawings by working proprietors) :-				Average time worked per Employee.
	Total.	Average per Employee.			
		Male.	Female.	Total.	
	£	£ s. d.	£ s. d.	£ s. d.	months.
1904	5,012,758	.....	.....	79 17 0	11'30
1905	5,191,350	.....	.....	77 12 2	11'34
1906	5,591,888	.....	.....	77 9 6	11'45
1907	6,650,715	.....	.....	80 12 7	11'43
1908	7,218,556	.....	.....	84 14 5	11'51
1909	7,665,125	103 19 3	37 18 1	87 5 5	11'46
1910	8,687,007	107 16 8	40 1 7	90 16 4	11'51
1911	10,047,662	114 4 9	43 2 1	96 7 1	11'55
1912	11,592,052	122 10 4	48 7 9	104 8 10	11'59
1913	12,683,384	127 15 4	50 5 10	109 13 2	11'62

In 1904 the general average amounted to £79 17s. per worker; in 1905 and 1906 it was somewhat less but, during the last seven years, it has increased steadily, and in 1913 was 37 per cent. higher than in 1906.

The largest amount of wages is paid in the class, metal works and machinery, —£3,676,626 out of a total of £12,683,384 in 1913; next in order are the classes, clothing and textiles, food and drink. The amounts paid in each class of industry during the years 1906, 1911, and 1913, are shown below :-

Class of Industry.	Salaries and Wages (exclusive of drawings by Working Proprietors).					
	Total Amount.			Average amount per employee.		
	1906.	1911.	1913.	1906.	1911.	1913.
	£	£	£	£ s. d.	£ s. d.	£ s. d.
Treating Raw Material, &c.	194,407	326,218	370,943	67 11 0	90 3 10	100 7 3
Oils and Fats, &c.	42,366	67,228	82,325	68 8 10	78 7 1	91 17 7
Stone, Clay, Glass, &c.	300,212	601,906	754,291	84 15 2	110 16 7	119 14 7
Working in Wood	376,912	732,465	979,464	81 12 9	97 8 7	113 13 7
Metal Works, Machinery, &c.	1,502,331	2,728,286	3,676,626	102 10 6	121 15 4	135 12 6
Connected with Food and Drink, &c.	824,083	1,301,676	1,568,207	77 14 6	95 12 1	106 9 0
Clothing, and Textile Fabrics, &c.	907,542	1,633,509	1,840,414	48 18 5	68 17 0	71 16 8
Books, Paper, Printing, &c.	557,245	868,868	1,099,656	87 18 2	190 4 1	115 10 8
Musical Instruments, &c.	30,584	43,755	50,618	92 13 7	115 9 0	127 16 5
Arms and Explosives	1,077	1,971	48,424	82 16 11	67 19 4	129 9 6
Vehicles, Fittings and Saddlery, &c.	179,900	391,955	450,123	76 12 6	87 12 5	110 12 5
Ship and Boat building, &c.	167,136	305,932	464,912	108 6 5	127 14 9	140 6 7
Furniture, Bedding, and Upholstery, &c.	157,383	354,368	425,417	73 4 9	106 9 0	112 19 3
Drugs, Chemicals and By-products	62,893	124,844	132,363	67 15 5	87 15 11	109 13 2
Surgical and other Scientific Instruments	5,589	8,202	11,170	75 10 6	94 5 6	131 18 3
Jewellery, Time-pieces and Plated Ware.	33,900	75,042	93,754	82 2 0	105 19 10	123 1 6
Heat, Light, and Power	200,922	370,547	492,510	115 12 1	133 17 4	139 8 10
Leatherware, N.E.L.	14,218	36,789	49,190	64 12 7	83 19 10	99 15 6
Minor Wares, N.E.L.	33,008	74,101	92,947	53 1 4	73 5 11	86 14 1
Total	5,591,888	10,047,662	12,683,384	77 9 6	96 7 1	109 13 2

The increase in the average amount paid per employee has been general throughout every class of industry. The high increase in the class arms and explosives, is the result of the establishment of the Commonwealth small arms factory, where highly skilled labour is engaged; but in other classes, such as those connected with stone, clay, and glass, with clothing and textile fabrics, with vehicles and saddlery, and with leatherware, the increase since 1906 exceeds 40 per cent.

The average amount per employee is lowest in the class clothing and textiles, where women and juveniles are largely in excess of adult male employees, and in establishments treating raw pastoral products, where employment is intermittent.

Since 1909 particulars have been obtained of the amounts paid to males and females respectively, and the following comparison shows the average earning per employee of each sex in 1909, in 1912, and in 1913. During the period the general average for male employees has increased by £23 16s. 1d., or 22·9 per cent., and for females by £12 7s. 9d., or 32·6 per cent.; but no allowance has been made for intermittent employment, skilled or unskilled labour, or other important factors affecting the comparison. Available information indicates that the mean average time worked in all industries was 11·46 months in 1909, as compared with 11·62 months in 1913; and that the proportion of employees under 16 years of age was 3½ per cent. of males and 8½ per cent. of females in the earlier year, as compared with 2½ per cent. of males and 7½ per cent. of females in 1913:—

Class of Industry.	Average Annual Amount of Wages per Employee, excluding Working Proprietors.					
	Males.			Females.		
	1909.	1912.	1913.	1909.	1912.	1913.
Treating Raw Material, Product of Pastoral Pursuits, &c.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
76 18 8	88 12 8	101 15 3	30 2 5	37 0 8	51 12 0	
Oils and Fats, Animal, Vegetable	93 0 4	99 18 9	104 12 1	37 6 11	41 6 8	48 8 11
Processes in Stone, Clay, Glass, &c.	103 8 6	123 1 10	120 8 6	34 8 7	49 8 11	43 10 11
Working in Wood	90 18 10	108 5 2	114 2 7	49 16 1	59 10 4	60 3 11
Metal Works, Machinery, &c.	113 13 11	132 8 4	136 6 0	59 3 7	55 12 9	57 2 5
Connected with Food and Drink, &c.	100 16 11	112 6 8	125 2 8	37 4 1	45 17 11	48 0 0
Clothing and Textile Fabrics, &c.	98 1 11	121 2 10	126 2 1	38 5 7	49 7 7	51 0 7
Books, Paper, Printing, &c.	116 3 6	134 5 11	141 2 9	34 10 10	44 11 0	47 4 7
Musical Instruments, &c.	112 16 6	129 5 3	136 8 3	32 16 6	51 1 6	49 4 1
Arms and Explosives	94 9 1	134 12 2	131 13 0	47 10 0	46 10 0	50 6 0
Vehicles, Fittings and Saddlery, &c.	86 17 7	107 15 11	111 9 5	41 17 6	59 7 7	64 1 11
Ship and Boat Building, &c.	125 17 10	136 11 8	140 6 10	.....	90 0 0	100 0 0
Furniture, Bedding, and Upholstery	98 13 6	115 18 1	121 11 10	41 0 4	51 15 0	48 1 2
Drugs, Chemicals, and By-Products	107 6 11	127 9 8	137 17 2	34 19 11	41 14 9	47 15 3
Surgical and other Scientific Instruments	107 13 10	113 11 2	149 9 7	55 9 6	73 1 2	64 3 4
Jewellery, Timepieces, and Plated Ware	100 7 7	121 3 1	130 3 5	42 19 8	56 16 0	68 0 11
Heat, Light, and Power	123 18 1	135 7 11	140 16 1	59 0 10	51 10 9	60 12 8
Leather, N.Z.I.	77 17 9	108 3 2	113 2 1	36 19 7	51 10 10	52 3 4
Minor Wares, N.Z.I.	81 8 3	93 2 0	101 13 1	37 13 10	42 3 11	48 15 4
Total	103 19 3	122 10 0	127 15 4	37 18 1	48 7 9	50 5 10

The following are the index levels of average annual amount of wages paid to total employees in manufactories and works during the years 1904-13. Wages in 1911=1,000 :—

Class of Industry.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.
Treating Raw Material, &c. ..	742	747	749	777	838	846	962	1,000	969	1,113
Oils and Fats, &c. ..	1,058	940	873	954	1,030	1,029	1,042	1,000	1,100	1,173
Processes in Stone, Clay, Glass, &c. ..	834	825	765	808	868	922	883	1,000	1,104	1,080
Working in Wood ..	863	830	838	891	901	931	947	1,000	1,107	1,168
Metal Works, Machinery, &c. ..	869	858	842	873	919	952	962	1,000	1,088	1,114
Connected with Food and Drink, &c. ..	791	754	813	815	842	897	957	1,000	1,037	1,113
Clothing, and Textile Fabrics, &c. ..	785	736	766	781	830	869	923	1,000	1,083	1,125
Books, Paper, Printing, &c. ..	916	881	877	886	880	957	981	1,000	1,103	1,153
Musical Instruments, &c. ..	737	749	803	826	838	912	932	1,000	1,055	1,107
Arms and Explosives ..	1,057	938	1,219	1,282	1,114	1,242	729	1,000	1,910	1,905
Vehicles, Fittings and Saddlery, &c. ..	835	834	875	907	909	981	1,078	1,000	1,217	1,262
Ship and Boat building, &c. ..	1,040	860	848	1,007	976	986	887	1,000	1,069	1,099
Furniture, Bedding, and Upholstery ..	694	746	695	774	781	883	887	1,000	1,035	1,071
Drugs, Chemicals, and By-products ..	711	770	771	814	870	899	908	1,000	1,064	1,149
Surgical and other Scientific Instruments	864	1,111	801	856	789	1,000	951	1,000	1,119	1,309
Jewellery, Time-pieces and Plated Ware	765	810	775	786	874	893	802	1,000	1,068	1,161
Heat, Light, and Power ..	913	894	864	889	933	916	978	1,000	1,062	1,042
Leatherware, n.e.t. ..	726	783	769	794	823	851	878	1,000	1,167	1,188
Minor Wares, n.e.t. ..	778	731	724	834	863	943	942	1,000	1,104	1,183
Mean of all Industries ..	829	805	804	837	879	906	943	1,000	1,085	1,188

The above table shows that wages in all industries, excepting those treating raw material, were higher in the year 1912 than in 1911, also that with very few exceptions the wages further advanced in the year 1913.

The wages in each year in the table are called 1,000, in 1911, therefore, the index levels can be compared only horizontally, not vertically.

VALUE OF PRODUCTION FROM MANUFACTORIES.

In stating in a previous table the value of production from manufactories, the returns from factories dealing with milk products are included.

The value of goods manufactured or work done in 1913, excluding the production of factories dealing with milk products, amounted to £62,256,031. Of this amount, £38,773,661 represent the value of materials and fuel used, the value added by the processes of treatment including salaries and wages being £23,482,370.

The proportions of the total output which the various items represent are shown in the following table :—

Heading.	Industries connected with Milk Products.	Other Industries.	All Industries.	Proportion of total, all Industries.
	£	£	£	per cent.
Materials	3,109,386	37,428,090	40,537,476	61·7
Fuel including Motive Power rented ..	25,854	1,345,571	1,371,425	2·1
Salaries and wages... .. .	131,730	12,551,654	12,683,384	19·3
Total	3,266,970	51,325,315	54,592,285	83·1
Goods manufactured or work done ..	3,416,464	62,256,031	65,672,495	.....
Balance which accrued to Proprietors for general purposes and for profit.	149,494	10,930,716	11,080,210	16·9

The difference between the cost of material, fuel, and wages, as shown represents the values accruing to proprietors and manufacturers, from which are to be deducted cost of premises rented, depreciation, &c. Under the heading of fuel is included the cost of rented power, but waste product fed for fuel, as in sawmills, is for purposes of these tables regarded as valueless.

Thus out of every hundred pounds worth of goods produced in factories, materials and fuel used in the manufacture thereof cost £61 14s., while the workers received £19 6s., and the proprietors £16 18s. There are, of course, numerous other sources of expense, and the balance shown as accruing to proprietors by no means represents the actual profits. A considerable margin must be allowed for such items as renewal of plant and machinery, &c.; insurance, rent, advertising, rates, taxes other than duty or income tax, and, in addition, a sum to cover the interest on invested capital, the balance being the actual reward of the manufacturers' exertions.

The proportions of the items of material, fuel, and wages, vary considerably in the different classes of industries:—

Class of Industry.	Goods Manufactured, or work done.	Materials used.	Fuel consumed, including motive power rented.	Salaries and Wages.	Proportionate Value of Manufactured Goods represented by—			
					Materials used.	Fuel, &c.	Salaries and Wages.	Balance to Proprietors.
	£	£	£	£	per cent.	per cent.	per cent.	per cent.
Treating Raw Material, Pastoral Products	5,372,798	4,561,365	42,208	370,042	84.9	.8	6.9	7.4
Oils and Fats, &c.	989,461	736,464	15,633	82,325	74.4	1.6	8.3	15.7
Processes in Stone, Clay, Glass, &c.	1,936,021	335,668	208,084	754,291	18.0	11.2	40.4	30.4
Working in Wood	3,330,632	2,384,674	21,230	979,464	62.3	.6	25.5	11.6
Metal Works, Machinery, &c.	16,504,231	9,684,085	475,477	3,676,626	58.7	2.9	22.3	16.1
Connected with Food and Drink, &c.	20,420,126	15,900,802	188,564	1,568,207	77.9	.9	7.7	13.5
Clothing and Textile Fabrics, &c.	5,783,261	2,958,993	34,303	1,840,414	49.4	.6	30.7	19.3
Books, Paper, Printing, &c.	2,794,304	977,232	32,967	1,099,656	35.0	1.2	39.3	24.5
Musical Instruments, &c.	157,611	67,588	910	50,618	42.9	.6	32.1	24.4
Arms and Explosives.	83,357	30,067	1,894	48,424	36.1	2.3	58.1	3.5
Vehicles, Fittings, and Saddlery, &c.	1,133,306	473,537	12,866	450,123	40.0	1.1	38.0	20.9
Ship and Boat Building, &c.	737,521	211,749	13,662	464,912	26.9	1.7	59.0	12.4
Furniture, Bedding, and Upholstery	1,234,117	613,065	6,947	425,417	49.7	.6	34.5	15.2
Drugs, Chemicals, and By-products	1,026,510	549,241	15,360	132,363	63.5	1.5	12.9	32.1
Surgical and other Scientific Instruments	27,468	8,338	217	11,170	30.4	.8	40.7	28.1
Jewellery, Timepieces, and Plated Ware	282,056	137,550	1,757	93,784	48.8	.6	32.5	18.1
Hoat, Light, and Power	2,708,881	547,245	293,245	492,510	20.2	10.8	18.2	50.8
Leatherware, N.E.L.	241,874	152,033	811	49,190	62.9	.3	20.3	16.5
Minor Wares, N.E.L.	373,422	207,737	4,790	92,947	55.6	1.3	24.9	13.2
Total	65,672,495	40,537,476	1,371,425	12,683,384	61.7	2.1	19.3	16.9

* Exclusive of drawings of working proprietors.

It is interesting to note the extent to which the value of materials is enhanced by the processes of treatment. For all industries, materials averaged 61.7 per cent. of the value of the output; there was, however, great diversity amongst the various classes, the proportion ranging from 18 per cent. in those industries engaged in processes in stone, clay, glass, &c., to 85 per cent. in those treating raw pastoral products. These variations can be understood easily when the wide difference between the operations of the industries is considered, and the value of the plant employed taken into account. The extensive use of machinery, however, is not always the chief factor controlling the value added to materials, and the industries dealing with food, &c., and those engaged in ship-building, &c., may be cited as examples. In the former class, materials represent 78 per cent. and wages only 8 per cent. of the total value, while in the latter class, the wages amount to more than twice the value of the materials used and represent 59 per cent. of the total cost. It must be noted, however, that in ship and boat-building and repairing a very large proportion of the work consists of repairs and renovations in which the cost of materials is much less than in making new goods.

In the following table the proportion per cent. that wages and material, including fuel, bears to the total output of manufactories and works is shown for each class of industry for the year 1904, in comparison with the years 1909-1913:—

Class of Industry.	1904.	1909.	1910.	1911.	1912.	1913.
Treating Raw Material, &c.	Wages ..	£ 6.0	£ 6.4	£ 6.9	£ 7.1	£ 6.8
	Materials ..	88.2	84.7	85.4	85.8	84.4
	Balance ..	10.8	8.9	7.7	7.1	8.8
	Total ..	100.0	100.0	100.0	100.0	100.0
Oils and Fats, &c.	Wages ..	7.9	7.2	6.8	6.9	6.8
	Materials ..	67.3	68.6	72.2	72.8	72.6
	Balance ..	24.8	24.2	21.0	20.3	20.6
	Total ..	100.0	100.0	100.0	100.0	100.0
Processes in Stone, Clay, Glass, &c.	Wages ..	48.0	39.8	33.2	39.1	33.3
	Materials ..	28.1	32.8	31.5	29.6	29.9
	Balance ..	23.9	27.4	30.3	31.3	31.8
	Total ..	100.0	100.0	100.0	100.0	100.0
Working in Wood	Wages ..	23.2	25.3	25.5	23.9	24.2
	Materials ..	61.5	59.0	58.8	61.8	61.9
	Balance ..	15.3	15.7	15.7	14.3	13.8
	Total ..	100.0	100.0	100.0	100.0	100.0
Metal Works, Machinery, &c.	Wages ..	22.3	23.8	22.1	22.4	21.5
	Materials ..	58.8	60.9	60.6	60.2	59.9
	Balance ..	18.9	15.3	17.3	17.4	18.6
	Total ..	100.0	100.0	100.0	100.0	100.0
Connected with Food and Drink, &c.	Wages ..	8.4	6.7	6.8	7.3	7.3
	Materials ..	74.5	80.7	80.4	79.0	78.5
	Balance ..	17.1	12.6	12.8	13.7	14.2
	Total ..	100.0	100.0	100.0	100.0	100.0
Clothing and Textile Fabrics, &c.	Wages ..	28.2	29.9	29.9	30.9	31.7
	Materials ..	56.2	52.7	52.9	52.4	50.5
	Balance ..	15.6	17.4	17.2	16.7	17.8
	Total ..	100.0	100.0	100.0	100.0	100.0
Books, Paper, Printing, &c.	Wages ..	41.3	39.3	38.9	38.3	39.1
	Materials ..	32.8	35.6	35.5	36.6	36.3
	Balance ..	25.9	25.1	25.6	25.1	24.6
	Total ..	100.0	100.0	100.0	100.0	100.0
Musical Instruments, &c.	Wages ..	53.0	29.2	28.9	29.8	32.0
	Materials ..	18.9	51.7	51.6	47.8	44.8
	Balance ..	28.1	19.1	19.5	22.4	23.2
	Total ..	100.0	100.0	100.0	100.0	100.0
Arms and Explosives	Wages ..	22.9	23.0	27.7	17.0	21.2
	Materials ..	61.7	72.8	64.7	78.2	72.0
	Balance ..	15.4	4.2	7.6	4.8	6.8
	Total ..	100.0	100.0	100.0	100.0	100.0
Vehicles, Fittings and Saddlery, &c.	Wages ..	34.5	30.0	35.8	36.4	39.4
	Materials ..	42.6	44.1	44.4	43.0	41.2
	Balance ..	22.9	19.9	19.8	20.0	19.4
	Total ..	100.0	100.0	100.0	100.0	100.0
Ship and Boat-building, &c.	Wages ..	65.2	56.7	55.2	55.9	61.0
	Materials ..	22.8	34.6	33.3	33.3	28.5
	Balance ..	12.0	8.8	11.5	11.8	10.5
	Total ..	100.0	100.0	100.0	100.0	100.0
Furniture, Bedding, and Upholstery	Wages ..	33.2	33.8	33.2	33.8	34.6
	Materials ..	48.2	50.3	49.8	50.7	48.9
	Balance ..	18.6	15.9	17.0	15.5	16.5
	Total ..	100.0	100.0	100.0	100.0	100.0

Class of Industry.		1904.	1909.	1910.	1911.	1912.	1913.
Drugs, Chemicals, and By-products ..	{ Wages ..	13.9	12.5	12.4	13.7	13.9	12.9
	{ Materials ..	54.3	56.7	55.0	5.60	55.6	55.0
	{ Balance ..	31.8	30.8	32.6	30.3	30.5	32.1
Total ..		100.0	100.0	100.0	100.0	100.0	100.0
Surgical and other Scientific Instruments ..	{ Wages ..	28.4	30.9	28.6	30.4	35.3	31.1
	{ Materials ..	38.8	27.9	29.0	28.9	29.4	40.7
	{ Balance ..	32.8	41.2	42.4	40.7	35.3	28.2
Total ..		100.0	100.0	100.0	100.0	100.0	100.0
Jewellery, Timepieces, and Plated Ware ..	{ Wages ..	38.6	34.1	30.9	31.2	32.0	33.2
	{ Materials ..	39.8	44.3	46.6	47.9	46.4	49.4
	{ Balance ..	21.6	21.1	22.5	20.9	21.6	17.4
Total ..		100.0	100.0	100.0	100.0	100.0	100.0
Heat, Light, and Power ..	{ Wages ..	18.7	17.6	15.7	17.4	17.8	18.1
	{ Materials ..	29.9	34.6	39.9	34.0	33.3	31.3
	{ Balance ..	51.4	47.8	44.4	48.6	48.9	50.7
Total ..		100.0	100.0	100.0	100.0	100.0	100.0
Leatherware, n.e.i. ..	{ Wages ..	16.5	17.1	16.6	17.5	20.1	20.3
	{ Materials ..	67.0	65.6	66.2	68.0	62.6	63.2
	{ Balance ..	15.6	17.3	17.2	14.5	17.3	16.5
Total ..		100.0	100.0	100.0	100.0	100.0	100.0
Minor Wares, n.e.i. ..	{ Wages ..	20.8	22.2	21.2	22.8	23.5	24.9
	{ Materials ..	63.5	56.5	61.2	60.0	59.2	56.9
	{ Balance ..	15.7	21.3	17.6	17.2	17.3	18.2
Total ..		100.0	100.0	100.0	100.0	100.0	100.0
Total all Industries ..	{ Wages ..	18.5	17.8	17.5	18.6	18.9	19.3
	{ Materials ..	62.7	65.8	65.6	64.2	62.9	63.8
	{ Balance ..	18.8	16.4	16.9	17.2	18.2	16.9
Total ..		100.0	100.0	100.0	100.0	100.0	100.0

The following statement shows the progress of manufactories, inclusive of those connected with milk products, as regards value of production and wages paid in each of the last ten years :—

Year.	Value of—					Salaries and Wages paid, exclusive of drawings of working Proprietors.
	Materials Used.	Fuel consumed including Motive Power rented.	Goods manufactured, or work done.	Production, being Value added to Raw Materials.	Production per head of population.	
	£	£	£	£	£ s. d.	£
1904	16,492,242	533,304	27,159,230	10,133,684	7 1 10	5,012,758
1905	18,636,720	572,700	30,028,150	10,818,730	7 8 9	5,191,350
1906	22,102,685	609,998	34,796,169	12,083,486	8 2 3	5,591,888
1907	25,533,451	843,686	40,018,301	13,641,164	9 0 0	6,650,715
1908	25,507,414	876,565	40,163,826	13,779,847	8 18 4	7,218,556
1909	27,314,486	940,840	42,960,689	14,705,363	9 6 6	7,665,125
1910	31,379,604	1,184,282	49,615,643	17,051,757	10 11 1	8,687,007
1911	33,670,951	1,242,613	54,346,011	19,432,447	11 13 6	10,047,662
1912	37,122,441	1,360,141	61,163,328	22,680,746	13 0 11	11,592,052
1913	40,537,476	1,371,425	65,672,495	23,763,594	13 2 8	12,683,384

The production per head of population has increased by £6 Os. 10d., or 86 per cent. since 1904.

With the exception of the industry in which surgical and scientific instruments are manufactured the figures in the subjoined statement demonstrate clearly the general increase which has taken place during the last five years in the cost of materials per employee in each industry.

Class of Industry.	1904.	1909.	1910.	1911.	1912.	1913.
	£	£	£	£	£	£
Treating Raw Material, &c. ...	826·02	943·28	1004·87	1013·26	1012·41	1153·19
Oils and Fats, &c. ...	622·99	746·61	835·65	801·65	892·23	814·84
Processes in Stone, Clay, Glass, &c. ...	49·02	79·58	76·57	79·86	90·77	82·85
Working in Wood ...	197·75	194·15	195·60	231·13	254·41	258·89
Metal Works, Machinery, &c. ...	266·36	284·73	314·92	321·10	360·49	367·85
Connected with Food and Drink, &c. ...	614·73	984·92	1039·87	998·04	1035·41	1058·72
Clothing and Textile Fabrics, &c. ...	94·23	94·25	100·46	103·14	106·12	112·68
Books, Paper, Printing, &c. ...	65·33	82·37	85·20	90·83	98·12	100·93
Musical Instruments, &c. ...	29·72	181·62	187·85	180·84	168·55	168·71
Arms and Explosives ...	163·58	241·45	107·86	275·48	*292·23	*318·14
Vehicles, Fittings and Saddlery, &c. ...	77·85	94·14	105·99	106·16	100·82	106·90
Ship and Boat Building, &c. ...	44·55	75·23	67·11	72·72	62·88	67·12
Furniture, Bedding, & Upholstery ...	96·68	130·85	132·68	147·40	144·41	153·65
Drugs, Chemicals, and By-products ...	223·71	346·00	341·50	349·63	362·75	413·63
Surgical and Scientific Instruments ...	98·04	75·09	81·40	80·89	77·13	88·19
Jewellery, Timepieces, and Plated Ware ...	73·65	116·36	134·81	153·11	154·04	170·72
Heat, Light, and Power ...	178·96	239·79	330·80	258·62	248·53	234·97
Leatherware, N.E.I. ...	230·59	258·24	272·61	310·63	285·70	291·13
Minor Wares, N.E.I. ...	155·13	166·71	188·86	184·62	193·97	187·91
Totals ...	250·24	308·12	326·58	321·42	333·41	348·90

* Excluding Commonwealth Small Arms Factory.

The following table shows the production per employee, i.e., value per employee added to raw materials in process of manufacture, 1904-13:—

Class of Industry.	1904.	1909.	1910.	1911.	1912.	1913.
	£	£	£	£	£	£
Treating Raw Material, &c. ...	166·74	170·16	171·24	167·03	186·92	192·69
Oils and Fats, &c. ...	302·00	341·26	322·55	299·31	336·47	257·17
Processes in Stone, Clay, Glass, &c. ...	125·18	163·03	166·41	150·34	213·89	201·47
Working in Wood ...	123·76	134·98	136·94	142·81	156·73	153·31
Metal Works, Machinery, &c. ...	186·35	182·66	194·98	212·79	241·17	229·72
Connected with Food and Drink, &c. ...	210·03	235·48	252·72	264·91	283·06	284·97
Clothing and Textile Fabrics, &c. ...	73·39	84·51	89·47	94·97	102·23	105·19
Books, Paper, Printing, &c. ...	133·93	149·06	155·07	157·67	171·54	178·25
Musical Instruments, &c. ...	127·95	169·45	176·39	197·92	204·86	219·50
Arms and Explosives ...	101·26	90·39	58·80	76·69	*113·75	*136·85
Vehicles, Fittings and Saddlery, &c. ...	105·33	120·58	132·74	137·52	143·80	153·28
Ship and Boat-building, &c. ...	151·25	142·72	134·57	152·53	158·01	167·40
Furniture, Bedding, and Upholstery ...	103·93	129·34	133·93	146·03	150·33	152·19
Drugs, Chemicals, and By-products ...	187·85	264·38	279·33	274·29	289·35	338·39
Surgical and other Scientific Instruments ...	155·07	194·06	199·57	199·71	184·96	194·99
Jewellery, Timepieces and Plated Ware ...	111·54	143·11	154·42	166·35	177·72	174·94
Heat, Light and Power ...	420·54	452·50	498·46	502·67	497·43	522·33
Leatherware, N.E.I. ...	109·14	134·74	139·42	146·15	170·64	169·58
Minor Wares, N.E.I. ...	89·36	128·23	119·93	123·07	133·72	142·26
Total ...	148·95	160·36	171·01	178·90	196·54	197·54

* Excluding Commonwealth Small Arms Factory.

The figures in the preceding table show that the production per employee has increased in value during the period under review; the statement hereunder demonstrates that in all industries, with few exceptions, the proportion per cent. of annual amount of wages to production (that is, value added to raw materials)—total employees, has advanced during the years 1904-13:—

Class of Industry.	1904.	1909.	1910.	1911.	1912.	1913.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
Treating Raw Material, &c. ...	35·5	41·9	47·4	50·2	43·4	48·2
Oils and Fats, &c. ...	24·2	22·9	24·4	25·2	24·7	24·7
Processes in Stone, Clay, Glass, &c. ...	66·8	59·3	55·8	55·5	54·8	57·0
Working in Wood ...	60·3	61·8	61·9	62·7	63·3	68·8
Metal Works, Machinery, &c. ...	54·2	60·9	56·2	56·1	53·6	57·9
Connected with Food and Drink, &c. ...	32·8	34·9	34·9	35·0	33·9	36·2
Clothing and Textile Fabrics, &c. ...	64·5	63·3	63·5	64·9	64·0	65·5
Books, Paper, Printing, &c. ...	61·4	61·1	60·3	60·3	61·3	61·6
Musical Instruments, &c. ...	65·4	60·5	59·7	57·1	58·0	56·8
Arms and Explosives ...	59·8	84·3	78·6	77·9	*75·8	*61·8
Vehicles, Fittings, and Saddlery, &c. ...	60·1	64·4	64·5	61·5	67·0	64·5
Ship and Boat-building, &c. ...	84·5	86·6	82·7	82·6	85·3	82·7
Furniture, Bedding, and Upholstery ...	64·1	68·0	66·1	63·7	67·8	69·3
Drugs, Chemicals, and By-products ...	30·4	28·9	27·6	31·2	31·3	28·7
Surgical and other Scientific Instruments	46·4	42·8	40·3	42·8	49·9	59·1
Jewellery, Time-pieces, and Plated Ware	63·6	61·8	57·8	59·9	59·7	65·6
Heat, Light, and Power ...	26·7	26·8	26·1	26·4	26·7	26·4
Leatherware, N.E.I. ...	51·4	49·6	49·1	54·6	53·8	55·3
Minor Wares, N.E.I. ...	56·9	51·0	54·7	57·1	57·5	57·8
Total ...	49·5	52·1	50·9	51·7	51·0	53·3

* Excluding Commonwealth Small Arms Factory.

INDIVIDUAL INDUSTRIES.

In the following pages some details are given in regard to the separate industries included in the group classification hitherto under discussion:—

I.—TREATING RAW MATERIAL, PASTORAL AND AGRICULTURAL PRODUCTS.

The industries in which raw materials, as derived from pastoral and agricultural operations, are treated, form five distinct groups. Details for 1913 for these groups are:—

Industries.	Establishments.		Average number of Employees, including working Proprietors.		Average time worked per Employee.	Power used.			Value of Machinery, Tools and Plant.
	Total.	Using Machinery	Males.	Females.		Steam.	Electricity	Other.	
					Months	H.-p.	H.-p.	H.-p.	£
Boiling-down, Tallow Refining, &c. ...	33	26	536	10	10·73	491	73	70	63,866
Sausage-skin making ...	7	...	173	17	12·00	...	...	...	1,224
Tanning ...	72	70	934	8	11·93	739	113	412	83,010
Wool-scouring and Fellmongering ...	62	60	1,486	67	9·91	1,410	832	134	188,388
Chaff-cutting, Corn-crushing, &c. ...	124	124	760	1	6·69	782	128	107	65,954
Total ...	267	280	3,889	103	9·98	3,423	1,216	723	403,442

Boiling-down, Tallow Refining, &c.

In the figures given above regarding establishments, particulars are not included concerning boiling-down or wool-washing plants in operation on sheep stations and on farms. Such plants are necessarily operative for more or less restricted periods.

Tallow refining as an industry is, in a measure, dependent upon seasonal conditions, activity being greatest when there is a surplus of live-stock, and coincidentally a market price for tallow which encourages production. The following statement shows the estimated production for the last ten years in comparison with the figures for 1900. The output from all sources, including station plants, is indicated; the amount used locally is shown also; this constitutes the raw material used in soap and candle works. The balance of the local production is exported:—

Year.	Estimated Quantity of Tallow.		Year.	Estimated Quantity of Tallow.	
	Produced.	Used Locally.		Produced.	Used Locally.
	cwt.	cwt.		cwt.	cwt.
1900	433,090	135,370	1900	640,110	116,200
1904	353,080	117,940	1910	742,200	118,450
1905	495,160	113,720	1911	729,330	123,740
1906	487,830	116,740	1912	568,500	131,600
1907	490,430	115,770	1913	795,020	143,590
1908	420,630	117,610			

Exclusive of operations on stations and large farms, for which details are not available, the value of carcasses, fat, refuse, bones, etc., treated during 1913 in boiling-down works, was £737,696, and 5,764 cwt. of raw tallow were used; the output included 518,885 cwt. of raw and refined tallow, valued at £766,533; 412,146 cwt. of manure, valued at £127,023; whilst the values of hides, skins, &c., was £12,815; oils, £4,155; bones, horns, &c., £11,509; glue-pieces, sinews, &c., £10,466.

Sausage-skin Making.

For the making of sausage skins, &c., in 1913 there were seven establishments, but no machinery was installed.

Tanning.

In tanneries, 130,445 calf and yearling hides and 323,297 other hides, and 4,050 cwt. of hide pieces, 3,693,515 pelts, and 148,121 other skins produced 12,724,000 lb. of leather, worth £857,984, and basils weighing 3,821,434 lbs. valued at £159,499; pelts, pickled, numbered 172,427, valued at £5,375. Other skins after treatment were valued at £33,075. 9,633 tons of bark were used in treating these materials.

Wool-scouring and Fellmongery.

In wool-scouring works and fellmongeries 31,241,578 lb. of greasy wool and 4,930,409 skins were treated, producing 13,891,116 lb. and 17,786,737 lb. respectively, of scoured wool, valued at £911,350 and £1,265,939 respectively, and 4,397,680 pelts, valued at £97,430, and 183,511 pickled pelts valued at £5,161.

Included with wool-scouring works are two wool-combing factories established at Botany, near Sydney.

II.—OILS AND FATS, &c.

The industries in which oils and fats, animal and vegetable, are treated, are grouped under two heads, and particulars for each group for 1913 include the following :—

Industries.	Establishments.		Average Number of Employees, including working proprietors.		Average time worked per Employee.	Power used.			Value of Machinery, Tools and Plant.
	Total.	Using Machinery.	Males.	Females.		Steam.	Elec- tricity.	Other.	
Oil and Grease	10	8	185	13	Months 12·00	H. p. 231	H. p. 110	H. p. 70	£ 61,067
Soap and Candles	31	22	535	190	11 92	251	213	...	170,995
Total	41	30	720	203	11·95	482	323	70	232,062

Establishments dealing with mineral oils are included in the class in connection with the development of heat, light, and power.

Soap and Candle Factories.

The following table gives some particulars of the soap and candle making industry during the last ten years :—

Year.	Soap and Candle Factories.	Average Number of Employees, including work- ing proprietors.	Quantity Manufactured.		Horse power of Plant (full capacity).
			Soap.	Candles.	
			cwt.	lb.	H. p.
1904	46	503	208,677	3,984,035	556
1905	40	574	212,658	4,226,082	520
1906	41	602	221,834	5,076,048	522
1907	34	547	234,022	5,656,354	489
1908	29	553	232,441	5,566,776	454
1909	26	571	229,846	6,922,488	427
1910	33	624	251,662	6,689,875	648
1911	37	658	277,449	5,388,848	872
1912	34	689	290,953	5,581,858	837
1913	31	725	278,899	5,563,404	645

The candles manufactured in 1913 weighed 5,563,404 lb., valued at £122,333, while the soap manufactured included household, 227,211 cwt., valued at £314,488; toilet, 15,269 cwt., valued at £63,628; sand, 30,059 cwt., valued at £26,398; soft, 6,360 cwt., valued at £6,249, making the total value for all soap £410,763. And in addition 1,873,403 lb. of soap extract and powders valued at £17,946, and soda crystals valued at £19,153 were made. Tallow, 143,593 cwt.; alkali, 6,623,006 lb.; and other materials such as copra oil, resin, and paraffin, valued at £203,957 were used in the manu- facture.

III.—STONE, CLAY, GLASS, &C.

The majority of the industries in this class are associated with the building trade, and their operations reflect, to a great extent, the condition of that trade. Details of each industry for 1913 were as follows :—

Industries.	Establishments.		Average Number of Employees, including working proprietors.		Average time worked per employee.	Power used.			Value of Machinery, Tools and Plant.
	Total	Using Machinery.	Males.	Females.		Steam	Elec- tricity.	Other	
Bricks and Tiles	217	90	3,035	30	11.14	4,909	1,416	1,352	£ 666,470
Glass (including Bottles)	8	6	898	...	11.95	24	122	64	24,493
Glass (Ornamental)	16	10	231	5	12.00	10	97	...	10,171
Lime, Plaster, Cement, and Asphalt	99	17	947	2	11.68	3,715	1,070	195	291,618
Marble, Slate, &c.	13	12	253	1	12.00	15	180	63	16,450
Modelling	2	...	12	...	12.00	...	...	...	...
Pottery, Earthenware, &c.	18	16	527	22	11.92	219	243	42	45,716
Total	313	151	6,503	60	11.47	8,892	3,128	1,716	1,054,918

With the exception of 59 horse-power derived from oil-engines, and used in brick and tile works, all the "other power" used was derived from gas.

Stone Quarries, &c.

Information regarding stone quarries, road-metal quarries, and the State Quarries, also quarry licenses and permits, is given in Part "Mining Industry" of this Year Book.

Brickworks.

Brickworks have been established in proximity to nearly every large town throughout the State.

The following figures give details concerning the industry during the last ten years :—

Year.	Brickworks.	Average Number of Employees, including working proprietors.	Bricks made.	Horse-power of Plant (full capacity).
				H.-p.
1904	165	1,893	154,480,000	2,701
1905	172	2,006	162,643,000	2,074
1906	187	2,147	172,010,000	3,172
1907	186	1,844	195,594,000	3,535
1908	189	1,919	214,606,000	3,853
1909	201	2,108	222,558,000	4,547
1910	220	2,514	251,546,000	5,382
1911	222	3,017	327,864,000	6,311
1912	202	3,128	333,656,000	7,956
1913	217	3,665	389,435,000	10,788

The output of bricks for 1913 was valued at £830,439.

The impetus given to brick-making during the last four years is a result of the remarkable activity of the building trades in the metropolitan and suburban areas.

State Brickworks, Homebush.

In the latter part of 1911 the Government initiated State Brickworks at Homebush, near Sydney, where a considerable area of suitable clay was located. Most of the output in the period of inauguration was used in constructing and amplifying the works. During the year ended 30th June, 1913, trade bricks manufactured numbered 14,676,279. These were disposed of at rates equivalent to £1 10s. per 1,000 at the kiln: 10,901,932 were used on public works, 1,599,635 were sold to private purchasers, and the balance were used at the yards. The bricks manufactured during the year ended 30th June, 1914, numbered 27,110,056, the cost of manufacture being £36,391, equivalent to £1 6s. 10d. per 1000. Bricks sold numbered 25,374,676, at an average price of £1 19s. 6d. per 1000. Of this number the State used 21,922,083, and 5,102,817 were taken by the general public.

State Sandlime Brickworks, Botany.

Sand-lime brickworks were established by the State at Botany in 1912, the capacity of the machinery installed being 250,000 bricks per week. The production of bricks for trading purposes was not commenced until the end of April, 1913. The number manufactured in the year 1913-14 was 2,842,008, the cost of manufacture being £8,898.

Lime and Cement Works.

Lime is manufactured chiefly at Capertee and Goulburn, though small quantities are obtained from other localities.

The manufacture of cement has become an important industry and the production has been increased considerably on account of the construction of the Burrinjuck dam, and extensive railway and other works. The principal cement works are in operation at Granville and at Portland, near Wallerawang, the limestone being obtained from the quarries in the locality of Capertee.

The production of lime and cement during the last ten years as recorded by the Department of Mines, is as follows:—

Year.	Lime Manufactured.		Value of Cement Manufactured.
	Quantity.	Value.	
	tons.	£	£
1904	22,173	13,250	54,750
1905	18,018	15,019	58,100
1906	21,126	15,573	128,487
1907	23,587	19,458	144,548
1908	24,922	21,610	184,400
1909	25,849	24,283	202,200
1910	30,113	30,189	251,110
1911	29,930	32,918	315,569
1912	35,657	44,478	368,280
1913	33,272	41,428	402,249

Cement Testing.

Cement testing is done by officers of the Department of Public Works. The operations during the last two years have been as follows:—

Nature of Test.	1911-12.	1912-13.
Cement	244	426
Sand	32	64
Mechanical	115	255
Chemical	56	62
Total	447	807

The revenue received for the year 1912-13 was £1,246, and the expenditure £1,909. This expenditure also covered cost of inspection of earthenware pipes and monier pipes, manufacture and testing tubes, also officer inspecting earthenware pipes at Lithgow, and two officers inspecting cement at Portland.

State Lime-works, Taree and Botany.

To work extensive limestone deposits in the locality of Manning River State lime-works were established during 1912 at Taree. The quantity of limestone produced was 14,804 tons, of which 1,804 tons were despatched to Botany, and 13,000 tons were stacked at the quarry at 30th June, 1913. For the year, 1914, the lime manufactured amounted to 312 tons, the total charges being £675. At Botany in 1914 the total charges were £6,570, the cost per ton being £3 1s. 4d., the sales amounted to 2,425 tons, realising £5,722.

Pottery, Earthenware, &c.

The manufacture of tiles, pottery, and earthenware is carried on usually in conjunction with brickmaking, although some establishments are devoted to this branch of the industry solely. The values of the tile, pottery, and earthenware manufactured in 1913 were:—Tiles, £27,422; pipes, £67,593; pottery, £48,407; terra-lignum blocks, £3,940; making a total value of £147,362.

Inspection of Earthenware Pipes.

During the year ended 30th June, 1913, the inspections of pipes made by officers of the Public Works Department consisted of 94,024 lineal feet, together with 17,453 feet junctions, bends, &c.

IV.—WORKING IN WOOD.

Wood-working industries are connected generally with the preparation and supply of building materials, and, as in the class immediately preceding, afford a reliable index to the state of the building trade.

Industries.	Establishments.		Average Number of Employees, including Working Proprietors.		Average time worked per Employee.	Power used.			Value of Machinery, Tools, and Plant.	
	Total.	Using Machinery.	Males.	Females.		Months	Steam.	Elec- tricity.		Other.
							H.-p.	H.-p.		H.-p.
Boxes and Cases ...	41	37	698	5	11·80	515	843	158	£ 53,189	
Cooperage	14	11	265	.....	12·00	101	56	86	25,651
Joinery	144	133	2,364	15	11·73	921	1,005	658	116,247	
Saw-mills... ..	477	477	5,744	44	10·70	10,633	2,252	236	619,264	
Wood-turning, &c. ...	36	36	210	8	11·45	97	106	34	13,475	
Total	712	694	9,221	72	11·09	11,667	4,267	1,182	£27,926	

Of the 9,293 persons employed in these industries, 4,297 were engaged in the metropolitan district, and 4,996 in the country, the employment in the latter district being almost wholly in connection with saw-mills, which provided work for 4,353 persons.

Box and Case Making.

Employment in box factories has extended considerably in recent years, mainly on account of advances made by the export trade. In 1902 there were only 183 employees in these establishments, as compared with 703 in 1913, and the number of establishments increased from 14 to 41.

State Timber and Joinery Works, Rozelle.

These works, which were purchased from the Chief Commissioner for Railways, were taken over on 1st June, 1912, and have since been maintained as a trading business by the State. The works supply the public, as well as the State, with timber and joinery. The total sales for the year 1913 amounted to £120,000.

The value of the stock at the works on 30th June, 1913, was £56,083.

State Timber-yard, Uhr's Point.

The State timber-yard, where timber used in constructional work may be properly seasoned, is situated at Uhr's Point, on the Parramatta Rivér, near Sydney. The expenditure during the year 1913 amounted to £40,687.

Saw-mills.

Details concerning the saw-milling industry during the last ten years were as follows :—

Year.	Saw-mills.	Average Number of Employees, (including Working Proprietors).	Plant and Machinery.		Year.	Saw-mills.	Average Number of Employees (including Working Proprietors).	Plant and Machinery.	
			Power (full capacity).	Value.				Power (full capacity).	Value.
			H.-p.	£				H.-p.	£
1904	324	3,655	6,379	285,935	1909	407	4,307	10,947	370,671
1905	339	3,886	6,903	286,011	1910	437	4,826	11,961	470,081
1906	338	3,642	6,936	260,810	1911	452	5,205	13,342	526,909
1907	377	3,983	8,909	332,239	1912	469	5,590	15,016	597,097
1908	385	4,127	9,367	367,005	1913	477	5,788	16,262	619,264

During 1913 the output of sawn timber from logs obtained from the forests of New South Wales amounted to 164,888,000 superficial feet, of which 124,292,000 superficial feet, or more than three-fourths, were hardwoods. From imported logs 15,816,000 superficial feet of timber were sawn, of which 13,739,000 feet were softwoods. The value of the timber sawn from native logs was stated as £320,398 for softwood and £819,933 for hardwood at the works, and the imported timber when sawn £148,329 for softwood and £26,607 for hardwood.

V.—METAL WORKS, MACHINERY, &c.

The industries included in this class are by far the most important to the industrial workers in the State, although the clothing trade employs a greater number of persons.

The following table shows the employment afforded, and other particulars for each branch of the industry during 1913 :—

Industries.	Establishments.		Average Number of Employees, including Working Proprietors.		Average time worked per Employee.	Power used.			Value of Machinery, Tools, and Plant.	
	Total.	Using Machinery.	Males.	Females.		Months	H.-p.	H.-p.		H.-p.
Agricultural Implements ...	23	21	644	7	11-92	65	62	124	29,618	
Art Metal Works ...	6	5	91	5	12-00	15	10	6	8,260	
Brass and Copper ...	26	25	303	10	11-91	26	49	70	24,618	
Cutlery ...	8	8	40	2	12-00	...	27	16	2,820	
Engineering ...	192	190	6,640	49	11-94	1,659	1,613	795	534,271	
Galvanized Iron ...	46	27	821	6	11-88	18	193	182	51,288	
Ironworks and Foundries ...	80	75	2,700	19	11-77	2,576	1,467	211	298,801	
Nails ...	2	2	74	...	12-00	...	27	150	13,128	
Railway Carriages and Rolling Stock	4	4	1,570	6	12-00	487	40	75	68,395	
Railway and Tramway Workshops	22	22	8,324	12	12-00	1,595	1,548	572	651,036	
Smelting and Ore Dressing ...	35	34	3,790	7	11-50	9,191	7,360	109	1,537,204	
Stoves and Ovens ...	13	11	410	5	11-93	...	94	151	26,061	
Tinsmithing ...	63	26	847	49	11-56	63	40	66	33,739	
Wireworking ...	18	16	632	12	11-66	30	398	50	64,345	
Other Metal Works (including Lead Mills) ...	15	14	444	45	12-00	178	79	96	54,172	
Total ...	553	450	27,385	234	11-87	15,906	13,057	2,653	3,447,776	

In 1902 there were only 13,695 persons engaged in works of this class, so that there has been an increase of 13,924, or 102 per cent. since that year. The largest increases are in engineering works and works connected with the manufacture of agricultural implements, the manufacture and repair of railway engines, carriages, and rolling-stock. Engineering works show an increase of 2,675 employees since 1902, the increase during the last five years being due partly to the local manufacture of locomotives.

In connection with the figures in the above table it should be remembered that the work carried out at the railway and tramway workshops is of such a character that the particulars shown under this heading and for engineering should be considered in conjunction.

The building locally of vessels for the Australian Navy at the Fitzroy Dock, Sydney, will give considerable impetus to the iron trades. Steel rails for use in Australian rail and tramways are made at Lithgow. Extensive iron and steel works have been constructed at Port Waratah, near Newcastle.

State Monier Pipe and Reinforced Concrete Works.

On 2nd February, 1914, pipeworks were acquired by the State, and administered under the Special Deposits (Industrial Undertakings) Act, 1912. At 30th June, 1914, the property account amounted to £16,362, and the stock in hand £9,710; the sales to that date amounted to £10,229.

Testing of Cast-Iron Pipes.

The number of cast-iron pipes tested by officers of the Public Works Department for the year ended 30th June, 1913, was 40,698. In addition the following materials were passed—10,016 special castings, 483 stop valves, 5 relief valves and 1,315 spring hydrants. The castings represented a weight of 7,201 tons, valued at £63,425.

Smelting and Ore Dressing.

Smelting Works, including treatment plants in conjunction with mining plants, in 1913 numbered 35, and 3,797 persons were employed. The bulk of the work done is in connection with the treatment of silver and lead ores of domestic production; but some establishments deal with gold, copper, tin, and other ores, which are brought from all parts of Australia, and also from New Caledonia. Quartz batteries are excluded from these figures, but establishments using a cyanide plant are included.

Smelting as a distinct industry is carried on in several centres in New South Wales, the most important works being at Cockle Creek, Boolaroo, in the northern district, and at Port Kembla in the south. At Cockle Creek the ores treated are obtained from Broken Hill, as well as from other mines of the State; at the Electrolytic Refining and Smelting Works at Port Kembla, the greater portion of the output is derived from copper produced at Mount Morgan, Queensland, and Mount Lyell, Tasmania, though a small proportion of blister copper was derived from New South Wales mines. It is considered that an economy would be effected, both in regard to the producing mine and the smelter, if all copper produced in Australia, either in the form of ore, matte, or metal, were refined in New South Wales.

The following statement shows the recorded operations of smelting companies during 1913:—

Works.	Output.					Value.
	Gold.	Silver.	Lead.	Copper.	Tin.	
	oz. fine.	oz.	tons.	tons fine.	tons.	£
Cockle Creek, Boolaroo ...	12,763	1,241,699	17,554	...	...	469,490
Port Kembla	130,474	406,961	...	14,388	...	1,542,827
Waratah ... ..	...	...	...	463	...	30,385
Woolwich ... ..	...	...	...	...	903	182,800

The output shown for the works at Waratah and Woolwich is from domestic ores only. At Port Kembla local ores, valued at £30,990, included in the above statement, yielded as follows:—Gold, 939 oz. fine, value £3,756; silver, 15,673 oz., value £1,698; copper, 393 tons, value £25,545.

VI.—FOOD AND DRINK.

There have been large individual increases in several industries in this group, notably confectionery, biscuits, and tobacco, but these have been counterbalanced by a decline in sugar-milling, and in meat-preserving. The number of workers fluctuates considerably during the year, as employ-

ment in establishments manufacturing aerated waters, butter, cheese, flour, sugar, and jam varies with the seasons. The following table shows the average number of persons employed in each industry during 1913:—

Industries.	Establishments.		Average Number of Employees, including Working Proprietors.		Average time worked per Employee.	Power used.			Value of Machinery, Tools and Plant.
	Total.	Using Machinery.	Males.	Females		Steam.	Electricity.	Other.	
Bacon-curing	19	19	186	2	11-71	188	68	31	25,091
Butter Factories and Creameries .. .	140	140	885	13	11-82	1,941	75	562	240,133
Butterine and Margarine .. .	4	4	53	2	11-73	55	10	30	6,750
Cheese Factories .. .	28	28	79	1	11-58	84	..	3	9,167
Condensed Milk .. .	2	2	40	2	12-00	40	..	..	12,350
Meat and Fish Preserving .. .	9	9	1,026	157	9-06	224	11	24	40,030
Biscuits .. .	7	7	748	846	12-00	546	471	..	107,720
Confectionery .. .	44	39	940	489	11-88	91	399	144	92,472
Cornflour, Oatmeal, &c. .. .	13	13	289	256	11-34	373	277	109	88,009
Flour-mills .. .	68	68	1,028	7	11-43	3,893	45	770	342,367
Jam and Fruit Canning .. .	15	11	378	390	10-54	149	78	..	29,173
Pickles, Sauces, and Vinegar .. .	20	15	181	184	11-95	25	32	10	15,069
Sugar Mills and one Sugar Refinery .. .	4	4	1,109	35	..	3,950	1,178	..	990,674
Aerated Waters, Cordials, &c. .. .	237	220	1,482	139	11-23	284	283	291	178,148
Breweries .. .	31	30	1,039	4	12-00	1,049	185	29	392,200
Condiments, Coffee, Spices, &c. .. .	21	18	235	237	11-95	94	84	18	25,492
Distilleries .. .	3	3	21	..	12-00	52	77	..	51,782
Ice and Refrigerating .. .	89	89	1,198	10	10-08	3,289	537	946	479,336
Malting .. .	4	4	53	..	11-02	88	40	32	24,688
Tobacco, Cigars, &c. .. .	12	8	692	805	11-95	310	290	2	100,298
Total .. .	770	726	11,612	3,585	11-29	16,730	4,185	3,001	3,150,439

Butter, Cheese, and Bacon Factories.

Creameries are not considered as separate establishments when worked in conjunction with butter factories; the persons employed are included. There has been an enormous increase in the quantity of butter made in recent years, and particulars of the machinery in use and the number of persons employed during each of the last ten years are given in the following table. The number of factories and of employees do not coincide with those shown in the preceding table, as they include factories on farms, in which the employees (737 males and 4 females in 1913) are not exclusively engaged in manufacturing dairy products, but in general farm labour:—

Year	Factories.							Estimated Value of Plant and Machinery.	Machinery in use.					Persons employed.				
	Butter only.	Creameries only.	Cheese only.	Bacon and Ham only.	Butter and Cheese.	Butter and Bacon.	Butter, Cheese, and Bacon.		Total.	Engines.			Cheese Presses.	Males.	Females.			
										Number.	Horse-power.	Butter Workers.						
1904	145	271	28	14	4	3	2	1	405	351,322	525	3,096	178	257	431	96	1,364	26
1905	153	255	36	16	4	3	2	1	463	277,908	546	3,179	195	289	425	104	1,342	2
1906	170	198	57	20	4	4	1	1	445	255,109	511	3,453	199	311	358	105	1,420	33
1907	178	146	36	16	4	3	1	1	374	278,830	447	3,413	213	321	274	113	1,369	80
1908	160	172	42	17	3	3	1	1	397	287,771	466	3,526	197	283	270	123	1,304	14
1909	168	222	43	17	4	3	1	1	455	236,517	524	3,009	201	291	310	131	1,398	25
1910	157	345	46	19	5	5	1	1	573	319,111	639	4,726	188	282	441	138	1,591	16
1911	163	639	49	19	5	5	1	1	865	389,585	966	5,944	185	279	715	154	1,923	28
1912	152	615	52	21	5	5	1	1	842	409,909	959	6,260	165	259	681	152	1,883	42
1913	142	677	50	19	3	3	1	1	897	435,619	1,027	6,986	133	266	753	145	1,927	22

* Includes combined churns and butter-workers—5 in 1911, 11 in 1912, and 71 in 1913.

During 1913 the bacon factories, apart from farms, cured 12,874,666 lb. of bacon and ham, valued at £433,263, and produced lard weighing 579,176 lb., valued at £15,826; also small goods to the value of £18,780. The butter factories showed during 1913 an output of 73,245,383 lb., valued at £3,259,935. Cheese factories produced 3,451,710 lb., valued at £90,896, and at condensed and concentrated milk factories 3,682,812 lb. of condensed and concentrated milk were made, the value being stated as £52,734.

As bacon, hani, butter and cheese are made also on farms, apart from factories, the special chapter in this Year Book dealing with the Dairying Industry should be consulted for complete information regarding these industries.

Butterine and Margarine Factories.

There were in 1913 four factories for the making of butterine and margarine at which 55 persons were continuously employed. The value of machinery, tools, and plant was stated as £6,750. The output for the year was 3,511,527 lb. of margarine, valued at £88,635.

Meat and Fish Preserving and Refrigerating.

There were 9 establishments and 1,183 persons employed in connection with meat and fish preserving during 1913. Following are the records of carcasses treated during the last ten years in establishments dealing with meat by preserving or chilling:—

Year.	Meat Preserving Works.		Meat and Tongues and Sundries.		Refrigerating Works.	
	Cattle.	Sheep and Lambs.	Quantity.	Value.	Cattle.	Sheep and Lambs.
1904	No. 10,696	No. 58,902	lb. *	£ *	No. 4,133	No. 570,934
1905	10,931	356,894	*	*	3,435	1,306,160
1906	9,955	274,950	*	*	5,352	1,283,862
1907	5,197	554,072	*	*	2,248	1,366,543
1908	4,078	620,013	2,802,529	12,119	1,719	1,196,096
1909	18,468	1,061,276	2,291,232	11,982	2,482	1,599,663
1910	36,145	1,093,577	2,445,525	17,546	10,357	2,226,750
1911	61,596	925,475	3,023,931	31,978	10,188	1,469,923
1912	50,941	616,435	2,301,418	37,079	11,532	1,191,711
1913	100,827	374,523	7,305,113	81,807	29,887	2,160,484

* Not available.

The output of tinned meat, etc., in 1913 was 31,576,337 lb., valued at £623,910, and other products valued at £122,020. By-products were valued at £297,384.

At the ice-works 51,400 tons of ice, valued at £84,011, were made during 1913.

Flour Mills, Biscuit Factories, &c.

The amount of mill-power for grinding and dressing grain is ample for treating the flour consumed in the State, and an export trade of growing importance is maintained.

The output of the flour mills was below the normal level in 1908 as a result of a decrease in the yield of wheat. The following table shows various details regarding flour mills for a period of ten years :—

Year.	Flour Mills.	Average Number of Employees including working proprietors.	Wheat treated.	Flour made.	Plant and Machinery.	
					Power (full capacity).	Value.
			Bushels.	Tons.	H.-p.	£
1904	81	875	10,418,979	210,137	4,851	293,328
1905	78	875	10,117,793	205,805	5,158	294,760
1906	78	873	11,151,126	225,995	5,532	297,859
1907	74	858	11,617,905	237,614	4,342	273,459
1908	68	792	8,737,228	180,843	5,609	284,954
1909	71	860	10,466,329	214,426	6,126	307,321
1910	72	945	12,045,148	242,813	6,083	326,502
1911	73	967	12,616,111	253,556	6,302	340,316
1912	69	964	12,065,733	255,359	6,268	333,068
1913	68	1,035	13,963,806	285,425	6,278	342,367

The value, at the mills, of flour made in 1913 was £2,340,564, the output of bran was 69,855 tons, valued at £325,495 ; pollard, 52,739 tons, valued at £254,431 ; and 3,508 tons of sharps and screenings, valued at £19,499 ; and 1,695 tons of wheatmeal, etc., valued at £15,025. Considerable quantities of oatmeal, maizena, etc., are manufactured locally.

In biscuit factories 10,654 tons of flour were used during 1913, and 27,606,000 lb. of biscuits, valued at £638,566, were made.

State Bakery.

A bakery was purchased by the State, and proclaimed a State industrial undertaking as from 12th February, 1914.

The price for land, buildings, and plant was £8,200, which, with additional expenditure, raised the capital employed as at 30th June to £9,137. The trading operations for the period resulted in a loss of £348.

The quantity of bread produced was 478,944 lb., the cost of production per 100 lb. being 10s. 7.15d. The sale price to Government Institutions per 100 lb. on old contract rates was 8s. 10d. to 10s. 1½d.

Jam, Pickle, and Sauce Factories.

The principal articles produced in jam, pickle and sauce factories during 1913 were 29,391,012 lb. of jams and preserves, valued at £406,117 ; 6,832 lb. of dried and evaporated fruit and pulp, valued at £183 ; 2,511,216 pints of pickles, valued at £44,312 ; 3,327,492 pints of sauces, valued at £75,009 ; and 799,555 gallons of vinegar, valued at £32,724.

Jam and fruit-canning is an industry which awaits systematic development in New South Wales ; the climate and soil are admirably adapted for fruit growing, nevertheless a large proportion of the local demand is supplied by importation.

Aerated Water and Cordial Factories.

Particulars regarding the output of aerated-water factories show that during 1913 the following articles were produced :—1,182,348 syphons and 6,479,058 dozen bottles of aerated waters, 236,568 dozen of cordials

and syrups, 505,476 dozen of hop beer, 1,140,069 dozen of ginger beer, and 57,130 dozen of other cordials, the total value at the factories being £731,869. The number of persons employed varies with the season of the year, the greatest number at work in 1913 being 1,929.

Breweries.

The number of breweries is decreasing, but the output shows an increase, especially during the last four years. The materials used in breweries for manufacturing purposes and the actual output during the last ten years were as follows:—

Year.	Malt.	Hops.	Sugar.	Other Materials.	Ale, Beer and Stout manufactured.
	Bushels.	lb.	Tons.	Centals.	Gallons.
1904	441,844	557,400	3,252	10,133	13,651,203
1905	458,371	558,661	3,370	6,209	13,873,259
1906	488,982	586,438	3,405	5,530	14,032,390
1907	533,825	636,650	3,651	4,996	15,361,227
1908	559,950	677,884	3,842	4,291	16,202,242
1909	571,526	681,614	3,871	6,440	16,754,728
1910	604,366	718,994	4,119	8,392	17,885,373
1911	667,457	790,866	4,421	7,705	19,804,540
1912	773,194	891,535	5,048	8,286	22,741,332
1913	809,171	909,116	5,218	9,404	24,212,202

In the following table is given the quantity on which excise was paid:—

Year.	Breweries.	Average Number of Employees including working proprietors	Ale, Beer and Stout on which Excise was paid.	Horse-power of Plant (full capacity).	Year.	Breweries.	Average Number of Employees including working proprietors	Ale, Beer and Stout on which Excise was paid.	Horse-power of Plant (full capacity).
			Gallons.	H.-p.				Gallons.	H.-p.
1904	42	968	12,877,757	961	1909	37	831	16,154,906	1,416
1905	42	1,028	13,248,336	1,089	1910	38	825	17,411,827	1,466
1906	39	881	13,587,336	1,087	1911	37	912	19,352,995	1,192
1907	38	854	14,994,537	1,253	1912	33	1,020	22,126,426	1,926
1908	37	885	15,791,878	1,426	1913	31	1,043	23,516,656	2,166

The total value at the breweries of the 23,516,656 gallons of ale, beer and stout made during 1913, and on which excise was paid, amounted to £1,099,359.

The local malt works treated 267,588 bushels of barley during 1913, and produced 257,457 bushels of malt, valued at £81,097.

Distilleries.

There are three distilleries in the State, two of which are wine distilleries, and the other is worked in connection with sugar-refining.

During the year 1913, the Customs Department issued 29 vigneron licenses.

Sugar Mills.

The manufacture of sugar has long been an important industry. So far back as 1878 there were 50 mills, of which 24 used steam-power, and 26 were worked by cattle. The number of employees was 1,068.

By 1886 the establishments numbered 83 steam-mills and 19 worked by cattle; the number of men employed and the quantity of sugar and molasses produced had increased correspondingly; since that time the smaller establishments have closed. There are now only three sugar mills in the State, and employment is afforded to a smaller number of persons than were engaged ten years ago. The raw sugar manufactured in 1913 was valued at £354,742, and molasses at £9,660, the quantity of cane crushed being 185,910 tons:—

Year.	Sugar Mills.	Average Number of Employees.	Quantity manufactured.		Horse-power of Plant (full capacity).
			Sugar.	Molasses.	Steam.
			cwt.	Gallons.	H.-p.
1904	6	643	400,150	1,296,590	3,146
1905	5	652	402,040	1,263,100	3,140
1906	5	622	479,993	1,305,466	3,485
1907	5	610	583,446	1,211,000	3,491
1908	4	543	299,920	922,549	3,196
1909	4	529	296,200	1,072,400	3,180
1910	4	506	402,300	918,900	3,196
1911	4	469	345,978	796,440	3,546
1912	3	469	336,340	667,100	2,835
1913	3	486	443,840	966,000	2,835

Sugar Refinery.

There is only one sugar refinery in the State, and it treats both local and imported sugars, so that its operations are extending each year.

Tobacco Factories.

Tobacco of local manufacture is, to a large extent, superseding the imported article; cigarettes made in this State now practically command the Australian market; and the manufacture of cigars is increasing also.

The following table shows details of the operations of tobacco factories for the last ten years. The large increase in the number of females employed is due principally to the extension of cigarette making:—

Year.	Establishments.		Average Number of Employees.*		Tobacco Leaf used, exclusive of waste.		Tobacco, Cigars, and Cigarettes manufactured.			Plant and Machinery.	
	Tobacco.	Cigars and Cigarettes.	Males.	Females.	Australian grown Leaf.	Imported Leaf.	Tobacco.	Cigarettes.	Cigars.	Power (full capacity).	Value.
					lb.	lb.	lb.	lb.	lb.	H.-p.	£
1904	4	17	648	376	1,256,339	2,709,569	3,404,201	829,851	47,756	464	106,793
1905	4	16	573	391	1,145,923	2,606,702	3,318,719	818,400	48,850	425	104,766
1906	5	20	649	397	1,178,183	3,056,906	4,057,965	837,835	50,326	431	104,226
1907	5	23	622	497	1,050,107	3,254,656	3,899,196	972,875	54,048	435	111,346
1908	3	25	665	674	1,039,909	3,549,966	3,916,388	1,119,269	57,716	567	119,723
1909	2	23	629	631	847,030	3,570,143	3,694,918	1,300,045	57,148	571	120,216
1910	3	22	669	763	815,809	4,130,059	3,850,154	1,548,872	73,194	589	125,703
1911	3	23	697	765	745,405	4,617,756	3,996,471	1,899,462	87,818	837	92,138
1912	4	18	694	748	760,543	5,305,654	4,170,853	2,377,554	80,537	935	100,101
1913	7	17	692	806	727,759	5,085,083	3,885,562	2,526,130	86,264	964	100,298

* Includes working proprietors.

NOTE.—The reduced value in 1911 of machinery was caused by writing off obsolete machinery at some of the principal factories.

In addition to the factories enumerated in a previous table, several establishments licensed by the Customs Department are included above.

The value at the factories of the tobacco manufactured in 1913 was £712,353; cigars, £53,555; and cigarettes, £631,532; the total being £1,397,440.

VII.—CLOTHING AND TEXTILE, FABRICS, &c.

These industries afford the greatest employment numerically, but in point of production and wages paid per employee they are below several other classes. The number of persons engaged in each branch of the industry during 1913 is shown in the following table:—

Industries.	Establishments.		Average Number of Employees, including working Proprietors.		Average time worked per employee.	Power Used.			Value of Machinery, Tools and Plant.
	Total.	Using Machinery.	Males.	Females		Months.	H.-p.	H.-p.	
					£				
Woollen and Tweed Mills	5	5	380	416	12'00	884	475	190	170,698
Hosiery and Knitting Factories ..	13	10	60	320	11'81	5	53	13	15,488
Boots and Shoes	105	81	2,703	1,559	11'92	187	280	522	158,916
Slop Clothing	99	92	908	4,910	11'93	..	356	18	40,498
Clothing (Tailoring)	346	45	2,324	3,424	11'83	..	62	..	23,959
Clothing (Waterproof and Oilskin)	4	4	33	77	12'00	10	9	..	2,566
Dressmaking and Millinery (makers' material)	205	32	110	4,115	11'64	..	54	2	18,082
Dressmaking and Millinery (customers' material)	97	9	6	699	11'61	..	14	..	3,764
Dyeworks and Cleaning	9	6	49	33	11'66	17	15	3	3,564
Furriers	5	3	28	38	12'00	..	8	1	390
Hats and Caps	38	31	570	975	11'78	335	288	28	60,396
Shirts, Ties, and Scarfs	51	44	179	1,950	11'47	..	230	45	24,801
Rope and Cordage	6	6	233	6	12'00	215	147	303	42,042
Sailmaking	6	3	26	4	12'00	..	4	2	644
Tents and Tarpaulins	14	12	182	268	11'83	4	84	29	15,305
Total	1,003	383	7,771	18,794	11'81	1,657	2,079	1,156	585,006

A recently developed industry included in this table is the making of shirts, ties, and scarfs. In 1898 only 74 persons were thus engaged, and in 1900, before the Federal tariff came into operation, 133. In 1913 the number was 2,129.

There has been a large increase in the number of persons engaged in the clothing trade, in "slops" and order work, the numbers of employees having increased by rather more than 100 per cent. in the last ten years; in the former trade more attention is being devoted to the manufacture of ready-made costumes for women.

The number of persons now employed in tent and tarpaulin making is 450, of whom the majority are machinists.

Woollen and Tweed Mills.

Although one of the greatest wool-producing countries in the world, only 776 persons find employment in the manufacture of woollen materials. Woollen mills were amongst the earliest works established in the State, but the industry has progressed little, the number of persons employed, until

the last five years, when a decided increase took place, had practically remained stationary for forty years. Details of the persons employed, and the output for the last ten years, are given below :—

Year.	Woollen and Tweed Mills.	Average Number of Employees (includes working proprietors).			Woollen Cloth and Tweed manufactured.	Horse-power of Plant (full capacity).
		Males.	Females.	Total.		
1904	3	148	97	245	yds. 481,289	h. p. 305
1905	3	151	111	262	459,590	329
1906	5	160	178	338	498,164	327
1907	5	179	216	395	512,640	397
1908	5	210	245	455	524,885	476
1909	5	277	293	570	594,512	901
1910	5	307	353	660	804,146	1,155
1911	5	349	389	738	1,054,845	1,024
1912	5	351	413	764	1,143,046	1,029
1913	5	360	416	776	1,312,363	2,015

During 1913, 1,242,223 lbs. of scoured wool were used in the mills, and, in addition to the tweed and cloth shown above, valued at £223,981, there were manufactured flannel, blankets, rugs, and shawls to the value of £62,050. The quantity of cloth manufactured showed no signs of increase until the latter half of 1905, since which time there has been an improved demand for locally-made cloth.

Hosiery and Knitting Factories.

Particulars regarding hosiery and knitting factories are available for the last four years; previously they were included with woollen and tweed mills. The following statement shows the rapid expansion of the industry :—

Year.	Factories.	Average number of Employees.			Value of Goods Manufactured.	Horse-power of Plant (full capacity).
		Males.	Females.	Total.		
1910	2	6	26	32	£ 5,300	h. p. 8
1911	8	33	180	213	41,008	51
1912	9	65	308	373	71,692	88
1913	13	60	320	380	78,718	97

The output of the factories, though somewhat restricted by a shortage of efficient machinists, has increased largely during the past few years.

Boot and Shoe Factories.

Following are the records of boot and shoe factories for the last ten years. For the year 1913 the boots and shoes made were valued at £1,208,892; slippers, &c., at £28,415; and uppers at £14,301. In the manufacture of boots, &c., in 1913 there were approximately 4,767,927 lbs. of sole leather used, and 8,070,590 square feet of upper leather:—

Year.	Boot and Shoe Factories.	Average Number of Employees (includes working proprietors).			Output (as returned by manufacturers).		
		Males.	Females.	Total.	Boots and Shoes.	Slippers, Infants shoes, Canvas & Cloth shoes.	Uppers.
					Pairs.	Pairs.	Pairs.
1904	92	2,858	1,459	4,317	3,291,087	477,302	.....
1905	98	3,021	1,444	4,465	3,250,243	435,912	.....
1906	102	3,178	1,589	4,767	3,567,555	378,599	.....
1907	102	3,163	1,623	4,786	3,687,868	460,132	69,068
1908	105	3,048	1,602	4,650	3,672,244	440,571	78,574
1909	102	2,854	1,606	4,460	3,597,359	408,527	103,762
1910	106	2,866	1,609	4,475	3,820,633	502,731	125,142
1911	106	2,818	1,593	4,411	3,730,760	439,425	71,138
1912	103	2,779	1,612	4,391	3,885,267	399,874	61,647
1913	105	2,703	1,559	4,262	3,640,068	310,026	53,295

Hat and Cap Factories.

There has been a great expansion in the establishments connected with the manufacture of hats and caps. Until 1898 less than 100 persons were employed, but each year subsequently has seen an increase, and between 1904 and 1913 the number of employees increased from 729 to 1545, and in the latter year there were nearly twice as many females as males:—

Year.	Hat and Cap Factories.	Average Number of Employees (includes working proprietors).			Power of Machinery (full capacity).	Value of Machinery, Tools, and Plant.
		Males.	Females.	Total.		
1904	18	269	460	729	H. p. 139	£ 26,117
1905	21	318	586	904	120	29,650
1906	23	342	694	1,036	144	32,570
1907	22	335	759	1,094	175	35,653
1908	26	361	860	1,221	216	34,315
1909	30	398	951	1,349	247	39,966
1910	29	454	944	1,398	382	52,057
1911	32	537	1,029	1,566	625	60,807
1912	35	546	1,051	1,597	863	61,873
1913	38	570	975	1,545	786	69,396

The hats and caps manufactured during 1913 numbered 3,084,959, valued at £345,919.

State Clothing Factory.

The State Clothing Factory to 31st December, 1912, was worked as a branch of the Government Stores Supply Department, but since 1st January, 1913, it has been classed as an Industrial Undertaking. The trading account at 30th June, 1913, showed stock on hand to the value of £13,202. The value of the manufactured clothing was £15,259, which clothing has been supplied to the Public Service only.

VIII.—BOOKS, PAPER, PRINTING, &C.

These industries give employment to 10,009 persons, 8,451 of whom are engaged in printing and bookbinding. In the process of bookbinding and in the manufacture of paper boxes and bags, women are employed largely and on an increasing scale; in 1900, females numbering 737 represented 14 per cent. of the total employees, as against 2,599 or 27 per cent. in 1913. The details of each industry for the latter year were as follows:—

Industries.	Establishments.		Average Number of Employees (includes working proprietors).		Average time worked per Employee.	Power Used.			Value of Machinery, Tools, and Plant.
	Total.	Using Machinery.	Males.	Females.		Steam.	Electricity.	Other.	
Electrotyping and Stereotyping...	7	7	68	1	11·04	...	38	...	12,396
Paper-making, Paper-boxes, Bags, &c. ...	29	26	504	778	12·00	663	228	76	119,514
Photo-engraving ...	16	16	193	14	12·00	...	78	2	17,625
Printing and Binding ...	895	352	6,630	1,821	11·92	26	2,459	1,148	992,053
Total ...	447	401	7,395	2,614	11·93	689	2,808	1,226	1,141,588

IX.—MUSICAL INSTRUMENTS, &C.

Thirteen establishments, of which seven used machinery, are engaged in the manufacture and repairing of musical instruments and sewing machines, and they employed 366 males and 40 females, full time being worked during the year. The machinery in use was 248 horse-power, of which 173 was derived from electricity, and 75 from gas; the value of the machinery and plant was £15,230. The most important of the industries is piano-making, and instruments of a high class are produced.

X.—ARMS AND EXPLOSIVES.

The manufacture of small arms and ammunition is a matter of national importance, which has occupied the attention of the Commonwealth Government. A small-arms factory at Lithgow, New South Wales, was formally opened on 8th June, 1912. In this State there are now eight establishments, seven of which use machinery, for the manufacture of explosives; these employed 369 males and 10 females during 1913, the average time worked per employee being 11·96 months. The machinery in use was 338 horse-power, represented by 310 steam, 25 electricity and 3 gas, and the value of machinery and plant £95,710.

XI.—VEHICLES, FITTINGS, AND SADDLERY, &C.

The work done in these establishments is connected mainly with the repair of vehicles; but there are many establishments where coaches and waggons are built throughout. With the extension of railways and tramways, and the introduction of other improvements in methods of locomotion, this industry cannot be expected to show much further development. In many establishments in the Metropolitan district persons are now employed

in the motor trade who were previously engaged in building vehicles for horse traction, as motor vehicles are coming into general use, especially in the city; in most cases the chasses are imported, and the bodies built locally. Other industries in this class, such as cycle-building, are growing in importance, and the whole group of industries employs more than twice as many people as in 1902. The following table shows the operations of each industry during 1913:—

Industries.	Establishments.		Average Number of Employees (includes working proprietors).		Average time worked per Employee.	Power used.			Value of Machinery, Tools and Plant.	
	Total.	Using Machinery.	Males.	Females.		Months	H.-p.	Electricity.		Other.
Coach and Waggon Building ...	253	103	2,613	13	11·79	65	370	273	71,725	
Cycles and Motors ...	25	79	858	11	11·48	3	177	103	33,758	
Perambulators ...	4	4	63	6	12·00	...	7	4	686	
Saddlery and Harness ...	78	10	779	44	11·76	...	17	8	13,507	
Spokes, &c. ...	11	11	148	1	11·74	169	72	...	13,027	
Whips ...	3	...	14	...	12·00	...	...	...	5
Total ...	434	207	4,475	75	11·72	237	643	488	132,708	

XII.—SHIP AND BOAT BUILDING, &C.

Nearly all the ships built in the State are small wooden vessels for the river and Island trades, or for passenger traffic on Sydney harbour. The ferry steamers which are built in the private docks of Sydney are among the finest in the world. In regard to boat-building, there is always considerable employment afforded in the Metropolitan district by the constant demand for yachts, motor-launches, and other pleasure craft. In the docking of ships, considerably less number of persons are employed than formerly, although additional accommodation has been provided, and there are now four large graving docks at Sydney. Employment in this connection, however, is subject to great fluctuation, and at one period of the year there were 1,291 persons employed in dockyards and 2,726 in ship and boat building, &c. A description of the docks is given in the chapter "Shipping." The following table shows the details of each industry for 1913:—

Industries.	Establishments.		Average Number of Employees (includes working proprietors).		Average time worked per Employee.	Power used.			Value of Machinery, Tools and Plant.	
	Total.	Using Machinery.	Males.	Females.		Months	H.-p.	Electricity.		Other.
Docks and Slips ...	6	6	1,063	...	12·00	2,247	50	...	363,223	
Ship and Boat Building and Repairing...	40	25	2,294	1	11·91	327	930	123	253,155	
Total ...	46	31	3,357	1	11·94	2,574	980	123	616,378	

An increase of employment in the ship-building trade has resulted by reason of the construction of war vessels for the Australian Navy, at the Fitzroy Dock, Sydney.

State Dockyard and Workshops, Newcastle.

A Government Dockyard and workshops are in course of construction at Newcastle. At the end of June, 1913, an expenditure of £13,416 had been incurred.

XIII.—FURNITURE, BEDDING, AND UPHOLSTERY.

Industries connected with the manufacture of furniture, bedding, &c., have increased greatly in importance since 1900, when only 1,916 persons were employed. The particulars relating to each industry for the year 1913 are shown in the following table :—

Industries.	Establishments.		Average Number of Employees (includes working proprietors).		Average time worked per Employee.	Power used.			Value of Machinery, Tools, and Plant.
	Total.	Using Machinery.	Males.	Females.		Steam.	Electricity.	Other.	
Bedding, Flock, and Upholstery	33	20	492	130	11·43	40	299	56	11,929
Billiard Tables... ..	3	3	70	...	12·00	..	20	19	1,456
Chair-making	17	16	217	14	11·46	..	86	48	4,915
Furnishing Drapery, &c. ...	10	7	73	227	11·80	...	19	...	1,566
Furniture and Cabinet-making ...	153	129	2,523	20	11·47	157	768	249	47,073
Picture Frames	20	18	146	45	12·00	...	30	3	2,743
Window Blinds	10	6	69	9	11·92	...	12	4	835
Total	246	190	3,590	445	11·53	197	1,234	379	70,757

A factory at Drummoyne, near Sydney, has been acquired by the Department of Public Instruction for the manufacture of furniture for State schools.

XIV.—DRUGS, CHEMICALS AND BY-PRODUCTS.

There are several large establishments for the manufacture of drugs and chemicals, and nearly one-half of the employees are females, who are principally engaged in packing or labelling the manufactured articles. The manufacture of by-products includes many articles such as baking powder, blue, blacking, &c., for domestic use, and the local article is gradually superseding imported goods. Following are the leading details in regard to each industry for the year 1913 :—

Industries.	Establishments.		Average Number of Employees. (includes working proprietors).		Average time worked per Employee.	Power used.			Value of Machinery, Tools, and Plant.
	Total.	Using Machinery.	Males.	Females.		Steam.	Electricity.	Other.	
Baking Powder and Self-raising Flour... ..	19	17	92	96	12·00	6	113	17	9,111
Chemicals, Drugs, and Medicines... ..	39	24	466	329	11·97	170	301	11	147,239
Paints and Varnishes (including Fertilizers)	12	12	96	11	10·82	48	93	101	9,816
Inks, Polishes, &c.	17	12	167	108	11·94	85	184	87	23,411
Total	87	65	821	544	11·87	309	691	216	189,577

Essential Oils.

A large proportion of the Australian vegetation yields essential oils, but the industry of oil extraction is as yet undeveloped. From information supplied by the Curator of the Sydney Technological Museum it has been ascertained that the following products can be obtained in large quantities:—Aromatic alcohol geraniol, a constituent used in the manufacture of synthetic rose oils; oil of a eucalyptus species which might be produced at a very cheap rate as a substitute for lemon oil, which it strongly resembles, though containing twice as much citral; citral used for flavouring purposes and perfumes; citronella, the chief constituent of citronella oil which is used extensively for perfuming soap and for similar purposes; eucalyptus oils which are used for pharmaceutical purposes and in metallurgy as a means of separating metallic sulphides from the gangue by a flotation process.

XV.—SURGICAL AND OTHER SCIENTIFIC INSTRUMENTS.

Most of these establishments, which number 13, are engaged in the manufacture of optical instruments, such as spectacles, &c.; 79 males and 18 females were employed during 1913, the average time worked per employee being 11·35 months. The total average power of machinery at 10 of the establishments at which it is in use was 18 horse-power, and the value of machinery and plant £5,057.

XVI.—JEWELLERY, TIMEPIECES, AND PLATED WARE.

While there are numerous small establishments where timepieces are repaired, there are but few in which the articles are actually manufactured, and these are included with manufacturing jewellery:—

Industries.	Establishments.		Average Number of Employees (includes working proprietors).		Average time worked per Employee.	Power used.			Value of Machinery, Tools, Plant, &c.
	Total.	Using Machinery.				Steam.	Electricity.	Other.	
			Males.	Females.					
					Months	H. p.	H. p.	H. p.	£
Electro-plating	13	13	170	13	11·72	..	85	43	10,849
Manufacturing Jewellery...	42	31	559	74	18·00	...	128	...	17,641
Total... ..	55	44	729	87	11·94	...	213	43	28,190

In 1900 there were only 102 employees engaged in manufacturing jewellery; in consequence of the import duty under the Federal tariff a number of factories were established, the figures for 1913 being 42 establishments with 633 employees. The progress of this and other industries which supply commodities which are not essentials is a notable indication of the general prosperity of the State. Australian gem-stones are used extensively in the jewellery trade, and have commanded favourable attention in other countries.

XVII.—HEAT, LIGHT, AND POWER.

Establishments connected with the supply of heat, light, and power show an increase in each year, the figures for the year 1913 are :—

Industries.	Establishments.		Average Number of Employees includes working proprietors.		Average time worked per Employee.	Power used.			Value of Machinery, Tools, Plant, &c.	
	Total	Using Machinery.	Males.	Females.		Months	H.-p.	Electricity.		Other.
Coke-works	13	12	463	...	11-29	1,507	272	...	190,777	
Electric Apparatus	30	28	523	6	11-71	...	140	45	34,939	
Electric Light and Power	115	115	1,111	7	11-81	73,980	...	2,074	1,391,009	
Gas-works and Kerosene	52	41	1,345	6	11-62	1,476	35	211	1,112,828	
Lamps and Fittings, &c.*	6	6	74	42	...	500	14	6	31,463	
Total... ..	216	202	8,516	61	11-65	77,463	461	2,338	2,761,016	

* Includes Hydraulic Power Works.

The chief development in this class has occurred in connection with the supply of electric power and light, principally owing to the development of electric tramways in the Sydney and suburban area, and of electric lighting systems.

Electric Light and Power Works.

The value of the plant and machinery used in furnishing electric power and light is £1,391,007, and the engines have a capacity of 114,371 horse-power. In 1913 the electric light produced was 27,834,225 kilowatt hours, valued at £353,066, and the power 165,873,147 kilowatt hours, valued at £913,126; coal weighing 309,441 tons was used in 1913 for the generation of electric light and power. The rapid progress of these establishments is shown by the following table :—

Year.	Electric Supply Works.	Average Number of Employees (includes working proprietors).	Machinery, Tools, and Plant.	
			Power (full capacity).	Value.
			H.-p.	£
1904	65	464	24,492	624,686
1905	67	521	31,862	778,313
1906	66	565	38,327	975,723
1907	91	634	43,215	1,109,535
1908	97	748	46,200	1,012,231
1909	103	769	66,428	1,047,680
1910	97	749	67,745	1,176,920
1911	104	889	89,155	1,257,173
1912	113	1,073	110,511	1,350,488
1913	115	1,118	114,371	1,391,007

In the metropolitan area there are numerous small establishments, the Government tramway, Sydney Municipal Council and the Electric Light and Power Supply Corporation, Limited (Balmain) systems being the most extensive outside the Metropolitan district, the largest establishments are connected with mines, as at Broken Hill and Cobar, or are controlled by municipal councils. Practically all the power is generated from coal.

The electric power for the Sydney tramways is obtained from a principal power-house at Ultimo and several auxiliary stations; a large power-plant is in course of construction at White Bay, Balmain.

State Power Supply.

During 1911-12 investigations were carried out, under the direction of the Department of Public Works, for the utilisation of the water and coal resources of the State, in a general scheme for the development and distribution of electric light and power over the more populated parts.

A report of the Chief Electrical Engineer advocates as a first instalment of the complete system, the establishment of a Power Station at one of the South Coast mines with transmission mains covering the coastal area between Sydney and Kiama, enabling the Government to supply power to all Government works and institutions, and to municipalities, mines, &c.

State Water-Power Schemes.

A proposal to develop power on a large scale from the Shoalhaven River is being considered, as also the matter of an electric railway to Batlow, and possibly to Tumbarumba, with power derivable from Gilmore Creek.

Gas-works, &c.

Considerable progress has been made in the installation of electric lighting plants; but the use of gas for lighting, power, and cooking is extending continually. The following table shows particulars of the operations of gas-works during each of the last ten years. The value of plant does not include mains.

Year.	Gas-works.	Average Number of Employees.	Gas made.	Machinery, Tools, and Plant.	
				Power (full capacity).	Value.
			1,000 cubic feet.	H.-p.	£
1904	40	692	2,598,650	1,091	601,976
1905	43	663	2,683,396	1,057	598,047
1906	44	654	2,790,494	1,221	628,339
1907	40	679	3,044,756	1,273	607,856
1908	39	659	3,307,083	1,368	610,914
1909	37	748	3,503,402	1,394	647,812
1910	44	916	3,861,771	1,799	748,473
1911	47	1,053	4,275,859	1,928	888,711
1912	47	1,298	4,820,512	2,223	1,236,541
1913	52	1,351	5,536,139	2,107	1,112,828

During 1913 the quantity of coal used for gas was 369,424 tons, which, with 37,865 tons of shale, produced, in addition to the gas (valued at £824,073), 209,980 tons of coke (valued at £109,844), 4,180,054 gallons of tar (valued at £51,109), and 2,459,188 gallons of ammoniacal liquor (valued at £7,647).

Mineral Oil.

Extensive works for treating oil shale have been established at Newnes, in the Wolgan Valley, at Murrurundi, and at Hamilton, near Newcastle. Particulars may be found in the chapter "Mining Industry."

Coke-works.

At the coke-works, 440,080 tons of coal were used in 1913 to produce 298,612 tons of coke, valued at £208,989. Further information regarding coke is contained in the chapter "Mining Industry."

XVIII.—LEATHERWARE.

There are 23 establishments with 415 males and 110 females employed in the manufacture of leatherware not elsewhere included, the majority of the employees being engaged in making bags and portmanteaux. The employees in this class were busily engaged throughout the year, averaging 11.86 months per person. The power of the machinery in average use at 21 of the establishments was 166 horse-power, and the value of the machinery and plant was £11,433.

XIX.—MINOR WARES.

Of the minor industries which cannot be classified under any of the preceding headings, the more important are broom and brush making, umbrella-making, and the manufacture of baskets, wicker-ware, and mats. The brooms are manufactured principally from millet grown in the State. An interesting feature of this industry is the employment which it affords to persons afflicted with blindness, and in 1913 there were 90 persons in the Sydney Industrial Blind Institution, who were employed in the manufacture of brushes, baskets, mats, &c. The particulars of the different industries for the year 1913 were as follows:—

Industries.	Establishments.		Average number of Employees (includes Working Proprietors).		Average time worked per Employee.	Power used.			Value of Machinery, Tools, and Plant.
	Total.	Using Machinery.	Males.	Females.		Steam.	Electricity.	Other.	
Baskets and Wicker-ware, Matting, &c.	8	1	124	3	12.00	...	2	...	406
Brooms and Brushware	21	13	230	24	11.83	...	16	32	5,415
Rubber Goods	7	7	215	80	12.00	386	205	...	59,685
Toys	3	3	16	...	12.00	...	...	15	470
Umbrellas	6	5	54	87	12.00	...	12	...	2,432
Other Industries	24	16	184	114	11.74	95	176	16	24,050
Total	69	45	823	308	11.89	481	411	63	92,458

STATE BUILDING CONSTRUCTION.

Building Construction was proclaimed a State Industrial Undertaking as from 1st October, 1913. It operates in three classes of work for the Public Departments, viz. :—1. Contracts—(a) Accepted in competition (as a general rule) with ordinary building firms; (b) Quotations accepted after comparison with Government Architect's estimates. 2. Works, of value exceeding £100—on the basis of all costs for wages and materials, with overhead charges of 10 per cent. in Metropolitan area, and $12\frac{1}{2}$ per cent. for Country Districts—such work as alterations to existing buildings and emergency works come under this class. 3. Jobs of value under £100, on the basis of all costs for wages and materials, with an overhead charge of 20 per cent.

The value of work performed in the period ended 30th June, 1914, was £269,616, the cost of carrying out the work being £245,616, resulting in a gross profit of £24,000. After deducting from the gross profits the charges for management, &c., there was a net profit for the nine months of £3,757.

PRIVATE FINANCE.

CURRENCY AND COINAGE.

THE Commonwealth Coinage Act, 1909, states that "every transaction, dealing, matter, and thing whatever relating to money, or involving the payment of, or the liability to pay any money, shall be made, executed, entered into, done, and had, according to the coins which are current and are legal tender under the Act." Previously the coins current in New South Wales corresponded to the British Monetary System, and were issued by the Royal Mint of England through its Sydney Branch.

Authority is vested in the Commonwealth Treasurer to issue silver and bronze coin made to his order, of specified denominations; and in addition, a nickel coinage is authorised, the denominations, fineness, and weight of which will be specified by proclamation.

A tender of payment, made in coins of British or Australian issue, is legal, if made in gold coins, for any amount; in silver coins, for a maximum amount of forty shillings; and in bronze, to a maximum of one shilling. Australian notes are legal tender throughout the Commonwealth.

Standard Coinage.

The standards of weight and fineness of the coins denominated in the Schedule of the Coinage Act, 1909, are as follows:—

Denomination of Coin.	Imperial Weight.	Metric Weight.	Remedy Allowance.	
			Weight per piece.	Weight per piece.
Gold—	grains.	grams.	Imperial grains.	Metric grams.
Five pounds	616·37239	39·94028	1·00	0·06479
Two „	246·54895	15·97611	·40	·02592
Sovereign	123·27447	7·98805	·20	·01296
Half-sovereign	61·63723	3·99402	·15	·00972
Silver—				
Florin	174·54545	11·31036	·997	·0646
Shilling	87·27272	5·65518	·578	·0375
Sixpence	43·63636	2·82759	·346	·0224
Threepence	21·81818	1·41379	·212	·0138
Bronze—				
Penny	145·83333	9·44984	2·91666	·18899
Halfpenny	87·50000	5·66990	1·75000	·11339

In the case of British coin in circulation, the current weight is as specified in the law of the United Kingdom applicable to the coin.

The principal variation of the Australian from the British system lies in the elimination of the half-crown from the Australian silver coinage.

For gold coins, the standard fineness is $\frac{11}{16}$ fine gold, $\frac{1}{16}$ alloy, or millesimal fineness, 916.6; for silver coins, $\frac{37}{100}$ fine silver, $\frac{3}{100}$ alloy, or millesimal fineness, 925; bronze coins are of mixed metal—copper, tin, and zinc.

Standard or sovereign gold of 22 carats fineness is worth £3 17s. 10½d. per oz.; pure or 24 carat gold is worth £4 4s. 11½d. per oz., but the gold contained in deposits sent to the Sydney Branch of the Royal Mint, for melting, assaying, and coining, is valued at the rate of £3 17s. 10½d. per oz. standard or sovereign gold, and there is thus no premium on gold.

Standard silver, owing partly to the greatly increased output, and still more to its demonetisation in a large part of Europe, and the restrictions placed upon its free coinage in countries which still have a double standard of coinage, decreased in value by over 47 per cent. between 1875 and 1895. The lowest average price was for the year 1909, but in 1912 there was a substantial increase. The average price of standard silver in the London market for various years since 1875 is given in the annual reports of the Deputy Master and Comptroller of the Royal Mint as follows:—

Year.	Price of Silver per standard oz.	Year.	Price of Silver per standard oz.	Year.	Price of Silver per standard oz.
1875	d. 56¼ ³ / ₈	1900	d. 28 ⁵ / ₁₆	1909	d. 23¼ ¹ / ₈
1880	52¼ ¹ / ₈	1905	27¼ ³ / ₈	1910	24¼ ¹ / ₈
1885	48 ³ / ₈	1906	30 ³ / ₈	1911	24 ¹ / ₈
1890	47 ³ / ₈	1907	30 ³ / ₁₆	1912	23 ¹ / ₈
1895	29 ⁷ / ₈	1908	24 ³ / ₈	1913	27 ¹ / ₈

It will be noticed that the average price for 1913 showed a decline of ½d. per oz. as compared with the previous year. The fluctuations in value during 1913 are shown in the following table of average monthly prices:—

Month.	Price of Silver per standard oz.	Month.	Price of Silver per standard oz.	Month.	Price of Silver per standard oz.
January ...	d. 28¼ ¹ / ₈	May ...	d. 27 ⁵ / ₈	September ...	d. 27¼ ¹ / ₈
February ...	28 ⁷ / ₈	June ...	26 ³ / ₈	October ...	28 ¹ / ₈
March ...	26 ³ / ₈	July ...	26 ³ / ₈	November ...	27¼ ¹ / ₈
April ...	27 ⁷ / ₈	August ...	27 ³ / ₈	December ...	26¼ ¹ / ₈

The nominal value of one ounce of silver coined into eleven sixpences is 5s. 6d., and of one pound (avoirdupois) of bronze coined into pence is 4s., and into halfpence or farthings 3s. 4d.

MINTING.

The Royal Mint of England has four branches, viz., one each at Sydney, Melbourne, Perth, and Ottawa (Canada). The earliest established of the Australian Branches was the Sydney Branch, opened on 14th May, 1855, the Melbourne Branch being opened in 1872, and the Perth in 1899.

Only gold coins have been struck at Sydney Mint, but silver and bronze of English coinage also were issued. By arrangement, the Australian coins issued up to the present date have been struck at the London Mint, and forwarded to the Sydney Branch, whence they were distributed at the order of the Commonwealth Treasurer.

Gold Coinage.

The total weight of gold sent for coinage to the Sydney Mint in the period from its foundation to 31st December, 1913, was 36,346,186 oz., valued at £134,308,613. Of this quantity New South Wales produced 11,650,777 oz., of the value of £43,176,412, the amount from each source being as follows:—

Where produced.	Weight.	Value.
	oz.	£
New South Wales	11,650,777	43,176,412
Victoria	1,447,425	5,940,243
Queensland (including Papua) ...	17,358,812	61,833,199
South Australia	98,709	338,670
Tasmania	141,006	495,595
New Zealand	5,244,282	20,983,517
Other Countries	79,643	277,444
Coin	325,532	1,263,533
Total	36,346,186	134,308,613

Nearly the whole of the gold mined in New South Wales and Queensland, and a big proportion of the output of the other States and New Zealand, is received at the Sydney Mint for coinage. The value of gold coin and bullion issued up to the end of 1913 was £134,063,912, of which £127,556,500 represented coin, the value of sovereigns and half-sovereigns being as follows:—

Year.	Sovereigns.	Half-sovereigns.	Total.
	£	£	£
1855 to 1903	99,307,500	3,025,000	102,332,500
1904	2,986,000	.....	2,986,000
1905	2,778,000	.....	2,778,000
1906	2,792,000	154,000	2,946,000
1907	2,539,000	.....	2,539,000
1908	2,017,000	269,000	2,286,000
1909	2,057,000	.....	2,057,000
1910	2,135,000	237,000	2,372,000
1911	2,519,000	126,000	2,645,000
1912	2,227,000	139,000	2,366,000
1913	2,249,000	.....	2,249,000
Total... £	123,606,500	3,950,000	127,556,500

The gold bullion issued from the Mint includes pure gold in small quantities for the use of jewellers, chemists, and others, but the bulk consists of small bars of fine gold for export to India. The amount of gold bullion issued during 1913 was valued at £25,740, the total from 1855 to the end of 1913 being 1,576,748·91 ounces, valued at £6,507,412.

The issues of gold coin from the various branch Mints in Australia and Canada during 1913 consisted of sovereigns, as no half-sovereigns were coined at these Mints during the year; the amounts were as follows:—

Sydney, £2,249,100; Melbourne, £2,323,180; Perth, £1,635,287; Ottawa, £3,742; total, £9,211,209.

Silver and Bronze Coinage.

The first issue of bronze coin from the Sydney Mint took place in 1868, of silver in 1879, the values of each to the end of the year 1910 being—bronze, £106,450, and silver, £1,239,400.

The issue of British silver and bronze coin in the Commonwealth ceased in 1910, the new Australian coins being first issued in that year.

The Australian silver and bronze coins issued from the Sydney Mint to the end of 1913 were valued at £503,100, made up as follows:—

Coin.	1910.	1911.	1912.	1913.	Total.
Silver—	£	£	£	£	£
Florins ...	61,500	22,950	51,000	86,900	222,350
Shillings ...	42,200	39,900	4,700	25,000	111,800
Sixpences ...	28,100	22,200	7,400	15,800	73,500
Threepences ...	10,500	37,400	6,500	13,900	68,300
Total silver	£ 142,300	122,450	69,600	141,600	475,950
Bronze—					
Pence ...	.....	7,840	9,060	2,400	19,300
Halfpence ...	.....	2,750	3,450	1,650	7,850
Total bronze	£	10,590	12,510	4,050	27,150
Total coin ...	£ 142,300	133,040	82,110	145,650	503,100

Profit on Silver and Bronze Coinage.

The coinage or nominal value of silver per standard ounce is 5s. 6d., and the average price per ounce paid by the London Mint during 1913 was 2s. 3 $\frac{1}{8}$ d., the difference, 3s. 2 $\frac{1}{8}$ d., representing the seigniorage or gross profit. Allowance being made for mint expenses the profit on the local silver currency accrues to the Commonwealth Government. Prior to the issue of Australian coinage the Imperial Government derived a substantial profit from silver coin issued in Australia. The net profit on the Australian silver and bronze coinage since 1910 was as follows:—

Year.	Silver Coin.	Bronze Coin.	Year.	Silver Coin.	Bronze Coin.
1910	£ 66,845	£	1912	£ 133,253	£ 14,374
1911	182,661	4,398	1913	111,659	4,744

Withdrawals.

The withdrawal of light gold coins is effected through the Sydney Mint at nominal value, provided that they have not been called in by any proclamation nor treated illegally, that is, impaired otherwise than by fair wear and tear, or defaced by stamping any device, &c., thereon.

Light gold coins in parcels of not less than £50 nominal value are received and recoined free of charge, but depositors are required to bear the loss by abrasion. Worn gold coins have been received at the Sydney Mint for recoinage since 1876, silver coins since 1873. The nominal value of gold coin withdrawn from circulation during 1913 was £1,740, and for the whole period since the opening of the Mint, £1,082,950.

Worn British silver coin of the value of £36,463 was withdrawn from circulation, through the Sydney Mint, during 1913; the aggregate value withdrawn to the end of 1913 was £333,952. This coin was forwarded to London for recoinage. British silver coin, not exceeding a nominal value of £50,000 in any one year, may be withdrawn at Sydney. Such coin is exported for re-issue in other parts of the British Empire, and replaced by Australian silver coin of equivalent value and denomination. During 1913 re-issuable silver coin to the value of £50,000 was withdrawn, the total to the end of 1913 being £79,000.

No Australian coins have yet been withdrawn from circulation.

Mint Receipts and Expenditure.

The receipts of the Mint, which are paid into the Consolidated Revenue of New South Wales, represent charges for coining gold, fees for assays, &c., and profits on sale of silver. Payment is made for all silver contained in deposits in excess of 8 per cent. of the gross weight, at a rate fixed by the Deputy Master from time to time. On 12th May, 1902, the rate was proclaimed at 1s. 6d. per oz. fine, and this is still ruling.

For assaying and coining gold, the charge is 1d. per ounce standard, and for melting and refining on all gold insufficiently refined and toughened for direct conversion into coin, a charge is made, the maximum being at the rate of 3d. per ounce gross, and the minimum 1d., with 1s. per ounce for all base metal extracted, on deposits containing more than 5 per cent. of base metal. The minimum charge on any one deposit is 6s., except in the case of deposits containing more than 5 per cent. of base metal, when the minimum charge is 10s. 6d.

The total receipts of the Sydney Mint since its establishment are shown below:—

Year.	Mint Charges.	Profit on Sale of Silver.	Fees for Assays and Crushings, and Proceeds of Sweep.	Total Mint Receipts (paid into Consolidated Revenue)
	£	£	£	£
1855 to 1903	510,347	128,002	92,492	730,841
1904	11,145	8,869	1,725	21,739
1905	10,158	8,196	1,068	19,422
1906	9,083	7,846	2,565	19,494
1907	6,836	4,884	2,136	13,856
1908	6,484	3,440	922	10,846
1909	6,149	4,141	698	10,988
1910	6,143	3,926	643	10,712
1911	6,320	3,496	455	10,271
1912	5,764	4,648	524	10,936
1913	5,474	4,325	1,094	10,893
Total £	583,903	181,773	104,322	869,998

The cost of maintenance of the Sydney Branch of the Royal Mint is borne by the State Government, £15,000 being set apart annually for that purpose. Special additional votes for limited amounts for construction, repairs, and furniture have also been made. The expenditure from Consolidated Revenue during 1913 amounted to £15,604.

PAPER CURRENCY.

Bank Notes.

Prior to 1910 the control of paper currency was vested in several private banking institutions which had used their right to issue bank notes, but note circulation in New South Wales, in conformity with the general tendency throughout the financial world, has not expanded during recent years, in

proportion either to population or to the volume of business transactions, the principal cause operating to curtail such circulation being the increase of facilities for operating on deposits by cheques, as evidenced by the growing volume of business in the Banks Exchange Settlement Office. In New South Wales, note currency issued by banks was subject to a note tax at the rate of 2 per cent. per annum, by which the State benefited to the extent of £33,900 for the year 1909-10, but which has now been replaced by a 10 per cent. Commonwealth tax. The result of this tax has been to force the banks' notes out of circulation.

Of the banks operating in New South Wales, three, exclusive of the Commonwealth Bank, had no note issue whatever, being simply trading banks of discount and deposit; of the remainder, the note circulation in proportion to the deposit liability was little more than 3 per cent., being almost a negligible quantity in the total liabilities. Against this note liability no special reserve was required by law, but in cases of institutions registered under the Companies Act, 1899, as limited companies, a specific provision renders such companies as issue notes subject to unlimited liability in respect thereof.

The following figures relating the total liability as regards notes and bills of banking institutions operating in New South Wales to the population, show the stationary position in regard to note circulation, prior to the issue of Australian notes and the imposition of the 10 per cent. tax, and the large decrease in the ratio after the imposition of the tax:—

Year.	Circulation in—		Total.	Per capita.
	Notes.	Bills.		
	£	£	£	£
1860	949,849	62,505	1,012,354	2.95
1870	695,366	50,515	745,881	1.52
1880	1,260,772	51,698	1,312,470	1.80
1890	1,557,805	127,442	1,685,247	1.53
1900	1,447,641	209,905	1,657,546	1.22
1910	2,243,128	370,199	2,613,327	1.60
1911	400,784	411,792	812,576	0.48
1912	171,199	413,411	584,610	0.33
1913	123,468	452,964	576,432	0.31

The purpose of the note issue was primarily to obviate the necessity for keeping gold reserves in branch banks, the circulation being confined practically to country districts; the lowest value for which notes were issued was £1.

Australian Notes.

As a consequence of the Australian Notes Act passed in 1910 by the Federal Parliament, the Commonwealth Treasurer was authorized to issue notes, which are legal tender throughout the Commonwealth, and are redeemable in gold at the seat of Federal Government. These notes may be issued in the following denominations:—10s., £1, £5, £10, and any multiple of £10; against the note liability the Treasurer was bound in terms of the Act to hold in gold coin a reserve of not less than one-fourth of the notes in circulation up to £7,000,000, and a pound for pound equivalent of notes issued in excess of £7,000,000. By an amending Act passed in 1911, and devised to operate from July, 1912, this pound for pound reserve above £7,000,000 was repealed, and a minimum 25 per cent. reserve fixed against all issues.

Queensland was the only State affected by the prohibition of a State issue, its note issue not redeemed representing at 30th June, 1914, £34,208.

In December, 1910, the value of bank notes in circulation in Australia was nearly £6,000,000; on 24th December, 1912, the Australian notes issued and unredeemed represented £10,012,275; and on 30th September, 1914, £13,066,966. The denomination and value of the Australian notes issued as at various dates since December, 1911, are shown below:—

Denomination.	Value.			
	27th Dec., 1911.	24th Dec., 1912.	27th Dec., 1913.	30th Sept., 1914.
	£	£	£	£
10s. ... ..	.....	.....	18,413	56,723
£1	3,511,163	3,191,100	3,144,170	4,124,403
£5	3,263,445	3,414,695	3,438,055	4,308,710
£10	1,724,210	1,771,300	1,657,970	1,918,280
£20	397,740	405,780	325,360	417,300
£50	890,700	819,400	916,000	1,043,750
£100	369,100	410,000	479,600	1,150,800
£1,000 ... ..	.....	.....	.....	47,000
Total £	10,156,353	10,012,275	9,979,568	13,066,966
Gold Reserve ...	4,949,422	4,465,339	4,512,599	6,567,496

Against this issue the Federal Treasurer held in gold coin a reserve amounting as at 30th September, 1914, £6,567,496, which is equal to 50·26 per cent. of the amount of notes issued. Under the Act of 1910, the balance of the reserve, or any part thereof, may be invested on deposit in a bank, or in securities of the United Kingdom, of the Commonwealth, or of a State. Further, as cover for the notes additional to the gold reserve, Treasury bills to the total amount of the notes may be issued by the Treasurer, within or beyond the limits of the Commonwealth.

A maximum penalty of £100 may be imposed for any attempt to copy the Australian notes, and a person may be prosecuted for any higher offence.

MONEY ORDERS AND POSTAL NOTES.

Exchange by means of the money orders and postal notes is conducted by the Post and Telegraph Department of the Commonwealth. Remittances may be forwarded by money order from the principal post offices of New South Wales to other parts of the world, the orders being sent either direct to the place of payment if within the Commonwealth, or through intermediary agencies to places outside Australia. The postal-note system enables exchanges to be effected throughout the Commonwealth, its original object being to afford means of transmitting small amounts of less than £1 to places within the State. So far as small remittances within the State are concerned, the money-order and postal-note systems are both effective; but as public convenience is met by the postal note, the money-order system is in fact confined almost entirely to amounts exceeding £1.

Money Orders.

The money-order system was initiated in January, 1863. In that year there were 3 orders issued for every hundred persons in the State, and the total value of the orders was £53,682; in 1913 the number was 883,990, or 48 per hundred inhabitants, and the total value £3,765,206. The growth of

the business has been due mainly to the extension of the sphere of operations in and beyond the State, and to greater appreciation of the system. Appended is a statement of the business transacted in 1913 by means of money orders:—

Country.	Issued in New South Wales.		Paid in New South Wales.	
	Notes.	Value.	Notes.	Value.
Commonwealth of Australia—	No.	£	No.	£
New South Wales	614,805	2,930,233	622,230	2,925,863
Victoria	46,809	194,538	21,372	96,602
Queensland	18,094	86,055	40,062	179,442
South Australia	13,954	62,837	10,444	48,899
Western Australia	4,749	25,008	12,440	72,552
Tasmania	5,551	22,443	7,046	30,183
Other Countries—				
United Kingdom	150,296	335,166	24,178	79,281
Canada	758	2,490	1,079	4,767
Union of South Africa	1,021	3,252	2,213	8,410
Ceylon	252	902	119	457
Fiji	246	780	3,793	9,903
Germany	1,901	6,765	476	2,409
German New Guinea	30	634	398	4,831
Hong Kong	1,004	4,419	281	673
India	1,779	15,448	602	2,151
Italy	1,890	12,346	77	1,908
Mauritius	51	86	13	131
New Zealand	13,786	42,547	34,495	91,986
New Caledonia	29	47	..	..
Papua	52	223	913	3,140
Samoa	22	44	529	4,376
Straits Settlements	79	162	121	435
Tonga	37	142	343	3,070
United States of America, Hawaii, and Pago Pago	6,526	15,092	2,730	11,490
Other countries	769	3,494	..	..
Total	833,990	3,765,206	785,984	3,582,659

The following table distinguishes orders drawn on New South Wales from those drawn on other countries. The amount of money transmitted to countries outside New South Wales was exceeded by the money received from other countries in every year of the last decennium, with the exception of 1912 and 1913, when the amount sent from New South Wales was the larger; this result was due mainly to the increase in the amount transmitted to the United Kingdom, which was £335,166 in 1913, as compared with £164,449 in 1911. The value of money orders, issued and paid in the State at intervals since 1895 is shown in the following table:—

Year.	Issued in New South Wales.			Paid in New South Wales.		
	Payable in New South Wales.	Payable in other Countries.	Total.	Issued in New South Wales.	Issued in other Countries.	Total.
1895	£ 985,771	£ 283,429	£ 1,269,200	£ 984,509	£ 262,726	£ 1,247,235
1900	1,182,554	325,413	1,507,967	1,178,713	362,822	1,541,535
1905	1,746,866	329,280	2,076,146	1,757,229	425,400	2,182,629
1910	2,311,711	494,314	2,806,025	2,308,056	571,334	2,879,390
1911	2,258,506	560,677	2,819,183	2,334,908	614,356	2,949,264
1912	2,530,659	728,353	3,259,012	2,521,837	668,666	3,190,503
1913	2,930,233	834,973	3,765,206	2,925,863	656,796	3,582,659

A commission is paid to those countries to which money is transmitted in proportion to the amount of the orders forwarded to each, the rate of commission varying from $\frac{1}{4}$ to 1 per cent., and a similar allowance is made to the State by countries doing a return business. The revenue received during 1913 in respect of commission on the money orders issued was £27,492, as compared with £19,377 in 1903, being an increase of 42 per cent.

in the ten years. As compared with the Commonwealth revenue from this source, New South Wales business furnishes about 40 per cent. of the total.

The total amount of commission collected from the public for the intervening years quoted above, and the excess of receipts over payments, are recorded as follows:—

Year.	Gross Commission Collected from the Public.	Net Receipts from Other Countries.	Net Commission received by New South Wales.
	£	£	£
1895	14,863	(-) 234	14,629
1900	16,296	51	16,347
1905	19,313	419	19,732
1910	20,962	220	21,182
1911	21,677	83	21,760
1912	26,654	(-) 433	26,221
1913	26,864	628	27,492

The rates of commission on money orders payable in the Commonwealth and Papua are respectively 6d. and 9d. for every £5. The charges on those payable in New Zealand and Fiji are:—Not exceeding £2, 6d.; £2 to £5, 1s.; £5 to £7, 1s. 6d.; £7 to £10, 2s.; and in the same proportion up to £40. The commission on orders payable in the United Kingdom, other British Possessions, and foreign countries, is at the rate of 6d. for any amount up to £2, and 3d. for each additional pound or fraction thereof. In case of remissions to foreign countries through London, a second commission of 3d. for each £5 or fraction thereof is charged, this commission being added to the amount of the order. In cases where there is no direct exchange through London the business is transacted through the agency of a foreign office, which deducts its commission, ranging from $\frac{1}{4}$ per cent. to 1 per cent., from the amount of the order.

Within Australasia remittances may be made by telegraph to and from money order offices, which are also telegraph or telephone offices, and a charge is made for the telegram of advice, in addition to the ordinary commission.

Postal Notes.

Postal notes were first issued in New South Wales on 1st October, 1893. The transactions for intervening years were as follow:—

Year.	Postal Notes issued in New South Wales, for payment—			Postal Notes issued in other Australian States and paid in New South Wales.					
	in New South Wales.	in other Australian States.	Total Value.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Total Value.
	£	£	£	£	£	£	£	£	£
1895	243,188	16,369	259,557	7,627	3,863	1,431	....	441	13,362
1900	462,087	26,396	488,483	12,207	9,899	2,209	....	1,047	25,362
1905	637,465	85,703	723,168	35,034	28,535	8,752	9,170	5,712	87,203
1910	910,136	182,000	1,092,136	45,725	49,873	14,211	11,821	7,674	129,304
1911	977,451	216,574	1,194,025	46,234	50,010	14,268	10,980	7,621	129,112
1912	1,057,439	223,152	1,280,591	49,768	52,512	15,818	11,358	8,613	138,069
1913	1,132,916	278,929	1,411,845	50,698	54,532	15,467	11,512	8,448	140,657

The total number of notes issued in New South Wales during 1913 was 3,764,615, of which 2,980,921 were for payment in the State; and 347,700 notes issued in other States were paid in New South Wales.

The poundage collected on postal-note issues in New South Wales during the same years was as follows:—

Year.	Poundage.	Year.	Poundage.
	£		£
1895	6,317	1911	23,389
1900	11,850	1912	24,906
1905	14,262	1913	25,949
1910	21,309		

COMMONWEALTH BANK OF AUSTRALIA.

During 1911 the Federal Parliament passed an Act to provide for the establishment of a Government Bank, to be called the Commonwealth Bank of Australia. The Act confers on the Bank authority to carry on general banking business and other incidental powers relating to acquisition of land, deposits, and advances, discounting and issue of bills and drafts, dealing in exchanges, specie, bullion, &c., and borrowing money. In accordance with the policy of conserving the control of the Australian note issue in the hands of the Federal Treasurer, the Commonwealth Bank may not issue bank notes.

The capital of the bank is fixed at £1,000,000, to be raised by the sale and issue of debentures. The management is entrusted to the Governor of the bank, appointed by the Governor-General of Australia for a term of seven years. In addition to ordinary banking business the Governor is empowered to establish a department for the transaction of savings bank business.

The Commonwealth Bank was established on 15th July, 1912, by the opening of the Postal Savings Bank Department in Victoria. A savings department was commenced in Queensland on 16th September; in the Northern Territory on 21st October, 1912; and in New South Wales, South Australia, and Western Australia on 13th January, 1913; in Tasmania the State Savings Bank was transferred to the Commonwealth Bank on 1st January, 1913. The rate of interest for deposits is fixed at 5 per cent. up to a maximum of £300.

On 20th January, 1913, operations were commenced with regard to ordinary banking business.

The Head Office of the Commonwealth Bank is at Sydney, and at 30th June, 1914, branches were open at Broken Hill, Newcastle, and Dubbo in New South Wales, a branch had been opened at Canberra, eight in other parts of the Commonwealth, and one in London. Savings Bank business is conducted at all branches and at 2,034 agencies at post offices throughout the Commonwealth and Papua.

The following statement of the Savings Department shows the number of depositors and the amount to their credit as at 30th June, 1913 and 1914.

	1913.		1914.	
	Depositors.	Amount at Credit of Depositors.	Depositors.	Amount at Credit of Depositors.
	No.	£	No.	£
New South Wales ...	15,351	490,586	37,677	1,171,255
Victoria	17,602	666,275	30,371	1,151,823
Queensland	13,481	455,167	24,202	815,947
South Australia ...	3,544	129,931	7,965	317,135
Western Australia ...	4,114	112,359	10,111	277,956
Tasmania	29,107	820,442	32,392	885,379
Northern Territory ...	228	13,151	292	18,709
Papua	46	2,238	133	7,064
London	85	3,822	.....	.....
Total	83,553	2,693,971	143,143	4,645,268

SAVINGS BANKS.

The objects of savings banks are to encourage individual thrift, and to provide a safe channel of investment for funds, especially of charitable institutions and friendly societies. To foster public confidence and assure soundness in financing, a measure of State control or supervision is regarded as essential.

Two Savings Banks were in operation in New South Wales prior to the establishment of the Commonwealth Bank—the Savings Bank of New South Wales and the Government Savings Bank of New South Wales. These institutions were amalgamated on 1st May, 1914.

The Savings Bank of New South Wales established in 1832 was controlled by trustees nominated by the Government; under the Savings Bank Act, 1902, and its amendment, the maximum number was eighteen, and the trustees were authorised to appoint a managing trustee, who, if not already a trustee, became so *ex-officio*. The number of trustees at the end of 1913 was thirteen, exclusive of the managing trustee. Sums over one shilling were received on deposit, the maximum interest-bearing deposit being £200 with the exception of funds of charitable institutions and friendly societies, which were allowed interest on the full amount deposited. The rate of interest paid during 1913 was 4 per cent.

The Funds of this institution were applicable to investments of a general nature, such as mortgages, Government and municipal securities, and deposits with banks of issue and the Treasury. The amount invested under each head, including interest accrued, at the close of 1913, was as follows:—

Investment.	Amount.
	£
Mortgages	1,481,476
New South Wales Government Stock	3,894,783
Municipal Debentures	1,589,406
Fixed Deposits in various Banks	1,727,299
Bank of New South Wales—Working Account	123,155
Deposit with Colonial Treasurer	407,178
Land and Banking-houses	98,977
Tellers' Cash in hand	9,403
Cash received after 31st December, 1913	51,766
Total... ..	£ 9,383,443

At 31st December, 1913, the liabilities amounted to £9,383,443, consisting of deposits, £8,974,829; balance of profit and loss account, £8,778; reserve fund, £358,325; mortgages and general investments depreciation account, £33,774; and other liabilities, £7,737.

The classification of the deposits at the Savings Bank of New South Wales on 31st December, 1912 and 1913, was as follows:—

Classification.	1912.		1913.	
	Depositors.	Deposits.	Depositors.	Deposits.
	No.	£	No.	£
£20 and under	77,482	321,972	79,078	321,936
Over £20 and under £50	18,854	610,579	19,328	626,338
£50 and under £100	14,137	995,409	14,818	1,046,745
£100 „ £200	15,110	2,140,155	16,330	2,304,677
£200 „ £300	16,906	3,600,074	19,299	4,106,950
£300 and upwards	1,092	575,219	1,060	568,183
Total... ..	143,581	8,243,408	149,913	8,974,829

The average deposit in 1913 was £59 17s. 4d., as compared with £57 8s. 3d. in 1912, and £55 4s. in 1906.

The figures shown above include the deposits of five penny savings banks established in various districts, which amounted to £1,228 at 31st December, 1913. Similarly the amount of deposits in the Government Savings Banks include those of the public schools savings banks, of which details are given in the chapter relating to Education.

The Government Savings Bank of New South Wales, established in 1871, was worked as the Post Office Savings Bank under the control of the Postmaster-General of New South Wales until March, 1901, when the postal service was transferred to the administration of the Commonwealth Government, and the Savings Bank was placed under the control of the Colonial Treasurer of New South Wales. Under agreement with the Federal Government the transaction of the savings bank business at post offices was continued until the end of the year 1912. On the determination of the Commonwealth Government to establish a savings bank with agencies at the post offices the State Government was given notice to remove its agencies as from 1st January, 1913, and separate branches and agencies were provided throughout the State.

A notable change in the administration of the Government Savings Bank was made on 1st January, 1907, when the bank was detached from the direct control of the Colonial Treasurer, and three Commissioners were appointed under the authority of the Government Savings Bank Act of 1906, to conduct the savings bank business and also the State business in connection with loans to land-holders previously administered by the Advances to Settlers Board.

The following rates of interest were paid by the Government Savings Bank from 1st July, 1912, to 30th June, 1914:—Ordinary depositors 3½ per cent. on amounts up to £300, and 3 per cent. from £300 to £500; friendly societies and similar institutions 3½ per cent. to £500 and 3 per cent. on excess without limitation. Since 1st July, 1914, the interest allowed to ordinary depositors has been 3½ per cent. on amounts up to £200 and 3 per cent. from £200 to £500.

At 31st December, 1913, the liabilities of the Government Savings Bank amounted to £22,447,278, of which £22,216,985 represented deposits, £58,704 Advance Department deposit at call, and £4,318 balance of profit and loss account; the reserve fund amounted to £151,000, and other liabilities £16,271. The investments made on behalf of the bank, and other assets, including accrued interest, were as follows:—

	£		£
Government Stock—		Bank Premises	330,800
New South Wales, Funded...	12,896,160	Sundry accounts due to Bank ...	8,913
Other States	109,945	Commercial Banking Co. of	
Deposits at New South Wales		Sydney, Ltd.... ..	136,980
Treasury	2,903,123	Cash at Branches, Agencies, and	
Debentures—		in transit	208,197
Advance Department ...	3,261,035	Balances due from other Savings	
Municipal	790,427	Banks	11,587
Fixed Deposits at various Banks	489,915		
Mortgage Securities, including			
accrued interest	1,300,196		
		Total	£22,447,278

The Commissioners are obliged, in terms of the Government Savings Bank Act, 1906, to retain at least 15 per cent. of the assets of the bank on call or at short notice.

The following statement shows the classification of depositors' balances at the Government Savings Bank for the years 1912 and 1913:—

Classification.	1912.		1913.	
	Depositors.	Deposits.	Depositors.	Deposits.
	No.	£	No.	£
£20 and under	369,092	1,121,003	339,914	1,188,051
Over £20 to £50	57,451	1,838,414	61,270	1,962,447
„ £50 to £100	35,600	2,482,553	39,536	2,768,063
„ £100 to £200	27,918	3,820,871	31,473	4,320,284
„ £200 to £300	12,111	2,910,515	13,795	3,333,422
„ £300 to £400	7,029	2,373,117	8,456	2,851,164
„ £400 to £500	4,539	2,034,299	4,670	2,090,987
„ £500	6,642	3,547,826	6,912	3,704,958
Total... ..	460,382	20,128,598	506,028	*22,216,985

* Exclusive of £2,391 in transit.

The average amount of deposit has increased from £32 17s. 11d. in 1906 to £43 14s. 5d. in 1912, and £43 18s. 1d. in 1913.

A Reciprocity Agreement exists between the various Savings Banks in Australia for the transfer of money for depositors, the amount transferred from the Government Savings Bank of New South Wales to the other States in 1913 being £241,037, while the transfers from the other States amounted to £291,233. Under similar arrangement with the United Kingdom, the amount of £19,850 was transferred to the Government Savings Bank of New South Wales, and £41,309 from that bank to the Post-Office Savings Bank of the United Kingdom.

A comparison of the number of depositors and the amount of deposits in the Savings Bank of New South Wales and the Government Savings Bank is shown below:—

Year ended 31st December.	Government Savings Bank of New South Wales.		Savings Bank of New South Wales.	
	Depositors.	Deposits.	Depositors.	Deposits.
	No.	£	No.	£
1860 } 1870 }	Not open.		12,027	557,197
1880	24,602	586,496	23,570	936,465
1890	83,312	1,875,905	36,929	1,489,360
1900	198,014	6,045,622	60,514	2,854,564
1905			84,629	4,855,760
1910	254,331	7,952,885	101,383	5,545,367
1911	368,306	15,190,820	130,352	7,263,104
1912	407,011	17,595,695	137,012	7,765,643
1913	460,382	20,128,598	143,581	8,243,408
	506,028	22,216,985	149,913	8,974,829

The Savings Bank Amalgamation Act of 1914, by which the Savings Bank of New South Wales was dissolved and its property and liabilities vested in the Government Savings Bank came into operation on 1st May, 1914. Persons who had deposits in the former bank at the date of amalgamation were entitled under certain conditions to continue their accounts for a period of ten years and to receive on amounts up to £200 a slightly higher

rate of interest than depositors in the Government Savings Bank, if the rate for the latter be lower than $3\frac{1}{2}$ per cent. At 30th April, 1914, the assets of the Savings Bank of New South Wales amounted to £9,345,952, the depositors numbered 150,838, and the balance at their credit amounted to £8,835,266.

The following statement shows the particulars of deposits in the savings banks in New South Wales at the end of each year of the decennium ended 30th June, 1914. The returns of the Savings Department of the Commonwealth Bank are included in the figures for 1913 and 1914:—

At 30th June.	Number of Depositors.	Amount of Deposits.		
		Total.	Per Depositor.	Per head of Population.
		£	£ s. d.	£ s. d.
1905*	355,714	13,498,252	37 18 11	9 5 8
1906*	379,631	14,881,260	39 4 0	10 0 6
1907	408,859	16,338,051	39 19 2	10 15 3
1908	435,618	17,849,384	40 19 6	11 11 3
1909	444,930	19,022,151	42 15 1	12 1 6
1910	478,006	20,823,764	43 11 3	12 18 0
1911	522,251	23,381,014	44 15 4	14 1 5
1912	577,232	26,539,640	45 19 6	15 5 3
1913	647,124	29,568,282	45 13 10	16 6 10
1914	717,737	33,167,523	46 4 3	17 17 2

* Returns of Savings Bank of New South Wales relate to 31st December following.

The following table shows for each State of Australia the number of depositors in the savings banks, the total amount standing to their credit, and the average amount per depositor and per head of population as at 30th June, 1914:—

State.	Depositors.	Amount of Deposits in all Savings Banks.	Average Amount.	
			Per Depositor.	Per Inhabitant.
	No.	£	£ s. d.	£ s. d.
New South Wales ...	717,737	33,167,523	46 4 3	17 17 2
Victoria ...	748,652	24,533,519	32 15 5	17 5 1
Queensland ...	201,163	9,944,069	49 8 8	14 12 8
South Australia...	267,805	9,366,491	34 19 6	21 7 6
Western Australia ...	131,798	4,808,314	36 9 8	14 16 10
Tasmania...	76,650	2,185,098	28 10 2	11 3 1
Total ...	2,143,805	84,005,014	39 3 8	17 1 3

TRADING BANKS.

Banking institutions transacting ordinary banking business within the State during 1913 numbered seventeen including the Commonwealth Bank of Australia, which, as stated above, commenced operations in Sydney in January, 1913. Five institutions have their head offices in Sydney, four in Melbourne, two in Brisbane, one in Wellington (N.Z.), four in London, and one in Paris. Of the four local banks, three have branches outside the State, but the fourth confines its operations to New South Wales. Two of the local banks—the Bank of New South Wales and the City Bank of Sydney—carry on business under the provisions of special Acts of Incorporation, and in each case the reserve liability attaching to the shares is equivalent to the amount originally subscribed; the Commercial Banking Company of Sydney (Limited) and the Australian Bank of Commerce

(Limited) are registered as limited companies under the Companies Act, 1906, the latter bank having registered in September, 1909, and commenced operations on 1st January, 1910; previously it was registered and operated as the Australian Joint Stock Bank (Limited). Including branches and head offices, New South Wales is served by 663 banking establishments, excluding those of the Commonwealth Bank and the Savings Banks.

Institutions which transact business of banking are required under the Banks and Bank Holidays Act, 1912, to furnish, in a prescribed form, quarterly statements of their assets and liabilities, from which statements and from the periodical balance-sheets the information here collated has been prepared. The returns furnished comply with the requirements of the law, but are unsuited to the modern methods of transacting banking business, and cannot be accepted as disclosing fairly the stability or otherwise of the institutions by which they are issued.

BANKING INSTITUTIONS AND THEIR CAPITAL.

The paid-up capital of the banks doing business in New South Wales in 1913 was stated, as £26,765,149, of which £2,551,444 carried a preferential claim on the profits of the companies.

In the following table is a statement of the ordinary and preferential capital of each bank at the date shown, with the amount of the reserve fund of the institution. In the case of some of the companies which were reconstructed, certain reserves, of which no account has been taken in the table, are held in suspense pending realisation of assets:—

Bank.	Offices, in New South Wales.	Date of Balance- sheet.	Capital Paid up.			Reserve Fund.
			Ordinary.	Preferen- tial.	Total.	
HEAD OFFICE, SYDNEY.						
Bank of New South Wales	No. 169	Mar., 1914	£ 3,500,000	£	£ 3,500,000	£ 2,450,000
Commercial Banking Co. of Sydney (Limited)	183	June, 1914	2,000,000	.....	2,000,000	1,730,000
Australian Bank of Commerce (Limited) ..	65	June, 1914	1,195,592	.....	1,195,592	45,000
City Bank of Sydney	45	June, 1914	400,000	.....	400,000	32,000
HEAD OFFICE, MELBOURNE.						
Commercial Bank of Australia (Limited) ..	18	June, 1914	1,432,038	.....	1,432,038	Nil.
Royal Bank of Australia (Limited)	1	Mar., 1914	300,000	.....	300,000	210,000
National Bank of Australasia (Limited) ..	9	Mar., 1914	1,192,440	305,780	1,498,220	500,000
Colonial Bank of Australasia (Limited) ..	1	Mar., 1914	135,236	304,044	439,280	220,000
HEAD OFFICE, BRISBANE.						
Queensland National Bank (Limited)	1	June, 1914	480,000	.....	480,000	154,000
Bank of North Queensland (Limited)	6	June, 1914	162,500	.....	162,500	35,000
HEAD OFFICE, WELLINGTON.						
Bank of New Zealand	1	Mar., 1914	500,000	1,769,690	2,269,690	1,560,000
HEAD OFFICE, LONDON.						
Bank of Australasia	43	Oct., 1913	2,000,000	.....	2,000,000	2,690,000
Union Bank of Australia (Limited)	37	Feb., 1914	2,000,000	.....	2,000,000	1,960,000
London Bank of Australia (Limited)	32	Dec., 1913	376,462	171,930	548,392	270,000
English, Scottish, and Australian Bank (Limited)	49	June, 1913	539,437	.....	539,437	300,000
HEAD OFFICE, PARIS.						
Comptoir National d'Escompte de Paris ..	1	Dec., 1913	8,000,000	.....	8,000,000	1,523,219
Total	663	.....	24,213,705	2,551,444	26,765,149	13,669,219

In addition to the paid-up capital shown above, an amount of £3,087 had still to be paid in respect of calls made on the shareholders of the Australian Bank of Commerce (Limited).

The following table shows the amount of the paid-up capital and reserve funds of banks operating in the State, at intervals since 1890:—

Year.	Banks.	Capital Paid up.		Total.	Reserve Funds.
		Ordinary.	Preferential.		
	No.	£	£	£	£
1890	17	.....	.....	13,929,326	7,832,047
1895	13	14,610,177	5,094,780	19,704,957	4,175,912
1900	13	12,212,120	4,594,940	16,807,060	4,529,109
1905	13	9,870,871	4,095,060	13,965,931	5,474,199
1910	16	21,911,796	2,281,754	24,193,550	9,909,711
1911	16	22,280,807	2,281,754	24,562,561	10,769,574
1912	16	22,689,126	2,281,754	24,970,880	11,601,057
1913*	16	24,213,705	2,551,444	26,765,149	13,669,219

* Exclusive of Commonwealth Bank.

LIABILITIES AND ASSETS OF BANKS.

The aggregate liabilities to the public in New South Wales and elsewhere of the banks enumerated were £261,868,078, against which there were assets representing £304,255,379. The following table gives the liability for each institution, notes in circulation and deposits being separated from other liabilities. In some cases small items which should be classed with "other liabilities" are included with deposits, as they cannot be distinguished in the balance-sheets, and in the case of the Commercial Bank of Australia (Limited), the accounts of the Assets Trust of the old bank have been excluded:—

Bank.	Notes in Circulation.	Deposits* (approximate).	Other Liabilities.	Total.
	£	£	£	£
Bank of New South Wales.. .. .	277,874	36,699,816	7,761,125	44,738,815
Commercial Banking Co. of Sydney (Limited).. .	21,804	22,278,511	1,118,852	23,414,167
Australian Bank of Commerce (Limited) .. .	1,427	4,681,574	293,117	4,976,118
City Bank of Sydney	7,180	2,067,531	Nil.	2,074,661
Colonial Bank of Australasia (Limited).. . . .	20,163	4,026,325	392,981	4,439,469
Commercial Bank of Australia (Limited)	21,053	7,168,789	1,021,242	8,211,084
National Bank of Australasia (Limited).. . . .	38,980	11,282,630	1,216,067	12,537,677
Royal Bank of Australia (Limited)	1,103	2,325,290	700,062	3,026,445
Queensland National Bank (Limited)	Nil.	9,733,576	162,150	9,900,726
Bank of North Queensland (Limited)	Nil.	1,046,290	94,067	1,140,357
Bank of New Zealand	989,882	18,070,613	1,405,457	20,463,952
Bank of Australasia	168,818	18,088,955	2,768,848	21,026,621
Union Bank of Australia (Limited)	183,408	23,538,534	1,714,216	25,436,158
London Bank of Australia (Limited)	8,343	5,490,278	971,899	6,470,520
English, Scottish, and Australian Bank (Limited) .. .	3,714	8,701,753	516,303	9,221,770
Comptoir National d'Escompte de Paris	Nil.	56,651,042	8,138,496	64,789,538
Total †	£ 1,743,699	231,856,507	23,267,872	261,868,078

* Includes other liabilities in some cases.

† Exclusive of Commonwealth Bank of Australia.

The assets which each bank showed against its liabilities to shareholders and the public are given in the following table:—

Bank.	Coin, Bullion and Cash Balances.	Australian Notes.	Advances.	Other Assets.	Total.
	£	£	£	£	£
Bank of New South Wales	13,032,121	1,239,858	94,829,406	11,144,335	50,845,720
Commercial Banking Co. of Sydney (Limited)	5,635,153	558,409	13,962,748	7,144,969	27,301,279
Australian Bank of Commerce (Limited)	663,277	203,254	4,090,774	1,280,426	6,237,731
City Bank of Sydney	482,109	69,408	1,685,452	285,140	2,522,109
Colonial Bank of Australasia (Limited)	774,458	*	2,845,215	1,499,936	5,119,609
Commercial Bank of Australia (Limited)	1,619,964	*	5,171,693	2,903,685	9,695,345
National Bank of Australasia (Limited)	2,734,502	*	9,306,047	2,570,658	14,611,807
Royal Bank of Australia (Limited)	792,105	*	1,590,682	1,172,823	3,555,610
Queensland National Bank (Limited)	2,023,729	338,251	6,488,057	1,734,779	10,584,816
Bank of North Queensland (Limited)	324,979	53,618	770,066	197,336	1,346,599
Bank of New Zealand	3,977,185	Nil.	11,860,486	9,662,579	24,400,250
Bank of Australasia	5,552,253	*	17,585,435	2,790,097	25,916,790
Union Bank of Australia (Limited)	4,953,179	*	16,306,479	8,322,010	29,581,668
London Bank of Australia (Limited)	1,196,385	*	4,358,778	1,777,728	7,332,891
English, Scottish, and Australian Bank (Limited)	1,691,063	*	6,128,056	2,427,034	10,146,153
Comptoir National d'Escompte de Paris	4,959,395	*	68,185,108	1,912,499	75,057,002
Total †	£ 50,311,862	2,462,798	194,645,685	56,835,034	304,255,379

* Included with coin, bullion, &c. † Exclusive of Commonwealth Bank of Australia.

The values of Australian notes held by the banks with headquarters in Melbourne and in London have not been distinguished from the value of coin, &c. In all cases, the assets and liabilities quoted represent the total of the various banks, wherever situated, not merely those in New South Wales, which are treated subsequently. The difference between the assets and liabilities shown in the table amounts to £42,387,301, and consists of the paid-up capital and reserves (£40,912,386), and dividends paid (£1,474,915).

LOCAL BUSINESS OF BANKS.

To render comparable the figures of the various banks, necessary adjustments have been made by excluding from the assets of the banks the balances due from branches and agencies outside New South Wales. The following table shows the assets and liabilities and the surplus assets of the banks, at intervals since 1860; particulars of the Commonwealth Bank are included in 1913. These figures represent the average for the quarter ended 31st December in each year:—

Year.	Banks.	Assets within the State.	Liabilities within the State.	Surplus Assets.
	No.	£	£	£
1860	...	8,053,463	6,480,642	1,572,821
1870	...	9,863,071	7,198,680	2,664,391
1880	11	21,658,317	19,485,862	2,172,455
1890	17	52,436,977	37,248,937	15,188,040
1900	13	43,036,427	33,969,731	9,066,696
1905	13	43,694,137	38,860,062	4,834,075
1910	16	58,276,278	54,667,088	3,609,190
1911	16	64,881,499	58,349,554	6,531,945
1912	16	63,006,510	57,988,968	5,017,542
1913	17	66,046,728	60,233,681	5,813,047

In New South Wales the excess of the assets over liabilities reached the highest point in 1891 and 1892; in the latter year the excess was shown as £16,146,513. From this date it was reduced in 1901 to £8,359,727, and in 1906 to £3,041,220. There has been some fluctuation since, and the amount in 1913 was £5,813,047.

The classification, both of assets and liabilities, required by the schedule to the Act is too general to admit of detailed analysis; thus under the term "deposits not bearing interest," most of the banks are accustomed to return interest accrued and all debts due by them other than deposits at interest, notes, and bills.

Coin and bullion together represent only 20·6 per cent. of the average assets of the banks within New South Wales, and no dissection is made of the various classes of advances, which represent in the aggregate 70·9 per cent. of the total assets which the banks hold against their liabilities.

The tables show the preponderance of deposits among the liabilities, and of advances among the assets, and it may perhaps assist to a fuller realisation of the extent to which the banking business of the State depends on these two factors, to emphasise the fact that deposits represent 97·7 per cent. of liabilities (exclusive of shareholders), while advances are 70·9 per cent. of assets, as quoted above. These items call for more extensive discussion in the returns.

The following statement shows the average liabilities within New South Wales, exclusive of liabilities to shareholders:—

Year.	Notes.	Deposits.			Other Liabilities.	Total Liabilities.
		At Interest.	Without Interest.	Total Deposits.		
	£	£	£	£	£	£
1881	1,390,376	11,869,979	7,719,236	19,589,215	446,535	21,426,126
1885	1,714,095	18,387,705	8,819,979	27,207,684	923,843	29,845,622
1890	1,503,404	25,114,127	9,932,310	35,046,437	278,792	36,828,633
1895	1,223,864	20,406,822	10,222,437	30,629,259	183,929	32,037,052
1900	1,447,641	20,009,081	12,224,510	32,233,591	288,499	33,969,731
1905	1,430,335	22,211,627	14,859,427	37,071,054	353,673	38,860,062
1910	2,243,128	27,824,972	24,068,552	51,893,524	530,436	54,667,088
1911	400,784	30,089,470	27,050,686	57,140,156	808,614	58,349,554
1912	171,199	30,291,713	26,863,689	57,155,402	662,367	57,988,968
1913	123,468	31,046,535*	27,221,654	58,868,209*	1,242,004	60,233,681

* Includes Commonwealth Savings Bank deposits, £741,211.

Against these liabilities, in which the steady growth of deposits is the outstanding feature, the average assets were as follows:—

Year.	Coin and Bullion.	Advances.	Landed Property.	Other.	Total.
	£	£	£	£	£
1881	3,674,982	19,033,356	585,224	3,183,395	26,481,987
1885	4,233,109	30,556,628	958,349	2,067,490	37,815,576
1890	5,659,057	41,623,049	1,601,589	2,796,100	51,679,795
1895	7,516,278	35,707,153	1,919,017	479,881	45,622,329
1900	6,126,126	34,385,388	1,874,099	650,814	43,036,427
1905	8,823,260	32,447,659	1,799,231	623,987	43,694,137
1910	13,724,285	40,854,690	1,822,997	1,874,306	58,276,278
1911	13,023,727	46,916,008	1,887,261	3,051,503	64,881,499
1912	10,609,665	47,741,319	1,955,994	2,699,532	63,006,510
1913	13,615,842	46,856,166	1,949,098	3,625,622	66,046,728

Under the heading of "other assets" are grouped notes and bills of banks, balances due from other banks, and, for 1910 to 1913, Australian notes. In view of the steady increase since 1905 of the assets so grouped, some interest may attach to a detail statement of such items for the past nine years:—

Year.	Liabilities.		Other Assets.	
	Balances due to other Banks.	Notes and Bills of other Banks.	Balances due from other Banks.	Australian Notes.
	£	£.	£	£
1905	140,118	326,750	297,237	.....
1906	117,629	335,979	379,602	.....
1907	153,186	359,033	443,636	.....
1908	176,122	388,925	431,377	.....
1909	131,067	374,522	522,132	.....
1910	160,237	906,857	675,702	291,747
1911	396,822	292,854	590,269	2,168,380
1912	248,956	321,422	479,451	1,898,659
1913	789,040	468,088	1,265,916	1,891,618

From preceding tables it is apparent that the deposits in banks have increased very rapidly, while the advances made, though larger from year to year, have not increased in the same proportion; thus, in 1881 the excess of deposits over advances was little more than half a million pounds; from 1890 to 1905, advances were considerably in excess of deposits; since 1905 deposits have increased 59 per cent. and advances 44 per cent. Considerable sums of money of Australian origin are held on deposit in London, and these amounts form a source of profit to the institutions, though they cannot be used for investment locally.

METALLIC RESERVES OF BANKS.

The proportion of metallic reserves which banking institutions should keep constantly in stock is not fixed by any enactment. Compared with the total liabilities, and with deposits at call and note circulation, the amount of coin and bullion has varied very considerably from year to year, as indicated below:—

Year.	Coin.	Bullion.	Total.	Proportion of Metallic Reserves—	
				To Total Liabilities.	To Deposits at Call and Note Circulation.
	£	£	£	per cent.	per cent.
1860	1,578,424	90,052	1,668,476	25·7	*
1870	1,291,177	86,744	1,377,921	19·1	*
1880	3,488,554	75,008	3,563,562	18·3	49·5
1890	5,619,111	87,659	5,706,770	15·8	49·1
1900	5,933,076	193,050	6,126,126	18·0	44·8
1905	8,624,083	199,177	8,823,260	22·7	54·2
1910	13,527,019	197,266	13,724,285	25·1	52·2
1911	12,841,780	184,947	13,026,727	22·3	47·5
1912	10,436,216	173,449	10,609,665	18·8	39·2
1913	13,492,871	122,971	13,615,842	22·6	49·8

* Amount of deposits at call unobtainable.

In the foregoing table the figures represent the weekly average amounts during the quarter ended 31st December in each year; the Comptoir National d'Escompte de Paris is included since 1907, the Royal Bank of Australia (Limited) and the Colonial Bank of Australasia (Limited) since 1910, and the Commonwealth Bank of Australia in 1913.

ADVANCES BY BANKS.

Under the head of advances are included notes and bills discounted, and all other debts due to the banks. The bulk of the advances are secured by the mortgage of real estate or by the depositing of deeds over which the lending institutions acquire a lien; but the extent of the discounting of trade bills is not apparent. A most interesting summary is supplied in the following table:—

Year.	Advances.	Ratio of Advances to Deposits.	Advances per cent. of Total Assets.	Amount of Advances per Inhabitant.
	£	per cent.		£ s. d.
1860	5,780,700	111·9	71·8	16 17 6
1870	7,814,116	127·9	79·2	15 18 11
1880	17,210,205	96·2	79·5	23 12 4
1890	43,009,559	121·3	84·7	39 0 8
1900	34,385,388	101·2	79·9	25 4 0
1905	32,447,659	87·5	74·3	22 1 9
1910	40,854,690	78·7	70·1	24 18 9
1911	46,916,008	82·1	72·3	27 12 4
1912	47,741,319	83·5	75·8	28 16 9
1913	46,856,166	79·6	70·9	25 11 5

DEPOSITS IN BANKS.

The total amount of money deposited with the seventeen banks operating in New South Wales during 1913 was, approximately, £231,856,507, of which sum £58,868,209 was received locally. The excess of the total over local deposits was employed in the various countries to which the banks' business extended, some, of course, being used in New South Wales; but from the nature of the transactions of the banks, it is not possible to ascertain the amount so used. Dealing only with local deposits, the following statement shows the average amount of money deposited at various periods commencing with 1860; the distinction between interest-bearing deposits and those at call was first made in 1875:—

Year.	Deposits bearing Interest.	Deposits not bearing Interest.	Total Deposits.	Proportion of Deposits not bearing Interest to Total Deposits.	Proportion of Deposits to Liability (to Public).
	£	£	£	per cent.	per cent.
1860	.....	.....	5,164,011	...	79·7
1870	.....	.....	6,107,999	...	84·8
1880	11,948,383	5,934,641	17,883,024	33·2	91·8
1890	25,395,600	10,064,518	35,460,118	28·4	95·2
1900	20,009,081	12,224,510	32,233,591	37·9	94·9
1905	22,211,627	14,859,427	37,071,054	40·1	95·4
1910	27,824,972	24,068,552	51,893,524	46·4	94·9
1911	30,089,470	27,050,686	57,140,156	47·3	97·9
1912	30,291,713	26,863,689	57,155,402	47·0	98·6
1913	31,646,555	27,221,654	58,868,209	46·2	97·7

The deposits reached their highest level in December, 1913, when there was entrusted to the banks an average total of £58,868,209. In 1891 the deposits amounted to £35,659,690, but in the subsequent ten years fully

£5,000,000 were withdrawn, the reduction being entirely in interest-bearing deposits. Since 1894 there has been a tendency to restrict fixed deposits, and to extend the operations in current accounts, which have increased from 9½ millions to 27¼ millions during the interval; fixed deposits have increased steadily since 1909. A feature of the movement in deposits is the rapid advance of current accounts since 1908.

INTEREST, DISCOUNT, AND EXCHANGE RATES.

The interest offered for fixed deposits is 3½ per cent. for sums deposited for twelve months; for six months' deposits the interest allowed is at the rate of 2 per cent.; for periods of two years the interest rate rises to 4 per cent. The practice of allowing interest on money fixed for less than six months was discontinued in May, 1894. The rates quoted are low, and the strength of deposits show that money equal to requirements is freely offered. The following is a statement of the average rates for twelve months' deposits from 1860 onwards. The figures do not include interest payable on deferred deposits, by reconstructed banks:—

Year.	Bank Interest on Deposits for twelve months.	Year.	Bank Interest on Deposits for twelve months.
	per cent.		per cent.
1860	5	1905	3 to 3½
1870	5	1910	3
1880	5	1911	3
1890	4½	1912	3 to 3½
1900	3	1913	3½

Under normal conditions the annual rate of interest paid on fixed deposits is uniform for all banks, and discount and overdraft rates should move down with the interest rates paid to depositors; it is evident, from a consideration of the profit and loss accounts of the various institutions, that the business of the banks is in a healthy condition.

The rates for overdrafts and discounts at intervals from 1890 to 1913 were as follow:—

Year.	Overdraft Rates.	Discount Rates.	
		Bills at 3 months.	Bills over 3 months.
	per cent.	per cent.	per cent.
1890	9	7	8
1895	7 to 8	6 to 6½	7
1900	6 ,, 7	5 ,, 5½	5½ to 6½
1905	6 ,, 7½	5½ ,, 6	6 ,, 6½
1910	6 ,, 7½	5 ,, 6	6 ,, 7
1911	6 ,, 7½	5 ,, 6	6 ,, 7
1912	6 ,, 8	5 ,, 6	6 ,, 7
1913	6 ,, 8	5 ,, 6	6 ,, 7

The bank exchange rate on London, at sixty days' sight, averages about 1 per cent., but is subject to some fluctuation. In May, 1893, it was $3\frac{1}{2}$ per cent., the banks at that date requiring all their available assets. The rates from 1890 to 1913 were:—

Year.	Exchange rate on London at 60 days' sight.	
	Buying.	Selling.
1890	per cent. 99 $\frac{3}{4}$ to 100	per cent. 100 $\frac{3}{4}$ to 101 $\frac{3}{4}$
1895	99 $\frac{1}{2}$ „ 99 $\frac{3}{4}$	100 $\frac{3}{4}$ „ 100 $\frac{3}{4}$
1900	98 $\frac{1}{2}$ „ 99 $\frac{1}{2}$	100 $\frac{1}{2}$ „ 100 $\frac{3}{4}$
1905	99 $\frac{1}{2}$ „ 99 $\frac{1}{2}$	100 $\frac{1}{2}$ „ 100 $\frac{1}{2}$
1910	98 $\frac{1}{2}$ „ 99	99 $\frac{3}{4}$ „ 99 $\frac{3}{4}$
1911	98 $\frac{1}{2}$ „ 99	99 $\frac{3}{4}$ „ 99 $\frac{3}{4}$
1912	98 $\frac{1}{2}$ „ 99 $\frac{1}{2}$	99 $\frac{1}{2}$ „ 100 $\frac{1}{2}$
1913	98 $\frac{3}{4}$ „ 98 $\frac{1}{2}$	99 $\frac{1}{2}$ „ 99 $\frac{3}{4}$

PROFITS OF BANKS.

The results of the transactions of each bank for the latest period for which information is available are given in the following table. With the exception of the Bank of New Zealand, the English, Scottish, and Australian Bank (Limited), the London Bank of Australia (Limited), and the Comptoir National d'Escompte de Paris, for which the figures relate to twelve months' operations, the amounts given cover a period of six months. The dates of the balance-sheets are as shown previously:—

Bank.	Balance brought forward.	Net Profits for half-year.	Total.	Half-yearly Dividend.		Amount transferred to Reserve Fund, &c.	Amount carried forward†
				Rate per cent. per annum.	Amount.		
	£	£	£		£	£	£
Bank of New South Wales	62,658	275,747	314,405	10	175,000	100,000	69,405
Commercial Banking Company of Sydney (Limited)	57,730	149,383	207,113	10	99,258	50,000	57,855
Australian Bank of Commerce (Limited)	4,874	26,146	31,020	3	17,934	10,000	3,086
City Bank of Sydney	2,650	14,798	17,448	6	12,900	3,600	2,448
Colonial Bank of Australasia (Limited)	6,680	29,230	35,860	7	15,376	16,000	4,485
Commercial Bank of Australia (Limited)	7,690	64,533	72,223	Pref., 4	42,347	*20,000	9,876
National Bank of Australasia (Limited)	16,054	94,856	110,910	7	52,438	42,000	16,472
Royal Bank of Australia (Limited)	6,096	23,089	29,165	8	12,000	10,000	7,165
Queensland National Bank (Ltd.)	Nil.	50,090	50,090	..	†38,090	12,000	..
Bank of North Queensland (Ltd.)	2,763	8,479	11,242	7	5,637	5,000	555
Bank of New Zealand	43,118	248,490	†291,608	Pref., 4 Ord., 6 Bonus, 3	65,060	175,000	51,608
Bank of Australasia	29,192	220,977	250,169	Div'nd. 14 Bonus, 3	170,000	50,000	30,169
Union Bank of Australia (Limited)	44,427	171,033	215,510	Div'nd. 10 Bonus, 2	140,000	30,000	45,510
London Bank of Australia (Ltd.)	25,093	111,437	136,530	7	34,131	†77,327	25,072
English, Scottish, and Australian Bank (Limited)	32,434	118,694	151,128	8	43,155	†75,385	32,588
Comptoir National d'Escompte de Paris	104,246	722,592	826,838	8	640,000	**66,781	120,057

* Includes £15,000 for reinstatement of capital, and £5,000 in reduction of premises, not in balance-sheet.
 † To Private Deposits Repayment Fund. ‡ Exclusive of interest on guaranteed stock, £40,000, interim dividend, £60,000, and £40,000 for reduction of premises, &c., not in balance-sheet. § Reserve Fund, £50,000; purchase and cancellation of Deferred Inscribed Deposit Stock, £14,335; Officers' Guarantee and Provident Fund, £2,500; and Bonus to Staff, £3,500.

¶ Including interest on Transferable Deposits, £25,327; Reserve Fund, £50,000; grant to Officers' Provident Fund, £2,000.

** Including £30,651 bonus to founders and directors.

BANKS' EXCHANGE SETTLEMENT.

The Banks' Exchange Settlement Office, which was established in Sydney on 18th January, 1894, is not a clearing-house in the accepted meaning of the term, since the exchanges are effected daily at the banks by clerks of each institution. The results of the daily operations are notified to the secretary of the Banks' Exchange Settlement, who establishes the daily credit of each bank with the "pool," which is under the control of three trustees, and consists of £700,000 in gold; this money is deposited in the vaults of three of the banks, and may not be circulated or distributed. The contributions to the "pool" are according to the volume of the operations of each bank. The secretary notifies each bank daily of the amount of its credit with the "pool," and it is not permissible for any balance to remain below 25 per cent. of the fixed contribution. In the event of its credit reaching this margin, the bank is required to make up its deficiency with gold; this payment, however, is not made to the "pool," but to such other banks as may happen to have at their credit with the "pool" a larger sum than is required by the agreement. This arrangement retains intact the £700,000 comprising the "pool."

The growth in the volume of exchanges is shown in the following table:—

Year.	Amount of Exchanges.	Year.	Amount of Exchanges.
	£		£
1895	108,509,860	1911	304,488,455
1900	144,080,314	1912	330,621,122
1905	189,826,381	1913	348,741,175
1910	274,343,666		

The transactions of this office have grown steadily since its establishment; the large annual increases during the last five years indicate a remarkable activity in trade, and evidence the general prosperity throughout the State.

REGISTRATION OF FIRMS.

The Registration of Firms Act, which came into force 1st January, 1903, required that within six months of that date every firm carrying on business or having any place of business in New South Wales under a firm-name which did not consist of the full or the usual names of all the partners without any addition, and every person carrying on business or having any place of business in New South Wales under any firm-name consisting of or containing any name or addition other than the full or the usual name of that person, should register with the Registrar-General the name under which their or his business was conducted. Other firms and persons required to be registered now register before they commence business.

The following return shows the transactions under the Act during the last five years:—

Transactions.	1909.	1910.	1911.	1912.	1913.
Statements, including original Registrations and subsequent changes ..	1,602	1,430	1,477	1,601	1,736
Declarations by Agents and Attorneys to accompany Statements... ..	21	15	15	12	19
Certified extracts from Register	30	21	34	19	25
Searches and Inspections	3,068	3,476	2,972	3,713	4,332
Inquiries by Letter	10	8	5	13	12
Total Fees	£ 565	489	529	593	660

INCORPORATED COMPANIES.

The legislation relating to incorporated companies in New South Wales is contained principally in the Companies Act, 1899, consolidating earlier statutes, the amending Acts of 1900, 1906, and 1907, and the Companies (Death Duties) Act, 1901. These enactments follow the general provisions of Imperial Acts relating to companies up to 1877, with deviations embodying the results of local experience. With the object of preparing the way for co-ordination of the laws which govern the formation, management, and winding-up of joint stock companies in different parts of the British Empire and so securing a practical basis for uniformity of mercantile law, in this respect the question of company law was made a subject for consideration at an Imperial Conference held in London in 1907, at which date the Statutes then operative numbered seventeen for the United Kingdom, seventy-five for Canada (embodying nine different systems of company law), forty-six for Australia (embodying six different systems), twenty-one for South Africa (embodying five systems), and two statutes each for India and New Zealand.

A later analysis of company law for the Imperial Conference of 1911 showed that as the result of fresh or of consolidating enactments the law affecting companies was contained in one enactment for the United Kingdom; in sixty-seven Acts and ordinances, comprising eleven different systems, for Canada; in forty-three statutes for Australia, comprising six different systems; in South Africa the number of statutes was reduced to sixteen; in India and New Zealand the position remained the same as in the earlier year. At the 1911 Conference a resolution was carried unanimously that it is in the best interests of the Empire that there should be more uniformity throughout the centres and dependencies in the law of copyrights, patents, trade-marks, and companies.

Under the Companies Act, 1899, of New South Wales, the liability of members of limited companies may be limited either by shares, or by guarantee; unlimited companies are those in which no limitation is placed on the liability of members. A special feature of the Act is the embodiment of provisions for the formation and registration of companies in connection with the mining industry under the "No-Liability System," as previously defined in the No-Liability Mining Companies Act, 1896. Societies worked only for the mutual benefit and advantage of the subscribing members are registered under the Building and Co-operative Societies Act, 1901. From the date of passing of the Companies Act, 1899, the formation of a company, association, or partnership of more than ten persons in a banking business, or of twenty in other businesses trading for profit is prohibited, except such company, association, or partnership be registered under the Act, or formed or incorporated in pursuance of some other enactment, or of a royal charter or letters patent. Special provision is made for associations formed for the purpose of promoting commerce, art, science, religion, charity, or other useful object, rather than of making profit for the members. Companies existing at the passing of the Act, and having a minimum of seven members, may register under the Act, particular provision existing to enable joint stock companies, having a permanent paid-up or nominal capital of fixed amount divided into shares of fixed amount, or held and transferable as stock, and having for members only holders of such shares or stock, to register as companies with liability limited by shares.

The trend of recent legislation in England has been to render available information concerning joint stock companies, on the ground that publicity is the best safeguard for the protection of creditors and of investors, and that, moreover, the privilege of limited liability confers a right to demand publicity and disclosure of material facts, which can make it possible for

creditors or investors to form a sound opinion. In New South Wales the particulars required to be filed in regard to companies registered include the following:—Address of the registered office; memorandum and articles of association; and in the case of companies not having a capital divided into shares, a list of directors; particulars are required also as to contracts, capital, nominal, subscribed, and paid-up, with a list of shareholders; copies of special or extraordinary resolutions, and of winding-up orders have to be filed. In the United Kingdom, India, British Columbia, the Transvaal, and in Victoria, an annual balance-sheet is filed; and in the United Kingdom and in New Zealand, details are required regarding the prospectus, or the statement in lieu of the prospectus, and allotments, mortgages, charges, or debentures.

In regard to limited companies and no-liability mining companies in New South Wales, the following particulars are recorded for the past ten years:—

Year.	Limited Companies.			No-Liability Mining Companies.		
	New Companies.	Nominal Capital.	Total Fees received.	New Companies.	Nominal Capital.	Total Fees received.
		£	£		£	£
1904	127	2,755,777	1,567	14	160,765	59
1905	170	3,185,390	1,901	23	225,725	84
1906	189	4,528,900	2,239	51	571,629	135
1907	180	3,777,307	2,302	65	493,510	179
1908	196	3,850,175	2,487	30	238,195	106
1909	251	6,791,157	3,064	49	573,705	132
1910	329	6,975,691	4,107	30	273,520	95
1911	400	10,627,217	5,427	24	359,500	80
1912	432	13,896,231	5,898	21	250,575	68
1913	444	12,356,737	5,790	26	568,910	84

Certain of these companies carry on bank deposit business in addition to their ordinary business; but the number of such companies and the extent of their deposit business is steadily declining. The number of such deposit companies is eleven, and their liabilities, assets, and paid-up capital for the quarter ended June, 1914, were as follows:—

Companies.	Number.	Liabilities (excluding Shareholders).			Assets.			Paid-up Capital.
		Deposits.	Other Liabilities.	Total.	Landed Property.	Other Assets.	Total.	
		£	£	£	£	£	£	£
Investment	8	138,183	132,438	270,621	311,612	609,980	921,592	619,477
Trading	3	205,200	2,146,327	2,351,527	667,064	5,508,392	6,175,456	3,850,000
Total	11	343,383	2,278,765	2,622,148	978,676	6,118,372	7,097,048	4,469,477

Under the Companies (Death Duties) Act, 1901, every company incorporated outside New South Wales for the purpose of mining, or of carrying on an agricultural industry in New South Wales, is obliged to have a registered office in the State, and is liable to the Government of the State for the payment of death duties on the decease of a member of the company, wherever such member may have been domiciled. This latter obligation, however, operates only where the value of shares held by the member at time of his death exceeds £1,000.

CO-OPERATIVE TRADING SOCIETIES.

Registrations under that section of the Building and Co-operative Societies Act, 1901, which relates to co-operative societies, number 136, of which only forty were still on the register at the end of 1913.

The working of the co-operative societies during the last five years will be seen below:—

	1909.	1910.	1911.	1912.	1913.
Number of Societies	40	44	42	42	40
Number of Members	*	*	23,083	26,767	30,586
	£	£	£	£	£
Liabilities—					
Share capital	97,891	121,241	138,201	156,534	199,174
Reserves and Net Profits... ..	81,356	96,963	101,977	103,891	140,653
Other liabilities	73,140	66,580	86,672	130,729	104,797
Total Liabilities	£ 252,387	284,784	326,850	391,154	444,624
Assets—					
Land, Building, Plant, &c.	71,254	80,430	101,290	133,387	142,108
Stock	117,865	132,609	144,972	172,282	188,757
Other Assets	63,268	71,745	80,588	85,485	113,759
Total Assets	£ 252,387	284,784	326,850	391,154	444,624

*Not available.

In the period from 1909 to 1913 the share capital of the societies has increased by 102 per cent. The predominant rate of interest allowed to shareholders on the subscribed capital is 5 per cent., and the dividend on purchases amounted in 1913 to an average of 1s. 7d. in the £. This dividend includes dividends on non-shareholders' accounts at a rate somewhat less than half that allowed to shareholders.

Considering the small amount of capital invested, the results obtained were very satisfactory, and afford liberal inducements for the further development of these institutions. The majority of existing societies are engaged in retailing groceries, provisions, boots, and clothing, or in the manufacture and supply of general commodities. Societies established outside the metropolitan and suburban districts are, almost without exception, in the mining districts.

During the year 1913 the sales amounted to £1,458,252, and the expenses, including interest and depreciation, to £230,327, equal to 15·8 per cent. on the amount of sales. The balances of profit amounted to £146,938, but in five cases there were losses amounting to £755. The profit on sales was at the rate of 10 per cent.

BENEFIT BUILDING AND INVESTMENT SOCIETIES.

The provisions of the Building and Co-operative Societies Act, 1901, enable any number of persons to form themselves into a benefit building and investment society for the purpose of subscribing money to enable members to erect or purchase dwellings, &c., by loans secured to the society by mortgage until the amount of the shares has been fully paid. These institutions are established solely for the benefit and advantage of the subscribing members, and their receipts are confined, as a rule, to the subscriptions. At the close of 1913 the building societies which had been registered under the

Act numbered 241, of which only 109 remained in existence at that date, 100 being Starr-Bowkett, and 9 Permanent Building Societies. Of the remainder, some, being terminating societies, had ceased to exist; others had become Limited Companies under the Companies Act, and consequently ceased to operate under the Building Societies Act; and a large proportion had become defunct.

Returns from the existing institutions show the aggregate liabilities and assets, &c., of these societies at the date of their latest balance-sheets as follows:—

Societies.	Number.	Liabilities.				Assets.			Profit and Loss Credit.
		Deposits.	Subscriptions and Shares.	Other Liabilities.	Total.	Advances.	Other Assets.	Total.	
		£	£	£	£	£	£	£	£
Starr-Bowkett ..	100	....	744,256	15,529	759,785	735,018	88,262	823,280	63,495
Permanent Building	9	462,294	258,501	128,307	849,102	694,429	216,249	910,678	61,576
Total ..	109	462,294	1,002,757	143,836	1,608,887	1,429,447	304,511	1,733,958	125,071

Since 1909 the number of Starr-Bowkett societies has increased from 61 to 100, while the assets have increased from £369,952 to £823,280; advances to members have increased in the same period from £326,644 to £735,018.

During 1913 eight new societies were registered and two were closed; of the societies in operation at the end of the year 57 had their offices in Sydney and suburbs and 43 in country towns.

Particulars relating to Starr-Bowkett Societies for the years 1909 to 1913 are shown below:—

	1909.	1910.	1911.	1912.	1913.
Number of Societies ...	61	71	87	94	100
Liabilities—	£	£	£	£	£
Members Subscriptions ...	302,662	385,444	493,666	590,975	744,256
Other Liabilities ...	41,516	49,227	41,862	35,971	15,529
Balance of Profit ...	25,774	29,562	38,715	41,451	63,495
Total ...	£ 369,952	464,233	574,243	668,397	823,280
Assets—					
Advances ...	326,644	406,451	503,287	608,414	735,018
Other Assets ...	43,308	57,782	70,956	59,983	88,262
Total ...	369,952	464,233	574,243	668,397	823,280

The following statement shows particulars relating to the liabilities and assets of the Permanent Building Societies at the close of each year from 1909 to 1913; although there has been a decrease in the number of societies

the volume of business transacted has increased considerably during the period. One of the societies failed to furnish a satisfactory return during 1913 and particulars of its operations have been excluded from the table:—

	1909.	1910.	1911.	1912.	1913.
Number of Societies	14	14	13	10	9
Liabilities—	£	£	£	£	£
Deposits	431,470	448,375	472,410	504,650	462,294
Share Capital	244,066	249,101	246,047	261,544	258,501
Reserves	78,709	81,326	87,258	93,714	91,918
Other Liabilities	13,360	9,216	26,800	18,775	36,389
Balance of Profit	30,204	34,324	38,905	36,111	61,576
Total	797,809	822,342	871,420	914,794	910,678
Assets—					
Advances	675,340	700,260	760,622	690,732	694,429
Other Assets	122,469	122,082	110,798	224,062	216,249
Total	797,809	822,342	871,420	914,794	910,678

LIFE AND ENDOWMENT ASSURANCE.

The statutes relating to insurance in New South Wales include the State enactment, Life, Fire, and Marine Insurance Act of 1902, which consolidated previous Acts relating to insurance; the section relating to marine insurance was superseded by the Commonwealth Marine Insurance Act of 1909. The amount of assurance payable on the death of children is limited by a Commonwealth Act passed in 1905.

Particulars relating to life assurance institutions are obtained from the reports published and circulated by the companies, not from official returns, and unfortunately their statements do not sufficiently separate local from foreign business. During 1912 there were eighteen institutions operating in the State. Of these, nine were local, four had their head offices in Victoria, one in New Zealand, one in the United Kingdom, and three in the United States of America. The volume of the local business of the English and American societies, proportionately to the total, is, however, small, and the business outside Australasia has been omitted from the summary tables relating to such offices. Several companies, uniting life with other classes of insurance, have local branches or agencies, but their transactions in life-risks in this State are unimportant.

Of local institutions, the Australian Mutual Provident Society is incorporated under a special Act; and the following were registered under the Companies Act:—The City Mutual Life Assurance Society (Limited), in 1879; the People's Prudential Assurance Company (Limited), in 1896; the Standard Life Association (Limited), registered in 1899, and amalgamated in 1911 with the Colonial Mutual Life Assurance Society (Limited); the Phoenix Mutual Provident Society (Limited), registered in 1902; and the Mutual Life and Citizens' Assurance Company (Limited), formed by amalgamation of two local companies in January, 1908, and further fortified by the amalgamation with it, in 1910, of the Australian Widows' Fund Life Assurance Society (Limited); the Assurance and Thrift Association (Limited), registered in 1910; and the Co-operative Assurance Company (Limited) and the Australian Provincial Assurance Association (Limited), in 1911.

The Phoenix Mutual Provident Society (Limited), a local institution, transacts only industrial business.

The results of the latest actuarial investigation of each society are given in detail in Part "Private Finance" of the New South Wales Statistical Register.

Nine of the companies are mutual, and the remainder are "mixed"—that is, proprietary companies, dividing profits with the policy-holders. In addition to life assurance, nine of the institutions transact industrial business; two, accident and invalidity insurance; the Australian Alliance Assurance Company, fire, marine, and guarantee insurance; the Liverpool, London, and Globe, fire and accident insurance; the Assurance and Thrift Association, house purchase, thrift, and general insurance; and the Australian Provincial Assurance Association, house purchase, fire, and accident insurance. Most of the offices have representatives in all the Commonwealth States and New Zealand; four of the Australasian institutions have extended their operations to the United Kingdom, and two also to South Africa.

Ordinary Branch.

The following table gives the total business in force in the ordinary branch in detail, for each society at the close of 1913. The item "Sums assured" means the sums payable, exclusive of bonuses and assurances, at death, or on attaining a certain age, or at death before that age:—

Institution.	Policies in Force.	Sums Assured.	Bonus Additions.	Total, excluding Annuities.	Annual Premium Income.
<i>Head Office in New South Wales.</i>					
	No.	£	£	£	£
Australian Mutual Provident Society	286,975	80,660,970	16,104,711	96,765,681	2,568,485
Mutual Life and Citizens' Assurance Company (Ltd.)	121,580	22,926,598	1,993,179	24,919,777	781,536
City Mutual Life Assurance Society (Ltd.) .. .	21,924	3,170,852	165,048	3,235,900	132,645
Australian Metropolitan Life Assurance Company (Ltd.) .. .	3,291	346,548	9,772	356,320	15,275
People's Prudential Assurance Company (Ltd.) ..	3,205	202,781	5,433	208,214	10,285
Australian Provincial Assurance Association (Ltd.)	1,016	250,200	¶	250,200	11,440
Assurance and Thrift Association (Ltd.) .. .	998	186,102	178	186,280	10,144
Co-operative Assurance Company (Ltd.) .. .	473	107,095	¶	107,095	4,947
<i>Head Office in Victoria.</i>					
Australian Alliance Assurance Company	390	134,955	13,273	148,228	3,092
National Mutual Life Association of Australasia (Ltd.) .. .	111,539	27,982,917	2,820,639	30,753,556	980,765
Colonial Mutual Life Assurance Society (Ltd.) ..	61,785	14,784,101	525,943	15,310,044	527,399
*Australasian Temperance and General Mutual Life Assurance Society (Ltd.)	44,533	4,679,366	162,816	4,842,182	179,742
<i>Head Office in New Zealand.</i>					
Provident Life Assurance Company	1,944	271,934	4,255	276,189	††8,900
<i>Head Office in United Kingdom.</i>					
†Liverpool, London, and Globe Insurance Company	347	148,891	‡	148,891	4,287
<i>Head Office in United States.</i>					
† Equitable Life Assurance Society of the United States	5,522	1,863,449	18,766	1,882,215	59,075
† Mutual Life Insurance Company of New York ..	3,843	1,492,161	‡	1,492,161	45,382
† New York Life Insurance Company	6,056	2,387,114	§	2,387,114	87,513
Total	675,456	161,546,034	21,824,013	183,370,047	5,430,812

* 30th September, 1913.

† Australasian business only.

‡ Information not available.

§ Included in previous column.

¶ No valuation yet made.

†† Estimated.

The business in force at the end of 1913 in New South Wales only, under headings similar to those of the preceding table, is given below:—

Institution.	Policies in Force, exclusive of Annuities.	Amount Assured, exclusive of Bonuses.	Bonus Additions.	Total.	Annual Premium Income.
	No.	£	£	£	£
Australian Mutual Provident Society	80,296	23,275,849	4,685,316	27,961,165	738,487
Mutual Life and Citizens' Assurance Company (Ltd.)	33,946	6,639,888	581,413	7,221,301	221,482
City Mutual Life Assurance Society (Ltd.)	8,778	1,260,003	.....	1,260,003	¶53,000
Australian Alliance Assurance Company	Nil.	Nil.	Nil.	Nil.	Nil.
National Mutual Life Association of Australasia (Ltd.)	17,736	4,082,839	.....	4,082,839	144,122
Colonial Mutual Life Assurance Society (Ltd.)	10,509	1,836,830	51,966	1,888,796	66,724
*Australasian Temperance and General Mutual Life Assurance Society (Ltd.)	9,614	977,167	30,552	1,007,719	37,520
Australian Metropolitan Life Assurance Company (Ltd.)	1,576	169,733	4,813	174,546	7,325
Equitable Life Assurance Society of the United States	1,529	571,822	7,333	579,155	16,142
Mutual Life Insurance Company of New York	2,180	974,180	†	974,180	29,270
New York Life Insurance Company...	2,227	924,728	‡	924,728	34,907
Liverpool and London and Globe Insurance Company	151	54,661	.....	54,661	1,810
People's Prudential Assurance Co. (Ltd.)	3,205	202,781	5,433	208,214	10,285
Provident Life Assurance Company ...	94	10,250	.....	10,250	¶324
Australian Provincial Assurance Association (Ltd.)... ..	1,016	250,200	§	250,200	11,440
Assurance and Thrift Association (Ltd.)	560	117,865	179	118,044	5,550
Co-operative Assurance Company (Ltd.)	417	83,795	§	83,795	3,774
Total	173,834	41,432,591	5,367,005	46,799,596	1,382,162

* 30th September, 1913. † Information not available. ‡ Included in previous column.
§ No valuation yet made. ¶ Estimated.

Industrial Branch.

In addition to the ordinary life transactions, a large industrial business has grown up during recent years. The policies in this class are usually for small amounts, and the premiums, in most cases, are payable weekly or monthly. The assurances may be effected on the lives of infants and adults, and the introduction of this class of business has proved of great benefit to the industrial population.

Eight of the Australasian companies combine industrial with ordinary business, while one limits its operations to industrial and medical benefit transactions. The balance-sheets of the companies, however, do not admit

of a satisfactory comparison of the business transacted, as the two branches are not always treated separately. For the year 1913 the total business of the nine companies showing transactions in the industrial branch is shown in the following table:—

Institution.	Policies in Force.	Amount Assured.	Bonus Additions	Total.	Annual Premium Income.
	No.	£	£	£	£
Australian Mutual Provident Society	108,545	3,745,531	4,516	3,750,047	235,717
Mutual Life and Citizens' Assurance Company (Ltd.)	257,174	4,760,306	Nil	4,760,306	263,222
*Australasian Temperance and General Mutual Life Assurance Society (Ltd.)	162,586	3,331,388	20,932	3,352,320	232,408
Colonial Mutual Life Assurance Society (Ltd.)	63,076	1,655,979	Nil	1,655,979	94,856
Provident Life Assurance Company	28,965	781,532	Nil	781,532	43,350
Australian Metropolitan Life Assurance Company (Ltd.)	24,595	579,626	548	580,174	34,555
†People's Prudential Assurance Company (Ltd.)	4,933	105,328	Nil	105,328	7,606
‡Phoenix Mutual Provident Society (Ltd.)	130	2,454	Nil	2,454	199
Co-operative Assurance Company (Ltd.)	2,984	100,550	Nil	100,550	6,260
Total	653,038	15,062,604	25,996	15,088,690	918,173

* 30th Sept., 1913. † Sick Benefit Business is excluded. ‡ 31st Dec., 1911.

The following statement shows the New South Wales business in force in the industrial branch in 1913:—

Institution.	Policies in Force.	Amount Assured.	Bonus Additions.	Total.	Annual Premium Income.
	No.	£	£	£	£
Australian Mutual Provident Society	34,910	1,155,614	†....	1,155,614	75,374
Mutual Life and Citizens' Assurance Company (Ltd.)	80,102	1,494,620	Nil	1,494,620	85,171
*Australasian Temperance and General Mutual Life Assurance Society (Ltd.)	31,648	662,013	4,234	666,297	47,634
Colonial Mutual Life Assurance Society (Ltd.)	19,714	473,901	Nil	473,901	27,721
Provident Life Assurance Company	3,011	82,518	Nil	82,518	4,009
Australian Metropolitan Life Assurance Company (Ltd.)	13,851	336,291	324	336,615	19,523
†People's Prudential Assurance Company (Ltd.)	4,933	105,328	Nil	105,328	7,606
‡§ Phoenix Mutual Provident Society (Ltd.)	130	2,454	....	2,454	199
Co-operative Assurance Company (Ltd.)	2,984	100,550	Nil	100,550	6,260
Total	191,323	4,413,289	¶ 4,608	4,417,897	273,997

* 30th Sept., 1913. † Not separately recorded. ‡ Sick Benefit Business is excluded. § 31st Dec., 1911. ¶ Approximate.

Summary—Ordinary and Industrial.

A summary of the local business, ordinary and industrial, of the institutions operating in the State, in comparison with their total business, is shown below. In regard to the English and American offices, the business outside Australasia has not been included:—

Branch.	Total Business.			Local Business.		
	Policies.	Amount Assured.	Annual Premium Income.	Policies.	Amount Assured.	Annual Premium Income.
Ordinary	No. 675,456	£ 161,546,034	£ 5,430,812	No. 173,834	£ 41,432,591	£ 1,382,162
Industrial	653,038	15,062,604	918,173	191,323	4,413,289	273,997
Total	1,328,494	176,608,728	6,348,985	365,167	45,845,880	1,656,159

In the ordinary branch the policies in force in New South Wales represent 25·7 per cent., and the amount assured 25·6 per cent. of the total ordinary business. In the industrial branch the proportions in New South Wales are—policies, 29·3 per cent.; amount assured, 29·3 per cent.

Local Business.

The next statement shows the ordinary and industrial business in force in New South Wales in each of the last eight years:—

Year	Ordinary Branch.			Industrial Branch.		
	Policies.	Amount Assured.	Annual Premium Income.	Policies	Amount Assured.	Annual Premium Income.
	No.	£	£	No.	£	£
1906	123,072	30,352,302	1,000,260	104,236	2,338,987	129,662
1907	130,296	31,592,379	1,038,828	116,795	2,631,476	146,356
1908	137,852	32,993,481	1,080,236	125,476	2,881,417	155,260
1909	147,632	34,446,756	1,166,697	129,180	2,782,868	160,348
1910	155,531	35,972,590	1,164,948	143,209	3,123,666	184,607
1911	159,928	37,591,311	1,212,409	156,194	3,411,133	205,886
1912	167,399	39,652,665	1,274,797	173,941	3,918,030	238,800
1913	173,834	41,432,591	1,382,162	191,333	4,413,289	273,997

A feature of this table is the steady increase in industrial insurance; since 1906 the increase in the number of these policies amounted to 84 per cent., and in the amount assured 89 per cent.

The number of ordinary and industrial policies per 1,000 of population at 31st December, 1913, was 199, as compared with 152 in 1906, and the total sum assured advanced from £21 16s. 3d. to £25 0s. 5d. per head of population:—

Year.	Policies per 1,000 of population.	Amount Assured per head of population.
	No.	£ s. d.
1906	152	21 16 3
1907	161	22 6 8
1908	169	22 19 11
1909	173	23 6 4
1910	182	23 17 4
1911	186	24 2 9
1912	192	24 9 10
1913	199	25 0 5

New Assurances.

The new business, ordinary and industrial, effected in New South Wales during the last two years is compared in the following table:—

Ordinary Branch.

Institution.	1912.			1913.		
	Polices.	Amount Assured.	Annual Premiums.	Polices.	Amount Assured.	Annual Premiums.
	No.	£	£	No.	£	£
Australian Mutual Provident Society	6,128	1,821,854	58,196	6,616	1,843,032	58,938
Mutual Life and Citizens' Assurance Company (Ltd.)	3,346	789,356	24,444	3,335	700,794	22,451
City Mutual Life Assurance Society (Ltd.) .. .	1,245	202,493	9,344	1,068	196,200	8,800
Assurance and Thrift Association (Ltd.) .. .	167	39,369	1,638	350	65,708	2,876
Co-operative Assurance Company (Ltd.) ...	311	55,805	2,528	373	74,256	3,239
Australian Alliance Assurance Company .. .	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.
National Mutual Life Assn. of Australasia (Ltd.)	2,089	521,928	19,534	2,084	546,906	18,500
Colonial Mutual Life Assurance Society (Ltd.) ..	2,219	443,865	15,219	1,300	228,932	8,633
Australasian Temperance and General Mutual Life Assurance Society (Ltd.) .. .	2,295	214,104	8,430	2,162	226,608	8,638
Australian Metropolitan Life Assurance Company (Ltd.) .. .	386	41,409	1,776	386	43,600	1,790
Equitable Life Assurance Soc. of the United States	3	2,200	222	6	2,500	235
Mutual Life Insurance Company of New York ..	41	24,033	982	66	53,030	2,432
New York Life Insurance Company .. .	89	57,185	2,615	94	66,048	2,450
Liverpool and London and Globe Insurance Co...	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.
People's Prudential Assurance Company (Ltd.) ..	1,045	67,725	3,095	762	73,300	3,735
Provident Life Assurance Company .. .	13	1,250	45	52	4,500	194
Australian Provincial Assurance Association (Ltd.)	123	21,000	840	1,193	288,600	13,149
Total	19,500	4,300,576	148,908	19,847	4,414,684	156,078

Industrial Branch.

Institution.	1912.			1913.		
	Polices.	Amount Assured.	Annual Premiums.	Polices.	Amount Assured.	Annual Premiums.
	No.	£	£	No.	£	£
Australian Mutual Provident Society	9,167	319,188	21,845	9,640	333,616	22,793
Mutual Life and Citizens' Assurance Company (Ltd.) .. .	10,181	226,204	14,741	11,022	234,623	15,905
Co-operative Assurance Company (Ltd.) .. .	4,935	162,868	11,832	5,075	162,422	11,215
Australasian Temperance and General Mutual Life Assurance Society (Ltd.) .. .	11,545	277,819	17,993	12,278	275,951	23,416
Colonial Mutual Life Assurance Society (Ltd.) ..	8,091	230,329	14,059	5,332	165,704	9,677
Provident Life Assurance Company .. .	861	23,202	1,192	1,956	52,398	2,746
Australian Metropolitan Life Assurance Company (Ltd.) .. .	4,778	132,689	7,280	6,489	189,114	9,939
*People's Prudential Assurance Company (Ltd.)..	4,243	104,318	7,713	3,573	87,264	6,296
*†Phoenix Mutual Provident Society (Ltd.) ..	19	348	29	19	348	29
Total	53,820	1,476,965	96,693	55,384	1,506,470	102,016

* Exclusive of medical business.

† Figures for 1911.

The returns of the total new business of the institutions show a decrease of 5 per cent. in the amount of new assurances in the ordinary branch, while in the industrial branch there was a slight increase.

There was an increase of nearly 3 per cent. in the amount of new assurances effected in New South Wales in the ordinary branch and of 2 per cent. in the industrial branch.

The following is a comparison of the total and local new business during the last two years:—

	Total New Business.		New Business in New South Wales.	
	1912.	1913.	1912.	1913.
Ordinary—				
Policies No.	81,296	76,900	19,500	19,847
Amount Assured ... £	18,531,371	17,606,592	4,300,576	4,414,664
Annual Premiums ... £	638,123	617,788	148,908	156,078
Industrial—				
Policies No.	187,554	188,589	53,820	55,384
Amount Assured ... £	5,203,194	5,212,012	1,476,965	1,506,470
Annual Premiums ... £	325,230	344,405	96,693	102,016

Receipts and Expenditure—Australasian Societies.

The receipts of the societies are represented chiefly by the collections from premiums on policies and by interest arising from investments of accumulated funds; the payments on account of policies matured and surrendered, cash bonuses, and expenses of management constitute the bulk of the disbursements.

The excess of receipts over expenditure represents the annual additions to the reserves. The general direction of business of the Australasian societies is shown in the following table:—

Year.	Societies.	Policies in Force.	Receipts.	Expenditure.	Excess.	Excess per Policy.
	No.	No.	£	£	£	£
1895	10	268,242	3,392,423	2,334,481	1,057,942	3·94
1900	11	331,868	4,093,376	2,648,303	1,445,073	4·35
1905	14	*756,585	5,437,589	3,834,272	1,603,317	2·12
1910	11	*1,056,173	7,131,250	4,619,440	2,511,810	2·38
1911	11	*1,138,955	7,650,230	4,875,974	2,774,256	2·44
1912	14	*1,228,104	8,152,393	5,214,022	2,938,371	2·39
1913	14	*1,312,696	8,572,977	5,358,192	3,214,785	2·45

* Includes Industrial business.

The aggregate receipts and disbursements for the Australasian institutions for 1913 were as follow, ordinary and industrial branches being included:—

Receipts		Expenditure.	
	£		£
Premiums—		Claims	3,079,130
New	609,698	Surrenders	648,149
Renewal*	5,409,458	Annuities	114,654
Consideration for Annuities	83,710	Cash Bonuses and Dividends	155,545
Interest	2,438,543	Expenses	1,259,057
Other Receipts (Rents, &c.)	31,568	Amount written off to Depreciation, Reserves, &c.	101,657
Total	£ 8,572,977	Total	£ 5,358,192

* Includes new Industrial premiums.

Accumulated Funds—Australasian Societies.

The additions to the funds from year to year have shown a considerable increase. The amount of funds and the interest received thereon were as follows:—

Year.	Accumulated Funds.		Interest.	
	Additions during year.	Total Amount.	Amount received.	Average Rate realised.
	£	£	£	per cent.
1890	1,404,215	14,580,210	827,909	5·97
1895	1,037,942	20,438,224	1,037,477	5·21
1900	1,445,073	26,491,025	1,161,696	4·51
1905	1,603,317	34,915,842	1,527,690	4·48
1910	2,511,810	45,668,204	1,963,425	4·42
1911	2,774,256	48,511,274	2,111,417	4·48
1912	2,938,371	51,497,036	2,261,970	4·52
1913	3,214,785	54,955,221	2,438,543	4·58

The decrease in earning power over the period reviewed is noticeable; but comparison with the bank rate of interest on fixed deposits, given on a previous page, shows that diminished rates are general, and that the fall in interest earned by the insurance companies is in a steady proportion to the general decline.

Expenses of Management—Australasian Societies.

The expenses of management for 1913 in the aggregate represent 14·69 per cent. of total receipts, or 20·46 per cent. of premium income. The ratio between management expenses and premium income must necessarily vary with the volume of new business transacted and the age of the society, quite apart from the intensity of competition for the new business. The following figures show the cost of management per policy and per cent. of premium income and gross income:—

Year.	Management Expenses.	Premium Income.	Gross Receipts.	Policies.	Management Expenses.		
					Per Policy.	Per cent. of—	
						Premium Income.	Gross Receipts.
	£	£	£	No.	£		
1895	438,524	2,380,167	3,392,423	268,242	1·635	18·42	12·93
1900	565,380	2,799,512	4,093,376	331,868	1·703	20·19	13·81
1905	*858,741	3,500,448	5,437,589	756,585	1·130	24·53	15·79
1910	*1,016,153	5,074,204	7,131,250	1,056,173	·962	20·03	14·25
1911	*1,137,165	5,417,202	7,650,230	1,138,955	·998	20·99	14·86
1912	*1,255,464	5,812,581	8,152,393	1,228,104	1·022	21·60	15·40
1913	*1,259,057	6,152,728	8,572,977	1,312,696	·959	20·46	14·69

* Includes Industrial business.

The expenses of the industrial branch are necessarily very high in proportion to the receipts on account of the house-to-house method of collection, which is considered an essential feature of the system.

The total receipts and disbursements relating to the industrial branch as derived from the latest balance-sheets in 1913 are given below. Particulars relating to the industrial branch of the People's Prudential Assurance Company (Limited) and the Co-operative Assurance Company (Limited) are incorporated with the ordinary business, and are not included in the following table:—

Institution.	Receipts.	Expenditure.		Excess (Additions to Funds).	Management Expenses per cent. of Gross Receipts.
		Management.	Total.		
Australian Mutual Provident Society	£ 230,388	£ 85,293	£ 95,605	£ 134,783	per cent. 37.02
Mutual Life and Citizens' Assurance Company (Ltd.)	298,526	107,542	215,754	82,772	36.02
Colonial Mutual Life Assurance Society (Ltd.)	86,155	47,249	81,065	5,090	54.84
Australasian Temperance and General Mutual Life Assurance Society (Ltd.)	234,465	84,420	188,665	45,800	36.00
Australian Metropolitan Life Assurance Company (Ltd.)	31,005	19,151	28,088	2,917	61.77
*Phoenix Mutual Provident Society (Ltd.)	2,806	1,067	2,545	261	38.03
Provident Life Assurance Company	49,158	25,116	36,256	12,902	51.09
Total	932,503	369,838	647,978	284,525	39.66

* Year ended December, 1911.

From information given above it is apparent that expenses of management represent 57.1 per cent. of the total expenditure, including claims, surrenders, and cash dividends, or 39.7 per cent. of receipts. On the average, an amount of 11s. 6d. per policy was spent during 1913 by the institutions shown above in collecting and handling the total premium income of £1 8s. 4d. per policy.

Assets and Liabilities—Australasian Societies.

The aggregate assets and liabilities are shown in the subjoined table:—

Year.	Societies.	Liabilities.			Assets.		
		Paid-up Capital and Accumulated Funds.	Other Liabilities.	Total.	Loans on Mortgages, Policies, &c.	Securities, Freehold Property, &c.	Total.
1395	No. 10	£ 21,497,059	£	£ 21,497,059	£ 15,600,229	£ 5,896,830	£ 21,497,059
1900	11	27,471,223	.....	27,471,223	19,013,579	8,457,644	27,471,223
1905	14	35,867,362	.....	35,867,362	22,072,061	13,795,301	35,867,362
1910	11	45,668,204	775,785	46,443,989	30,625,778	15,818,211	46,443,989
1911	11	48,511,274	762,155	49,273,429	33,115,573	16,157,856	49,273,429
1912	14	51,497,036	954,992	52,452,028	35,063,109	17,388,919	52,452,028
1913	14	54,955,221	821,591	55,776,812	37,305,102	18,471,710	55,776,812

Loans on mortgage and on the policies of the societies represent 67 per cent. of the total assets. In former years insurance companies sought only these forms of investment, but recently attention has been given to Government securities, loans to municipalities, and investments in shares, and considerable sums are deposited with banks, or in freehold and leasehold

property. Investments on personal security are unusual, advances being generally combined with life policies. In some of the States, companies are obliged by law to deposit certain sums with the Treasury as a guarantee of good faith, and the amount so lodged is included in their balance-sheets, under the head of Government securities or of deposits. The ratio of loans on mortgages, policies, &c., to total liabilities over the years quoted in the previous table is as follows:—

Year.	per cent.	Year.	per cent.
1895 ...	... 72.57	1910 ...	... 65.94
1900 ...	... 69.21	1911 ...	... 67.21
1905 ...	... 61.54	1912 ...	... 66.85
		1913 ...	... 66.88

ACCIDENT AND INVALIDITY INSURANCE.

Since the Workmen's Compensation Act, 1910, came into operation the majority of societies doing business in New South Wales have extended their operations to cover the liabilities of employers in the industries specified as insurable, but no records are yet available to show the extent of the business done under this head.

FIRE, MARINE, AND GENERAL INSURANCE.

The Fire Brigades Act, 1909, which commenced to operate on 1st January, 1910, embraces a wider area than the earlier Act, which was applied only to the metropolitan area of Sydney, though it was permissible to extend its provisions to any borough or municipal district of New South Wales. The Act of 1909 applies to the city of Sydney, 122 suburban and country municipalities, and 13 townships, grouped in Fire Districts numbering 73. By proclamation the provisions of the Act may be extended to other areas.

The Board of Fire Commissioners of New South Wales, consisting of four representatives, being one each elected by the city and suburban area, the country area, the volunteer brigades, and the insurance companies—with a President appointed by the Government—exercises full control in regard to fire prevention in declared districts, and has power to recover charges for attendance at fires outside such districts. On the passing of the Fire Brigades Act, 1909, all existing Fire Brigades' Boards were dissolved, and their property, real and personal, was vested automatically in the Board of Fire Commissioners, subject to any trusts and liabilities attaching to such property. The Board is charged with the establishment and maintenance of permanent fire brigades, and the authorisation and subsidising of volunteer brigades, for which purposes the funds of the Board are maintained by contributions of one-third each of estimated requirements for each district by insurance companies, municipalities, and the Government; and responsibility for a *pro rata* contribution is cast upon each owner of property assured in any company, as defined, which is not registered within the State. To ensure efficient operation of these provisions, returns are required periodically by the Board from municipalities, insurance companies, and property owners.

The estimates of necessary revenue adopted by the Board for 1913 amounted to £111,645, being £76,758 for Sydney Fire District, and £34,887 for the Country Fire Districts; and for 1914 the estimates were to £124,686—Sydney District, £87,600; and Country Districts, £37,086. The ratio of municipal contributions to the Assessed Annual Value in Sydney and suburbs was 6s. 10d. per £100 in 1913 and 7s. per £100 in 1914.

Under the Fire Brigades Act, 1909, the contributions payable by insurance companies are proportionate to the premiums received by or due to the companies during the year; for 1913 contributions amounting to £37,023 were received from 83 insurance companies, and in addition contributions

amounting to £192 were received from 73 individual firms who insured goods with companies not registered in New South Wales. The contributions in the Sydney Fire District represent nearly £6 8s. per £100 of premium.

Marine insurance in Australia is subject to the Commonwealth Marine Insurance Act of 1909.

There were 28 Australasian insurance companies transacting general insurance in New South Wales during 1913, but in two cases no information was available. Twelve have their head offices in New South Wales, 7 in Victoria, 1 in Western Australia, 2 in Tasmania, and 6 in New Zealand. The life assurance figures of those institutions which combine fire and life business have been excluded where possible from the following statement of receipts and disbursements:—

Receipts.		Disbursements.	
	£		£
Premiums (less reinsurances) ...	2,500,949	Claims paid and outstanding ...	1,277,407
Interest, rent, fees, &c. ...	205,694	Expenses of management, &c. ...	864,232
		Other	525,701
Total	2,706,643	Total	2,667,340

The losses represent 51·1 per cent., and the expenses of management 34·6 per cent. of the premium income.

The total liabilities and assets of the same companies were as follows:—

Liabilities.		Assets.	
	£		£
Paid-up Capital	2,099,876	Investments, including accrued interest	3,954,484
Reserve Funds, &c.	2,677,831	Real Estate	974,008
Other Liabilities	395,399	Other Assets	685,210
Balance of Profit and Loss Account	450,596		
Total	5,623,702	Total	5,623,702

BANKRUPTCY.

Transactions in insolvency were conducted by the Commissioner of Insolvent Estates till 1888, but under the Bankruptcy Act of 1887, and subsequent amending Acts, which were consolidated under the Act of 1898, the law is administered by a Supreme Court Judge in Bankruptcy. The following statement shows the number of bankruptcy petitions for each of the last eight years:—

Year.	Petitions in Bankruptcy.			Petitions withdrawn, refused, &c.	Sequestration Orders granted.
	Voluntary.	Compulsory.	Total.		
1906	337	91	428	22	406
1907	256	111	367	34	333
1908	272	84	356	24	332
1909	297	84	381	15	366
1910	255	97	352	27	325
1911	213	118	331	39	292
1912	283	112	395	36	359
1913	238	113	351	31	320

A fairly consistent decrease in the number of sequestrations has taken place since 1893, which, together with the increase of savings bank deposits and the position disclosed by the life assurance returns, offers substantial proof of the continued prosperity of the State.

The estates freed from sequestration during the currency of the Act number 2,970, including 78 for 1913, being 16 per cent. of the total sequestrations. Occasionally application made for a certificate is refused, and taking these into consideration, it would appear that out of 100 bankrupts, 84 are unable, or too indifferent, to take the necessary steps to free themselves from bankruptcy. The property of an uncertificated bankrupt, even if acquired subsequently to sequestration, is liable to seizure on behalf of unsatisfied creditors; and, as applications for certificates of discharge are apparently the exception rather than the rule, it would appear that the great majority of bankrupts do not attain a position in which they are likely to be disturbed by unsatisfied creditors. The number of sequestrations for the years the Act has been in force is 18,907, and of these 15,937 remain uncertificated.

During 1913, of a total of 320 sequestrations, the liabilities, according to bankrupts' schedules, were £208,755, and the assets amounted to £144,038. The qualification "according to bankrupts' schedules" is necessary, as the return of assets and liabilities established after investigation by the Court differ widely from those furnished by bankrupts:—

Period.	Sequestrations.	Nominal—		
		Liabilities.	Assets.	Ratio of Assets per £1 of Liability.
	No.	£	£	s. d.
1888-1892	5,730	5,682,689	2,644,382	9 4
1893-1897	6,235	5,760,282	3,406,148	11 10
1898-1902	2,864	2,159,659	994,903	9 3
1903-1907	2,084	1,359,121	781,108	11 6
1908	332	322,850	185,507	11 6
1909	366	168,169	82,563	9 10
1910	325	176,088	119,377	13 7
1911	292	109,359	49,390	9 0
1912	359	210,504	153,633	14 7
1913	320	208,755	144,038	13 10

The dividend rates paid on the amount of proved liabilities of estates which have been wound-up are not given, as it would involve an investigation of the transactions in each estate; and even this operation would not result in complete returns, as there are estates which remain unsettled during many years.

Official assignees assist the Court in winding-up the estates, each paying all money received by him to the Registrar in Bankruptcy, who places the amount to the credit of the Bankruptcy Estates Account, from which all charges, fees, and dividends are met. The official assignees are required to furnish quarterly statements of the transactions in each estate.

District Registrars in Bankruptcy have been appointed throughout the State, the positions being filled generally by Police Magistrates or other court officials. District Registrars have the same powers and jurisdiction

as the Registrar in respect to examinations of bankrupts and the technical business of the court. In this connection reference should be made to the chapter relating to the procedure of the Law Courts.

TRANSACTIONS IN REAL ESTATE.

The Real Property Act, commonly known as "Torrens Act," passed in 1862 to regulate the procedure in regard to land transfers, was modelled on the lines of legislation in South Australia, adopted at the instance of Sir R. R. Torrens. The main features of the Act which were embodied in the Real Property Act, 1900, consolidating the original Act and its amendments, were the transfer of real property by registration of title instead of deeds; the absolute indefeasibility of the title when registered; and the protection afforded to owners against possessory claims, as a title issued under the Act stands good notwithstanding any length of adverse possession. From the passing of "Torrens" Act all lands sold by the Crown have been conveyed to the purchasers under its provisions, the provisions of the old law being restricted to transactions in respect of grants issued prior to 1862, and governed by the Deeds Registration Act, 1843. The area for which such grants were issued was 7,478,794 acres; of these grants, 2,212,582 acres have since been brought under the provisions of "Torrens" Act, so that the area still held under the earlier Act is 5,266,212 acres.

Lands may be placed under the Real Property Act or "Torrens" Act only when the titles are unexceptional; and as thousands of acres are brought under the Act during the course of every year, it is merely a question of time when the whole of the lands of the State will be under a uniform system. The areas of Crown lands conveyed, and of private lands brought under the Real Property Act during the decade ended 1913, were as follows:—

Year.	Area.			Value.		
	Crown Lands.	Private Lands.	Total.	Crown Lands.	Private Lands.	Total.
	acres.	acres.	acres.	£	£	£
1904	1,557,667	38,890	1,596,557	1,109,688	907,371	2,017,059
1905	1,834,802	55,251	1,890,053	1,390,255	725,508	2,115,763
1906	1,743,210	98,722	1,841,932	1,486,489	968,449	2,454,938
1907	1,750,597	54,205	1,804,802	1,552,049	1,349,351	2,901,400
1908	1,604,062	85,917	1,689,979	1,502,640	1,173,042	2,675,682
1909	1,227,312	54,903	1,282,215	1,147,768	1,093,796	2,241,564
1910	864,857	74,986	939,843	775,211	1,300,661	2,075,872
1911	820,728	79,778	900,506	769,723	1,488,238	2,257,961
1912	749,076	60,541	809,617	725,011	1,771,354	2,496,365
1913	458,651	64,297	522,948	438,243	1,338,091	1,776,334

For the whole period during which the "Torrens" system has been in operation, 34,721,074 acres, valued at £34,530,332 have been conveyed under its provisions; and 2,212,582 acres, valued at £38,301,442, have been brought under it, the deeds under the old Act having been cancelled.

The transfers and conveyances of private lands which take place during ordinary years indicate in some measure the condition of business in real estate; the volume of these transactions, however, in some years cannot be relied upon as giving more than an indication of speculation or inflation. In the following table, which covers ten years, the money consideration paid on sales of private lands during each year is shown, excluding, of course, lands sold on long terms. During 1888 land to the value of £11,068,873 changed hands, but in 1905 the amount had fallen to £6,865,053; in 1912, the total for the year was £23,882,472, this being the maximum value transferred in any year. The records of recent years, as shown below, indicate that there is an upward tendency in transactions in real estate of a permanent character.

Year.	Conveyances or Transfers.		
	Under Deeds Registration Act.	Under Real Property (Torrens) Act.	Total.
	£	£	£
1904	2,524,799	4,138,994	6,663,793
1905	2,197,031	4,668,022	6,865,053
1906	2,820,456	7,346,558	10,167,014
1907	3,342,526	9,366,063	12,708,589
1908	2,879,955	9,880,177	12,760,132
1909	2,312,529	9,416,875	11,729,404
1910	4,057,760	11,958,783	16,016,543
1911	4,602,322	16,425,982	21,028,304
1912	5,502,502	18,379,970	23,882,472
1913	4,725,865	16,078,926	20,804,791

As already mentioned, the Real Property Act provides that on the issue of a certificate the title of the person named on the certificate is indefeasible. Provision is made, however, for error in transfer, by which persons might be deprived of their property; as, should the transfer be made to the wrong person, the holder of the certificate cannot be dispossessed of his property unless he has acted fraudulently. To enable the Government to compensate persons who, through error, may have been deprived of their properties, an assurance fund was created by means of a contribution of one half-penny in the pound on the declared capital value of property when first brought under the Act, and upon transmission of titles of estates of deceased proprietors. It is a sterling testimony of the value of the Act, and of the facility of its working, that payments from the assurance fund to 31st December, 1907, in respect of titles improperly granted, amounted to £16,326 only.

In 1907 the assurance fund, as a separate account, was closed, and the amount at credit, £255,059, was transferred to the Closer Settlement Account in accordance with the provisions of section 6 of the Public Works and Closer Settlement Funds Act, 1906. All assurance contributions under section 119 of the Real Property Act, 1900, and claims for compensation in pursuance of that Act, are now respectively paid to and discharged from the Closer Settlement Fund.

MORTGAGES.

All mortgages, except those regulated by the Bills of Sale Act of 1898 and the Merchant Shipping Act of 1894, are registered at the Registrar-General's office, and it is a fair assumption that the number recorded represents the bulk of the mortgages effected. Where more than one mortgage has been effected on the same property, the mortgages take priority according to the time of registration, not in accordance with the respective dates of the instruments. The amount of consideration for which a mortgage stands as security is not always stated in the deeds, the words "valuable consideration" or "cash credit" being inserted instead of a specific sum in many of the transactions of banks and other loan institutions, in cases where the advances made are liable to fluctuation; and as this frequently occurs when the property mortgaged is of great value, an exact statement of the total advances against mortgages cannot be given. Consequently the figures in the tables given below relate only to cases in which a specific amount is stated in the deeds, whether that amount be the sum actually advanced or not. The same remark applies also to discharges, the amount of which, as shown in the tables, is still further reduced by the exclusion of mortgages which have been satisfied by foreclosure or seizure, a record of which is not available. Many mortgages, therefore, appear in the official records as current, although the property which they represent has passed away from the mortgagor.

MORTGAGES OF REAL ESTATE.

Mortgages of land are registered either under the Deeds Registration Act or the Real Property Act, according to the Act under which the title of the property stood at the date of mortgage. The mortgages registered for each of the five years ended 1913 were:—

Year.	Mortgages.			Consideration.		
	Under Deeds Registration Act.	Under Real Property Act.	Total.	Under Deeds Registration Act.	Under Real Property Act.	Total.
	No.	No.	No.	£	£	£
1909	5,126	10,380	15,506	5,578,095	9,517,116	15,095,211
1910	5,084	11,329	16,413	6,629,211	10,436,733	17,065,944
1911	5,818	13,042	18,860	8,137,625	13,580,750	21,718,375
1912	6,846	15,766	22,612	9,537,888	16,424,624	25,962,512
1913	6,435	16,939	23,374	8,243,929	14,964,433	23,208,362

The consideration given generally represents the principal owing; in some cases, however, it stands for the limit within which clients of banks and of other loan institutions are entitled to draw, as many of these clients may be in sound positions financially, notwithstanding that their property is mortgaged and unreleased.

The amount of mortgages discharged has always been much less than the amount registered, since the discharges do not include foreclosures, which, if not formally registered as discharges, are nevertheless mortgages cancelled. The volume of the releases is also reduced by mortgages paid off in instalments, as the discharges may be given for the last sum paid, which might

happen to bear a very small proportion to the total sum borrowed; and further, the total of discharges is reduced owing to the practice, now largely followed, of allowing mortgages maturing on fixed dates to be extended for an indefinite period.

MORTGAGES ON LIVE STOCK, WOOL, AND CROPS.

Liens on wool, mortgages on live stock, and liens on growing crops are registered under special Acts, the first two under a temporary measure passed in 1847, which was continued from time to time and became permanent by a special enactment in 1860, and the liens on growing crops under the law of 1862, all which enactments are consolidated with Liens on Crops and Wool and Stock Mortgages Act, 1898. Mortgages on live stock are current till discharge, and liens on wool mature at the end of each season, terminating without formal discharge. The duration of liens on agricultural and horticultural produce may not exceed one year. Such advances do not usually reach large sums, either individually or in the total, as there is an element of uncertainty in the security offered. Mortgages are valid without delivery of the stock or crops to the mortgagees.

The figures relating to live stock throw considerable light on the condition of the pastoral industry of the country. They must, however, be taken with this qualification, that the amount stated represents in many cases merely nominal indebtedness, the advances being not necessarily made to persons financially embarrassed. In the table, amounts secured both by lien on the wool and by mortgage of the sheep, are included under both heads; the amount so secured in 1913 was £260,507, so that the net amount lent on lien was £541,044.

Classification.	1909.	1910.	1911.	1912.	1913.
Wool—					
Liens No.	1,778	1,600	1,423	1,416	1,387
Sheep „	4,197,519	3,625,589	3,010,173	2,856,961	2,850,894
Consideration ... £	947,858	657,215	658,517	575,413	801,554
Growing Crops—					
Liens No.	1,115	798	785	953	1,438
Consideration ... £	134,500	94,804	111,904	158,182	233,665
Live Stock—					
Mortgages No.	2,984	3,142	3,265	3,166	2,749
Sheep „	3,053,456	3,488,617	3,395,547	2,882,917	2,313,922
Cattle „	113,416	125,588	149,131	117,874	81,016
Horses „	16,057	19,894	24,222	24,382	19,282
Consideration* ... £	1,737,047	1,404,957	1,133,489	1,228,065	1,313,171

* Amount not supplied in all cases.

DISCHARGES OF MORTGAGES ON LIVE STOCK.

The number of discharges registered amounted to one-third of the number of mortgages of live stock registered during last year; the difference is partly due to the fact that in many cases one discharge covers several mortgages. The figures for the ten years ended 1913 were:—

Year.	Discharges.	Amount.	Year.	Discharges.	Amount.
	No.	£		No.	£
1904	410	402,398	1909	912	684,714
1905	509	644,569	1910	1,038	1,232,079
1906	768	1,184,201	1911	1,091	1,144,461
1907	914	1,236,705	1912	1,064	623,539
1908	873	838,609	1913	940	641,037

MORTGAGES ON SHIPS.

Mortgages of registered British vessels are arranged under the Imperial Merchant Shipping Act of 1894. The mortgages are divided into two classes, one in which the ship is the sole security, and the other in which the advances are made on the security of the "account current," which may consist of ships, wharfage appliances, land, and other properties. Registrations are effected at the two ports of registry, Sydney and Newcastle; and the returns are given in the subjoined statement:—

Year.	Mortgage on Ships only.				Mortgage on Account Current.			
	Sailing Vessels.		Steam and Motor Vessels.		Sailing Vessels.		Steam and Motor Vessels.	
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.
		£		£		£		£
1909	11	1,832	12	19,500	5	2,363	8	10,504
1910	...	.....	18	37,320	1	*	1	*
1911	1	245	15	21,350	1	1	18	6,213
1912	1	600	30	124,129	1	1	10 $\frac{3}{4}$	11
1913	4	1,600	15	14,934	2	501	5	148

* Information not available.

BILLS OF SALE.

All mortgages on personalty other than ships and shipping appliances, wool, live stock, and growing crops, are filed at the Supreme Court under the Bills of Sale Act, 1855, and its amendments, as consolidated by the Bills of Sale Act, 1898, which was also amended in 1903 to secure that a bill of sale shall be ineffective as to certain household furniture unless the consent of the wife or husband of the maker or giver of the bill is endorsed thereon. The Act provides that each document shall be filed within thirty days after it is made or given, otherwise the transaction is illegal; also, that

the registration shall be renewed every twelve months; and to prevent fraud and imposition the records are open to the inspection of the public. The total amount of advances made annually on the bills of sale is not readily available; but according to the number of bills filed, the sum must be considerable. No complete record is made of the bills terminated voluntarily or by seizure, the official records showing only those discharged in the ordinary way. Seizures of the security given, which generally consists of household furniture and stock-in-trade, are frequent, and it is to be regretted that no record of them is kept; but, as previously stated, the neglect in the registration of foreclosures is a weakness in the procedure under all Acts regulating mortgage transactions. The bills filed and the discharges registered for the five years ended 1913 are as follow:—

Year.	Registrations.		Renewals under Bills of Sale Act of 1898.
	Filed in Supreme Court.	Satisfied or orders for discharge made.	
1909	2,212	265	1,779
1910	2,335	282	1,713
1911	2,430	352	1,689
1912	2,861	370	1,748
1913	3,058	335	2,015

DISTRIBUTION OF PROPERTY.

In making estimates of the wealth of a country, the probate value of estates has frequently been taken as a basis of the calculations. This is unsatisfactory, as the probate returns give only the gross value of property left by deceased persons, irrespective of debts. The valuations of estates for stamp duty purposes, however, represent the net values, and have been used in the compilation of the following particulars regarding estates of deceased persons.

To assume that the average amount of property left by each adult who dies during a given period represents the average possessed by each living adult is open to two objections. First, the average age of adults who die is greater than of those still surviving; and, secondly, the wealth of an individual increases with years, and generally is greater at death than at any period during life.

A table is annexed showing the number of estates and amount on which stamp duty was paid during the years ended 30th June, 1913, to 1914:—

Year ended 30th June.	Estates.	Amount.	Year ended 30th June.	Estates.	Amount.
	No.	£		No.	£
1905	2,712	5,297,552	1910	3,187	10,417,169
1906	2,802	6,066,182	1911	3,303	7,827,275
1907	2,797	6,400,392	1912*	4,372	13,445,639
1908	3,172	6,655,673	1913*	4,749	8,509,070
1909	3,239	7,215,018	1914*	4,631	10,330,256

* Includes estates administered by the Curator of Intestate Estates, particulars of which are not available for previous years.

According to these figures, stamp duty was paid during the ten years ended 30th June, 1914, on 34,974 estates, valued at £82,273,226. This gives an average value per estate of £2,352.

In the next table, information, collected for the first time in 1911, is given concerning the property left during 1911 and 1912 by deceased persons classified according to age at death; figures for 1913 were not available at the time of going to press. From the table it is possible to obtain the average amount of property left by each person who died during the two years; and on the assumption that each person living possessed the same average amount of property as those dying at the same age, it would be possible to estimate the value of the private wealth of the people. It is felt, however, that such an estimate based on the results of two years would very probably be misleading, because the values of estates fluctuate from year to year, as will be seen from the preceding table, and it appears better to wait until the experience of four or five years is available. The table shows in various age-groups the number and value of estates of deceased persons of each sex in respect of which probate was granted during 1911 and 1912. The values given represent the net values of estates for stamp duty purposes:—

Age Group.	Males.				Females.			
	Estates.	Value of Estates.	Average Value—		Estates.	Value of Estates.	Average Value—	
			Of each Estate.	Of Estate per Death at each Age.			Of each Estate.	Of Estate per Death at each Age.
	No.	£	£	£	No.	£	£	£.
Under 15	13	3,939	303	1	9	4,390	488	1
15—20	40	9,196	230	18	8	1,840	230	4
21—29	300	69,021	230	60	68	14,044	207	13
30—39	476	276,219	580	195	194	120,298	620	102
40—49	803	952,644	1,186	500	239	184,657	773	160
50—59	1,046	1,716,494	1,641	678	380	266,021	700	197
60—69	1,199	2,967,985	2,475	1,073	499	586,972	1,176	337
70—79	1,316	3,899,046	2,963	1,188	550	770,674	1,401	375
80—89	511	4,271,132	8,358	2,940	253	1,335,443	5,278	1,265
90 and over	57	130,587	2,291	725	29	79,317	2,735	407
Not stated	224	708,291	3,162	.....	76	552,974	7,276	.....
Absentees	351	2,013,934	5,738	.....	122	451,014	3,697	.....
Total ...	6,336	17,018,488	2,686	711	2,427	4,367,644	1,800	262

The total number of deaths in 1911 and 1912 was 21,106 males and 14,959 females. It appears, therefore, that of the males who died in the State, 28 per cent. left property, and of the females 15 per cent. Taking only adults of the males who died, 40 per cent. left property, and of the females 23 per cent.

The above statement, on the whole, bears out the remark made previously that as the age increases, wealth increases; the average value of estates increased up to age 80, and then declined.

The average value of estates in relation to the total number of persons who died was £711 per male, and £262 per female. Taking only persons leaving property, the estates of males were valued on the average at £2,686, and of females at £1,800.

Comparing the statement with one prepared similarly in Victoria, it is found that among males up to age 70 the Victorian estates on the average were of higher value than in New South Wales. At ages 70 years and over, the New South Wales estates had the higher value; and also the general average was higher in New South Wales. Among females, at ages 30-49 and 60 and over, the New South Wales estates were higher than the Victorian; the general average also was much higher in New South Wales. The figures relating to the years 1911 and 1912 are stated below:—

Age Group.	New South Wales.				Victoria.			
	Males.		Females.		Males.		Females.	
	Total Number of Estates.	Average Value of Estates.	Total Number of Estates.	Average Value of Estates.	Total Number of Estates.	Average Value of Estates.	Total Number of Estates.	Average Value of Estates.
		£		£		£		£
Under 15	13	303	9	488	4	270	3	465
15—20	40	230	8	230	21	416	4	822
21—29	300	230	68	207	176	435	59	657
30—39	476	580	194	620	328	761	204	471
40—49	803	1,186	239	773	664	1,513	351	699
50—59	1,046	1,641	380	700	830	2,431	450	1,202
60—69	1,199	2,475	499	1,176	936	2,626	618	997
70—79	1,316	2,963	550	1,401	1,425	2,565	910	1,373
80—89	511	8,358	253	5,278	960	2,812	470	978
90 and over	57	2,291	29	2,735	82	2,100	58	2,714
Not stated	224	3,162	76	7,276	.....	.....	.....	.....
Absentees	351	5,738	122	3,697	440	2,258	206	1,250
Total ...	6,336	2,686	2,427	1,800	5,866	2,274	3,333	1,100

In Victoria and in South Australia, wealth is apparently more widely diffused than in New South Wales, as will be apparent from the following statement, the results in which are based on the experience of five years, 1909-13.

State.	Estates of Deceased Persons.		Average Deaths of Adults.	Adults at Census, 1911.	Estates per 1,000 Deaths of Adults.	Average Estate per Adult Dying.	Average Value per Estate.
	Mean Number.	Mean Value.					
		£			No.	£	£
New South Wales	3,567	10,093,857	12,027†	921,731	297	839	2,830
Victoria ...	4,087	7,856,370	11,194	752,486	365	702	1,922
Queensland ...	726	2,064,753	4,259	329,091	171	485	2,844
South Australia...	1,168	2,440,877*	3,022	232,625	387	808*	2,090*
Western Australia	524	858,030	1,873	166,813	280	458	1,637
Tasmania ...	410	765,767	1,308	100,895	313	585	1,868

* Gross value.

† Approximate.

Of the adults who died in New South Wales, rather less than one-third were possessed of property with regard to which it was necessary to obtain probate. In South Australia the proportion was nearly two-fifths, and in Victoria it was slightly lower. It was lowest in Queensland, where the proportion was less than one-fifth. It should be remembered, however, that the populations of Victoria and South Australia are older than in the other States, and that the proportions, at ages over 50, after which age, judging from New South Wales and Victoria, the values of estates increase quickly, are higher than in New South Wales, and much higher than in Queensland and Western Australia. For instance, in Victoria the proportion of the population aged 50 and over at the Census of 1911 was 15·0 per cent.; in South Australia 14·9 per cent.; in New South Wales and Tasmania 13·5 per cent.; in Queensland 12·7 per cent.; and in Western Australia 10·4 per cent.

As complete figures regarding estates administered by the Curator of Intestate Estates are not available, they have been excluded from this statement; but if such estates were taken into consideration the proportion of persons dying possessed of property would be higher than shown above, and as they are usually of small value, the average value would be much lower.

ESTATES OF DECEASED PERSONS.

In the following table a comparison is afforded for quinquennial periods since 1880 of the proportion of persons dying possessed of property per hundred of the total deaths in each quinquennium. The figures shown in this and the succeeding tables for the years prior to 1911 are exclusive of estates administered by the Curator of Intestate Estates. In 1911, such estates numbered 654; in 1912, 1,052; and in 1913, 803:—

Period.	Proportion of Estates per 100 deaths of total population.	Period.	Proportion of Estates per 100 deaths of total population.
	per cent.		per cent.
1880-84	11·0	1905-09	19·1
1885-89	11·6	1910	19·3
1890-94	13·2	1911	23·7
1895-99	14·9	1912	24·8
1900-04	17·0	1913	23·5

The above figures indicate a widely diffused basis of prosperity, which is being continually enlarged.

A still more convincing illustration of the wide distribution of property in New South Wales is afforded by the next table, which shows the proportion of estates per 100 deaths of adult males, as well as the proportion per 100 deaths of adult males and females. The latter method of comparison is

frequently neglected, which should not be, because large numbers of females are possessors of valuable property. The figures are given for quinquennial periods, commencing with the year 1880:—

Period.	Proportion of Estates per 100 deaths of adult Males.	Proportion of Estates per 100 deaths of adult Males and Females.
1880-84	34·6	22·3
1885-89	37·5	23·8
1890-94	41·2	25·8
1895-99	42·7	26·2
1900-04	46·0	27·8
1905-09	48·8	29·2
1910	49·9	29·4
1911	57·8	34·3
1912	61·2	37·1
1913	58·6	35·5

Information regarding the ages of persons leaving property was not ascertained until 1911; therefore it was not possible to exclude from the above calculations the estates of persons under 21 years of age. In 1911, of the adult males who died in New South Wales, 37·6 per cent. were possessed of property, and the proportion of adult females was 23·4 per cent.; in 1912 the proportions were 42·9 per cent. and 23·4 per cent. respectively.

The same weakness exists in these figures as in the case of those previously given in regard to the values, for approximately three in every hundred estates concerning which probate or letters of administration are granted prove to be without assets, so that the proportions must be somewhat reduced.

The statement that there is a wide distribution of property in New South Wales must be taken relatively. The following table is of interest as showing the distribution of property amongst the persons who died during the ten years ended June, 1914. The figures are exclusive of estates administered by the Curator of Intestate Estates except for the last three years:—

Category.	Number of Persons with Property, Deceased.	Proportion per cent. in each Group.	Value of Estates of Deceased.	Proportion per cent. in each Group.
			£	
£50,000 and over ...	191	·55	29,435,252	35·78
£25,000 to £50,000 ...	281	·80	9,649,137	11·73
£12,500 to £25,000 ..	526	1·50	9,063,169	11·01
£5,000 to £12,500 ...	1,483	4·24	11,507,149	13·99
£200 to £5,000	20,483	58·57	21,636,373	26·30
Under £200	12,010	34·34	982,146	1·19
Total	34,974	100·00	82,273,226	100·00

Absentees.

Analysis of the returns collected by the Stamp Office in Sydney shows that 95 per cent. of estates represented persons domiciled in New South Wales, leaving only 5 per cent. as absentees, that is, persons who died outside the State leaving property in New South Wales. In 1911 and 1912, the number of estates of male absentees was 351, and the average value £5,738; there were 122 estates of female absentees of an average value of £3,697.

INCOMES ASSESSED FOR TAXATION.

Prosperity as indicated by the number and amount of incomes assessed for income tax during the four years 1908-11 is illustrated below:—

Annual Income.	1908.		1909.		1910.		1911.	
	No.	Net Income.	No.	Net Income.	No.	Net Income.	No.	Net Income.
£		£		£		£		£
Under 1,000...	4,723	1,042,468	4,274	997,592	4,406	1,105,645	4,261	1,118,623
1,001—1,200...	139	151,849	147	162,986	145	159,971	173	190,698
1,201—2,000...	364	562,069	343	569,226	423	659,684	462	718,943
2,001—5,000...	378	1,168,614	378	1,217,581	463	1,434,196	542	1,660,591
5,001—10,000...	180	1,235,745	172	1,131,902	198	1,385,458	213	1,474,850
10,001—20,000...	89	1,203,870	75	1,031,875	107	1,474,589	114	1,613,656
20,001 & upwards	60	3,486,411	53	2,642,689	68	3,347,377	81	4,318,502
Total ...	5,933	8,851,026	5,442	7,753,851	5,810	9,566,920	5,846	11,095,863

Under the Income Tax Deduction Act, 1907, no tax was levied during the four years 1908-11 on incomes of less than £1,000 per annum derived from personal exertion; but under the provisions of amending Acts passed in 1911 and 1912, all persons, other than companies, in receipt of £300 per annum or over become liable to income-tax; a deduction of £50 for each child under 18 years of age was provided, and insurance premiums up to £50 were exempted. In the case of companies the whole receipts were taxable. In 1914 the minimum income liable to taxation was lowered to £250. Particulars of the rates of taxation and the revenue derived from income tax are shown in the chapter Public Finance, but since 1911 it has not been possible to collate any statistical information regarding the number and amount of incomes assessed.

LAW COURTS.

IN New South Wales legal processes may be grouped within the original jurisdiction of the Lower or Magistrates' Courts, or of the Higher Courts presided over by appointed Judges. The subject of appellate jurisdiction will be discussed separately.

ORIGINAL JURISDICTION—LOWER COURTS.

The Lower or Magistrates' Courts include Petty Sessions, Small Debts, Licensing, and Children's Courts.

All persons arrested and charged with offences at the various Police Stations—also all summoned persons—must be brought before the Magistrates' Courts to answer charges, indictable or summary, or complaints of any nature; and are either dealt with summarily, or committed to take their trial at the Court of Quarter Sessions, or at the Supreme Court in its criminal jurisdiction. Persons may also be committed to take their trial at such higher Courts by a Coroner or by a Judge.

Certain indictable offences (larceny, stealing from the person, embezzlement, &c.) are punishable summarily by Magistrates—by consent of the accused person—if the subject matter of the charge, or value of the property involved, does not amount to £20. Persons convicted by the Magistrates under such circumstances are liable to imprisonment for six months, or to a fine of £20. The period of imprisonment that may be awarded by Magistrates for purely summary offences is fixed in each case by the Statute creating the offence; in some cases sentences up to two years may be imposed. Most summary offences are punishable by fine, or by imprisonment, not exceeding seven days, in default of payment, where the amount of fine and costs does not exceed 10s., and not exceeding twelve months, where the amount payable exceeds £100.

Where a person is committed to be imprisoned, and is then undergoing imprisonment for another offence, the Magistrate may order that the sentence for the subsequent offence shall commence at the termination of the period the person is then serving. Justices have no power to impose more than one sentence of imprisonment to commence at the expiration of the first sentence.

By the Small Debts Recovery Act, 1912, the jurisdiction of Magistrates' Courts is extended to include action for the recovery of a debt or liquidated demand not exceeding £30, or where the Court is constituted by a Stipendiary or Police Magistrate sitting in some place appointed in that behalf by the Governor, to an amount not exceeding £50, whether on balance of account or after admitted set-off or otherwise.

COURTS OF PETTY SESSIONS.

Courts of Petty Sessions are held by Stipendiary Magistrates in the Sydney, Parramatta, Newcastle, Broken Hill, and Wollongong districts, and in the country districts by Police Magistrates, or Justices of the Peace, the latter being honorary officers.

The total number of offences charged at all Courts of Petty Sessions during the last five years, are shown in the following table :—

Courts.	1909.	1910.	1911.	1912.	1913.
Children's Courts	2,445	2,020	2,405	2,869	2,638
Courts of Petty Sessions	69,873	71,940	72,709	87,082	89,469
All Magistrates' Courts	72,318	73,960	75,114	89,951	92,107

The following table summarises the operations of these Courts for 1913 :—

Procedure.	Charged before Magistrates.	Treated summarily.			Committed to higher Courts.
		Convicted.	Withdrawn or Discharged.	Total.	
By arrest... ..	55,020	49,784	3,799	53,583	1,437
By summons	37,087	29,295	7,700	36,995	92
Total	92,107	79,079	11,499	90,578	1,529

The cases (1,529) committed to higher Courts represent 1·7 per cent. of the total charges ; the remainder, representing 98·3 per cent., were summarily treated, convictions resulting from 87·3 per cent. of the charges. A division of accused persons, according to sexes, shows that the charges against females numbered 8,149, being only 8·8 per cent. of the total.

Sex	Charged before Magistrates.	Treated summarily.			Committed to higher Courts.
		Convicted.	Withdrawn or Discharged.	Total.	
Males	83,958	72,250	10,264	82,514	1,444
Females	8,149	6,829	1,235	8,064	85
Total	92,107	79,079	11,499	90,578	1,529

Stipendiary Magistrates are maintained in the metropolitan district, Parramatta, Newcastle, Broken Hill, and Wollongong, and a great proportion of the charges are treated summarily. The following table shows the proportion of summary convictions by Magistrates, of acquittals and discharges, and the committals to higher Courts at decennial intervals since 1870 :—

Year.	Summary Convictions.	Acquittals and Discharges.	Committals to higher Courts.
	per cent.	per cent.	per cent.
1870	69·0	24·7	6·3
1880	76·9	18·4	4·7
1890	80·4	16·0	3·6
1900	83·1	14·9	2·0
1910	86·1	12·3	1·6
1911	86·6	11·8	1·6
1912	86·3	12·0	1·7
1913	87·3	11·0	1·7

Investigation into the nature of the offences for which summary convictions were effected during 1913 shows that only a small proportion were really criminal offences, viz., offences against person or property. Following is a classification of summary convictions, showing also their ratio to the general population, during each of the last eight years :—

Year.	Against the Person.	Against Property.	Against Good Order.	Under Defence Act.	Other Offences.	Total Summary Convictions.
NUMBER OF SUMMARY CONVICTIONS.						
1906	1,500	3,469	37,294	12,516		54,809
1907	1,587	3,209	40,522	12,785		58,103
1908	1,494	3,282	40,268	12,586		57,630
1909	1,370	3,391	38,578	12,428		55,767
1910	1,598	3,619	42,959	15,495		63,671
1911	1,664	3,404	44,185	15,805		65,058
1912	1,918	3,981	49,727	2,580	19,405	77,611
1913	1,913	4,244	50,109	5,123	17,690	79,079
PER 1,000 OF MEAN POPULATION.						
1906	1·01	2·34	25·12	8·45		36·92
1907	1·05	2·11	26·70	8·42		38·28
1908	·97	2·12	26·05	8·14		37·28
1909	·87	2·15	24·46	7·88		35·36
1910	·99	2·24	26·58	9·59		39·40
1911	1·00	2·05	26·54	9·50		39·09
1912	1·10	2·29	28·60	1·49	11·16	44·64
1913	1·05	2·35	27·69	2·83	9·78	43·70

In most instances the offences shown under the heading of "Other" offences are committed in ignorance of the law and, being trivial, are met with small, and in many cases nominal, penalties.

The following table gives a comparison of summary convictions of males and females during the years 1906 and 1913, excluding cases treated in Children's Courts :—

Offences.	Summary Convictions.					
	1906.			1913.		
	Males.	Females.	Total.	Males.	Females.	Total.
Against the person	1,265	172	1,437	1,688	149	1,837
Against property	2,323	377	2,700	3,048	370	3,418
Against good order	29,615	7,206	36,821	44,531	5,241	49,772
Other offences	11,378	779	12,157	21,227	1,005	22,232
Total	44,581	8,534	53,115	70,494	6,765	77,259

A survey of this table shows that the increase of offences, as evidenced by convictions for the two years, resulted primarily from a considerable increase in offences of men against good order, though in cases of both men and women other offences, excluding those against person or property, are an appreciable factor. The reduction in more serious offences of women is

noticeable, a prominent influence causing such decreases being found in present methods of prison treatment, *e.g.*, the application of the principle of indeterminate sentences.

For each of the last eight years the total number of summary convictions at both Courts of Petty Sessions and Children's Courts, and the proportion per 1,000 of population, were as follows :—

Year.	Summary Convictions.			Per 1,000 of mean Population.		
	Males.	Females.	Total.	Males.	Females.	Total.
1906	46,211	8,598	54,809	59·80	12·08	36·92
1907	49,894	8,209	58,103	63·20	11·27	38·28
1908	49,727	7,903	57,630	62·01	10·63	37·28
1909	49,422	6,345	55,767	60·40	8·48	35·36
1910	57,842	5,829	63,671	68·85	7·51	39·40
1911	59,357	5,701	65,058	68·36	7·16	39·09
1912	70,637	6,974	77,611	77·36	8·45	44·64
1913	72,250	6,829	79,079	75·96	7·96	43·70

Summary convictions in 1913 resulted in penalties as classified below :—

Offences.	Fines Paid.	Imprisoned in default.	Imprisoned without option.	Bound over and released on probation.	Other Punishments.	Total.
Against the person	1,181	323	278	100	31	1,913
Against property	1,565	826	962	745	146	4,244
Against good order	27,614	18,755	1,212	248	2,280	50,109
Other offences	16,568	725	399	103	5,012	22,813
Total	46,928	20,629	2,851	1,202	7,469	79,079

Included under the heading, "other punishments," are a large number of cases of drunkenness in which the defendants took a pledge to abstain from intoxicating liquors, and numerous cases under the Defence Act in which offenders were transferred to the military authorities.

Sentences of imprisonment in default are usually commuted by subsequent payment of fine; the extent to which this practice operates is shown on a subsequent page in connection with the prison services. Per 100 cases, fines were paid in 59; imprisonment in lieu of fine, 26; peremptory imprisonment, 4; bound over, &c., 2; and other punishments, 9.

The fines paid amounted to £57,711, of which £29,868 were paid into Consolidated Revenue and £14,400 to the Police Reward Fund, £5,161 to informers, £3,897 to municipalities and shires, £1,441 to Pastures Protection Boards, £1,069 under Commonwealth laws, and the remainder was paid to hospitals, societies, &c.

CHILDREN'S COURTS.

Children's Courts under the Neglected Children and Juvenile Offenders Act, 1905, were established throughout the State with the object of removing children as far as possible from the atmosphere of a public court. Magistrates exercise powers in respect of children and of offences committed by and against children. They also possess the authority of a Court of Petty Sessions or Justice under the Children's Protection Act, 1902, the Infant Protection Act, 1904, and the Deserted Wives and Children Amending Act, 1913.

Offences against the universal training section of the Defence Act committed by cadets under 16 years of age are prosecuted in the Children's Courts as far as practicable; magistrates are empowered to fine offenders or commit them to the custody of the military authorities.

The Neglected Children and Juvenile Offenders Act is designed to remove children from association with reputed thieves, and otherwise provides for the protection and reformation of neglected or uncontrollable children, and for the supervision of the children engaged in street trading.

Information as to the number of licenses for street trading, under the Neglected Children Act, and permits under the Children's Protection Act to take part in public exhibitions, at theatres, &c., will be found in the Part of this Year Book relating to Social Condition.

During the year 1913 the cases taken in Children's Courts numbered 2,638. In addition to these cases, there were 2,041 applications for orders, relating to the disposal of neglected and uncontrollable children, and to the maintenance of children; and 1,230 were cases of non-compliance with orders.

The following table shows the cases taken at Children's Courts during 1913; and as offences committed against children are dealt with by these Courts the figures include many cases of adult offenders:—

Offences.	Summarily treated.				Committed to Higher Courts.		Total.		
	Convicted.		Discharged or Withdrawn.		M.	F.	M.	F.	Total.
	M.	F.	M.	F.					
Against the person ...	70	6	80	17	72	3	222	26	248
Against property ...	787	39	272	5	6	...	1,065	44	1,109
Against good order ...	327	10	72	9	1	...	400	19	419
Other offences...	572	9	275	6	...	...	847	15	862
Total ...	1,756	64	699	37	79	3	2,534	104	2,638

The following table shows the number of convictions recorded in each class during the last five years:—

Offences.	Convictions.				
	1909.	1910.	1911.	1912.	1913.
Against the person ...	78	77	73	83	76
Against property ...	757	747	814	900	826
Against good order ...	296	302	465	301	337
Other offences ...	243	313	416	756	581
Total ...	1,374	1,439	1,768	2,040	1,820

The figures shown above and other particulars of Children's Courts are included in the aggregate tables relating to Courts of Petty Sessions.

The figures for 1912 and 1913 include 377 and 303 convictions respectively under the Commonwealth Defence Act.

SMALL DEBTS COURTS.

The total number of cases dealt with by the Small Debts Courts during 1913 was 45,661; in only 506 cases was the amount claimed in excess of £30. Verdicts were entered for plaintiff in 16,171 cases for a total

amount of £106,809; included in these figures were 217 cases exceeding £30, for a gross amount of £7,566. The verdicts for defendants, including non-suits, numbered 832, while 23,262 cases were withdrawn or struck out, &c. The cases pending at the end of the year numbered 5,396. Garnishee cases taken numbered 1,287; in these cases the Court may order that all debts due by a garnishee to the defendant may be attached to meet a judgment debt, and further direct that the garnishee pay so much of the amount owing as will satisfy the judgment debt. In respect of wages or salary, garnishee orders may be made only for so much as exceeds £2 per week.

Oral examinations of judgment debtors as to debts due to them, ordered on the application of a judgment creditor, numbered 604 in 1913; interpleader cases, as to claims made to goods held under a writ of execution, by a person not party to the suit, numbered 52.

LICENSING COURTS.

In the metropolitan district of the State, the Court for granting licenses to sell intoxicants consists of the Metropolitan Stipendiary Magistrates, with the addition of one or more Justices of the Peace specially appointed, bringing the number of occupants of the Bench up to seven, three of whom form a quorum. In country districts the local Police Magistrate and two Justices of the Peace, also specially appointed, constitute the Court. In 1882 the number of licensed houses was 3,063; in 1907, it was 3,022; and in 1913, 2,717, the decrease being 305, or 10 per cent. since the first local option vote was taken in 1907.

The Liquor Act, 1912, regulates the sale of intoxicating liquor, and facilitates the exercise of the principle of local option. In addition to stringent regulations regarding the licensing and management of hotels, the registration of clubs in which liquor is sold is compulsory. Registration is granted only to properly-conducted associations, established for a lawful purpose, on suitable premises.

LOCAL OPTION.

The local option vote is taken triennially in terms of the Act of 1905 at each general election of the State Parliament. Publicans' or Colonial wine licenses in any electorate may not exceed the number existing on 1st January, 1906, unless an increase be granted on account of growth of population. Clubs may not exceed the number formed before November, 1905, and registered before March, 1906.

Following are the propositions submitted to electors at each general election in this connection—

- (a) That the number of existing licenses be continued;
- (b) That the number of existing licenses be reduced;
- (c) That no licenses be granted in the electorate;
or where resolution (c) has been previously carried—
- (d) That licenses be restored.

To carry resolution (c) or (d) the votes in favour must represent three-fifths of the total votes polled, and 30 per cent. of the electors on the roll. Where resolution (c) is not carried the votes are added to those given for resolution (b).

In electorates where a majority of electors vote for reduction, licenses may be reduced by one-fourth. Where the "no license" resolution is carried, licenses in the electorate cease to operate within three years, except in cases of special extension.

Particulars of the local option vote taken at the last three elections are shown in the following statement:—

Year.	Electorates in which Electors carried.		Votes recorded for—		
	Continuance.	Reduction.	Continuance.	Reduction.	No-license.
1907	25	65	209,384	75,706	178,580
1910	76	14	324,973	38,856	212,889
1913	75	15	350,707	44,453	245,202

The proposition that no licenses be granted has not been carried in any electorate, consequently no vote has yet been taken on the question of "Restoration." In 1907 the proportion of votes recorded for continuance was 45·16 per cent.; for reduction, 16·33 per cent.; and for no-license, 38·51 per cent. In 1910, the percentages were:—Continuance, 56·35; reduction, 6·74; and no-license, 36·91. In 1913 the figures were:—Continuance, 56·79; reduction, 6·63; no-license, 36·58.

Special Courts are constituted to effect the reductions in accordance with the Act. The time at which the reduced licenses will cease varies from six months to three years, according to the character of the house; and under special circumstances the latter period may be extended.

In 1907, when the first local option vote was taken, there were 3,023 hotels in existence; of this number 293 were ordered to be closed at dates varying from 10th September, 1908, to 31st December, 1913. At the second local option vote on 14th October, 1910, there were 2,869 hotels, and as a result of the vote 28 were ordered to be closed. At the date of the last election, 6th December, 1913, there were in existence 2,719 hotel licenses, of which 23 will be closed in accordance with the local option vote at a date not later than 15th July, 1917.

The number of Wine licenses in operation at the time of the vote of 1907 was 633, of which 46 were abolished. In 1910, of the 565 licenses in existence orders were made in 5 cases, while in 1913, in respect of the 514 existing, 7 closing orders were made.

LICENSES.

Hotel Licenses.

The following table gives particulars respecting the number of hotels in the State, and the average number of residents to each:—

Year.	Licenses Issued.	Average number of Residents to each Hotel.	Year.	Licenses Issued.	Average number of Residents to each Hotel.
1900	3,163	428	1907	3,022	502
1901	3,151	434	1908	2,980	519
1902	3,132	443	1909	2,923	540
1903	3,128	450	1910	2,865	564
1904	3,098	461	1911	2,775	600
1905	3,063	475	1912	2,723	638
1906	3,055	486	1913	2,717	666

The annual fee for a Publican's license is regulated by the annual assessed value of the hotel. During the year 1913, an amount of £79,599 was collected on account of such licenses.

Additional Bar Licenses.

With reference to hotel licenses it may be stated that the Liquor Act provides for the issue of "Additional Bar" licenses to holders of publicans' licenses, when liquor is to be sold in more than one room in the licensed premises. During the year 1913 there were 127 of these licenses granted, the total amount of license fees collected being £2,459.

Railway Refreshment Room Licenses.

In addition to those shown above, 27 liquor licenses were issued to Railway Refreshment Rooms, the annual fee for each license being £30, the total fees being £801. These licenses are issued under Executive authority, and not by Magistrates, and provision is made for payments *pro rata* for portions of the year.

Booth or Stand Licenses.

The holder of a Publican's license may obtain a booth or stand license for a period not exceeding seven days for places of public amusement. During 1913 there were 2,049 such licenses issued, the total fees received being £4,098.

Packet Licenses.

These licenses are held by Masters of steamers engaged in the coastal trade of the State. In 1913 there were 19 Packet licenses in force, for which an amount of £162 was collected as fees.

Wine Licenses.

The Colonial Wine, Cider, and Perry licenses current during 1913 numbered 515, for which an amount of £1,545 was received as license fees.

The licenses are held chiefly by grocers, restaurant and oyster saloon keepers, wine shops and fruit shops. The wine, cider, or perry sold by licensees must be the produce of fruit grown in Australasia, and the quantity sold at one time must not exceed 2 gallons.

Spirit Merchants' and Brewers' Licenses.

Spirit Merchants' and Brewers' licenses do not come under the operation of the Local Option vote. Holders of Spirit Merchants' licenses, who are generally merchants, wholesale wine merchants, and grocers, are not allowed to sell a quantity less than 2 gallons of liquor of the same kind at the one time. In 1913 there were 207 Spirit Merchants' and 29 Brewers' licenses; the total fees received amounted to £5,630.

Club Licenses.

In 1913 licenses to sell intoxicating liquors were issued to 76 Clubs, and fees amounting to £916 were collected. The annual license fee is £5 for the first forty members and £1 for each additional forty. The Clubs are classified as follows:—Recreation and social, social and literary, golf, social and sporting, rowing and bowling, residential and yachting, bicycle, gun, lawn tennis, cricket, automobile.

Billiard and Bagatelle Licenses.

These licenses are generally held by hotel keepers. The license fee is £10 per annum, and during 1913 there were 973 in force, the total fees collected being £9,344.

Auctioneers' Licenses.

Auctioneers' licenses are divided into two classes, viz., General and District. The annual fee for a general license is £15, and for a district £2,

and provision is made for a *pro rata* payment for licenses issued after the commencement of the year. There were 309 of the former and 1,586 of the latter current in 1913, the license fees received being £7,288. General licenses are available for all parts of the State, while district licenses only cover the Police district for which they are issued—but district licenses are not issued for the Metropolitan District. Sales by auction are illegal after sunset or before sunrise.

Pawnbrokers' Licenses.

In 1913 there were 80 Pawnbrokers' licenses current in New South Wales, for each of which an annual fee of £10 is payable. Compared with the number for the previous year, viz., 97, a substantial decrease is shown. The hours for receiving pledges by pawnbrokers are limited, with certain exceptions, to between 8 a.m. and 6 p.m., but no restriction is placed on the rate of interest charged.

Hawkers and Pedlers' Licenses.

The annual license fee for a hawker trading on foot is £1, and if with pack animals or vehicles the charge is £2. The total amount of fees received during 1913 was £2,228.

Licenses Issued—Comparative Table.

A table showing the principal licenses issued in 1905, and in the years 1909–1913, is given hereunder:—

License.	1905.	1909.	1910.	1911.	1912.	1913.
Publicans'	3,063	2,923	2,865	2,775	2,723	2,717
Additional Bar ... ..	...	118	115	118	124	127
Railway Refreshment	24	24	24	29	26	27
Booth or Stand	1,915	1,612	1,765	1,829	1,940	2,049
Packet	24	26	23	24	22	19
Colonial Wine, Cider, and Perry	682	583	564	532	569	515
Spirit Merchants'	205	203	195	198	186	207
Brewers'	40	37	37	29	32	29
Club ... ..	...	76	76	76	76	76
Billiard and Bagatelle	698	787	856	859	902	973
Auctioneers'—General	222	282	305	298	317	309
District	1,064	1,328	1,405	1,443	1,589	1,586
Pawnbrokers'	66	92	92	105	97	80

REGISTRATION OF DOGS.

The Dog and Goat Act, 1898, prohibits the use of dogs or goats for the purpose of drawing or helping to draw any cart, carriage, truck or barrow. All dogs must be registered annually at a fee of 2s. 6d., with a reduction to 1s. 2d. for latter six months of year. During 1913 there were 133,444 dogs registered in New South Wales, the fees collected amounting to £16,654. Additional revenue to the extent of over £250 was obtained from searches, copies of registration, sale of forms, &c. In the same year 2,651 stray dogs were destroyed by the Metropolitan police, the expenditure being £331.

CORONERS' COURTS.

Under the Coroners Act, 1912, every stipendiary or police magistrate has the powers and duties of a coroner in all parts of the State, except the Metropolitan Police District, which is under the jurisdiction of the City Coroner.

Inquiries must be held in all cases of violent or unnatural death, and, at the discretion of the Coroner, in cases of destruction or damage to property by fire; and on the evidence the Coroner is empowered to commit for trial persons judged guilty of manslaughter, murder, or arson.

The transactions of Coroners' Courts during 1913 resulted in 44 persons, 35 males and 9 females, being committed for trial to higher Courts; the offences charged being murder, 16 males and 5 females; manslaughter, 10 males and 2 females; arson, 9 males and 2 females.

Inquests upon Deaths.

Under the Coroner's Court Act, 1904, a Coroner is empowered to hold an inquisition, sitting alone; but upon request of a relative, of the secretary of any society of which the deceased was a member, or on the order of the Minister of Justice, a jury of six is called. The number of deaths during 1913, the causes of which were investigated by Coroners or Magistrates, was 1,295 of males and 332 of females, giving a total of 1,627; the verdicts of the courts were that 1,275 deaths were caused by violence. Of these cases 705 males and 144 females were the results of accidents, and 208 males and 58 females were found to have committed suicide.

Inquests upon Fires.

During 1913 inquiries were held into the origin of 147 fires; accident was ascribed as the cause in 7 cases, arson in 27; in 113 instances there was insufficient evidence.

DISTRICT COURTS, &c.

District Courts are held for the trial of civil causes where the property involved or the amount claimed does not exceed £400, and in cases where a title to land not exceeding £200 in value is in question. These Courts are presided over by Judges, who also perform the duties of Chairmen of Quarter Sessions for the trial of prisoners, except those charged with capital crimes. District Courts are held during ten months of the year in the metropolis, and twice a year in all important country towns. The Judge is not usually assisted by a jury; but in cases where the amount in dispute exceeds £20, either of the parties, by giving notice to the Registrar of the Court, may have a jury consisting of four or twelve men. On questions of law, and in respect of admission or rejection of evidence, appeal lies to the Supreme Court. At the end of 1913 there were 72 District Courts in the State.

Particulars of suits brought in District Courts during the last ten years are given in the following table:—

Year.	Total Suits.	Causes tried.		Causes discontinued or settled without hearing.	Judgment for Plaintiff by default, or confession, or agreement.	Causes referred to Arbitration.	Causes pending and in arrear.	Total amount of Claims.	Court Costs of Suits.
		Verdict for Plaintiff.	Verdict for Defendant (including non-suits).						
1904*	4,042	833	198	1,201	1,014	1	795	£ 103,007	£ 8,944
1905*	3,687	763	186	995	999	2	742	100,362	9,227
1906	3,277	489	191	1,014	972	2	609	123,510	8,708
1907	2,971	388	156	852	903	2	670	134,991	9,470
1908	3,565	371	194	898	1,239	3	860	166,680	9,346
1909	4,314	479	191	1,206	1,398	5	1,035	204,642	10,853
1910	2,930	253	137	740	1,059	3	738	130,295	8,929
1911	4,123	376	186	1,278	1,326	4	953	199,437	11,824
1912	5,162	454	234	1,601	1,719	16	1,138	270,176	15,492
1913	6,058	527	221	1,828	1,993	8	1,481	290,776	16,468

* Year ended on 1st March.

Of the 748 causes heard during 1913, only 82 were tried by jury, and in 2 cases the jury disagreed. During the same period there were 6 appeals from judgments given in District Courts, one of which was successful. There were also 10 motions for new trials, of which 4 were granted. The amount of judgment for plaintiffs during the year was £97,417.

The several District Court Judges under the District Courts Acts, numbering nine, and three Judges attached to the Metropolitan District, are also Chairmen of Courts of Quarter Sessions and Judges of the Court of Review within their respective districts, as well as Judges of the Court of Marine Inquiry.

INDUSTRIAL ARBITRATION.

The Court of Industrial Arbitration is a superior court, and a court of record, having jurisdiction and powers conferred on it by the Industrial Arbitration Act, 1912, and by the Clerical Workers Act, 1910.

The Court or an Industrial Board exercising the jurisdiction under the Act is governed in its procedure and in its decisions by equity and good conscience, and is not bound to observe the rules of law governing the admissibility of evidence.

Court of Industrial Arbitration.

The transactions of the Court of Industrial Arbitration show that at 30th June, 1914, 211 Boards were in operation, 17 having been constituted and 2 dissolved during the year. Prosecutions for strikes or lock-outs numbered 461, and 407 convictions followed. There were 19 proceedings on appeal from the Industrial Registrar and Industrial Magistrates. The expenditure for Boards, representing fees and travelling expenses, amounted to £14,149. Further information regarding the transactions of the Court are shown in the part of the Year Book relating to "Employment and Industrial Arbitration."

Industrial Magistrates.

In regard to the proceedings before Industrial Magistrates, prosecutions for breaches of awards numbered 1,447, and the convictions 1,030. In 41 cases orders were made to pay fines and subscriptions to unions. There were 671 convictions of failure to keep time and pay sheets of employees, and 451 convictions for failures to exhibit awards.

Industrial Registrar.

The applications for registration of Unions numbered 21. The records of the Industrial Registrar's Office show that 846 indentures of apprenticeship were lodged, and 61 industrial agreements registered.

Investigation Office.

At the Investigation Office 4,461 complaints were received during the year 1913-14. There were 2,230 prosecutions and 1,894 convictions, and the fines inflicted amounted to £2,268, and costs, £1,272.

Chief Inspector of Factories Office.

The prosecutions during 1913-14 under the Factories and Shops Act numbered 120, and under the Early Closing Act, 308.

THE SUPREME COURT.

The Supreme Court of New South Wales, consisting of the Chief Justice and seven Puisne Judges, has jurisdiction in all matters which pertained to the jurisdiction of His Majesty's Courts at Westminster, or the respective

Judges thereof in the administration of justice, under any Imperial Act in force in England on 1st March, 1829, and applicable to New South Wales, or under any Imperial Act applicable and adopted in New South Wales. Every power, jurisdiction, or authority vested in the Court, or in the Judges collectively, may be exercised lawfully by two or more Judges of the Court.

The Chief Justice and three Puisne Judges are engaged ordinarily in matters of Common Law, including the Criminal and Civil jurisdictions; and under the Supreme Court and Circuit Courts Act, 1900, the Judges then holding special jurisdictions were confirmed in their commissions as follows:—

The Chief Judge in Equity.

The Judge exercising the Matrimonial Jurisdiction of the Court.

The Judge in Bankruptcy.

The Probate Judge.

The number of Puisne Judges was limited to six until an amending Act provided for a seventh Judge, and for the appointment of additional Judges upon resolutions by both Houses of Parliament declaring the necessity for such additional appointments.

A Puisne Judge must be a barrister of at least five years' standing, and his commission is dependent upon his good behaviour, and revocable only upon address of both Houses of the Legislature.

Any Judge of the District Court, or any barrister or solicitor of at least seven years' standing, may be appointed as Acting Judge; and Judges may be authorised to exercise special jurisdiction, having all the power and authority of such jurisdiction.

The salaries of office are £3,500 per annum for the Chief Justice, and £2,600 per annum for each Puisne Judge. There is a pension on retirement after fifteen years' service, or on permanent disability or infirmity, of seven-tenths of the actual salary at date of retirement, such pension in the event of acceptance of any new appointment under the Crown to merge or be reduced *pro tanto* during the tenure of appointment according to the salary attached to such new appointment.

The work of the Court is taken in four terms, the durations of which are arranged by the Judges in the several jurisdictions; and during vacation, to prevent possible delay and consequent injury, every Judge is empowered to make such orders and grant such writs as are ordinarily made or granted only by the Court. In cases of exigency, such power is exercisable by any Judge during term. Under the Supreme Court and Circuit Courts Amendment Act of 1912, the Judges may make rules to empower the Prothonotary to sit in Chambers and exercise the jurisdiction, as a Judge sitting in Chambers, except in matters relating to the liberty of the subject.

COMMON LAW PROCEDURE.

Under the Supreme Court Procedure Act, 1900, the parties to an action may consent to dispense with a jury, whereupon the finding of the Judge ranks as the finding of a jury. Issues under the Real Property Act also may be tried without a jury; and applications directed by the Real Property Act, 1900, to the Supreme Court may be made to the equitable jurisdiction of the Court, or to the Supreme Court holden before three Judges.

RULES OF COURT.

Rules of Court regulating its practice and procedure are made by the Judges of the Court, or by any three of them, being variable from time to time, subject to the approval of Parliament; but non-compliance with such rules does not void any proceeding unless the Court or a Judge direct, though such proceedings may be set aside as irregular or amended.

EQUITY PROCEDURE.

Equitable relief may be given on an originating summons, appeals lying to the Full Court, and the Equity Court has discretion to refuse an administration decree if the questions between the parties can be determined otherwise.

CIVIL JURISDICTION.

Civil actions are tried usually before a jury of four persons, but either party to the suit, on cause shown, may apply to a Judge in Chambers to have the cause tried before a jury of twelve. Twice the number of jurors required to sit on the case are chosen by lot, from a panel summoned by the Sheriff; and from that number each of the parties strikes out a proportion, the remainder thus selected by both parties constituting the jury. The jury find only as to the facts of the case, being bound by the dicta of the Judge on points of law. From the Court thus constituted appeal lies to the "Full Court," sitting *in Banco*, which is composed generally of at least three of the Judges. The Chief Justice, or in his absence the senior Puisne Judge, presides over the Full Court, which gives its decision by majority. New trials may be granted where the Judge has admitted erroneously or rejected material evidence; where he has directed the jury wrongly on a point of law; where the verdict of the jury is clearly against evidence; or where, from some other cause, there has been evidently a miscarriage of justice.

Leave to appeal to the High Court may be granted in cases where the amount involved exceeds £300, or, in any case, with the permission of the High Court.

Provision is made for appeal by a suitor to the Privy Council, subject to leave from the Supreme Court. The dispute must involve a minimum amount of £500, or affect the construction of a New South Wales statute. In other cases, application for leave to appeal must be made directly to the Privy Council.

ADMIRALTY COURT.

The Supreme Court of the State has been constituted a Colonial Court of Admiralty, with power to hear and determine matters previously determined by the Vice-Admiralty Court. During 1913, 12 causes were taken in the Admiralty Court—1 for wages and disbursements, 1 for necessaries, 5 for loss by collision, 4 for salvage, and 1 for limitation of liability, &c. In four cases verdicts were given for plaintiff, and the remaining 8 cases were settled, not proceeded with, or pending.

SHERIFF'S OFFICE.

The transactions of the Sheriff's Office during 1913 included the issue for service of 1,434 writs of summons in the Supreme Court, as against 1,240 for 1912; the money value involved is not recorded. Other writs issued included 470 writs of *fieri facias*, involving amounts aggregating £64,712, and other writs, including fines and estreats aggregating £7,700 in value.

EQUITY JURISDICTION.

The Equity Act, 1901, consolidated enactments relating to the practice, procedure, and powers of the Supreme Court in matters of equity demanding relief, including the appointment of guardians of infants and the administration of their estates. The Judge in Bankruptcy exercises equitable jurisdiction as the Judge in Equity, with the assistance of two other Judges, the decision of the majority having the effect of a Full Court decision. The Court, in making binding declarations of right, may call for the assistance of actuaries, engineers, merchants, or any other persons; has power to decide legal titles, to award damages, or to grant specific performance; and exercises all the powers of the Common Law Jurisdiction of the Supreme Court; also the Court may delegate investigations to the Master in Equity, who is also the Master in Lunacy, and undertakes various duties, as of Taxing Officer, Head of the Records and Writ Office, &c. On 31st December, 1913, the Master in Lunacy held Trust Funds amounting to £240,140. The following is a statement of the transactions in Equity jurisdiction during the last ten years:—

Year.	Statements of Claims.	Statements of Defence	Petitions.	Summonses.	Motions.	Decrees, Orders, and Certificates.
1904	211	98	89	176	174	1,245
1905	180	88	60	192	164	1,050
1906	149	86	64	183	127	1,030
1907	172	88	71	195	147	1,072
1908	191	124	65	151	135	1,047
1909	210	121	66	153	168	1,016
1910	181	117	87	166	120	949
1911	157	78	100	149	123	871
1912	171	92	92	152	133	816
1913	196	128	132	147	162	1,040

The amount of Trust Funds invested under Equity Jurisdiction in 1913 was £743,170, the investments being made at interest rates ranging from 1 to 6 per cent.

PROBATE JURISDICTION.

Under the Wills, Probate and Administration Act, 1898, the Supreme Court in its Probate Jurisdiction absorbed the powers previously vested in the Primary Judge in Equity; and under the Administration Amending Act, 1906, formal duties in the granting of probates and letters of administration are delegated to the Registrar of Probates, who is also the Prothonotary and Ecclesiastical Clerk. In estates of less value than £300 the intervention of a solicitor is unnecessary, and in 1913 probate or letters of administration were granted for 490 such estates valued at £62,641.

The number of probates and letters of administration granted by the Supreme Court in its testamentary jurisdiction for the last ten years is shown in the following table:—

Year.	Probates granted.		Letters of Administration.		Total.	
	Number of Estates.	Value of Estates.	Number of Estates.	Value of Estates.	Number of Estates.	Value of Estates.
		£		£		£
1904	1,854	5,536,494	996	619,469	2,850	6,155,963
1905	1,842	6,999,863	962	714,553	2,804	7,714,416
1906	1,927	6,697,600	925	831,837	2,852	7,529,437
1907	2,045	6,835,381	1,039	728,118	3,084	7,563,499
1908	2,114	7,054,170	980	784,402	3,094	7,838,572
1909	2,104	10,295,793	1,081	846,275	3,185	11,142,068
1910	2,261	7,649,244	1,075	1,184,990	3,336	8,834,934
1911	2,421	12,257,228	1,168	880,840	3,589	13,138,068
1912	2,467	9,766,844	1,150	955,232	3,617	10,722,076
1913	3,011	10,716,922	1,268	1,038,627	4,279	11,755,549

These figures represent the gross values of estates, inclusive of those not subject to duty; but the Stamp Duties Department return shows the net values of the estates, excluding those not subject to duty. Probates taken out a second time, and included above, also tend to increase the difference between the figures recorded for the two Departments.

From 20th July, 1914, the statistics relating to estates administered by the Public Trustee will be included in this table.

INTESTATE ESTATES.

Under the Wills, Probate, and Administration Act, 1898, the Registrar of Probates, as Curator of Intestate Estates, under the jurisdiction of the Supreme Court, is empowered to apply for orders to administer estates of intestates, or of persons who have appointed the Curator as executor, or where no executor is appointed. Moneys unclaimed after six years are paid into the Consolidated Revenue Fund, but a rightful claimant may obtain payment, without interest, at any subsequent period.

The number of estates opened during 1913 was 835, from which the Curator received £68,467, and paid away £26,504; in connection with estates opened during previous years £33,509 was received, and £48,420 paid. Commission and fees to the amount of £4,459 were paid into the Consolidated Revenue Fund during the year. The revenue also benefited to the extent of £5,220 of unclaimed moneys, but on the other hand claims amounting to £4,627 were received for moneys which had been paid into the Consolidated Revenue Fund previously.

In the following table the transactions of the last five years are summarised:—

Year.	Administered by Curator.	Value of Estates received.	Disbursements.	Fees paid.	Unclaimed moneys.	Estates of Previous Years.		
						Money received.	Money paid.	Claims allowed against.
	No.	£	£	£	£	£	£	£
1909	598	49,895	22,850	3,292	11,289	18,393	53,033	1,182
1910	625	40,181	18,976	3,253	5,893	21,426	42,296	2,350
1911	656	46,293	13,296	3,495	13,061	24,754	50,705	1,540
1912	785	54,323	26,717	3,305	7,921	23,693	53,249	2,549
1913	835	68,467	26,504	4,459	5,220	33,509	48,420	4,627

From 1st January, 1914, the functions of the Curator of Intestate Estates were taken over by the Public Trustee.

PUBLIC TRUST OFFICE.

Under the Public Trustee Act, 1913, the Public Trustee is authorised to act as—

- (1) Trustee of a will or settlement.
- (2) Executor or administrator of an estate.
- (3) Collector under an order to collect.
- (4) Agent or attorney.

The Public Trust Office is not allowed to make profits, consequently its charges are low; the Trustee has power to reduce the charges, particularly in regard to small estates. Special provision has been made for the deposition of wills with the Trustee, and transfers of property to him as Public Trustee are exempt from stamp duty.

In the following table is shown the business transacted during the six months ended 30th June, 1914 :—

Nature of Estate.	Number.	Value.
Intestate estates	199	£ 43,638
Administrations with the will annexed	31	74,948
Trusts estates transferred	6	41,709
Estates transferred by executor	2	5,800
Probates granted to the Public Trustee as executor ...	4	27,625
Original trusts	1	10,000
Orders to collect under section 19 of the Act	10	1,236
Total	253	204,956

The total value of the estates under the control of the Public Trustee at 30th June, 1914, amounted to £360,550, of which £157,416 represents landed property, £11,946 shares, &c., £24,997 investments, £10,569 savings banks deposits, £7,135 fixed deposits, and £141,399 bank balance (earning 3 per cent.), the remainder being represented by insurance policies, amounts due on mortgage, sundry debtors, &c.

BANKRUPTCY JURISDICTION.

Any person unable to meet his debts may surrender his estate for the benefit of his creditors, or the latter may apply for a compulsory sequestration under certain specified conditions, the case coming under the Bankruptcy Jurisdiction of the Supreme Court.

Certain of the powers vested in the Judge in Bankruptcy are delegated to the Registrar in Bankruptcy, and in country districts Police Magistrates and Registrars of District Courts, appointed as District Registrars, have the same powers and jurisdiction as the Registrar in respect to the examination of bankrupts held before them; but appeal from a decision of the Registrar, or of a District Registrar, lies to the Judge in Bankruptcy, who also deals with questions relating to priority of claims.

An official assignee, deputed by the Judge to manage the estates of insolvents, receives $2\frac{1}{2}$ per cent. commission on the amount realised, and $2\frac{1}{2}$ per cent. on the amount of dividends declared, and in some cases special remuneration awarded by the Court. Creditors may accept, and the Court endorse, a proposal for a composition, or for a scheme of arrangement, subject to the approval of a majority representing three-fourths of the value of all approved claims. Such a proposal having been accepted, one or two trustees may be appointed in place of, or in addition to, the official assignee. After acceptance of a composition, or approval of a scheme of arrangement, a bankrupt's estate may be released from sequestration. Release may be effected when all creditors have been paid in full, or when they have given a legal quittance of the debts due. In other cases, a bankrupt may give notice, by advertisement, three months from the time of sequestration, of his intention to apply for a certificate of discharge, whereupon the Court receives a report from the official assignee, and may either grant or refuse an absolute order of discharge, suspend the operation of the order for a certain

time, or grant an order subject to conditions respecting the future earnings or income of the bankrupt. Operations in the Bankruptcy Court are discussed in detail in the chapter of this volume relating to Private Finance.

Analysis of the occupations of persons declared bankrupt during 1913 shows the following grouping:—

Group.	Number of Bankrupts.	Group.	Number of Bankrupts.
Professional	23	Industrial	111
Domestic	14	Primary Producers	45
Commercial	102	Indefinite	12
Transport and communication...	13	Total	320

According to Bankrupts' Statements of Affairs, the liabilities of the estates sequestrated in 1913 amounted to £208,755, to meet which there were said to be assets to the extent of £144,038, thus leaving a deficiency of £64,717.

The Court Fees paid to the Treasury were £4,006.

DIVORCE AND MATRIMONIAL CAUSES JURISDICTION.

The Supreme Court of New South Wales has jurisdiction in divorce, dating from the Matrimonial Causes Act, 1873, under which the important grounds for divorce were adultery on the part of the wife, and adultery and cruelty on the part of the husband. The present law is contained in the Matrimonial Causes Act, 1899, under which jurisdiction is vested in the Supreme Court in respect of all causes, suits, and matters matrimonial, excepting in respect of marriage licenses. Dissolution of marriage may be granted on petition as under—

Husband v. Wife.—Adultery, desertion, or habitual drunkenness and neglect of domestic duties, for three years; refusal to obey an order for restitution of conjugal rights; imprisonment for three years and upwards; attempt to murder or to inflict grievous bodily harm, or repeated assaults and cruel beatings during one year preceding the date of the filing of the petition.

Wife v. Husband.—Adultery and desertion for two years; desertion, or habitual drunkenness, with neglect to support and cruelty, for three years; refusal to obey an order for restitution of conjugal rights; imprisonment for three years and upwards; imprisonment under sentences aggregating three years, within a quinquennial period; attempt to murder or to inflict grievous bodily harm, or repeated assaults and cruel beatings within one year of petition.

The petitioner must have been domiciled in the State for three years or upwards at the time of instituting the suit.

Judicial separation may be sought on grounds of cruelty or desertion without cause extending over two years, and nullity may be declared in cases of marriages which are void.

The law provides also for suits for the restitution of conjugal rights, for alimony, and generally for the enactment and enforcement of decrees.

PETITIONS FOR DIVORCE, &c.

A total of 8,395 petitions for divorce, 665 for judicial separation, and 91 for nullity of marriage, have been presented to the Supreme Court in the Divorce and Matrimonial Causes Jurisdiction from 1873 to the end of 1913. Of the petitions for divorce, 2,745 were presented *in forma pauperis*.

The following statement shows the divorces, judicial separations, and decrees of nullity of marriage granted in New South Wales since the year 1873 :—

Period.	Divorces.		Judicial Separation granted.	Nullity of Marriage.	
	Decrees nisi.	Decrees absolute.		Decrees nisi.	Decrees absolute.
1873-1877	55	33	...	...	...
1878-1882	85	70	...	...	...
1893-1887	141	120	8	2	2
1888-1892	305	224	31	5	5
1893-1897	1,403	1,308	55	7	7
1898-1902	1,184	1,098	89	12	12
1903-1907	1,027	886	73	15	12
1908	242	206	13	3	1
1909	317	287	15	3	4
1910	207	257	9	2	3
1911	219	206	12	5	4
1912	316	343	12	7	6
1913	360	313	9	3	4

The first Divorce Act in New South Wales was passed in 1873, and from 1st July in that year down to the end of 1892 the number of divorce decrees made absolute was 447. In August, 1892, an amended Divorce Act came into force, and in 1893 the number of decrees was 247, and in the following year, 288; in 1907 the number decreased to 147, rising again to 289 in 1909; in 1913 the number was 313.

Reckoning as a divorce only those cases where the decree has been made absolute, the total number of decrees from 1873 to 1913 was 5,737, of which 5,351 were divorces, 60 cases of nullity of marriage, and 326 judicial separations.

The majority of petitions are lodged by the wife, the proportion being approximately 70 petitions made by the wife to 30 lodged by the husband.

The following statement shows the sexes of petitioners for divorce in the cases of decrees made absolute during the past ten years :—

Year.	Petitions for Divorce.		Year.	Petitions for Divorce.	
	Husband.	Wife.		Husband.	Wife.
1904	69	147	1909	85	202
1905	63	119	1910	81	176
1906	51	106	1911	64	142
1907	40	108	1912	116	227
1908	68	138	1913	129	184

In regard to judicial separations over the same period, 17 were granted on petition of the husband, and 111 on petition of the wife.

The grounds of suits for divorce made during each year since 1904 were as follow :—

Ground of Suit.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.
Adultery	70	58	60	62	67	85	69	65	87	97
„ coupled with bigamy, cruelty, and desertion	11	8	6	4	7	13	10	5	3	5
Attempt to murder ... ..	...	...	...	...	...	...	...	...	...	1
Cruelty and repeated assaults	1	2	...	1	1	1	3	1	1	...
„ „ habitual drunkenness	11	8	9	6	8	7	5	...	1	6
Desertion	116	98	73	65	110	157	152	118	224	195
Habitual drunkenness and neglect to support	5	4	3	6	5	11	4	11	12	2
Habitual drunkenness and neglect of domestic duties	2	..	2	1	1	2	2	3	2	...
Imprisonment of husband for three years ... ..	...	2	1	1	2	4	2	...	1	2
Non-compliance with order for restitution of conjugal rights ... ..	...	2	3	2	5	7	10	3	12	5
Total	216	182	157	148	206	287	257	206	343	313

As to the grounds in support of applications for divorce, the majority of petitions granted were made on issues of desertion, a lesser proportion including habitual drunkenness as a causative factor in the conditions upon which the application was based. The following statement shows the proportions of petitions based on these grounds, viz., desertion and habitual drunkenness, during the ten years, 1904-1913 :—

Year.	Causes based on—		Other.	All Causes.	Year.	Causes based on—		Other.	All Causes.
	Desertion.	Drunkenness				Desertion.	Drunkenness		
1904	116	18	82	216	1909	157	20	110	287
1905	98	12	72	182	1910	152	11	94	257
1906	73	14	70	157	1911	118	14	74	206
1907	65	13	70	148	1912	224	15	104	343
1908	110	14	82	206	1913	195	8	110	313

It will thus be seen that over 60 per cent. of divorces granted are allowed on these two counts. As regards judicial separations, cruelty and repeated assaults are prominent factors. There is, however, a large proportion of causes based upon mutual consent.

As regards the duration of marriages dissolved, the records for 1913 show an average of 11·2 years, the families averaging 1·5 children.

COMMON LAW JURISDICTION.

The following table gives the number of writs issued, and the amount for which judgment was signed, in the Supreme and Circuit Courts (Common Law Jurisdiction) during the last ten years. The number of

writs issued includes cases which were settled subsequently by the parties but the total amount involved in these claims is not included in the sum for which judgment was signed. The amounts for signed judgments include taxed costs in all cases where the judgments have been completed at the end of the year. During 1913 the total bills of costs amounted to £40,031, but from this a sum of £12,906 was taxed off, leaving the net costs at £30,125. The Court costs of taxation amounted to £580:—

Year.	Writs issued.	Judgments signed.	Year.	Writs issued.	Judgments signed.
	No.	£		No.	£
1904	3,973	220,305	1909	2,023	193,039
1905	3,719	176,930	1910	1,868	139,223
1906	2,404	143,386	1911	1,892	169,708
1907	1,832	132,839	1912	2,497	258,208
1908	2,266	189,350	1913	2,842	277,985

The number of causes set down and tried is shown below:—

Year.	Causes set down.	Not proceeded with.	Referred to Arbitration.	Causes Tried.				Total.
				Verdict for Plaintiff.	Verdict for Defendant.	Disagreement of Jury.	Non-suited.	
1904	266	87	7	119	38	3	12	172
1905	260	89	2	102	49	5	13	169
1906	235	76	2	105	34	5	13	157
1907	174	62	4	89	19	1	8	108
1908	221	91	1	86	30	1	12	129
1909	204	73	1	89	29	2	10	130
1910	210	80	1	106	19	...	4	129
1911	262	94	1	113	40	2	12	167
1912	260	102	...	120	36	...	2	158
1913	312	128	6	128	39	...	11	178

The small number of causes set down for hearing in comparison with the number of writs issued indicates the extent to which cases are settled out of Court.

The Commercial Causes Act, 1903, provided an expeditious method for the trial of commercial causes, which include matters relating to the ordinary transactions of merchants and traders, the construction of mercantile documents, affreightment, insurance, banking, and mercantile usages. The parties to a Supreme Court common law action may secure the Judge's order to have it brought upon the list of Commercial Causes, and from this order there can be no appeal. To secure speedy settlement in accordance with the aim of the Act the Judge is empowered to dispense with juries, pleadings, and technical rules of evidence, and with proofs of writing and documents, and to order inspections and admissions; he may also settle the issues for trial, and state a case on points of law for the Full Court.

COURTS OF MARINE INQUIRY.

A Court of Marine Inquiry is constituted of one or more District Court Judges assisted by assessors appointed under the Navigation Act, who have power only to advise, and not to adjudicate, upon any matter before the Court.

Such a Court hears and determines inquiries as to wrecks, shipping casualties, charges of incompetency or misconduct of officers, and appeals and references under the Navigation Act. Inquiries held at Sydney during 1913 numbered 15, of which 5 were as to collisions and 8 to strandings and shipwrecks, 1 to foundering, and 1 to grounding. The Courts found in 7 cases that blame was not attachable to any particular person; in 12 cases the master was exonerated; in 7 cases masters were found at fault, and 5 had certificates suspended. In a like manner 1 mate was deemed at fault, and his certificate was suspended. At Newcastle one inquiry was held, and an engineer's certificate suspended for 12 months on a charge of misconduct.

CRIMINAL JURISDICTION.

A Judge of the Supreme Court presides over the Central Criminal Court of Gaol Delivery held quarterly at Sydney, when all prisoners are tried by a jury of twelve, chosen by lot from the panel provided by the Sheriff. In capital cases the right to challenge, both by the Crown and by the accused, is limited to twenty jurors, except for cause shown; and in cases other than those in which the sentence of death may be imposed, whether felonies or misdemeanours, the number challenged may not exceed eight. At the close of the case for the prosecution, an accused person may make a statement in his defence without rendering himself liable to examination thereupon, either by counsel for the Crown or by the Court. The Accused Persons Evidence Act, 1898, provides that it shall not be lawful to comment at the trial of any person upon the fact that he has refrained from giving evidence on oath on his own behalf. The verdict of the jury must be unanimous, and they may be detained until they give a verdict or are discharged by the Court. If no verdict is returned, the prisoner may be tried again before another jury.

CIRCUIT COURTS.

In accordance with the provisions of the Supreme Court and Circuit Courts Act, 1900, the State was divided into circuits, in which Courts would be held by a Judge of the Supreme Court, such Courts being courts of record, of oyer and terminer, and of assize and nisi prius for New South Wales, and of gaol delivery in and for the particular district. Jurisdiction in civil actions vested in every Circuit Court, which was empowered to try and determine all issues of fact, and to inquire into and assess damages in actions before the Court. Further, every Circuit Court had criminal jurisdiction, to hear and determine all cases of crimes and misdemeanours committed in New South Wales, upon information by or on behalf of the Attorney or Solicitor-General, conviction involving liability to the same penalties as if imposed by the Supreme Court. Procedure in Circuit Courts was as established for the Supreme Court.

The Supreme Court and Circuit Courts Act, which came into force on 1st July, 1912, revised the system of circuit towns, and provided for the hearing of civil and criminal causes in the country by sittings of the Supreme Court at towns and places notified by proclamation as circuit towns; the Supreme Court is a court of gaol delivery, for which purpose the Court may be constituted by one Judge sitting in open Court in the exercise of criminal jurisdiction. The gaoler at each gaol is required, at prescribed times, to make returns to the Supreme Court of persons under detention.

QUARTER SESSIONS.

The Courts of Quarter Sessions are held by Chairmen, who also perform the duties of Judges of the District Courts. There are eight Chairmen of Quarter Sessions; three of these preside over the Courts in the metropolitan

district, and one each in the following districts:—Southern and Hunter, south-western, northern, north-western, and western. All offences, except those involving the capital penalty, are within the jurisdiction of the Court. On the trial of prisoners at Quarter Sessions, at the request of the prisoner's counsel, the Chairman must reserve questions of law for the consideration of the Supreme Court.

OPERATIONS BEFORE HIGHER COURTS.

During the year 1913 there were 1,125 persons, viz., 1,098 men and 27 women, charged before the higher Courts of the State. The following table shows the results in the cases of these accused persons for 1912 and 1913 in comparison:—

Sex.	1912.			1913.		
	Charged.	Convicted.	Withdrawn, discharged, &c.	Charged.	Convicted.	Withdrawn, discharged, &c.
Males	947	591	356	1,098	748	350
Females	46	29	17	27	24	3
Total	993	620	373	1,125	772	353

Classifying accused persons according to the nature of the offences, it is found that, in cases both of males and females, offences against property are the most numerous. A statement is given below of the principal offences of the persons convicted in higher Courts during 1913:—

Offences.	Males.		Females.		Total.	
	Number.	Per cent. of total.	Number.	Per cent. of total.	Number.	Per cent. of total.
Against the person	180	24·0	9	37·5	189	24·5
Against property	469	62·7	9	37·5	478	61·9
Forgery and against the currency ...	58	7·8	2	8·4	60	7·8
Against good order	9	1·2	2	8·3	11	1·4
Other offences... ..	32	4·3	2	8·3	34	4·4
Total	748	100·0	24	100·0	772	100·0

The following statement shows the character of the principal offences of persons convicted in higher Courts during each of the last five years:—

Offences.	1909.	1910.	1911.	1912.	1913.
Against the person	146	125	141	136	189
Against property	382	329	313	410	478
Forgery and against the currency ...	60	41	48	48	60
Against good order	3	5	14	2	11
Other offences	28	46	22	24	34
Total	619	546	538	620	772

POOR PRISONERS' DEFENCE ACT.

Under the Poor Prisoners' Defence Act, 1907, any person committed for trial for an indictable offence may apply for legal aid for his defence before the jury is sworn. If the judge or committing magistrate considers that the person is without adequate means, and that such legal aid should be supplied, the Attorney-General may arrange for the defence of the accused and for payment of expenses of all material witnesses.

LAND APPEAL COURT.

For the year ended 30th June, 1914, the cases referred to the Court numbered 102, of which 90 were referred by the Minister for Lands, and 12 by local Land Boards. Of the cases heard during the period, 36 resulted in the appeal being upheld, and 8 were sent back for rehearing, 37 were dismissed, and 7 withdrawn.

APPELLATE JURISDICTION.

Courts having Appellate Jurisdiction are the following:—Courts of Quarter Sessions, the Supreme Court, the Full Court, the High Court of Australia, and, finally, the Privy Council. A Court of Criminal Appeal was established in 1912.

Courts of Quarter Sessions.

Appeal lies from Courts of Petty Sessions to Courts of Quarter Sessions, which provide a ready means of bringing the orders and convictions of Stipendiary Magistrates and Justices under review, and assure co-ordination of procedure in the lower Courts. During 1913, 462 appeals were taken before Courts of Quarter Sessions in this way, and convictions were confirmed in 291 cases, varied in 58, and quashed in 104, a balance, 9 cases, remaining at the end of the year. Questions of fact as well as of law may be taken before these Courts, and the only savings as to the right of appeal from Magistrates' orders or convictions are as to orders made under the Seamen's Act, and adjudication to imprisonment for failure to comply with an order for payment of money, or for finding sureties.

Appeals to Supreme Court.

During 1913, applications for writs of prohibition and mandamus numbered 44, of which 18 were to Judges in Chambers, and 26 to the Full Court. Writs granted were 15, viz., 5 of mandamus and 10 of prohibition.

The special cases numbered 29; decisions were sustained in 14 and reversed in 8 from the Magistrates' Courts. Of Appeals in Land Cases, 4 decisions were sustained and 2 reversed. Included in the Magistrates' Court Cases which were sustained were 2 Land and Income Tax cases, and 2 stated by the Commissioner for Stamp Duties.

Appeals to Full Court.

In Common Law 26 cases were taken during 1913, all of which were civil cases. The cases consisted of new trial motions, of which 11 were granted and 9 refused, and 6 were not proceeded with. The following statement shows the appeals in Equity, Probate, Bankruptcy, and Divorce:—Equity, 2 sustained and 1 disallowed; Probate, nil; Bankruptcy, 1 sustained, 1 disallowed; Divorce, 1 sustained, and 1 not proceeded with. Appeals from District Courts numbered 11, of which 3 were allowed, 2 refused, and 6 not pursued.

Court of Criminal Appeal.

The Court of Criminal Appeal was established by the Criminal Appeal Act of 1912, which prescribes that the Supreme Court shall be the Court of Criminal Appeal, constituted by three or more Judges of the Supreme Court as the Chief Justice may direct. Any person convicted on indictment may appeal to the Court against his conviction (1) on any ground which involves a question of law alone, or (2) with the leave of the Court or upon the certificate of the judge of the court of trial, on any ground which involves a question of fact alone, or of mixed law and fact, or any other ground which appears to the Court to be sufficient. A convicted person may also, with the

leave of the Court, appeal against the sentence passed on conviction; in such appeal the Court may quash the sentence and substitute another either more or less severe.

During 1913, three applications to a judge were granted, and 20 refused; 46 convictions were affirmed, 2 were quashed, and 2 sentences were varied.

In addition to determining appeals in ordinary cases the Court has power, in special cases, to record a verdict and pass a sentence, in substitution of the verdict and sentence of the court of trial; it may also grant a new trial, either on its own motion or on application of the appellant. During 1913, eight new trials were granted.

High Court of Australia.

Under the Commonwealth Constitution Act, the judicial power of the Commonwealth, both in original and appellate jurisdiction is vested in the High Court of Australia. Its original jurisdiction extends to matters in which the Commonwealth is a party, or which lie between States or residents of States. Its appellate jurisdiction extends to the hearing and determination of appeals from all judgments, decrees, orders and sentences of any justice exercising the original jurisdiction of the High Court or any other Federal Court, or of the Supreme Court or any other Court of any State from which an appeal previously lay to the King in Council. The judgment of the High Court, in all such cases, is final; its sittings are held in the capitals of the States, as may be necessary. Hitherto the majority of actions brought before the High Court have related to its appellate jurisdiction. During 1913 the following appeals were made from decisions of Judges of the Supreme Court of New South Wales:—

Jurisdiction.	Appeals set down.	Allowed.	Disallowed.	Settled.
Equity	6	..	4	2
Bankruptcy	2	1	1	...
Divorce	1	1	...	...

In addition, appeals from the Full Court of the Supreme Court of New South Wales numbered 14, of which 7 were allowed and 7 were dismissed. The Full Court also dealt with 4 special cases, one prohibition, one injunction, 3 appeals from a single Justice of the High Court, and two appeals from Queensland Registry.

Two appeals from the decision of a Judge exercising Federal jurisdiction in New South Wales were allowed. Five notices of appeal under the Land Tax Assessment Act were filed during 1913, 4 being allowed and 1 dismissed.

Five applications for Leave to Appeal from judgments of the Supreme Court of New South Wales were refused.

Appeals to Privy Council.

During 1913, 2 applications were made and granted for leave to appeal, both being in Common Law. There were 4 appeals to the Privy Council; all in Common Law, 1 of which was upheld and 3 were not concluded.

THE GOVERNMENT IN LITIGATION.

The Government of New South Wales was concerned in 1,732 actions commenced during the year 1913, viz., in 1,694 as plaintiff, and in 38 as defendant. Of these actions 1,295 were settled without trial; the causes tried, numbering 200, resulted in 195 instances in verdicts for the Government, 184 being as plaintiff, and 11 as defendant; and in 5 as defendant

and 2 as plaintiff the decisions were against the Government. Causes under consideration at the end of the year numbered 237. The majority of actions commenced related to taxation, viz., 1,473, and to public works, 101.

In connection with the Railway Department, the actions commenced numbered 908, of which 710 were settled without trial; 76 were tried, and 122 were pending at the end of the year. In 51 of the causes tried verdict was given for the Railway Department, viz., 19 as plaintiff and 32 as defendant.

Concerning the Metropolitan Board of Water Supply and Sewerage, the total actions commenced were 95; in each case the Department was plaintiff, and all the cases were settled or discontinued.

SOLICITORS AND BARRISTERS.

A solicitor has the right of audience in all Courts of New South Wales, and the Supreme Court may suspend or remove from the roll any solicitor who has been guilty of misconduct or malpractice.

A candidate seeking admission as solicitor in New South Wales, provided he has not been admitted in the United Kingdom, or in any State of Australia, must have qualified by passing examinations as outlined in part "Education" of this Year Book. Admission of a solicitor may take place during any law term; a solicitor who ceases to practise for two years continuously is allowed to resume practice only under an order from the Court; a barrister who has been in practice for five years, having caused himself to be disbarred, may be admitted as a solicitor without examination.

The Board for admission of barristers of the Supreme Court consists of the Judges of the Supreme Court, the Attorney-General, and two elected members of the Bar. Applicants must have been students-at-law for three, or, in the case of graduates, for two years, and have passed all examinations prescribed by the Board. A solicitor who has been in practice for at least five years, and who has removed his name from the roll of solicitors, may be admitted as a barrister without examination.

There were, during 1913, 161 barristers practising in New South Wales, and the number of solicitors was 1,037; of the latter, 607 were in the Metropolis.

PATENTS.—COPYRIGHTS.—TRADE MARKS, AND DESIGNS.

Since 1st June, 1904, the administration of the Patents, Copyright, and Trade Marks Acts has devolved upon the Federal authorities, and a patent granted under the Commonwealth Act is thus afforded protection in all the States, and in the Territory of Papua, the period for which it remains in force being limited to fourteen years. The copyright in a book, the performing right in a dramatic or musical work, and the lecturing right in a lecture, continue for the author's life and fifty years after his death. The British Copyright Act subject to certain modifications is in force in the Commonwealth under the Copyright Act, 1912.

The registration of a trade-mark protects it for fourteen years, but may be renewed from time to time. Under the "Commonwealth Designs Act" an industrial design may be protected for five years, and the period extended to fifteen years, provided it is used in Australia within two years of registration.

Under the various Federal acts, arrangements may be made for the protection in other countries of patents, copyrights, trade-marks, and designs. In all cases the rights of holders under the legislation of a State were conserved.

POLICE AND PRISON SERVICES.

DUTIES OF THE GENERAL POLICE.

Apart from the preservation of order and the protection of life and property, the general police are charged with a variety of duties, which, though beyond the scope of usual police work, are allotted to them as the most efficient and economical agents—as in the collection of records and statistics, and the pursuit of investigations and inquiries for various branches of the Public Service. Upon the police devolve the tasks of compiling new electoral rolls and jury lists; of collecting annually, statistics of pastoral holdings, manufacturing and slaughtering establishments, mills, and private schools. The police also issue timber, fuel, and quarry licenses, miners' rights, business and mineral licenses; and serve as inspectors under the following Acts:—

Liquor.	Shearers' Accommodation.
Cattle Slaughtering and Diseased Animals and Meat.	Pure Foods.
Tobacco.	Magazines and Explosives.
Dairies Supervision.	Vineyards.
Diseases in Sheep.	Weights and Measures.
Alien Immigration.	Commonwealth Old-Age Pensions.
Fisheries.	Factories and Shops.
Early Closing.	State Children's Relief.
Noxious Trades.	&c., &c.

In some localities the police also act as clerks of petty sessions, gaolers, wardens' clerks, mining registrars, and registrars of births, deaths, and marriages.

As regards the services of the police in cases of accident, it is of interest to note that during the year 1913, at examinations in swimming held by the Royal Life-saving Society, 55 police were successful. Of the total police force of 2,635 men at 31st December, 1913, no less than 512 were the holders of First Aid Certificates.

POLICE REGULATION ACT.

The Police Regulation (Superannuation) Act, No. 28 of 1906, provides that the age of retirement from the police force shall be 60 years, except in the case of the Inspector-General of Police. Under certain circumstances, however, any member of the force may be retained until he reaches the age of 65 years.

During 1913 there were 37 members of the police force superannuated on pensions amounting to £6,791 per annum; 4 were discharged with gratuities to the total of £608. The sum of £2,193 was paid from the Police Superannuation and Reward Fund as gratuities to seven widows, in addition to £94 funeral expenses. During the year 20 police pensioners died, the pensions of which they were in receipt amounted to £3,156 per annum.

Additional information regarding the Police Superannuation Fund may be found in Part "Social Condition," of this Year Book.

POLICE FORCE.

A police force numbering 2,635 men is maintained under the immediate control of an Inspector-General. The following statement shows the distribution of the establishment at 31st December, 1913:—

Classification.	Superintendents.	In-spectors.	Sub-In-spectors.	Ser-geants.	Con-stables.	De-tectives.	Track'rs	Total.
General Police	12	10	39	223	2,115	...	53	2,452
Detective ,,	1	1	1	...	...	27	...	30
Water ,, ... ..	...	1	...	2	37	...	...	40
Traffic ,,	1	...	1	3	102	...	...	107
Weights & Measures Office	...	...	...	1	5	...	...	6
Total... ..	14	12	41	229	2,259	27	53	2,635

In addition to the above, there are five women attached to the police stations as searchers.

It is to be expected that with a steadily increasing population the strength of the police establishment will advance also; but, as the following statement shows, during the last nine years the increases have not been proportionate; the extension of population has been so much more rapid than the extension of the police force, that the ratio of one policeman to 624 inhabitants, subsisting at the end of 1904, has changed gradually, so that for 1913 the ratio was one policeman to 710 inhabitants:—

Year.	Number of Police.	Inhabitants to each Policeman.	Year.	Number of Police.	Inhabitants to each Policeman.
1904	2,310	624	1909	2,435	656
1905	2,342	627	1910	2,447	670
1906	2,342	640	1911	2,487	683
1907	2,381	643	1912	2,554	696
1908	2,417	645	1913	2,582	710

In connection with the duties of the Water Police, it may be stated that the crews of vessels visiting Sydney during 1913 numbered 171,010, and at Newcastle 31,462. These figures are exclusive of the crews of the many vessels engaged in trading between ports of the State.

In the metropolitan district the Traffic Police inspect public vehicles, test taximeters, regulate and control the use of motor vehicles upon public streets, besides exercising a general control over all street traffic. In this connection 2,341 accidents were recorded in public streets within the metropolitan area, and 696 persons were taken to hospitals by the Traffic Police.

VEHICLES AND LICENSES.

Metropolitan Traffic Act.

The following table shows the licenses granted under the Metropolitan Traffic Act for each class of vehicles during the years 1912 and 1913:—

License.	Annual Fee.	Licenses Issued.		License.	Annual Fee.	Licenses Issued.	
		1912.	1913.			1912.	1913.
	s. d.	No.	No.		s. d.	No.	No.
Horse cab	20 0	763	759	Motor-van driver...	5 0	18	18
Motor cab	20 0	203	228	Horse-bus driver ...	5 0	70	58
Horse van	20 0	1,468	1,604	Motor-bus driver ..	5 0	4	14
Motor van	20 0	11	7	Conductor	5 0	6	5
Horse omnibus ...	40 0	43	32	Transfer	1 0	251	236
Motor omnibus ...	40 0	2	5	Permit	1 0	277	284
Horse-cab driver ...	5 0	932	928	Badge	2 0	229	238
Motor-cab driver ...	5 0	289	350	Taximeter test ...	10 0	355	475
Horse-van driver ...	5 0	1,749	1,903				

The revenue obtained under the Metropolitan Traffic Act was £3,548 for the year 1912, and £3,802 for the year 1913.

Motor Traffic Act and Regulations.

Certificates and Licenses granted under the Motor Traffic Act and Regulations during the years 1912 and 1913 are shown below:—

Certificate or License.	Annual Fee.	Licenses Issued		Certificate or License.	Annual Fee.	Licenses Issued.	
		1912.	1913.			1912.	1913.
	s. d.	No.	No.		s. d.	No.	No.
Motor vehicle ...	20 0	5,914	8,072	Motor cycle duplicate...	2 6	26	49
Motor vehicle driver	5 0	8,831	12,154	Learner's permit ...	2 6	2,955	3,753
Motor cycle... ..	2 6	3,804	4,850	Transfers	2 6	1,014	1,378
Motor cycle rider ..	Free	4,596	6,088	New number plate	2 0	565	870

The revenue obtained under the Motor Traffic Act was £9,184 for the year 1912, and £12,456 for 1913. In 1914 an Act was passed imposing a graduated tax on motor vehicles other than motor cycles.

WEIGHTS AND MEASURES.

The inspection and verification of weights, measures, and weighing instruments at traders' premises is a duty of the Police. Transactions during the year 1913 were as follow :—

Inspection.

Transactions.	Metro- politan District.	Country Districts.	Transactions.	Metro- politan District.	Country Districts.
Premises visited ...	11,064	2,422	Weighing Instruments—		
Weights—			Total examined ...	15,979	3,105
Total examined ...	59,655	12,627	Correct ...	13,771	2,788
Correct ...	51,629	11,220	Seizures of Material ...	35	80
Measures of Length—			Prosecutions ...	40	8
Total examined ...	4,006	434	Cautions issued ...	2,907	.....
Correct ...	3,762	428	Fines ...	115	7
Measures of Capacity—					
Total examined ...	17,705	1,394			
Correct ...	16,951	1,355			

Verification.

Transactions.	Metro- politan District.	Country Districts.	Transactions.	Metro- politan District.	Country Districts.
Weights—			Weighing Instruments—		
Total examined ...	36,572	8,485	Total examined ...	6,648	2,259
Correct ...	35,698	8,133	Correct ...	6,187	2,244
Measures of Length—			Fees collected ...	£ 847	217
Total examined ...	3,083	75			
Correct ...	3,079	75			
Measures of Capacity—					
Total examined ...	11,770	1,753			
Correct ...	11,448	1,742			

Inspections at Bakehouses and Shops.

The inspections by the police under the Bread Act during 1913 were :—

Transactions.	Metro- politan District.	Country Districts.	Transactions.	Metro- politan District.	Country Districts.
Premises visited ...	913	746	Prosecutions ...	1	14
Weights found correct ...	828	714	Cautions ...	84	.....
,, ,, incorrect	85	32	Fines ...	£ 50	130

Inspections of Coal-weighing Machinery.

The inspections of coal-weighing machinery under the Coal Mines Regulation Act in New South Wales, as performed by the police during the year 1913, were as follows :—

Mines visited ...	137	Machines found correct ...	261
Machines examined ...	273	,, ,, incorrect ...	12

PRISONS.

IDEALS OF THE SYSTEM.

The aim of the whole prison system of the State is to educate offenders and to remould their habits, thus enabling them to obtain their freedom and to use it advantageously to themselves and to the community. The idea of imprisonment as punitive or retributive is no longer entertained, but it is taken as axiomatic that the committal of crime demonstrates unfitness to be at liberty and to compete with normal individuals in the struggle for existence; and while not yet attempting to distinguish and eliminate the causes, hereditary or acquired, which tend to produce criminals, the effort is made to segregate the undesirables until they shall have acquired and evinced normal characteristics. To this end sentences of sufficient length are desirable, especially in cases of declared habitual criminals.

PRISON POPULATION.

During 1913 there were in New South Wales 30 gaol establishments; of these, 5 were principal, 12 minor, and 13 police gaols. The total number of cells in all gaols was 2,224, and only one occupant is allowed in each cell.

The number of prisoners in gaol at the close of each year during the last nine years will be found below:—

Year.	Under Sentence.		Awaiting Trial.		Total.		
	Males.	Females.	Males.	Females.	Males.	Females.	Total.
1905	1,414	155	94	15	1,508	170	1,678
1906	1,281	149	76	13	1,357	162	1,519
1907	1,275	162	47	6	1,322	168	1,490
1908	1,258	159	72	11	1,330	170	1,500
1909	1,196	137	86	11	1,282	148	1,430
1910	1,114	124	79	6	1,193	130	1,323
1911	1,066	107	68	8	1,134	115	1,249
1912	1,145	112	94	12	1,239	124	1,363
1913	1,295	161	86	9	1,381	170	1,551

The prisoners under sentence at the end of the year 1913 are exclusive of inebriates, viz, 47 men and 72 women, but include 1 male debtor.

Ages of Prisoners.

During 1913, 11,853 convicted and unconvicted persons were received into the institutions; of these 4,277, representing 36 per cent., were born outside Australia. The following statement shows the grouping according to ages of persons received during the last five years:—

Age Group.	1909.	1910.	1911.	1912.	1913.
Years.					
Under 16	12	2	6	9	11
16-20	1,118	933	897	1,079	1,214
21-24	1,343	1,105	1,136	1,261	1,252
25-29	1,819	1,543	1,483	1,837	1,911
30-34	1,423	1,258	1,223	1,589	1,671
35-39	1,489	1,172	1,157	1,426	1,479
40-44	1,304	1,159	1,012	1,152	1,366
45-49	1,043	933	873	1,082	1,037
50 and over	1,952	1,710	1,710	1,892	1,880
Not stated	47	34	35	34	32
Total	11,550	9,849	9,532	11,361	11,853

As will be seen by reference to the detail figures showing the operations of Magistrates' Courts, the proportion of cases remanded to higher courts is comparatively small. The majority of offences charged before the lower courts result in summary convictions for which, during 1913, fines were imposed and paid fully in 59 per cent. of cases; in 26 per cent. of convictions, involving imprisonment in default of payment, the fine was in most cases paid, in whole or in part, with remission of sentence in proportion. Only in 3·6 per cent. of convictions was imprisonment peremptory.

Decreasing Prison Population.

The total prison population at the close of 1913 was 1,551, which, with the exception of the last three years, represents the lowest level over a period of 39 years, while the following table, showing the relative position of general to prison population, and the gaol entries at intervals since 1875, proves that while the general population has more than trebled, the prison population as between 1875 and 1913 has increased by only 7 per cent.; the gaol entries shown below represent convicted persons, and persons awaiting trial:—

Year	General Population at 31st December.	Gaol Entries during Year.	Gaol Population at 31st December.	
			Number.	Per 1,000 of General Population.
1875	594,297	11,832	1,453	2·44
1885	949,570	20,740	2,562	2·70
1895	1,262,270	18,552	2,460	1·95
1905	1,469,153	13,380	1,678	1·14
1910	1,638,220	9,849	1,323*	·81
1911	1,698,736	9,532	1,249*	·74
1912	1,778,962	11,361	1,363*	·77
1913	1,832,456	11,853	1,551*	·85

* Exclusive of Inebriates detained.

INSTITUTIONAL TREATMENT.

Grading of Establishments.

The prison establishments are graded with a view to the concentration of prison population in institutions large enough to ensure efficiency of supervision with economy of administration, and the maintenance of a strict and disciplinary organisation conducive to the highest ideals of reform.

Since 1902 the number of gaol establishments has been reduced from 60 to 30.

The central establishment at Darlinghurst was reserved as a clearing-house, and also as a hospital for persons requiring medical care. From the Darlinghurst centre long-sentence prisoners were distributed to the principal country establishments, which are reserved for men in their special classes, viz., Goulburn for first offenders; Bathurst for men previously convicted but deemed amenable to reformatory influences; Parramatta for more confirmed or habitual criminals; and Grafton for special cases. Maitland Gaol is reserved for men from the Northern District, with sentences not exceeding six months; and other and smaller establishments, as at Armidale, Young,

Tamworth, Albury, &c., are used for short-sentence prisoners in the particular districts; while at the police gaols and lock-ups are detained only prisoners with sentences of less than fourteen days. During 1914, a Penitentiary for Males was opened at Long Bay, and Darlinghurst Gaol ceased to be used, its inmates being transferred to the other establishments.

Women prisoners are detained at the State Reformatory for Women, Long Bay.

Classification and Segregation.

In all the large establishments an inter-classification system is operative, which assures the segregation of the inmates in various classes as to age and conduct, and transfers are effected when necessary from class to class, or from one establishment to another.

The various classes are distinguished as follows :—

1. Sentences of penal servitude, or of over two years, with hard labour.
2. Sentences of less than two years, with hard labour, for felony or misdemeanour.
3. Sentences of imprisonment or indeterminate sentences.
4. Persons awaiting trial or under examination.
5. Mental defectives.
6. Debtors.
7. Youthful offenders, *i.e.*, men and youths under age 25, with sentences of less than twelve months.
8. Appellants.
9. Maintenance convicts.

With regard to the last mentioned class the Deserted Wives and Children Amending Act, 1913, empowers the Comptroller-General of Prisons to direct a prisoner committed to prison under the Deserted Wives and Children Act, 1901, or the Infant Protection Act, 1904, to perform any specified class of work. An estimate is made of the value of the work performed, and after a deduction for the prisoner's keep, the remainder is applied towards satisfaction of the order for maintenance under the Deserted Wives and Children Act, 1901, or for maintenance or expenses under the Infant Protection Act, 1904.

Restricted Association.

Prisoners under classes 1 and 2 are further subjected to divisional treatment, *i.e.*, they earn their right to promotion by exemplary conduct till placed in associated labour; but otherwise they are kept in separate cells, from which they go to the probationary division, when they benefit by various privileges preparatory to release.

For several years the principle of restricted association has been enforced, and has yielded results which demonstrate the success of the principle. Under present conditions association while at work, at exercise, and at religious instruction, is subject to the closest supervision; cells are lighted, and literature is made available from the prison libraries, which, in December, 1913, contained 24,628 volumes.

The enforcement of this system of isolation has involved heavy expenditure, which has been counterbalanced, however, by the advantages accruing from the policy of concentration, quite apart from the moral benefit ensuing to the prisoners. Separate confinement is practically abolished, the maximum period enforceable being four weeks.

Prisoners' Dietary.

In pursuance of the general scheme of prison reform the prisoners' dietary was revised and now comprises six classes based on the nature of the employment, the penal element being eliminated, while special consideration has been given to the dietary of offenders of the vagrant class.

The following summary shows the ingredients and quantities of the dietary in force in the prisons of this State :—

Dietary.	Sex.	Daily Allowance in Ounces.					
		Bread.	Maizemeal	Meat.	Vegetables	Rice.	Sugar.
1	M	14	8	6	8	$\frac{1}{4}$	.....
	F	12	6	4	8	$\frac{1}{4}$	.....
2	M	18	8	8	12	$\frac{1}{4}$	.....
	F	14	6	6	10	$\frac{1}{4}$	.....
3	M	18	8	12	12	$\frac{1}{4}$	1
	F	16	6	10	12	$\frac{1}{4}$	1
4	M	24	6	16	16	$\frac{1}{4}$	1
5*	M	16	.....	.....	.....	.....	.....
	F	16	.....	.....	.....	.....	.....
6	M	16	8	8	12	$\frac{1}{4}$	1

* Ill-conducted or idle prisoners, irrespective of sentence, and during solitary confinement.

In addition, $\frac{1}{2}$ ounce of salt is allowed with each ration, and where females are employed at washing, etc., they may be allowed a pint of tea daily, after one month's servitude.

Inebriates are dieted under rations numbers 2 and 3, but may be granted indulgences on obtaining marks for conduct and industry.

In January, 1914, the dietary allowance of the Prisoners Afforestation Camp, Tuncurry was gazetted and is similar to number 4 dietary, with the addition of 2 oz. of sugar, and $\frac{1}{2}$ oz. of tea.

BREACHES OF PRISON REGULATIONS.

A Visiting Justice is appointed to visit each prison at least once in every week, and Judges of the Supreme Court and Justices of the Peace may at any time visit and examine any prison. The Visiting Justice is empowered to hear and determine all complaints made against a prisoner for disobeying the rules of the gaol, or for having committed any offence, and to pass sentence of solitary confinement for a term not exceeding seven days. Drastic forms of punishment have been replaced by a policy of deprivation of privileges, and experience shows that the latter method is effective. No corporal punishments or dark cells have been inflicted for prison offences in New South Wales since May, 1900.

Breaches of prison regulations are rare, the punishments imposed for such infractions of discipline affecting only 3 per cent. of the total number of prisoners received into the gaols during the year 1913; of a total of 661 breaches, 11 were cases of violence to officers, and 27 of idleness. For the year 1914, the number of prison punishments amounted to only 523, and of these 339 were imposed during the first five months of the year, and 184 or 26 per month for the last seven months. The general decrease is attributed to the fact that since the middle of the year practically all the prisoners have been engaged in strenuous manual labour such as bricklaying, scrub clearing, levelling, quarrying, &c. It is noteworthy that at the Afforestation Camp no punishments were inflicted.

IMPRISONMENT IN LIEU OF FINE.

Under the Justices Act, 1902, imprisonment for non-payment of an amount adjudged to be paid on order of a Justice may be curtailed by payment of a portion of the fine, for which a proportionate part of the sentence may be remitted, and under the Crimes Act, 1900, and its amendment of 1905, provision is made for the payment of fines in instalments. The following

table shows the extent to which diminution in the term of confinement was commuted by money payment during the past five years:—

	1909.	1910.	1911.	1912.	1913.
Persons committed to gaol in default of payment of fines	6,471	5,027	4,959	5,844	6,016
Prisoners subsequently released after paying portion of fines	1,435	1,385	1,480	1,807	1,407
Days prisoners would have served if portion of fines had not been paid ...	42,760	45,573	41,104	55,835	46,031
Days remitted by part-payment of fines ..	29,773	32,823	30,120	41,000	32,042
Amount received at gaol as part-payment of fines	£ 2,924	£ 2,881	£ 3,153	£ 4,255	£ 3,387

In the year 1913, 65 per cent. of the total persons received into gaol were detained in default of payment of fines. Of the 6,016 so detained, 1,407 subsequently obtained release by paying part fines proportionate with unreserved balance of sentence, and an amount of £3,387 was received at the gaol.

The question of short sentences in lieu of paying fines is engaging the attention of the prison authorities generally, and it is agreed that a system is required, in which time to pay should be allowed when there is a fair prospect of recovering the fine.

IMPRISONMENT FOR DEBT.

During 1913, 31 men and 2 women were imprisoned for debt, but the time of detention, as a rule, extended over a short period, and the number of debtors in confinement at any given time was not large. At the end of the year 1913 there was one debtor (male) in gaol. The number of persons sent to gaol for debt during each of the last ten years is given in the following table:—

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
1904	62	7	69	1909	40	5	45
1905	63	12	75	1910	34	...	34
1906	57	14	71	1911	33	1	34
1907	42	4	46	1912	32	3	35
1908	43	3	46	1913	31	2	33

SPECIAL TREATMENT.

First Offenders.

When any person, not previously convicted of an indictable offence is convicted for a minor offence and sentenced, the Court, under the provisions of the Crimes Act, may suspend the sentence upon a recognisance, without sureties, for good behaviour during the period covered by the sentence, the probationary term being, however, not less than one year. An examination is made for purposes of identification, and the offender is required to report himself periodically. If his conduct be not satisfactory he becomes liable to imprisonment for the unexpired portion of the sentence; but good behaviour during the whole probationary period will cancel the conviction. During 1913, there were 327 persons, viz., 220 at Magistrates', and 107 at Higher Courts, released as first offenders; of these, 272 were men, and 55 women. These figures do not include children released on

probation from the Children's Court, under the Neglected Children and Juvenile Offenders Act, 1905.

The records of prisoners, convicted at Gaol deliveries and Courts of Quarter Sessions, show that, out of 772 persons convicted during 1913, 374 had not been convicted previously.

At Goulburn Gaol special reformatory treatment is provided for first offenders—useful employment, educational facilities, physical drill, and strict classification in order to prevent the association of prisoners of vicious tendencies. That this plan is an important factor in the deterrent influence of the prison system, is evinced by the small proportion of re-convictions of prisoners passing through the treatment.

YOUTHFUL OFFENDERS.

Under the Borstal system, as applied in England, the ages between 16 and 21, or in certain cases 23 years, are regarded as essentially the critical years during which temptation is hardest to resist, and during which also young offenders may reap most benefit from disciplinary and moral influences and industrial training. In New South Wales, the upward limit is set at age 25, and a strict line of demarcation is drawn between offenders over and under that age. Offenders under age 25 are classified in age-groups, also according to length of sentence over or under 12 months, and divisional treatment is accorded. Special scholastic, industrial, religious, disciplinary, and physical training courses are enforced, for the last of which facilities in the form of workshops are available. Particularly is it found that healthy outdoor agricultural work supplies an effective means of ensuring profitable employment when the offenders are released conditionally. Great discrimination and special care are necessary to prevent such youthful offenders from becoming confirmed criminals.

During 1913 there were 440 prisoners eligible for instruction; of this number 159 were practically uneducated, being 36 per cent. of the total eligible, who are drawn mainly from offenders under the age of 25 years.

WOMEN IN PRISONS.

In August, 1909, a specially designed and fully equipped establishment (the State Reformatory for Women) was opened at Long Bay, and to this central institution are sent all prisoners from the metropolitan district, and all long-sentence prisoners from extra-metropolitan districts. Short-sentence prisoners in the latter districts are detained at the largest local establishment. At Long Bay an exhaustive system of classification is in force, subdivisions being made in twelve distinct yards. Accommodation is provided by means of 290 separate rooms, ranged in four halls, one hall being reserved for inebriates. In addition there are workrooms, dining and reception rooms, and a special hospital; each inmate occupies a separate room when not engaged in the workrooms; and exercise takes the form of physical drill, in separate divisions.

During 1913, 1,544 women were received and 1,497 discharged from Long Bay, the number remaining at end of the year being 144. Approximately 75 per cent. of the women received at all gaols were committed on sentences of one month and less, and consequently presented little opportunity for the application of reformatory measures. The industrial activity of the institution resulted in an output of manufactures, the value of which, added to that of gardening and domestic services, was calculated at £2,333. Out-door employment has effected marked mental and physical improvement in the women; other employment is available at knitting, needlework, cooking, and services of a domestic character. During 1913

the daily average at the Long Bay State Reformatory for Women was 128 ; and 44 prisoners were punished for breaches of the regulations of the establishment.

In 1913, at all gaols of New South Wales, 1,723 female prisoners were received under sentence, the daily average number being 154.

HABITUAL CRIMINALS AND PREVENTIVE DETENTION.

The Habitual Criminals Act, 1905, empowers a judge to declare as an habitual criminal any person convicted for the third or, in some cases, the fourth time, on account of certain criminal offences, as specified in the Act. A definite sentence is imposed and served on account of the offence charged, and subsequently the offender is detained for an indefinite term, until he is deemed fit for freedom. Provision is made for a Consultative Committee of visiting officers and the governor of the prison, to whom each case is to be reported regularly.

This system of treatment acts as a deterrent to the existence of professional criminals, and moreover confers an incalculable benefit on society by removing the force of example of criminality. The benefits accruing from the system of indeterminate sentences, as initiated in New South Wales, have led to its adoption in other communities.

Six men were declared to be habitual criminals during 1913—making a total of 57 men and 1 woman so declared since the inception of the Act. Of this number, 8 men were released on probation, 1 being recommitted to gaol, 5 died, 2 were released on medical grounds, and 6 on account of technical flaws in the declaration determining their detention, so that at the end of 1913 there were under detention 11 men who had not yet completed the definite period, and 26 men and 1 woman who had passed through the definite term.

On the completion of the definite term under the ordinary prison regulations, the habitual criminal passes to the indeterminate stage, which is divided into three grades—intermediate, higher, and special; a minimum period of 4 years 8 months must be spent in the lower grades before the prisoner can gain admission to the special grade wherein cases may be brought under consideration with a view to release. Of the habitual criminals in gaol on 31st December, 1913, in the definite stage, the range of sentences was from 1 to 14 years, more than half being for 5 years.

On account of the length of the definite terms imposed in some cases, many prisoners have been deprived of the hope of liberty, except at a very advanced age. This fact has given rise to the question as to whether better reformatory results could be obtained if an equal period of definite sentence were fixed for all cases. As release is allowed only on sufficient justification being shown, it is considered that a term of moderate length would meet the purposes of the system, and at the same time encourage good conduct and industry in order to gain release.

At the end of 1913, of the 26 male prisoners in the indeterminate stage, 13 had succeeded in passing into the higher grade, while 1 was an inmate of the criminal hospital for insane. Of the 8 habitual criminals released to date, only 1 has been recommitted to gaol in New South Wales. In four of the cases, the period of probation, two years, has been completed, and these persons are no longer habitual criminals within the meaning of the Act.

An important proviso of the Habitual Criminals Act prescribes that while under detention as an habitual criminal every prisoner must work at some

useful trade, and receive at least one-half of the proceeds of his work. As these persons, as a rule, have not been trained in any branch of skilled labour, facilities are afforded them, while serving the definite term, to acquire training in some remunerative employment, such as brush or boot-making, carpentering or tailoring. As a result of his industry one prisoner in the indeterminate stage had accumulated over £110 at the end of year 1913.

CAPITAL PUNISHMENT IN NEW SOUTH WALES.

Prior to the passing of the "Criminal Law Amendment Act of 1883," the laws dealing with offences which carried the death penalty were those governed by various Imperial Acts, the provisions of which were adopted in New South Wales, principally by an Act passed by the Legislative Council in the year 1838.

The Constitution Act of 1855 also provided for the retention of "all Laws, Statutes, and Ordinances" which, at the time of passing of that Act, were in force within New South Wales.

The offences subject to the death sentence prior to 1883 were as follows:—

- (a) Murder.
- (b) Attempt to murder (administering poison or doing bodily injury with intent to commit murder).
- (c) Rape.
- (d) Carnally knowing a girl under the age of 10 years.
- (e) Burglary, with assault, with intent to murder, or stabbing, cutting, wounding, beating, or striking any person being within the dwelling.
- (f) Robbery, attended with cutting or wounding.
- (g) Piracy, when murder is attempted.
- (h) Setting fire to a dwelling-house, any person being within.
- (i) Setting fire in order to cast away or in any way destroy any ship or vessel, whereby the life of any person shall be endangered.
- (j) Hanging out false lights to cause shipwrecks.

In the Amending Act of 1883 the penalty for the offence (f) "Robbery attended with wounding or cutting," was altered to that of "penal servitude for life"; in the case of (g) Piracy, the punishment was not mentioned explicitly; and the offences, "Exploding gunpowder or other explosive substance, destroying or damaging any building or placing or throwing any matter or thing upon or across a railway or removing or displacing any sleeper or other thing belonging to a railway with intent in any such case to commit murder," were added to item (i).

The Crimes Act of 1900 embodies such offences punishable by death as are provided for in the 1883 Amending Act.

It is also provided that, in every case of conviction for murder or rape, the sentence of death must be pronounced, but in every other case where an offender is liable to the punishment of death, the judge may abstain from passing such sentence, and direct such sentence to be "recorded," and every sentence so recorded shall have the same effect in law as if it had been pronounced in open Court. Provision is also made for the commutation of capital sentences.

The following table shows the number of convictions, and executions for capital offences, in the State at decennial periods from 1861 to 1901, and

for the years 1909 to 1913 inclusive, together with the total number of death sentences pronounced, and sentences of death recorded.

Year.	Murder and attempt to murder.		Rape.		Carnally knowing a girl under the age of 10 years.		Death Sentences Pronounced and Sentences of Death Recorded.*
	Convictions.	Executions.	Convictions.	Executions.	Convictions.	Executions.	
1861	2	...	3	2	1	...	...
1871	9	3	2	...	2	...	...
1881	3	1	3	1	...	...	...
1891	6	3	3	...	1	...	7
1901	5	2	2	...	1	1	8
1909	6	...	3	...	...	...	4
1910	6	...	6	...	...	...	4
1911	6	...	2	...	...	...	5
1912	14	1	4	...	...	...	9
1913	11	...	5	...	...	...	10

* The separate offences in which death sentences were recorded are not available.

DRUNKENNESS.

During 1913, the total convictions for drunkenness numbered 32,467. The following table shows the total convictions or cases, not distinct individuals, during each of the last ten years, and their ratio to the mean population:—

Year.	Convictions (Not distinct individuals).			Convictions per 1,000 of—		
	Males.	Females.	Total.	Male Population.	Female Population.	Total.
1904	18,116	4,827	22,943	24·34	7·05	16·06
1905	18,996	5,007	24,003	25·06	7·18	16·50
1906	20,589	4,664	25,253	26·64	6·55	17·01
1907	23,573	4,536	28,109	29·86	6·23	18·52
1908	23,730	4,087	27,817	29·59	5·49	18·00
1909	23,616	3,747	27,363	28·86	4·94	17·35
1910	24,450	2,930	27,380	29·10	3·78	16·94
1911	26,295	3,004	29,299	30·28	3·77	17·60
1912	29,264	3,456	32,720	32·05	4·19	18·82
1913	29,153	3,314	32,467	30·65	3·86	17·94

It will be seen that there has been a decided decrease in the convictions of women; this has been most marked in the years immediately succeeding the enactment of the Liquor Amendment Act of 1905, and the establishment of State institutions for treatment of inebriates in 1907. There is no doubt that the proportions during the last five years have been appreciably lowered by the detention of women who, though few in number, swelled the record of cases by repeated convictions on the charge of drunkenness.

With regard to the men, the figures show a decided increase; in 1904 the rate was 24·34 per 1,000 of male population, while in 1913 it was 30·65, an increase of over 25 per cent.

THE TREATMENT OF INEBRIATES.

Inebriates in prisons have been treated separately since 12th August, 1907, and during 1913 there were two State institutions, under the control of the Comptroller-General of Prisons, devoted to their treatment, viz., Darlinghurst and Long Bay. The system is effective in supplying medical attention and

care to chronic drunkards who have become mentally and physically enfeebled, and the maintenance of establishments in the nature of asylums is essential to effect the humane detention of persons who are otherwise disturbances to society, and careless of their own interests; but the number of such persons who can be benefited permanently is very small, and the best safeguard lies in preventive rather than reformative measures. With this object in view, stringent clauses regarding the sale of liquor at licensed premises are prescribed by the Liquor Act.

Except in cases of sickness or accident, persons under the age of 18 years may not be supplied with liquor, and persons under 17 years of age are not allowed in the bar of an hotel; females under 21 years, except in the case of the wife or daughter of a publican, are not permitted to serve liquor. Hotels must be closed during the time of voting for a Parliamentary election and on Sunday, though liquor may be sold to *bonâ fide* travellers, lodgers, servants, or inmates. In the case of travellers, publicans are not compelled to supply and may do so only where the traveller has travelled 10 miles from his lodging place of the previous night in the country, or 20 miles in the County of Cumberland.

The Inebriates Act has been designed to provide treatment for two classes of inebriates—those who have been convicted of an offence and those who have not in this way come under the cognisance of the law.

For the care and treatment of the latter class, the Act authorises the establishment of State institutions under the control of the Inspector-General of Insane. Judges, police magistrates, and the Master-in-Lunacy are empowered, on application of an inebriate, his relations, or, in special cases, a police officer of superior rank, to order that an inebriate be bound over to abstain from intoxicating liquor for a period not less than twelve months, or that he be placed in a State or licensed institution, or under the care of an attendant controlled by the Master-in-Lunacy, or of a guardian, for a period not exceeding twelve months. Provision is made also to enable an inebriate to enter voluntarily into recognisances to abstain. Up to the present time no State institution has been provided under this section of the Act, but one private establishment has been licensed for the treatment of male inebriates; and a number of orders have been obtained to place an inebriate under the care of an attendant, who is usually the owner of a private hospital.

With regard to inebriates of the criminal class, the records of the State over a period of years show that practically half the persons who constitute the gaol population at any given date have commenced their criminal career on a charge of drunkenness, and there are many offenders frequently convicted on this charge for whom the short sentence or the imposition of a fine is quite useless as a deterrent.

To meet such cases the Acts provide that where an inebriate is convicted of an offence of which drunkenness is a factor, or of assaulting women, cruelty to children, attempted suicide, or wilful damage to property, and it appears that drunkenness was a contributing cause, he may be required to enter into recognisances to be of good behaviour and to abstain from intoxicating liquor for a period not less than twelve months, during which he must report periodically to the police; or he may be placed in a State institution for a period of twelve months, such period being liable to extension. Inmates are employed in remunerative and useful occupations.

Any person detained in a State institution may be released on license, the conditions imposed on the licensee being good behaviour and abstinence for a stated period. If re-convicted within a year of entering into recognisances, or discharge from an institution, or of release on license, an inebriate may be committed to an institution for a period ranging up to three years.

The State institutions for this class of inebriates, two in number during 1913, were under the direction of the Comptroller-General of Prisons. A portion of Darlinghurst Gaol was set apart for inebriate men, but reformatory treatment was hampered by the lack of adequate accommodation. Inebriate women were detained at the State Reformatory, Long Bay. Open air working conditions are apparently the most suitable for these persons; and it was proposed to remedy the existing lack of accommodation, especially for men inebriates, by erecting an institution, where outdoor work could be provided, at Long Bay, outside the prison area.

Transactions at State Inebriate Institutions

The power of detaining inebriates in State Institutions was first exercised in August, 1907, and the majority of admissions have been of chronic offenders over 40 years of age who for many years prior to admission had served frequent sentences under the repeated short sentence system, and who in consequence had drifted into a condition from which reformation seemed almost hopeless. In view of this fact the results attained by the operation of the Acts may be considered encouraging. During the period dating from the first reception in August, 1907, to 31st December, 1913, the total number of original receptions amounted to 486—222 men and 264 women; 181 release licenses issued for men and 293 for women; and in the cases of 65 men and 129 women it has been found necessary to cancel the licenses and recommit the holders to institutions.

The following statement shows the number of admissions to, and departures from, the two inebriate institutions during 1913:—

Classification.	Males.	Females.	Total.
Received from Courts	68	84	152
Discharged after detention	1	3	4
" before completion of detention... ..	5	...	5
" on medical grounds	6	...	6
Released on license	49	74	123
Died	1	...	1
Detained at end of year	47	72	119

Of the persons released on license during 1913 from the institutions, 8 were sent to domestic service, 9 to gardening or labouring work, 2 to other more or less skilled work, 54 to homes, and 50 to care of friends, &c.

Of 152 persons admitted during 1913 to the institutions, 99 were Australian born, 81 being natives of New South Wales, and of the remainder 48 were British born. The minimum period of detention was six months, the range being: 2 cases, 6 months; 1 case, 7 months; 77 cases, 12 months; 25 cases, from 12 months to 2 years; 47 cases, over 2 years.

Of the persons admitted during 1913, the number of convictions recorded in the various cases were as follows:—

Convictions.	Cases.	Convictions.	Cases.
1	3	31-40... ..	21
2-5	11	41-50... ..	8
6-10	26	51-100	10
11-20	40	Over 100	9
21-30	24		

The majority of persons admitted during 1913 were over 40 years of age, viz. :—

Under 21, nil; 21–25 years, 2; 25–30 years, 7; 30–35 years, 21; 35–40 years, 29; 40–45 years, 35; 45–50 years, 26; 50 years and over, 32.

Of 68 men admitted 43 were labourers, dealers, &c., *i.e.*, unskilled, 5 were seamen, 17 were skilled or professional workers, and 3 were classed independent means.

The total expenditure on inebriate institutions during 1913 amounted to £3,445, the greater portion of which was on account of administration.

INDUSTRIAL ACTIVITY IN PRISON ESTABLISHMENTS.

Ability to perform useful and remunerative labour is recognised as of equal importance with good conduct in demonstrating fitness for freedom; and to encourage some degree of skill, employment at industries calculated to inspire interest, and subsequently to prove remunerative, is provided and is supervised by competent instructors.

The gross value of articles manufactured during 1913 amounted to £17,543, including the value of articles manufactured for Government Departments, and for use within prison establishments. On alterations and repairs within the institutions, at average rates, the work done was valued at £4,963; in domestic service the labour value for the year was £12,216. The tailoring work was valued at £3,534, the bootmaking at £3,300, and the carpentry at £2,954.

Where it is practicable, each person is kept at his particular trade, but the majority of offenders have no trade. The large proportion of general workers among the prison population demonstrates this preponderance of unskilled labour, since among the persons listed as working at skilled trades or at manufacturing are many whose knowledge has been acquired only during detention.

Agriculture and Out-door Work.

Where land is available, considerable attention is given to agriculture, and offenders under age 25 are specially detailed for this work, which from its nature is recognised as particularly conducive to physical and moral improvement. The principal establishments at which agriculture and horticulture are carried on are Bathurst, Goulburn, Grafton, and Parramatta gaols and the State Reformatory for women.

It is anticipated that during 1914 a Prison Farm will be established at Emu Plains. Arrangements are being made with the Department of Agriculture and it is proposed to work the farm with selected first offenders.

Afforestation by Prisoners.

During 1911 investigation was made into the system of tree planting by prison labour as carried on in New Zealand, where afforestation on large sections of barren country, especially hill slopes in the thermal districts, gives promise of being a profitable source of revenue in the future. The proved efficiency of the system has led to its inauguration in New South Wales.

Owing to the slow growth of the native trees in New Zealand afforestation has been adopted, but in New South Wales, where the hardwoods and inland cypress pines reproduce naturally, re-afforestation will be the most suitable method.

The first site chosen for the work was near Tuncurry, in the North Coast district, where an area of 6,000 acres was selected and the preliminary work

completed. In November, 1913, four officers and twenty prisoners commenced active operations, and between that date and the following May, were occupied in fencing, levelling, grass planting, grubbing, well-sinking, &c. In addition, two vegetable gardens covering three-quarters of an acre were prepared.

Between May and September, the number of trees planted by prison labour was 121,896, of which 48,700 were at the agricultural area and 73,196 in the prison area.

UNEMPLOYED IN PRISON ESTABLISHMENTS.

In the various establishments there must necessarily be a certain proportion of inmates who for various reasons are unemployed. At the end of 1913 there were 208 such, the causes being—

In hospital, 45 ; under medical treatment, 17 ; in cells, 14 ; exempted, 20 ; recently received, 18 ; not under sentence, 91 ; debtors, &c., 3.

SICKNESS AND MORTALITY IN GAOLS.

Visiting surgeons are attached to the various important establishments of which the sanitation and hygiene are on modern lines. Among the persons received into the institutions are included many whose physical condition is deplorable, persons in the last stages of disease, and aged and infirm persons, for whom a hospital or asylum is the befitting destination. Within the institutions cleanly habits are required, and there occur few instances of disease originating after reception ; on the other hand, there are cases in which disease, apparently originated prior to committal, has grown so serious as to compel the release of the prisoner. The following statement shows particulars regarding the releases made on medical grounds during 1913 :—

Mental disease, 4 ; tuberculosis, 3 ; cancer, 2 ; diabetes, 2 ; Bright's disease, 2 ; pregnancy, 2 ; eczema, 2 ; other, 6.

In 17 cases the disease had originated before reception into prison.

The general medical statistics of prisons show that with an average daily number of 1,509 inmates, the total number of cases of sickness treated in hospital, irrespective of minor ailments treated outside hospital, was 718.

Particulars in regard to the duration of illness are not available, but details regarding the deaths show 2 from alcoholism, and 1 each from apoplexy, heart disease, duodenal ulcer, and acute peritonitis, while one prisoner committed suicide.

In the following table the number of deaths in gaols, exclusive of those resulting from executions, is given for 1895 and subsequent periods, together with the death-rate per 1,000 of the average number of prisoners in gaols during the year :—

Year.	Deaths.		Death-rate per 1,000 persons in gaols.	Year.	Deaths.		Death-rate per 1,000 persons in gaols.
	Males.	Females.			Males.	Females.	
1895	19	3	8·83	1909	6	3	6·11
1900	15	3	9·02	1910	6	...	4·39
1905	12	1	6·98	1911	11	1	9·27
1906	5	3	4·90	1912	4	2	4·38
1907	9	1	6·48	1913	7	...	4·64
1908	14	1	10·27				

In 1912, one male prisoner was executed ; this was the only occasion in which capital punishment was enforced since 1907.

Tubercular Ward.

During 1911 a special ward was erected in Bathurst Gaol for the treatment of prisoners suffering from tuberculosis. The report of the medical officer shows that the general condition of those treated to date, principally advanced cases, was good.

INSANITY IN GAOLS.

During 1913, 58 cases of insanity, viz., 52 males and 6 females, were diagnosed among the gaol inmates, of which number 38 showed symptoms on reception and 7 developed them within one month of admission. There were also 35 prisoners sent to observation wards, 119 persons received for protection or on charges of mental defectiveness, and 26 were received suffering from the effects of alcoholism. Of the cases diagnosed, 6 recovered in gaol, 18 were certified for removal to a hospital for insane; in 8 cases the sentences expired, in 5 remission was granted, and in 17 remand cases the prisoners were discharged to the police.

CONTAGIOUS DISEASES.

Under the Prisoners Detention Act, 1908, prisoners found to be suffering from certain contagious diseases may be detained in Lock Hospitals, of which—in 1913—there were 11. In the case of imprisonment in lieu of payment of a fine, the Act does not provide for detention beyond the specified term of imprisonment.

In cases of imprisonment without option of fine, a stipendiary magistrate may cause the prisoner to be detained until certified by the medical officer as free from disease even after the definite sentence is served.

In the following table, persons "Under Orders" are therefore cases of peremptory imprisonment; persons "Eligible for Orders" are similar cases where the sentence was too short to admit of treatment; while those "Not Eligible" represent imprisonment in lieu of a fine.

It can be seen from the table that, since 1909, owing to the limitations of the Act, no less than 252 cases were discharged from prison while possibly in a contagious state.

In the attached statements are shown the number of cases and sexes, also the disposal of the cases.

Prisoners Suffering.

Year.	Under Orders.		Eligible for Orders.		Not Eligible.		Total.		
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Total.
1909	43	27	35	11	54	21	132	59	191
1910	48	14	28	4	60	2	136	20	156
1911	55	15	14	5	52	7	121	27	143
1912	51	20	23	1	39	10	113	31	144
1913	65	11	27	9	73	9	165	29	194

Result of Treatment.

Year.	Under Orders.		Eligible for Orders.		Not Eligible.		Total.			
	Cured.	Uncured.	Cured.	Uncured.	Cured.	Uncured.	Cured.	Uncured.	Remain- ing.	Total.
1909	58	...	38	...	5	65	101	65	23	*189
1910	57	1	19	1	10	47	86	49	21	156
1911	55	1	14	2	14	39	83	42	23	148
1912	54	...	14	1	8	34	76	35	33	144
1913	68	...	14	...	11	61	93	61	40	194

* Excludes 2 deaths.

TERMS OF SENTENCES.

The following statement shows the number of persons received into penal establishments during the years 1912 and 1913 for sentences of the durations specified :—

Term of Sentence.	Persons Received.					
	1912.			1913.		
	Males.	Females.	Total.	Males.	Females.	Total.
1 month and under	4,613	1,226	5,839	4,539	1,253	5,822
From 1 to 3 months	1,472	298	1,770	1,546	315	1,861
„ 3 to 6 „	633	92	725	703	105	813
„ 6 to 12 „	193	6	199	237	11	248
„ 1 to 2 years	126	2	128	160	1	161
„ 2 to 5 „	63	1	64	104	2	106
„ 5 to 10 „	6	...	6	14	...	14
Over 10 years ... ..	...	...	...	2	...	2
Death and Death recorded ...	9	...	9	10	...	10
Life... ..	1	...	1	1	...	1
Unspecified	214	4	218	271	6	277
Total	7,330	1,620	8,950	7,592	1,723	9,315

Cumulative sentences have been taken as in the aggregate, and concurrent sentences as equal to the longest term. It is noticeable that for 1913, 63 per cent. of sentences are for periods not exceeding one month; and 94 per cent. do not exceed one year. The majority of short sentences have been imposed for breaches of good order, the imprisonment being served in default of fines.

A number of persons in each year are convicted on charges under the Vagrancy Act, and receive sentences ranging up to six months. For many of these, the sentences served under ordinary gaol regulation are unsuitable, their cases being the result of mental or constitutional defect, and it has been suggested that a system of indeterminate sentences be applied in order to assure medical treatment and disciplinary training.

On 31st December, 1913, there were 60 prisoners serving life sentences (including 2 females), and 13 sentences of various periods over 10 years. In these cases the sentences have been imposed by the Executive authority in lieu of capital punishment. In this State "Life Sentence" does not mean any fixed term, but a prisoner may petition for release after serving twenty years. Where, however, a prisoner's expectation of life is less than twenty-two years, the date of petition is in accordance with a fixed scale.

LICENSING OF PRISONERS.

Some satisfactory results are derived from the system of licensing in lieu of absolutely discharging prisoners, but difficulty is experienced in compelling the license holders to comply with the conditions of the license. During 1913 376 persons were discharged from all prisons on license, viz. :—

	Males.	Females.	Total.
Under Crimes Act	95	3	98
„ Prison Regulation	276	2	278
Total	371	5	376

Licenses operate for the unexpired portion of the sentence; sureties are required. The licensee is required to report periodically, and for any breach of conditions is liable to cancellation of license, and to recommittal to gaol for the balance of the sentence.

Of the licenses issued under the Crimes Act, 77 were in force at the end of 1913, viz., 76 for men and 1 for a woman.

FUGITIVE OFFENDERS AND EXTRADITION.

The Imperial statutes in force in New South Wales for the surrender of fugitive criminals are the Fugitive Offenders Act, 1881, and the Extradition Acts, 1870 to 1895.

Under the Fugitive Offenders Act, 1881, provision is made for the surrender from the United Kingdom to a British possession or *vice versa*, or from one British possession to another, of fugitives charged with the perpetration of crimes which, in the part of His Majesty's dominions where they are committed, are punishable by a minimum penalty of imprisonment with hard labour for twelve months. Persons apprehended under this Act are brought before a Magistrates' Court, and their cases are included in the figures relating to the business transacted at such courts.

During 1913, 24 persons—22 males and 2 females—were arrested in other countries as fugitive offenders, and returned to New South Wales. Of these 6 were discharged, 2 were summarily convicted before magistrates, 10 were committed to higher courts, in one case proceedings were discontinued, in four cases maintenance orders were made, and the remaining case was remanded.

The number of persons arrested in New South Wales during 1913 as fugitives from other parts of the British Empire was 38, of whom 36 were males and 2 females. Of these 1 was discharged, 29 were remanded to other States of the Commonwealth, 6 to New Zealand, 1 to Fiji, and 1 to Java.

The Extradition Acts provide for the surrender to foreign States of persons accused or convicted of committing crimes within the jurisdiction of such States, and for the trial of criminals surrendered to British dominions. Treaties for the extradition of fugitives subsist between the United Kingdom and the majority of foreign countries. In proceedings taken in New South Wales under the Extradition Acts the fugitive may be brought before a Stipendiary or Police or Special Magistrate, who hears evidence on oath, and, if satisfied, makes out a warrant for the extradition. At the hearing, the Consul for the country of which the person charged is a subject, the Crown Solicitor, and the Inspector-General of Police are represented. If a warrant be granted, the prisoner is detained for fifteen days prior to extradition, during which interval he may apply to the Supreme Court for a writ of *habeas corpus*. During the year 1913 there were no extraditions.

PREVENTION OF INFLUX OF CRIMINALS.

In the Commonwealth Immigration Act, 1912, special clauses have been inserted vesting powers in the States to prevent the landing of criminals.

AUXILIARY AGENCIES.

The Prisoners' Aid Association assists released persons to find suitable employment, and acts as trustees of gratuities and moneys earned while in prison. During 1913, 266 discharged prisoners were supplied with food, money, clothing, or lodging, while employment was secured in 141 cases. Formal applications for assistance numbered 439, of which only 17 were refused.

The work of the Association in assisting first offenders with advice or help in obtaining sureties covered 4,062 interviews during 1913. Fines amounting to £1,674 were collected in 1,036 cases, while sureties for payment of fines, and the necessary bail, were found in many cases, thus assisting a large number to retain their employment.

The principal religious bodies delegate special officers for police court duty, and the work performed by such officers covers every possible form of assistance. Precise details are not readily available.

Upon external agencies depend the provision of lectures, entertainments, &c., at the various institutions, but religious and educational work, as already noted, are functions of the system.

In December, 1912, the first issue of the *Compendium*, a monthly newspaper for issue to well-conducted prisoners in the gaols of New South Wales, was published. This paper is edited and compiled under the supervision of the Comptroller-General of Prisons, and, in addition to matters of a non-controversial nature, contains information regarding the demands for labour in various parts of the State of great value to prisoners whose sentences are about to expire.

COST OF POLICE AND PRISON SERVICES.

The following table shows the amount expended in maintaining the police and prison services of New South Wales during the last five years, also the amount of fines paid into the Consolidated Revenue, and the net return from prison labour:—

Expenditure and Revenue.	1909.	1910.	1911.	1912.	1913.
Expenditure—	£	£	£	£	£
Police	461,457*	465,307*	493,638*	510,407*	574,806*
Penal establishments	120,253	104,608	131,632	105,399	106,825
Total	581,720	569,915	625,270	615,806	681,631
Revenue—					
Fines paid to Consolidated Revenue	21,578	23,813	25,637	29,760	29,868
Net value of prison labour of a productive character.	24,672	24,470	21,620	20,688	22,614
Total	46,250	48,283	47,257	50,448	52,482
Net Expenditure	535,470	521,632	578,013	565,358	629,149
Per Head of Mean Population—	s. d.	s. d.	s. d.	s. d.	s. d.
Police	5 10	5 9	5 11	5 10½	6 4
Penal establishments	1 2	1 0	1 4	0 11½	0 11½

* Financial year ending 30th June.

LAND LEGISLATION AND SETTLEMENT

AREA OF NEW SOUTH WALES.

THE area of New South Wales, including Lord Howe Island of 5 square miles and the Federal Capital Territory of about 900 square miles, as stated previously in this Year Book, is estimated at 310,372 square miles, or 198,638,080 acres, being a little over two and a half times that of Great Britain and Ireland. Excluding the surface covered by rivers and lakes, the area within the boundaries of the State is 195,669,000 acres, or about 305,733 square miles, of which the greater portion has been alienated under various forms of tenure, classified as freehold or leasehold. The formal transfer on 1st January, 1911, of 576,000 acres at Yass-Canberra to the Commonwealth Government as Federal Capital Territory, reduced the land surface of the State to 195,093,000 acres.

RECENT LEGISLATION.

The following is a list of the various important enactments passed since the consolidation of the Statutes in 1896, relating to land settlement:—

*Appraisement	...	...	...	...	...	...	...	1902
†Advances to Settlers	...	...	...	...	...	...	...	1899, 1902 (2)
Balarald Irrigation	...	...	...	...	...	...	...	1902
Barten Jack Dam and Murrumbidgee Canals Construction	...	...	...	...	...	...	...	1906
†Blockholders	...	...	...	...	...	...	...	1901
†Church and School Lands	...	...	...	...	...	...	...	1897, 1903
Closer Settlement	...	...	...	...	...	...	...	1902, 1904, 1906, 1907, 1909, 1912, 1914
Closer Settlement Promotion	...	...	...	...	...	...	...	1910
*Crown Lands	...	...	...	...	...	...	...	1884, 1898, 1899, 1903, 1905, 1908, 1910, 1912 (2)
*Crown Lands Improvement Purchase	...	...	...	...	...	...	...	1909
Department of Agriculture	...	...	...	...	...	...	...	1907
Dividing Fences...	...	...	...	...	...	...	...	1902
Drainage Promotion	...	...	...	...	...	...	...	1901, 1902
Forestry	...	...	...	...	...	...	...	1903
Government Savings Bank	...	...	...	...	...	...	...	1902, 1903, 1906, 1913
Hay Irrigation	...	...	...	...	...	...	...	1902 (2)
Improvement Leases Cancellation	...	...	...	...	...	...	...	1906, 1908 (2), 1909
Inclosed Lands Protection	...	...	...	...	...	...	...	1901
Irrigation	...	...	...	...	...	...	...	1912
Labour Settlements	...	...	...	...	...	...	...	1902
Local Government	...	...	...	...	...	...	...	1906, 1908
Mining	...	...	...	...	...	...	...	1906, 1907
Murrumbidgee Irrigation	...	...	...	...	...	...	...	1910 (2)
Pastures Protection	...	...	...	...	...	...	...	1952, 1904, 1906, 1912
Prickly-pear Destruction	...	...	...	...	...	...	...	1901
Western Lands	...	...	...	...	...	...	...	1901, 1905, 1908, 1909

* These are now included in the Crown Lands Consolidation Act, 1913.
 † Now repealed.

The Crown Lands Consolidation Act, 1913, repealed the whole or the unrepealed portions of a large number of Acts dealing with the lands of the State, and certain sections of the Public Trusts Act, 1897, the Western Lands Act, 1901, the Mining Act, 1906, the Forestry Act, 1909, and Irrigation Act, 1912.

EARLY ALIENATION.

From the early days of settlement until the year 1861 the Crown disposed of land, under prescribed conditions, by grants and by sales, so alienating, by the end of 1861, an aggregate area of 7,146,579 acres:—

	acres.
1. By grants, and sales by private tender to close of 1831	3,906,327
2. " " in virtue of promises of early Governors made prior to 1831, from 1832-40 inclusive	171,071
3. " sales at auction, at 5s., 7s. 6d., and 10s. per acre, from 1832-38 inclusive	1,450,508
4. " " " " 12s. and upwards per acre, at Governor's discretion, from 1839-41 inclusive	371,447
5. " " " " 20s. per acre, from 1842-46 inclusive	20,250
6. " " " " and in respect of pre-emptive rights, from 1847-61 inclusive	1,219,375
7. " grants for public purposes, grants in virtue of promise of Governor made prior to the year 1831, and grants in exchange for lands resumed from 1841-61 inclusive	7,601
Total alienated on 31st December, 1861	7,146,579

Certain grants were made under special enactments, and instructions from the Imperial authorities to Sir Thomas Brisbane, then Governor, directed him to reserve one-seventh of the Crown lands in each county for Church and School purposes.

The aggregate area of such reserves up to the year 1832, stated at 443,486 acres, was, by subsequent surveys, shown to be actually 454,050 acres, and did not aggregate the proportional area specified in the instructions. These lands were administered by the Clergy and School Land Corporation until its abolition by Order of Council on the 4th February, 1833, when the lands reverted to the Crown, and an agent was appointed to determine the claims of purchasers, to whom deeds of grant were made, and confirmed by a subsequent Act of Council, dated the 5th August, 1834.

Of the reserves mentioned above, 171,746 acres were alienated up to the year 1880, when, by the Church and School Lands Dedication Act of that year, the balance of 282,304 acres came under the control of the State Legislature to be administered for the purpose of Public Instruction. Subsequently the Church and School Lands Act, 1897, re-vested all these lands in the Crown, free from any trust or condition, but subject to the provisions of the Crown Lands Act of 1884 and its subsequent amending Acts, thus determining the land as Crown land. Until a notification classifying any area of Church and School Lands has been published in accordance with the Crown Lands Act, such area may be dealt with only by reservation, dedication, license, or held under special or annual lease.

The total area of Church and School Lands held under lease at 30th June, 1914, in the Eastern Division was 4,384 acres, at a rental of £415 per annum, the subdivisions being as follows:—

	No.	Area. acres.	Rent. £
Pastoral	6	4,265	50
Agricultural	18	97	26
Ninety-nine Year	38	10	329
Miscellaneous	3	12	10
Total	65	4,384	415

In addition to the above, there were 15 miles of water races.

The Australian Agricultural Company, incorporated by Act of the Imperial Parliament, dated 21st June, 1824, was, in 1825, granted an area of 1,000,000 acres. An area containing 1,048,960 acres was selected in the country surrounding Port Stephens, but in 1832 the Company was authorised

to exchange a portion of this grant, containing 600,000 acres, for two areas situated on the Peel River and on the Liverpool Plains, respectively, the three grants aggregating as follows:—

	acres.
Port Stephens Estate, County of Gloucester	464,640
Peel River Estate, County of Parry	249,600
Warrah Estate, Liverpool Plains, County of Buckland... ..	313,298
Total	1,027,538

In addition to this land, the Company obtained from the Crown the promise of a lease of the coal-fields at Port Hunter (Newcastle) for thirty-one years, which lease, however, was exchanged for a grant of 500 acres, increased in 1828 to 2,000 acres of coal land, upon which the Company's collieries are now situated.

RESERVES.

The total area of reserved lands in the State as at 30th June, 1914, was 27,342,452 acres. A classification of reserves according to the purpose for which used is shown below:—

Class of Reserves.	Area. acres.
Travelling Stock	6,194,483
Water	2,683,038
Mining	1,315,422
Forest	6,624,568
Temporary Commons	551,880
Railway	328,086
Recreation and Parks	223,880
Pending Classification and Survey	5,012,075
From Conditional Purchase, within Gold-fields	861,774
Miscellaneous	3,547,318
Total	27,342,452

The extent of land set apart for timber conservation amounts to 6,624,568 acres; for routes and camping-places for travelling stock 6,194,483 acres have been reserved, 3,716,539 acres being in the Western Division; water reserves totalled 2,683,038 acres, of which 1,855,437 acres are in the Western Division.

A revision of the reserved lands is being made in each Land District with the object of withdrawing from reserves any area the continued reservation of which is not required in the public interest.

OCCUPATION OF PASTORAL LANDS—LIMITED TENURE.

The pastoral lands of New South Wales have been occupied under various systems of tenure. In the early days land was held for grazing by virtue of tickets of occupation, the issue of which was stopped in 1827, when holders of such lands were required to pay a quit-rent of 20s. per 100 acres per annum, and to vacate the land at six months' notice. The necessity for depasturing increasing stocks induced settlers to extend their occupation to Crown lands without any right except that of first discovery, until the Legislature, in 1833, passed an Act protecting Crown lands from intrusion and trespass, Commissioners being appointed to safeguard the interests of the State.

The discovery of new country soon attracted pioneer squatters beyond the limits of settlement as proclaimed on 14th October, 1829; and regulations, involving liability to severe penalties, were issued on 29th July, 1836, with the view of restraining unauthorised occupation. In 1839 the regulations were reinforced by the passing of an Act levying upon stock a yearly assessment at the following rates:— $\frac{1}{2}$ d. for every sheep, $1\frac{1}{4}$ d. per head of cattle, and 3d. for every horse.

Under an Act passed in 1847 a new system was introduced relating to pastoral lands of which previously the tenure had been annual, the fee being based on the area of land occupied by the squatter. Under the new plan, fixity of tenure of lease was substituted, the license fee being calculated upon the stock-carrying capacity of the run; but the term of the pastoral leases varied, being fixed, in the unsettled districts, at fourteen years; in the intermediate division, at eight years; while in the settled districts the yearly tenure was retained. The licensing fee under the altered conditions was charged at the rate of £10 for 4,000 sheep, or a proportional number of cattle—which was the minimum at which the stock-carrying capacity of a run could be assessed—and £2 10s. for every additional 1,000 sheep, or proportionate number of cattle. In settled districts lands were let for pastoral purposes only, in sections of not less than 1 square mile in area, the annual rental for each section being fixed at 10s. The holders of alienated lands were permitted to depasture their stock upon Crown lands adjoining their holdings, free of charge; this permission, however, constituted only a commonage right.

The Occupation Act of 1861 created a new system, limiting the tenure of pastoral leases to five years in unsettled, and intermediate or second-class settled districts, and leaving the whole of the pastoral leases open to the operations of the free selectors. The evils resulting from this system led Parliament to adopt, in 1884, 1889, 1895, and at intervals since 1903, the measures, the provisions of which are described below.

CROWN LANDS ACT OF 1861.

The conditions of colonisation altered greatly under the powerful attraction of the gold-fields; and, to meet the wants of a class of immigrants of a different type from those contemplated by former enactments, the question of land settlement had to be discussed in an entirely new spirit, the result being the passing of the Crown Lands Act of 1861, introduced by Sir John Robertson. The conditions of settlement had rendered it difficult previously for men of small means to establish themselves with a fair chance of success, and the new measure aimed at facilitating the settlement of an industrial agricultural population side by side with the pastoral tenants, by introducing a principle entirely new to the land legislation of the State, namely, that of free selection, in limited areas, *before survey*. The Act provided for the conditional purchase of areas from 40 to 320 acres in extent at £1 per acre—25 per cent. of the purchase money to be deposited with the application. At the expiration of three years the purchaser was required to pay the balance, and to furnish a certificate showing that he had resided on the land, and made the necessary improvements. Provision was made to defer payment of the balance of the purchase money on receipt of 5 per cent. interest.

The Amending Act of 1875, under which annual instalments were payable, gave to any conditional purchaser of land the option of availing himself of the change in the method of payment. The system of unconditional sales was, however, continued under the Act of 1861; and during the twenty-three years the Act was in operation 23,470,140 acres were sold conditionally, and 15,572,001 acres by auction, by improvement purchase, by virtue of pre-emptive right, or otherwise without conditions, the total area alienated being 39,042,141 acres. In many cases the land selected, or purchased, reverted to the State; so that the absolute area alienated or in process of sale when the Act of 1884 came into force amounted to only 32,819,023 acres, besides 7,146,579 acres alienated prior to 1861.

THE CROWN LANDS ACTS OF 1884 AND 1889.

After many amendments the Act of 1861 was superseded by that of 1884, with the supplementary enactment of 1889, which measures maintained the principle of free selection before survey, but with one essential difference. Under the original Act the whole area of the Crown lands was thrown open to free selection, including the lands held under pastoral lease. The Acts of 1884 and 1889 were devised to give fixity of tenure to the pastoral lessee and to obtain a larger rental from the public lands, at the same time restricting the area sold unconditionally.

Existing holders of pastoral leases under the earlier Act were required to surrender one-half of their leases, which were resumed by the Crown for subsequent alienation, leasehold, or reserve; the other half in each case was leased to the pastoralist under fixity of tenure for a term of years. On 31st December, 1884, when this division was made, there were 4,313 leased runs, yielding an annual rental of £268,500, and forming about 1,600 "stations," estimated to contain the bulk of the unalienated public estate, after allowing for reserves, &c. An increase in the revenue from pastoral occupation, one of the principal objects of the Act of 1884, has been realised, as evidenced by the total revenue received from the pastoral occupation of Crown lands, which increased from £329,356 in the year 1884 to £512,160 in the financial year 1913-14.

THE CROWN LANDS ACTS OF 1895 AND 1903 TO 1912.

The Act of 1861 failed conspicuously in encouraging *bond fide* settlement; and the legislation of 1884 and 1889 also was ineffective, since the accumulation of land in large estates continued, while settlement proceeded very slowly. Expert opinion pointed strongly to the necessity of introducing entirely new principles, and this was done in the Crown Lands Acts of 1895 and 1903, which, while placing land within easy reach of all, supplied the means of securing permanent settlers through the new system of tenure—homestead selections and settlement leases. These tenures have been superseded by those of Homestead Farms and Crown Leases which were created by the Act of 1912.

The State is divided into three territorial divisions, Eastern, Central, and Western, the boundary lines running approximately north and south. Control of the lands within the Western Division is vested in the Western Land Board, consisting of three Commissioners. The Eastern and Central divisions are subdivided into Land Districts, in each of which is stationed a Crown Land Agent, whose duty is to receive applications and furnish information regarding land. Groups of these districts are arranged in larger areas, under the control of Land Boards, whose decisions are subject to review by the Land Appeal Court, which is composed of a President and two Commissioners, whose awards in matters of administration have the force of judgments of the Supreme Court. Whenever questions of law arise, a case may be submitted to the Supreme Court, either on the written request of the parties interested, or by the Land Appeal Court. The conditions of alienation and pastoral occupation of Crown lands differ in each of the three divisions of the State.

The Eastern Division has an area of 60,684,326 acres (exclusive of an area of 576,000 acres Commonwealth territory), and includes a broad belt of land between the sea-coast and a line nearly parallel to it, starting from a point midway between the small settlements at Bonshaw and Bengalla on the Dumaresq River, and terminating at Howlong, on the River Murray, thus embracing the coastal districts of the State, as well as the northern and southern tablelands. In this division is excellent

agricultural land, and all the original centres of settlement, which are readily accessible to the markets of the State. For these reasons, the conditions governing the purchase and occupation of the Crown lands in the Eastern Division are more stringent than is the case in the Central and Western Divisions.

The Central Division embraces an area of 57,055,846 acres, extending from north to south between the western limit of the Eastern Division and a line starting from a point on the Macintyre River, where it is crossed by the 149th meridian of east longitude, and following this river and the Darling to the junction of Marra Creek; thence along that creek to the Bogan River, and across to the River Lachlan, between the townships of Euabalong and Condobolin, along the Lachlan to Balranald, and thence to the junction of the Edward River with the Murray. The area thus defined contains the upper basin of the Darling River in the northern part of the State, and in the south portions of the basins of the Lachlan, the Murrumbidgee, and other affluents of the Murray. The land in this division has been devoted mainly to pastoral pursuits; but experience having proved that it is suitable for agriculture, the cultivated area is increasing steadily.

The Western Division is situated between the western limit of the Central Division and the South Australian border. It contains an area of 80,318,708 acres, watered by the Darling River and its tributaries, and is devoted to pastoral pursuits. Water conservation and irrigation are the factors which ultimately will counteract climatic conditions and irregular rainfall, and make agriculture possible over this large area, of which the soil is adapted to the growth of most crops; but legislation in regard to the occupation of the lands of the district is based upon the assumption that for many years to come there will be little inducement for agricultural settlement.

METHODS OF ACQUISITION AND OCCUPATION.

Under the Acts in force during 1913-14, land in the Eastern and Central divisions of the State may be acquired by the following methods:—

- (1) Conditional and additional conditional purchase with residence;
- (2) Conditional purchase without residence;
- (3) Classified conditional purchase;
- (4) Preferent right of purchase attached to conditional leases;
- (5) Improvement purchases on gold-fields;
- (6) Auction sales;
- (7) After-auction sales;
- (8) Special sales without competition;
- (9) Exchange;
- (10) Settlement purchase, under Closer Settlement Acts;
- (11) Homestead farms;
- (12) Suburban holdings;
- (13) Irrigation farms.

Crown lands may be occupied under the following systems of lease:—

- (1) Annual;
- (2) Special conditional purchase;
- (3) Conditional;
- (4) Inferior lands;
- (5) Occupation license;
- (6) Scrub;
- (7) Special;
- (8) Residential on gold and mineral fields;
- (9) Improvement;
- (10) Snow-lands;
- (11) Crown.

The maximum area which may be purchased conditionally differs in the Eastern and Central Divisions according to the method of acquisition shown in the statement above. In the Western Division land may be alienated by auction or occupied under lease.

ACQUISITION.

Conditional Purchase.

Unreserved Crown lands in the Eastern and Central Divisions not held under pastoral or other lease are available for conditional purchase, and lands held under annual lease or occupation license may also be acquired in this way, if not otherwise reserved. Land under conditional lease in any division may be purchased conditionally by the leaseholder only. Lands within suburban boundaries or within population areas may be proclaimed as special areas, and are open to conditional purchase under the special conditions prescribed. The value of any improvements on a conditional purchase must be paid by the applicant.

Residential conditional purchase may be taken up by males over age 16, or females over age 18, provided that a woman must be unmarried, or a widow, or judicially separated from her husband; for a non-residential conditional purchase the minimum age limit is 21 years. Every conditional purchase must be made solely in the interest of the applicant. Minors who become conditional purchasers have the rights and liberties of persons of full age in connection with their land.

The minimum and maximum areas allowed for each class of conditional purchase are as follow :—

Class.	Division.	Minimum Area.	Maximum Area.
Residential	Eastern	40	1,280
Residential	Central	40	2,560
Non-residential... ..	Eastern	40	350
Non-residential... ..	Central	40	320
Special area	Eastern ... ..	.....	320
Special area	Central ... ..	.....	640

With regard to special areas, both the minimum and maximum areas are subject to proclamation in the *Government Gazette*, and, are, therefore, liable to limitation. Any conditional purchaser may take up the maximum area at once, or by a series of purchases at convenient intervals. With the exception of non-residential purchases, provision is made in the Crown Lands Amendment Act, passed in 1908, that the specified maximum areas may be exceeded by means of additional holdings, the area of which, together with all other lands held, other than a lease having less than 5 years to run unless with a right to purchase the freehold, must not exceed a home maintenance area, meaning thereby an area which, used for the purpose for which it is reasonably fitted, would be sufficient for the maintenance in average seasons and circumstances of an average family. Additional holdings need not necessarily adjoin the original holdings, but must be situated within a reasonable working distance.

Under the Crown Lands Amendment Act of year 1905 areas may be set apart for original holdings, or for additional holdings; but no such area may be selected under both classes of holdings. Original holdings include (a) original conditional purchases and (b) original conditional purchases and conditional leases taken up in respect of, and at the same time as, the original conditional purchase within the area. Additional holdings include (a)

additional conditional purchases and (b) conditional leases other than those previously mentioned. Values and rentals are specified in the official notices under the Act. Lands may be classified and set apart, by notification, at specified prices.

Applications for conditional purchase, or for additional conditional purchase, must be lodged with the Crown Lands Agent of the district in which the land is situated, and a deposit and survey fee paid at the same time. The statutory price of ordinary Crown lands is fixed at £1 per acre for residential conditional purchase, but in special areas and on lands within classified areas the price per acre may be either above or below that amount. The deposit on all residential conditional purchases is at the rate of 5 per cent. of the capital value, but on non-residential conditional purchases the price of the land is doubled, the deposit being at the rate of 2s. in the £ of such increased value; survey fee or, one-tenth thereof, must be lodged with the application unless such fee has been paid by a previous holder. Under ordinary conditions the balance of purchase money, with interest at $2\frac{1}{2}$ per cent. per annum, is cleared off by twenty-seven annual payments of 1s. per acre, and a subsequent final lesser payment. The first instalment is due on the expiration of three years from the date of the contract.

A resident conditional purchaser in certain circumstances may reduce his annual instalment of 1s. to 9d. per acre, but in the event of reduction to the latter amount, it will take the selector about forty-one years to pay. Under special circumstances a similar privilege may be extended to conditional purchasers not in residence. By the Crown Lands Act Amendment Act of 1903, the rate of interest on the balance of purchase money was reduced from 4 to $2\frac{1}{2}$ per cent. per annum, being retrospective only in special circumstances.

Upon receipt of an application for a conditional purchase the Land Board may cause the land to be surveyed and a report to be supplied by the surveyor; and may either confirm or disallow the application. In case of confirmation a certificate is issued to the applicant.

The original conditional purchase must be occupied continuously by the selector for a period of ten years, and residence must be commenced within three months after the application has been confirmed by the Land Board. Residence may be suspended conditionally, or remitted by the Land Board, for sufficient cause, for stated periods, or may be effected on the holding of a member of the same family, or on another of applicant's holdings, or in a village or town within reasonable distance. Each additional conditional purchase or conditional lease is subject to the condition of residence indicated, but the place of residence may be on any block of the series, and the term may be reduced in certain circumstances, by the applicant's previous residence on the series.

The selector must enclose his land, within three years after confirmation, with such a fence as the Land Board may prescribe; or he may substitute improvements in lieu of fencing. In such a case, permanent improvements, of the value of 6s. per £ of purchase money but not exceeding £384, are required within three years, and these improvements must be brought up to the value of 10s. per £ of purchase money, but not exceeding an aggregate value of £640, within five years from the date of confirmation. In the case of non-residential purchases, the land must be fenced within one year after date of confirmation, and within five years other improvements to the value of £1 per acre must be effected. Fencing may be superseded by other improvements equivalent to 30s. per acre, within five years after confirmation.

Under the Crown Lands Amendment Act, 1908, an original non-residential conditional purchase, with any additional non-residential conditional purchase made in virtue of it, may be converted into an original residential conditional purchase, provided that the ten years residence commences from the date of application for such conversion. This term of residence is subject to reduction, and all moneys previously paid are credited towards payment of the converted conditional purchase.

A conditional purchase, residential or otherwise, may be converted into a homestead farm under certain conditions.

Improvement Purchases.

Holder of miners' rights or of business licenses on a gold-field, being in authorised occupation by residence of land containing improvements, may purchase such land without competition. Improvements must include a residence or place of business, and be of the value of £8 per acre on town land, and £2 10s. on any other land.

Auction Sales and After-auction Purchases.

Crown lands are submitted to auction sale under two systems. Under the ordinary system the balance of purchase money is payable, without interest, within three months of the day of sale; while, under the deferred payment system, the balance is payable by instalments, with 5 per cent. interest, distributed over a period not exceeding five years; in either case, 25 per cent. of the purchase money must be deposited at the time of sale.

Auction sales are limited by law to 200,000 acres in any one year. Town lands may be sold in blocks not exceeding half an acre, nor at a lower upset price than £8 per acre; and suburban lands must not exceed 20 acres in one block, the minimum upset price being £2 10s. per acre. Country lands may be submitted in areas not exceeding 640 acres, the upset price being not less than 15s. per acre. The value of improvements on the land may be added to the upset price.

Town or suburban land or portions of country land of less than 40 acres each, which have passed at auction may be bought, with the Minister's consent, at the upset price; a deposit of 25 per cent. of such upset price is payable at the time of application, the balance being payable on the terms fixed for the auction sale.

Special Non-competitive Sales.

Any unnecessary road which bounds or intersects freehold land may be closed and sold to the freeholder at a price determined by the Land Board, and any unnecessary road which passes through land held under conditional purchase may be closed and added to the area.

Reservations are maintained in many Crown grants of land having water frontage, being usually 100 feet from high-water mark; but the Crown may rescind the reservation, and convey the land to the holder of the adjoining land, at a price to be determined by the Land Board.

The owner in fee-simple of land having frontage to the sea, or to any tidal water or lake, who desires to reclaim and purchase any adjoining land lying below high-water mark, may apply to the Minister for Lands to do so, except in the case of Port Jackson, the control of which is vested in the Sydney Harbour Trust. Reclamations which might interrupt or interfere with navigation are not authorised.

Land encroached upon by buildings erected on granted land, or land situated between granted land and a street or road, which forms, or

should form, the way of approach to the granted land, or land to which no way of access is attainable, or land which is insufficient in area for conditional purchase, may be purchased by the owner in fee-simple of the adjoining land, at a price determined by the Board.

Exchange of Land between the Crown and Private Owners.

Before the granting of fixity of tenure in connection with pastoral leases, the lessees had made it a practice to secure portions of their runs by conditional purchases and purchases in fee-simple. The practice was disadvantageous to the public estate, since Crown lands were left in detached blocks severed by lessees' freehold properties, and the lessees realised that it would be convenient to them to gather their freeholds together in one or more consolidated blocks by surrender of the private lands in exchange for Crown lands elsewhere.

Volunteer Land Orders.

Holders of certificates issued to volunteers who had served under the provisions of the Volunteer Force Regulation Act of 1867 were entitled to a free grant of 50 acres of land. These certificates entitled the holder to 50 acres of such land as was open to conditional purchase, other than lands within a proclaimed special area. Claims to these grants lapsed unless lodged within three years after the commencement of the Crown Lands (Amendment) Act, 1908, which period terminated on 31st January, 1912.

Homestead Selection and Homestead Grant.

The appropriation of areas for homestead selection was a prominent feature of the Act of 1895, the land chosen for subdivision being good agricultural land. Where suitable lands were situated within easy access of towns, small blocks were set apart, the lands being available after particulars relating to area, capital value, &c., were published in the *Gazette*. The maximum area that might be selected was 1,280 acres, but the selector was limited to a block as granted.

Any person eligible to take up a conditional purchase might apply for a homestead selection; the selector was required to deposit one-half year's rent and one-tenth of the survey fee with his application, and to pay for any improvements already on the land. The applicant must have commenced to reside on the selection within three months, and have erected a dwelling of a minimum value of £20 within eighteen months, after the confirmation of his application. The rent, until the issue of a grant, was $1\frac{1}{4}$ per cent. of the capital value of the block. The condition of residence might be fulfilled by deputy prior to the issue of the grant, but the applicant was required, during this period, to pay rent at the rate of $3\frac{1}{2}$ per cent. of the capital value, and to effect greater improvements. An appraisalment of the capital value of the land might be obtained under certain conditions.

Additional land might be acquired out of an area set apart for the purpose to make up an area which, with all other lands held by the applicant other than under lease having less than 5 years to run unless with a right to purchase the freehold, would not be more than sufficient for the maintenance of the applicant's home in average seasons and circumstances. The additional holding need not adjoin the original holding, but must be situated within a reasonable working distance.

At the expiration of five years after the confirmation of the application a grant of the holding, called a homestead grant, would issue, the tenure being subject to perpetual residence and perpetual rent. After issue of the grant the rent is $2\frac{1}{2}$ per cent. on the improved capital value of the land, which is appraised every fifteen years, and residence may be restricted to seven

months in each year. The land may not be transferred during the first five years, and each successive transferee is required to live on the land while he holds it. Tenant-right in improvements is allowed, and the holding may be so protected that it cannot, by any legal procedure, except by levy or sale for taxes, be taken from the owner while he resides on it.

Under the Crown Lands (Amendment) Acts, of the years 1908 and 1912, a homestead selection or grant may be converted into a homestead farm, or a conditional purchase lease, a conditional purchase, or a conditional purchase and conditional lease, provided the area contained in such lease does not exceed three times the area in the conditional purchase.

Lands are not now made available for homestead selections, such tenure having been replaced by that of homestead farm. A large number of persons have, however, selected under this form of holding.

Homestead Farms.

The new tenures created by the Crown Lands Amendment Act of 1912 were homestead farms, suburban holdings, Crown leases, and irrigation farms. Crown lands set apart for disposal as homestead farms are subdivided into home maintenance areas, but the land may be made available before survey. A person—including an alien—of a minimum age of 16 years, if a male, or 18 years, if a female, may apply for a homestead farm, provided that the applicant does not hold under any tenure—except lease which has less than five years to run, and does not confer right to purchase the freehold—an area of land which added to the area of the homestead farm would substantially exceed a home maintenance area. In estimating what constitutes a home maintenance area, the joint area held by husband and wife (unless judicially separated) is taken into account as lands held by one person. An alien becoming the holder of a homestead farm, suburban holding, Crown lease, or irrigation farm, is required to become naturalised within three years. A married woman may apply if possessed of a separate estate. Persons who have previously selected are disqualified in certain circumstances.

The title of a homestead farm is a lease in perpetuity. The annual rent is charged at the rate of $2\frac{1}{2}$ per cent. of the capital value, but for the first five years the holder, in lieu of payment of rent, may expend an equal amount on improvements of a permanent character in addition to those which are otherwise required as a condition of the lease. The capital value is subject to reappraisal after the first twenty-five years and for each subsequent period of twenty years.

A condition of perpetual residence is attached to every homestead farm, but in special cases residence in the nearest town or village, or anywhere within reasonable working distance, may be allowed. Residence may be permitted on a holding of a member of the same family, or on another of the selector's holdings within reasonable working distance.

The perpetual lease grant will be issued after the expiration of five years from confirmation of the application if the holder has complied with all required conditions. The holder of a conditional purchase, or conditional purchase and conditional lease, or homestead selection, or homestead grant, or conditional purchase lease, or settlement purchase under the Closer Settlement Acts, other than a settlement purchase acquired under the Closer Settlement Promotion Act, 1910, may under certain conditions convert such holding into a homestead farm. A homestead farm may be protected against sale for debt in certain circumstances.

Suburban Holdings.

The conditions of perpetual rent and perpetual residence are attached to suburban holdings. The area of a suburban holding is determined by the Minister for Lands; the rent—minimum £1 per annum—is calculated at the rate of $2\frac{1}{2}$ per cent. of the capital value, to be appraised for each period of twenty years. Persons who own any land, males under 16 years, females under 18 years, and married women, except those living apart from husbands under judicial decree, are disqualified from applying. A suburban holding may be protected against sale for debt in certain circumstances.

Any suburban Crown lands, or Crown land within population boundaries, or within the Newcastle pasturage reserve, or any other Crown land, may be set apart for disposal by way of suburban holding.

Irrigation Farms.

The disposal of lands within duly constituted irrigation areas is regulated by the Crown Lands Amendment Act, 1912, and the Irrigation Act, 1912. A special land board, with the powers and duties of a local land board, may be appointed to administer the Crown Land Acts within an irrigation area; the lands are classified as town, irrigable, and dry or non-irrigable lands. A person (except a married woman not separated from her husband by judicial decree) aged 16 years or over, if a male, or aged 18 years or over, if a female, or two or more such persons, may apply for an irrigation farm or block. An alien is not barred, but he must become naturalised within 3 years under penalty of forfeiture. The title is perpetual lease, subject to perpetual payment of rent and performance of residence. The rent is at the rate of $2\frac{1}{2}$ per cent. of the capital value—minimum for town land blocks £1 per annum. At the expiration of five years after confirmation of the application a grant of the farm or block will be issued to the holder provided that the required conditions have been observed. The holding may be protected against sale for debt in certain circumstances.

In respect of town land blocks, the conditions of residence may be waived or suspended by the Commissioner for Water Conservation and Irrigation; no person may hold more than three adjoining blocks for residence, or four adjoining blocks for business purposes.

OCCUPATION.

Annual Leases.

Unoccupied lands not reserved from lease may be obtained for pastoral purposes as annual leases, on application, or they may be offered by auction or tender. They may be obtained also by after auction tender, or after tender tender. No conditions of residence or improvement are attached to annual leases, which convey no security of tenure, the land being alienable by conditional purchase, auction sale, &c. The area in any one lease is restricted to 1,920 acres. In certain circumstances an annual lease may be converted into a lease under improvement conditions for a term not exceeding ten years.

Conditional Purchase Leases.

This form of tenure was created in 1905; but, as in the case of homestead selections and settlement leases, it is obsolete for the purposes of selection, as no lands are now made available under it. There are, however, considerable numbers of conditional purchase leases still standing. Areas set apart for disposal by way of conditional purchase lease were subdivided as the Minister for Lands determined. The lease was for forty years, at a rental of $2\frac{1}{2}$ per

cent. per annum on the capital value. The value of existing improvements was appraised by the Land Board, and special conditions have been imposed regarding improvements, cultivation, preservation, or planting of timber, &c.

Any male above the age of 16 years, and any female above 18 years, who was not disqualified under the provisions of the Land Act, might apply for a conditional purchase lease. A female applicant must have been unmarried, or widowed, or living apart from her husband under a decree of judicial separation.

Residence on the lease was continuous for ten years, and must have commenced within twelve months from the date of confirmation, but the commencement of residence might be deferred for five years. At any time after the confirmation of an application the holder may convert the area into a conditional purchase by payment of a deposit of 5 per cent. on the capital value of the land, provided that the proper conditions have been observed, and subject to all the unperformed conditions of the lease, except payment of rent. The balance of purchase money is payable by equal annual instalments at the rate of 5 per cent. of the price, consisting of principal and interest at the rate of $2\frac{1}{2}$ per cent. on the unpaid balance, the first instalment becoming due twelve months after the date of application for conversion. In accordance with the provisions of the Crown Lands Amendment Act, of year 1912, conditional purchase leases might be converted also into homestead farms.

A holder of a conditional purchase lease may acquire additional conditional purchase leases, but in no case may the total area of the lands held by him under any tenure, except under lease having less than five years to run without right of purchase, exceed a home maintenance area.

Special Conditional Purchase Leases.

Under the Crown Lands Act, 1908, land might be set apart for disposal as special conditional purchase lease, provided that for six months the land has been available for some class of residential holding. The areas must be not less than 20, nor more than 320 acres. There were no conditions of residence, but substantial improvements of value of £1 per acre or any lesser value not being less than 10s. per acre must be completed within three years. Although no lands are now set apart for special conditional purchase lease, there are areas still available for application in certain districts.

Conditional Leases.

A conditional lease may be obtained by any holder of a conditional purchase (other than non-residential), or a conditional purchase within a special area in the Eastern Division. Lands available for conditional purchase are also available for conditional lease, with the exception of lands in the Western Division, or within a special area or a reserve.

Applications must be accompanied by a provisional rent of 2d. per acre and a survey fee. The area which an applicant may obtain as conditional purchases and conditional leases is restricted to 1,280 acres in the Eastern Division, and 2,560 acres in the Central Division; but the Land Board may specifically permit larger areas. The area that may be leased is limited to three times the area of the conditional purchase in virtue of which it is obtained. The lease is for a period of forty years, at a rent determined by the Land Board, payable yearly in advance. The conditions of fencing, or substitution of improvements in lieu of fencing, which attach to a residential conditional purchase, apply equally to a conditional lease, and residence is required as in the case of an additional conditional purchase.

After confirmation, a conditional lease may be converted, either wholly or in part not less than 40 acres, into a conditional purchase.

Leases of Scrub and Inferior Lands.

Scrub leases may be obtained on application, by auction or tender, after-auction tender, or after tender tender, but inferior-lands leases may be acquired only by auction or tender, after-auction tender, or after tender tender. There is no limitation as to area, and in the case of a scrub lease obtained by application the rent is appraised by the Local Land Board. The initial rent of an inferior-lands lease prevails throughout the whole term; but the terms of a scrub lease may be divided into periods, the rent for each period being determined by reappraisal. The term of each class of lease may not exceed twenty-eight years. The holder of a scrub lease must take such steps as the Land Board may direct for the purpose of destroying the scrub, and keep the land clear afterwards. During the last year of any of the leases application may be made for a homestead grant of 640 acres.

Occupation Licenses.

Occupation licenses may be (a) preferential occupation licenses, consisting of the area within the expired pastoral leases, and (b) ordinary occupation licenses, which relate to the parts of the holdings formerly known as resumed areas. They may be acquired by auction or tender, after auction tender, or after tender tender. Occupation licenses extend from January to December, being renewable annually at a rent determined by the Land Board.

Pastoral Leases.

Under the Crown Lands Amendment Act of 1903, the registered holder of any pastoral lease, preferential occupation license, or occupation license, could apply for a lease, for not more than twenty-eight years, of an area not exceeding one-third of the total area of the land comprised within the lease or license, subject to such rent, conditions of improvement, and withdrawal for settlement as may be determined. These are known as 18th Section Leases, having been granted under Section 18, Act of 1903, which has now been repealed.

Special Leases.

Special leases are issued chiefly to meet cases where land is required for some industrial or business purpose, and may be obtained by application auction, or otherwise, the term of the lease not to exceed twenty-eight years. The conditions attached are suitable to the circumstances of each case, being, like the rent, determined by the Land Board. The Crown Lands Act, passed in 1908, provides for the conversion of special leases, for certain purposes, and of agricultural or pastoral church and school lands leases, into original or additional conditional purchase leases; or original or additional conditional purchases; or original or additional homestead selections; or original or additional settlement leases; or conditional leases.

Residential Leases.

The holder of a "miner's right" within a gold or mineral field may obtain a residential lease. A provisional rent of 1s. per acre is charged, the maximum area is 20 acres, and the longest term of the lease twenty-eight years; the annual rent is appraised by the Land Board. The principal conditions of the lease are residence during its currency, and the erection within twelve months of necessary buildings and fences. Tenant-right in improvements is conferred upon the lessee. The holder of any residential lease may apply after the first five years of his lease to purchase the land.

Improvement Leases.

Improvement leases may consist of any scrub or inferior land not suitable for settlement in the Eastern or Central Divisions, and are obtained

only by auction or tender, after-auction tender, or after tender tender. The rent is payable annually, and the lease is for a period of twenty-eight years, with an area not exceeding 20,480 acres. Upon the expiration of the lease the last holder will have tenant-right in improvements. During the last year of the lease the lessee may apply for a homestead grant of 640 acres, including the area on which his dwelling-house is erected. Should the Advisory Board, constituted under the Closer Settlement Act, 1907, report that land comprised in an improvement lease or scrub lease is suitable for closer settlement, the Minister may resume the lease, the lessee being compensated.

Settlement Leases.

Under this tenure, which has now been superseded by that of Crown lease, farms gazetted as available for settlement lease were obtainable on application, accompanied by a deposit consisting of six months' rent and the full amount of survey fee. The maximum area of agricultural land which might be taken up was 1,280 acres; but where the settler combines agriculture with grazing, the farms might contain any area not exceeding 10,240 acres. These areas, however, could be exceeded by means of additional holdings, which need not adjoin the original holding, but had to be situated within a reasonable working distance thereof.

The lease was issued for a term of forty years, divided into four periods. The annual rent for the first period was that notified before the land was made available for lease; but the lessee might require that the rent be determined by the Land Board, and the annual rent for each succeeding period might be separately determined in like manner. Residence was compulsory throughout the whole term; and the land had to be fenced within the first five years, and noxious weeds and animals on the land destroyed within eleven years. The lessee may apply at any time after the first five years of the lease for an area not exceeding 1,280 acres, on which his house is situated, as a homestead grant.

Under the Crown Lands Act of year 1908, the holder of a settlement lease may convert such lease into a conditional purchase, or into a conditional purchase and conditional lease under certain provisions, but in no case may the unimproved value of the land to be converted into conditional purchase exceed £3,000.

Snow Leases.

Vacant Crown lands which for a portion of each year are usually covered with snow, and are thereby unfit for continuous use or occupation, may be leased by auction or tender, by after-auction tender, or by after tender tender as snow leases. Not more than two snow leases may be held by the same person. The maximum area is 10,240 acres. The term of the lease is seven years, but may be extended by three years.

Crown Leases.

Crown leases were constituted under the Crown Lands Amendment Act, 1912. The term of lease is forty-five years, and the annual rent $1\frac{1}{4}$ per cent. of the capital value, as determined every fifteen years. The rent payable for the first year may be remitted if, in addition to the improvements required as a condition of the lease, an equal sum be spent by the lessee in improving the land. The lessee is required to reside on the land during the whole term of lease, and during the last five years, unless debarred by notification setting the land apart, may apply to convert into a homestead farm so much of the land as will not exceed a home maintenance area. The lease may be protected against sale for debt in certain circumstances. Any person qualified to apply for a homestead farm may apply for a Crown lease,

WESTERN DIVISION.

The administration of the Western Division under the Western Lands Acts, 1901 and 1905, is vested in three Commissioners, constituting "The Western Lands Board of New South Wales," who, sitting in open Court, also exercise all the powers conferred upon Local Land Boards by the Crown Lands Acts.

Subject to existing rights and extension of tenure granted under certain conditions, all forms of alienation (other than by auction) and lease prescribed by the Crown Lands Acts, ceased to operate within the Western Lands Division from 1st January, 1902.

The registered holder of a homestead selection or grant, pastoral, homestead, settlement, residential, special, artesian well, improvement, scrub, or inferior lease or occupation license, of land in the Western Division, may apply to bring his lease or license under the provisions of the "Western Lands Acts of 1901 and 1905"; in cases where application has not been made, such lease or license is treated as if the Acts had not been passed.

Crown lands within this division are not available for lease until so notified in the *Gazette*, but leases for special purposes may be granted upon certain conditions, and holders of areas, which are considered too small to maintain a home or to make a livelihood, may obtain an additional area under certain conditions as a lease. Lands are gazetted open for lease at a stated rental under specified conditions with respect to residence, transfer, mortgage, and subletting.

All leases issued or brought under the provisions of the "Western Lands Acts of 1901 and 1905," except special leases, expire on 30th June, 1943. In cases where a withdrawal is made for the purpose of sale by auction or to provide small holdings, the lease of the remainder may, as compensation, be extended for a term not exceeding six years.

The rent on all leases brought under the provisions of the Act is determined by the Commissioners for the unexpired portion. The minimum rent or license fee is 2s. 6d. per square mile or part thereof, the maximum is 7d. per sheep on the carrying capacity determined by the Commissioners.

Holdings under the Western Lands Acts as at 30th June, 1914, were classified as follows:—

Class of Holding.	Leases issued.	Area.	Annual Rental.
	No.	acres.	£
Pastoral Leases	300	40,316,869	50,918
Homestead Leases	1,114	10,338,439	22,607
Improvement Leases	116	1,950,875	1,040
Scrub Leases	3	17,431	25
Inferior Leases	4	209,950	48
Settlement Leases	8	40,050	130
Artesian Well Leases	29	296,631	395
New Special Leases	275	1,058,493	1,570
Special (Conversion) Leases	61	9,727	341
Residential Leases	1	10	1
Occupation Licenses	105	7,176,606	2,107
Homestead Selections	11	6,966	24
" Grants	24	17,838	103
Section 32, Western Lands Act Leases... ..	288	2,779,960	2,159
Part VII, " " " " " " "	373	9,278,192	8,567
Preferential Occupation Licenses	5	12,216	11
Permissive Occupancies	44	834,215	457
Conditional Leases	85	115,087	507
	2,846	74,459,555	91,010

ANNULMENT OF APPLICATIONS.

Applications for conversion to mineral conditional purchase may, under the 1910 Act, be annulled or withdrawn, and all moneys, less authorised deductions for cost, refunded with the application.

LABOUR SETTLEMENTS.

In the Labour Settlements Act, 1902, provision is made for land to be set apart for lease as a labour settlement, under the control of a Board, which is empowered to enrol approved persons; to make regulations concerning the work to be done; to apportion the work among the members; and to distribute equitably wages, profits, and emoluments, after providing for the cost of maintenance of members; to establish any trade or industry, and apportion the profits among the enrolled members. The land is under the control of a Board, in trust for the members of the settlement.

With a sufficient enrolment of members a Board may apply for monetary assistance on behalf of the members of the settlement, to a maximum amount of £25 for each enrolled member who is the head of a dependent family; £20 for each married person without a family; and £15 for each unmarried person. On the expiration of four years from the commencement of the lease, and at the end of each year following, 8 per cent. of the total sum paid to the Board becomes a charge on its revenue, until the total amount advanced, with interest at the rate of 4 per cent. per annum, has been repaid.

On 30th June, 1914, the only settlements in existence were those at Bega and Wilberforce. At Bega an area of 1,360 acres is attached to the settlement, and on the date specified there were 28 men enrolled, the total population being 144. A sum of £2,420 has been advanced by the Government and the value of improvements, exclusive of crops, is £3,100. At Wilberforce, an area of 435 acres has been granted for settlement. On 30th June, 1914, there were 10 men enrolled, the total population being 43. Loans from the Government amount to £2,479, the value of improvements, exclusive of crops, being £1,510.

CLOSER SETTLEMENT.

Under the Closer Settlement Act, 1901, provision was made for the acquisition of private lands, or of lands leased from the Crown, for purposes of closer settlement, lands so acquired to be divided into farms and leased for a term of ninety-nine years, at an annual rental not exceeding 5 per cent. of the capital value of the land. No power of compulsory resumption was conferred, and, consequently, the Act was practically inoperative.

Under the Closer Settlement Act, 1904, which repealed the 1901 enactment, provision was made for compulsory resumption, for purposes of closer settlement, of private land, when the value exceeds £20,000, exclusive of improvements, and owners could offer to surrender private lands at specified prices, such offer to be binding on the owner for a period of nine months. These provisions have been repealed by the Closer Settlement (Amendment) Act, 1914.

The Closer Settlement Amendment Act, 1907, constituted three Advisory Boards to report upon lands suitable for closer settlement, the land being purchased by agreement with the owner, or acquired by resumption when the value, without improvements, exceeds £20,000. Within six months after the passing of an Act sanctioning the construction of a line of railway, the Governor may notify a list of estates within 15 miles of a railway line; within six months of this notification the Governor may purchase or resume for purposes of closer settlement land so notified the property of one owner and exceeding £10,000 in value.

Land comprised in an improvement or scrub lease, or lease to outgoing pastoral lessee, may also be resumed for closer settlement upon the recommendation of an Advisory Board constituted under the Act of 1907.

Before land acquired is available for settlement, the areas and values per acre of the proposed settlement purchases must be approved by the Minister. The area available may include not only land acquired under the Act but also any adjacent Crown lands set apart for the purpose. Settlement areas are notified for disposal in three classes, viz., agricultural lands, grazing lands, and township settlement allotments.

In the Closer Settlement Amendment Act, 1909, provision is made that at any time after a proclamation of intended acquisition of an estate, if an agreement be made that the land shall be subdivided for closer settlement by the owner, the power of resumption may be suspended for a term not exceeding two years. Any sale or lease made under such agreement must be submitted to the Minister, and if it be found that the owner has failed to fulfil the conditions, the suspension of the power of resumption shall cease.

Males above the age of 16 years, and females over 21 years, may apply for land under the Act, if they are not holders, except under annual tenure, of land which, with the area sought, will substantially exceed a home maintenance area; but if any person divests himself of land in order to apply for a settlement purchase, his application will be disallowed, unless the Minister's consent in writing be obtained to the making of an application.

The person applying, if a woman, must be unmarried or widowed, or if married, be living apart from her husband under a decree for judicial separation; but with the Minister's consent a married woman not living apart from her husband may apply for a settlement purchase, in which case the lands held by her husband will be considered in estimating whether the area held, together with that applied for, substantially exceeds a home maintenance area; and in considering any application by a married man not so living apart, the total area held by husband and wife will be similarly considered.

Applications, accompanied by a deposit of $5\frac{1}{2}$ per cent. of the notified capital value of the land, are lodged with the Crown Land Agent of the district, or with any other officer duly appointed. The purchase money, including interest at $4\frac{1}{2}$ per cent., is payable in thirty-five annual instalments at the rate of $5\frac{1}{2}$ per cent. of the capital value of the land unless otherwise prescribed. Where the settlement purchase is within a settlement purchase area notified prior to 1st January, 1913, the deposit and subsequent instalments are at the rate of 5 per cent. per annum, and the interest is at the rate of 4 per cent. per annum.

Residence for a period of ten years is required, and commences at any time within twelve months after the decision of the Land Board allowing the purchase; but the term may be extended to any date within five years of the allowance of purchase, and on such terms and conditions as to improvements and cultivation as may be arranged between the applicant and the Land Board. Residence implies continuous and *bona fide* living upon the area allotted, or upon a township settlement allotment in the same settlement purchase area. Subject to the approval of the Land Board, the condition as to residence may be observed in any adjacent town or village; or, by permission, may be suspended. Residence may be permitted on another holding of the applicant.

On unimproved land, the purchaser is required to effect substantial and permanent improvements to the extent of 10 per cent. of the capital value

within two years from the date of application, with an additional 5 per cent. within five years, and a further 10 per cent. within ten years from the same date. Existing improvements on the land are held to fulfil this condition to the amount of their value. Every purchaser is subject to conditions as to mining, cultivation, destruction of vermin and noxious weeds, &c.

The Minister may give consent to the temporary occupation, subject to certain conditions, of any lands within a settlement purchase area which remain unselected. The permit to occupy does not exempt the land from settlement purchase.

Under the provisions of the Crown Lands Amendment Act, 1912, the holder of a settlement purchase under the Closer Settlement Acts, other than those acquired under the Closer Settlement Promotion Act, 1910, may under certain conditions convert such holding into a homestead farm.

The three Advisory Boards constituted under the Closer Settlement Act to inspect and report upon suitable estates for closer settlement were replaced in January, 1911, by one central Board to deal with closer settlement for the whole State; an additional Board has since been appointed.

The following table contains information regarding areas administered under the Closer Settlement Acts as at 30th June, 1914:—

Name of Settlement Purchase Area.	Lands comprised in Settlement Areas.			Price paid for Acquired land.	
	Acquired land.	Adjoining Crown land.	Total.	Total.	Per Acre.
	acres.	acres.	acres.	£	£ s. d.
Myall Creek, Inverell	53,929	19,373	73,302	138,866	2 11 6
Gobbagombalin, Wagga	61,866	4,622	66,488	207,560	3 7 1
Marrar, Wagga	26,608	781	27,389	68,777	2 11 8
Walla Walla, Albury	50,156	1,580	51,736	250,687	5 0 0
Sunny Ridge, Cowra	12,031	416	12,447	49,038	4 1 8
Borce Creek, Urana	17,002	242	17,244	61,385	3 12 3
Peel River, Tamworth	99,618	114	99,732	405,416	4 1 5
Mungery, Parkes	55,159	47,371	102,530	115,878	2 2 0
Coreen and Back Paddock, Corowa	37,862	1,492	39,354	140,000	3 14 1
Brookong, Urana	12,006	156	12,162	42,170	3 10 3
Piallaway and Walhallow, Tamworth	12,447	348	12,795	61,980	5 0 0
Everton, Dubbo	6,477	6,049	12,526	19,426	3 0 0
Pine Ridge, Mudgee	7,845	197	8,042	28,790	3 13 5
Richlands, Goulburn	8,719	302	9,021	34,855	4 0 1
Larras Lake, Molong	11,536	42	11,580	53,830	4 13 4
Crowther, Young	10,563	325	10,888	52,201	4 18 10
North Logan, Cowra	11,441	243	11,684	54,461	4 15 3
Hardwicke, Yass	6,141	112	6,253	26,100	4 5 0
Tuppall, Corowa	49,178	1,073	50,251	221,224	4 10 0
Nangus, Gundagai	7,517	212	7,729	29,819	4 0 0
Gunningbland, Parkes	12,404	109	12,513	37,212	3 0 0
Tibbereenah, Narrabri	12,357	528	12,885	49,022	3 19 8
Wandary, Forbes	8,998	439	9,437	36,963	4 2 6
Cote Park, Malton, and Rossiville, Goulburn	3,141	769	3,910	14,090	4 10 0
Bibbenluke, Bombala	16,174	410	16,584	60,339	3 15 0
Maharatta, Bombala	20,256	454	20,710	72,190	3 11 11
Warrah, Murrurundi	45 0 6	.....	45,006	192,747	4 5 8
Boorabil, Wyalong	8,717	1,781	10,498	17,433	2 0 0
Total	685,156	89,540	774,696	2,542,489	3 14 3

Of the total area of Closer Settlement lands, 26,145 acres have been reserved for roads and other purposes, and 748,551 acres have been divided into 1,613 farms, the average area per farm being 464 acres.

Particulars of the subdivisions are shown in the following statement :—

Name of Settlement Purchase Area.	Farms.	Capital value of Areas contained in Farms.			Farms allotted to 30th June, 1914.	Area allotted.	Capital value of Farms selected.
		Acquired Lands.	Crown Lands.	Total.			
	No.	£	£	£	No.	Acres.	£
Myall Creek	134	138,589	24,967	163,556	131	67,003	163,556
Gobgombalin	142	225,663	12,429	238,092	142	64,492	238,092
Marrar	46	75,133	2,040	77,173	46	27,048	77,173
Walla Walla	126	255,262	3,845	259,107	126	50,603	259,107
Sunny Ridge	21	50,292	1,236	51,528	21	12,265	51,528
Boree Creek	30	67,606	527	68,133	30	17,031	68,133
Peel River	289	438,580	126	438,706	289	97,415	438,706
Mungery	62	117,497	81,962	199,459	62	95,111	199,459
Coreen Creek & Back Paddock	63	150,173	3,849	154,022	63	38,353	154,022
Brookong	20	43,155	341	43,496	20	12,006	43,496
Fialloway and Walhalow	38	63,485	1,371	64,856	38	12,631	64,856
Everton	18	19,890	11,671	31,457	13	12,306	31,457
Pine Ridge	16	29,556	625	30,181	16	7,946	30,181
Richlands	37	36,161	932	37,093	37	8,917	37,093
Larras Lake	30	57,137	3	57,140	30	11,486	57,140
North Logan	58	57,966	676	58,642	36	11,190	57,740
Hardwicke	21	26,857	276	27,133	21	6,172	27,133
Tuppall	117	232,110	2,362	234,472	117	49,573	234,472
Nangus	17	31,667	485	32,152	17	7,649	31,552
Gunningbland	19	38,792	118	38,910	19	12,389	38,910
Tibbereelah	77	51,324	868	52,192	72	12,543	50,368
Wandary	12	37,985	642	38,627	18	9,075	38,627
Crowther	22	53,687	694	54,381	22	10,677	54,381
Cole Park, Malton, & Rossiville	19	14,614	5,808	20,452	17	3,750	20,023
Bibbenluke	31	62,108	1,289	63,397	27	14,136	55,126
Maharatta	48	81,321	993	82,314	43	17,587	72,884
Warrah	83	207,994	..	207,994	82	43,918	207,479
Boorabil	8	19,630	3,219	22,849	1	845	3,591
Total	1,613	2,635,660	163,254	2,848,914	1,567	734,125	2,806,285

At 30th June, 1914, 1,567 farms, containing 734,125 acres, had been allotted. The average cost to the settler was £3 16s. 5d., per acre and £1,787 per farm. The farms which have not yet been selected are let under permissive occupancy, and remain available for settlement purchase application.

Closer Settlement Promotion Act, 1910.

The Closer Settlement Promotion Act, 1910, enables three or more persons qualified to hold settlement purchases to negotiate with an owner of private lands in their particular district, and to apply to have such lands brought under the Act. Upon approval by the Minister, the vendor surrenders the land to the Crown, and the purchaser acquires it as a settlement purchase, obtaining an advance, secured by mortgage on the land, from the Commissioners of the Government Savings Bank, who may make advances up to 94½ per cent. of the Crown valuation of the farm, with a maximum of £3,000; the total advances by the Bank under this Act in any financial year may not exceed £1,000,000. Each farm is worked independently, the co-operation of the applicants ceasing with the allotment of an area, for which each has to lodge a deposit of £5 and costs of surveys, &c., with 5½ per cent. of the Crown valuation of the farm on allotment. Repayments of advances from the Government Savings Bank are subject to the regulations in force at the date of commencement of title. At present the regulations provide for repayment at the rate of 5½ per cent. per annum of the capital value of the farm; this includes interest at 4½ per cent. on the outstanding balance, the whole indebtedness being discharged in thirty-five years.

Extension of time to pay instalments of purchase may be sanctioned in special circumstances, and holders of farms may obtain advances on account of improvements effected.

From the commencement of the Act in September, 1910, till 30th June, 1914, 904 farms, of a total area of 356,173 acres, were applied for, the amount involved being £1,887,961. Of this number 692 farms, embracing an area of 265,454 acres, at a cost of £1,433,568, were allotted and finally dealt with at 30th June, 1914.

The transactions for each year were as follows :—

Year.	Estates.	Farms.	Area.	Value.
1911	17	123	acres. 50,769	£ 251,766
1912	29	213	85,094	456,197
1913	34	269	99,343	556,301
1914 (to 30 June)	19	82	30,248	169,304
Total ...	99	692	265,454	1,433,568

In addition to the land acquired by the State for closer settlement a number of estates have been subdivided for that purpose by private owners.

LAND RESUMPTIONS.

Land required by the State may be obtained by resumption, purchase, exchange, surrender, or gift. Resumptions are those made under the Public Works and Lands for Public Purposes Acquisition Acts, and are treated by the Government Land Valuer, except those made for purposes of Public Instruction or of Railways.

The following statement shows the area of such resumptions and purchases which were made during the past seven years :—

Year.	Resumptions and Purchases.			Gifts.			Total.		
	a.	r.	p.	a.	r.	p.	a.	r.	p.
1908	5,974	0	20	67	0	17	6,041	0	37
1909	2,779	1	33	240	1	34	3,019	3	27
1910	3,815	2	0	62	3	2	3,878	1	2
1911	13,159	0	4	6	2	10	13,165	2	14
1912	148,332	1	26	4	0	24	148,336	2	10
1913	102,187	3	11	15	2	23	102,203	1	34
1914	14,514	0	15	27	3	31	14,542	0	7

Resumptions and purchases made during 1913-1914, principally in connection with irrigation, were :—

	Area.				Area.		
	a.	r.	p.		a.	r.	p.
Carpentry Workshops ...	2	0	0	Public School sites ...	240	2	19
Defence ...	15	0	0	Railways, Tramways, and Quarries ...	3,270	2	5
General Purposes...	2,926	3	13	Total ...	14,542	0	7
Irrigation ...	7,907	2	2				
Maintaining Traffic ...	167	2	3				
Postal ...	12	0	0				

DEDICATIONS OF LAND.

	Area.				Area.		
	a.	r.	p.		a.	r.	p.
Additions to Mechanics Institute site ...	0	0	25½	Public Recreation and Racecourse ...	80	0	0
Addition to School of Arts ...	0	0	17½	Public Recreation and Showground ...	361	0	30
„ Showground ...	62	1	4	Public Recreation, Showground, and Racecourse ...	99	3	12
Extension to General Cemetery ...	0	1	33	Public Roads ...	233	1	37
„ Permanent Com- mon ...	15	0	0	Public School sites ...	132	3	26½
General Cemetery ...	16	0	29½	Racecourse and Showground	122	2	0
Hospital ...	2	1	8	Reserve for Travelling Stock and Camping ...	15	0	0
Literary Institute ...	0	3	28½	Shire Council Chambers ...	1	2	26½
Public Hall ...	0	2	39	Showground ...	28	2	20
Public High School ...	0	1	24	Total ...	1,430	1	2
Public Park ...	3	0	0				
Public Recreation ...	240	2	0½				
Public Recreation, Athletic Sports, and Showgrounds ...	13	0	0				

PROGRESS OF LAND ALIENATION.

The figures relating to land alienation under the legislation of 1861, and to its subsequent amendments, show that up to 30th June, 1914, there were 14,913,139 acres sold by auction and other forms of sale.

As regards conditional purchases, the following applications have been made under the various Acts:—

	Applications.	
	No.	acres.
Under the Crown Lands Act of 1861—		
To May 24, 1880	136,389	14,982,120
Under the Crown Lands Act of 1880	55,084	8,488,020
Total to 31st December, 1884... ..	191,473	23,470,140
Under the Crown Lands Acts of 1884, 1889, 1895, and amending Acts	91,439	16,623,618
Grand total to 30th June, 1909	282,912	40,093,758

The number of selections—viz., 282,912, containing 40,093,758 acres—has been reduced since 1909 by forfeitures, cancellations, conversions into homestead selections, &c., and increased by conversions from other tenures under the Crown Lands Act, so that the land wholly alienated, or in process of alienation, by conditional purchase, on 30th June, 1914, amounted to 33,798,632 acres, contained in 213,744 purchases. Deeds have now been issued upon 121,749 completed purchases, covering 15,960,930 acres, and the balance represents the number of purchases still in force, but upon which the conditions have not been fulfilled, viz., 91,995, covering an area of 17,837,702 acres.

Applications for homestead selections numbering 10,030 were received to 30th June, 1914, the aggregate area of such being 3,824,103 acres. Of the applications lodged, 7,947, covering 2,763,683 acres, were confirmed. Homestead grants to the number of 4,028, with an area of 1,628,176 acres, were issued to 30th June, 1910; during the following year 287 homestead grants, covering 123,086 acres, were prepared, in 1911-12, 196 grants for 88,517 acres, and in 1912-13, 175 grants for 55,377 acres, were prepared. The area held under homestead selection and grants on 30th June, 1914, was 1,396,911 acres.

The total area alienated by volunteer land orders to 30th June, 1911, amounted to 170,650 acres, and this area was increased only by 848 acres as at 30th June, 1912. During the next year there was a further alienation of 500 acres, and during 1913-14 an additional 200 acres were alienated, the total area standing at 172,198 acres. Free grants ceased as from 31st January, 1912.

From 1862 to 30th June, 1914, the Crown has dedicated 235,623 acres for public and religious purposes, the dedications during the last year covering 1,430 acres.

Homestead farms and suburban holdings were new forms of tenure created by the Crown Lands (Amendment) Act of 1912, and the first areas for homestead farms were made available on 13th May, 1912. For the year ended 30th June, 1914, 468 applications, embracing 284,640 acres, were lodged; 358 applications, covering 221,576 acres, were confirmed, the rental value being £10,357. The area held as homestead farms on 30th June, 1914, was 450,999 acres.

For suburban holdings during the year 1913-14 762 applications, embracing 15,885 acres, were received, and 570, covering 13,415 acres, were confirmed,

the annual rental value being £1,503. The area held under suburban holdings on 30th June, 1914, was 22,114 acres.

The operations of the various Orders, Regulations, and Acts of Council and of Parliament for the disposal of the public lands, since the foundation of New South Wales, have produced the following results:—

Area granted and sold by private tender and public auction at prices ranging from 5s. to 20s. per acre, prior to the year 1862	acres.	7,146,579
Area sold by auction and other forms of sale, 1862 to 30th June, 1914, inclusive		14,913,139
Area sold under system of conditional purchase for which deeds issued, 1862 to 30th June, 1914, inclusive		15,960,930
Area granted under Volunteer Land Regulations of 1867		172,198
Area dedicated for public and religious purposes, less resumptions, 1862 to 30th June, 1914... ..		235,623
Homestead selections and grants existing on 30th June, 1914		1,396,911
Homestead farms		450,499
Suburban holdings		22,114
Total, 30th June, 1914... ..		40,297,993
Less alienated and dedicated lands within Federal Capital Territory		173,451
Total area alienated, 30th June, 1914		40,124,542
Area in process of alienation under system of conditional purchase standing good on 30th June, 1914 (exclusive of Federal Capital Territory) ...		17,837,702
Area alienated and in process of alienation on 30th June, 1914, exclusive of lands dealt with under Closer Settlement Act, and Federal Capital Territory		57,962,244
Area acquired for Closer Settlement to 30th June, 1914 (including 265,454 acres under Closer Settlement Promotion Act, 1910)		950,610
Total		57,011,634
Lands (acquired and Crown) alienated for closer settlement to 30th June, 1914 (including 265,454 acres disposed of under Closer Settlement Promotion Act)		999,579
Total area alienated, and in process of alienation on 30th June, 1914 (exclusive of Federal Capital Territory)		58,011,213

It has been found impracticable to separate the area alienated by grant from that sold by private tender, as the records of early years are incomplete upon this point.

CONVERSION OF TENURES.

In reference to the various methods of acquisition and occupation, details have been given of provisions of the Crown Lands Amendment Acts passed in 1908 and 1912, which confer on certain holders of Crown lands the right of conversion into more desirable tenures.

The following statement shows the applications for conversion made, and those confirmed, during the last three years:—

Class of Holding.	Applications made.					
	1911-12.		1912-13.		1913-14.	
	No.	Area.	No.	Area.	No.	Area.
		acres.		acres.		acres.
Conditional Leases	1,464	555,972	1,850	780,773	1,050	576,400
Conditional Purchase Leases ...	122	39,296	41	17,904	47	27,649
Homestead Selections or Grants ...	426	186,796	176	70,703	179	73,623
Settlement Leases	218	587,269	94	308,863	99	347,889
Non-residential Conditional Purchases	2	254	4	548	8	966
Special Leases	397	59,871	269	36,791	265	34,435
Settlement Purchases ... ..	...	.....	34	17,533	6	1,980
Church and School Lands Leases ...	14	8,098	2	1,537	...	.....
Improvement Leases	1	500	7	4,045	5	3,200
Conditional Purchases ... ..	...	.....	1	224	4	3,352
Scrub Leases ... ..	...	.....	...	.....	1	640
Total	2,644	1,438,056	2,478	1,238,921	1,664	1,070,134

Class of Holding.	Applications confirmed.					
	1911-12.		1912-13.		1913-14.	
	No.	Area.	No.	Area.	No.	Area.
		acres.		acres.		acres.
Conditional Leases	1,503	580,220	1,781	784,556	1,272	584,234
Conditional Purchase Leases ...	137	44,579	50	18,155	41	24,204
Homestead Selections or Grants ...	649	295,288	195	76,306	182	78,846
Settlement Leases	404	1,287,583	166	544,345	88	319,441
Non-residential Conditional Purchases	5	716	4	324	6	604
Special Leases	392	54,500	232	26,845	206	21,107
Settlement Purchases ... ..	...	.....	19	9,944	6	4,001
Church and School Lands Leases ..	6	1,766	2	2,154	...	.....
Improvement Leases	1	595	1	600	...	.....
Conditional Purchases* ... ..	...	.....	...	.....	5	2,558
Conditional Leases* ... ..	...	.....	...	.....	4	3,560
Total	3,097	2,265,247	2,450	1,463,229	1,810	1,038,555

* Conversions under Section 194, Crown Lands Consolidation Act, 1913.

REVENUE FROM PUBLIC LANDS, 1910-14.

The following statement shows the Revenue received from Public Lands during the years ended 30th June, 1910 to 1914, and also the Revenue per capita:—

Head of Revenue.	1910.	1911.	1912.	1913.	1914.
ALIENATION—					
Auction and Special Sales—	£	£	£	£	£
Auction Sales	77,055	83,058	83,764	63,001	43,762
Improved Purchases	2,951	3,825	1,225	3,149	2,427
Newcastle Pasturage Reserve Sales	676	1,061	996	904	619
Miscellaneous Purchases	7,636	11,049	13,631	25,801	18,233
Total	£ 88,318	98,993	99,616	92,855	65,041
Conditional Purchases—					
Deposits and Improvements (Acts, 1884 and 1883)	64,236	135,392	70,930	62,303	42,068
Instalments and Interest (Acts of 1875, 1884, and 1889)	538,175	537,226	595,805	660,703	721,470
Interest (Act of 1861)	22,200	21,614	18,894	17,094	17,279
Balances (Acts, 1861, 1875, 1884, and 1889)	174,495	186,592	146,593	138,013	101,210
Homestead Selections (Improvements and Rent)	71,624	62,917	48,577	40,768	43,409
Total	£ 870,730	943,741	880,799	918,881	925,436
OCCUPATION—					
Pastoral Leases—					
Pastoral	756	749	706	720	735
Conditional	204,965	199,214	201,450	207,043	211,662
Conditional Purchase	19,708	21,544	22,692	20,729	20,704
Occupation Licenses	31,533	29,871	26,952	25,051	23,060
Homestead	1,555	1,688	1,771	1,551	1,114
Annual and Snow	38,152	34,297	33,547	40,607	37,405
Scrub and Inferior	10,389	9,896	9,853		
Settlement	115,561	106,736	85,331	79,147	72,238
Improvement	50,712	49,501	49,644	46,203	40,947
Artesian Well	230	198	198	144	144
Church and School Land	7,751	632	471	515	406
Western Land Division	79,517	82,265	83,264	89,613	84,662
Blockholders Act of 1901	28	15	7	...	...
Leases under 18th Section, Land Act, 1903	11,538	11,451	9,645	10,146	9,934
Crown Leases ... ..	...	...	1,017	4,059	7,268
Suburban Holdings ... ..	...	...	77	940	1,881
Total	£ 572,395	548,057	526,725	526,468	512,160
Mining—					
Mineral Leases	20,706	17,490	17,739	18,796	19,682
Leases of Auriferous Lands	2,310	2,544	1,892	1,837	1,755
Deposits—Gold and Mineral					
Dredging Act, 1899	1,236	987	945	821	834
Miners' Rights	3,184	2,913	2,777	3,004	2,780
Business Licenses	888	784	764	691	656
Residential Leases	1,713	1,661	1,679	1,703	1,611
Royalty on Minerals	59,373	77,613	89,423	103,851	110,893
Fees—Warden's Courts and Department of Mines	2,063	1,889	1,689	1,715	1,959
Other Receipts	4,789	4,698	3,552	5,015	5,032
Total	£ 96,262	110,579	120,460	137,433	145,202

Head of Revenue.	1910.	1911.	1912.	1913.	1914.
OCCUPATION (continued)—					
Miscellaneous Land Receipts—	£	£	£	£	£
Timber Licenses, &c.	60,508	84,460	94,560	96,929	98,972
Rents, Special Objects	40,485	43,490	43,064	44,546	47,174
Fees on Preparation and Enrolment of Title-deeds	7,457	7,355	6,823	5,346	4,609
Survey Fees	28,883	30,823	24,297	27,428	23,992
Fees on Transfer of Leases	2,047	2,415	2,919	2,254	2,742
Quit Rents and Other Receipts	25,505	26,194	22,471	27,859	38,479
Total	£ 164,885	194,737	194,134	204,362	215,968
Gross Revenue	£ 1,792,590	1,896,107	1,821,734	1,879,999	1,863,807
Refunds	£ 62,850	57,190	56,275	44,051	34,920
Net Revenue	£ 1,729,740	1,838,917	1,765,459	1,835,948	1,828,887

REVENUE PER CAPITA.

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Auction and Special Sales	0 1 1	0 1 3	0 1 2	0 1 0	0 0 9
Conditional Purchases	0 10 11	0 11 6	0 10 5	0 10 4	0 10 1
Pastoral Occupation	0 7 2	0 6 8	0 6 3	0 5 11	0 5 7
Mining Occupation	0 1 2	0 1 4	0 1 5	0 1 7	0 1 7
Miscellaneous Land Receipts	0 2 1	0 2 4	0 2 3	0 2 3	0 2 4
Gross Revenue	£ 1 2 5	1 3 1	1 1 6	1 1 1	1 0 4
Refunds	£ 0 0 9	0 0 8	0 0 8	0 0 6	0 0 5
Net Revenue	£ 1 1 8	1 2 5	1 0 10	1 0 7	0 19 11

AREA LEASED AT 30TH JUNE, 1914.

The area leased to pastoral tenants and others at the end of June, 1914, amounted to 121,837,047 acres (including leases to miners under the Mining Act), and was subdivided as follows:—

Type of Lease.	Area, acres.	Type of Lease.	Area, acres.
Pastoral	1,137,095	Snow Land	52,970
To outgoing Pastoral Lessees	1,061,240	Special	622,079
Occupation License	7,410,302	Inferior Land	104,674
Conditional	15,798,871	Artesian Well... ..	71,680
Conditional Purchase... ..	579,108	Western Lands	74,459,555
Homestead	383,378	Permissive Occupancy	1,203,244
Annual	3,705,570	Prickly Pear	50,187
Settlement	6,591,911	Mining Act	199,060
Improvement	5,448,966	Other	17,738
Scrub	2,053,634		
Crown	880,785	Total	121,837,047

The total available area of the State, exclusive of 576,000 acres ceded to the Commonwealth Government as Federal Capital Territory, is 198,058,880 acres. Deducting the area alienated, and in process of alienation, 58,011,213 acres, and the area leased, 121,837,047 acres, making a total of 179,848,260 acres, there remained a balance of 18,210,620 acres, representing the area of country neither alienated nor leased, and including roads, reserves for public purposes, travelling stock routes and water.

AREA AVAILABLE FOR SETTLEMENT.

In 1895 attention was directed to the question of land legislation, as it was contended that the Lands Acts of 1884 and 1889 had failed to prevent the accumulation of extensive landed estates in the hands of a very limited number of proprietors.

Although it may be said, in defence of the policy pursued by this class of landowners, that in many cases it was forced upon them by the defective nature of legislation which failed to discriminate between the very different interests of the pastoralists and of the agricultural settlers, it must nevertheless have been patent to everybody that these immense alienations of the public estate were not conducive to healthy settlement. The Acts mentioned were, however, amended by the Crown Lands Act of 1895. Many radical changes in land legislation were effected by this Act; but immediate remedial action could be taken only in connection with Crown lands which have not been alienated or leased to Crown tenants for a definite period of years. Leases granted under certain conditions, such as those attached to conditional leases, which carry with them the right of purchase at any time during their currency, may be considered as a form of alienation, because only a comparatively small portion of these areas is ever likely to return to the public estate. Lands under homestead leases in the Western Division not brought under the Western Lands Act, scrub lands, snow-covered areas, inferior lands, settlement leases, improvement leases, leases to outgoing pastoral lessees, leases for long periods of fixed tenure, and under the Western Lands Act for long terms, form another category of lands concerning which past legislation prevented immediate action.

The lands which can be affected beneficially by the Act of 1895 and subsequent enactments are, therefore, limited to the area which is unalienated, or for which contracts have not been made, and is further reduced by reserves for public purposes, for gold-fields and other forms of mining enterprise, and for railway and other purposes. At the end of June, 1914, there were 40,124,542 acres absolutely alienated, excluding lands (173,451 acres) alienated and dedicated within the Federal Capital Territory; 17,837,702 acres conditionally sold, the conditions of purchase not being complete; and 23,609,707 acres leased with the right to convert into freehold. These areas amounted to 81,571,951 acres; but taking into consideration the lands dealt with under the Closer Settlement Acts—950,610 acres acquired and 999,579 acres disposed of—there are 81,620,920 acres which have been placed practically beyond State control.

The following statement shows the tenure under which the areas leased with right or provision to convert into freehold, under the Crown Lands (Amendment) Act of 1908, are held:—

	acres.
Conditional Leases	15,798,871
Conditional Purchase Leases	579,108
Settlement Leases	6,591,911
Special Leases	622,079
Residential Leases on Mineral Fields	13,354
Church and School Land Leases	4,384
Total	23,609,707

The areas under long contracts of lease, in some cases with right of renewal, are given below:—

	acres.
Crown Leases	880,785
Pastoral Leases	1,137,095
Leases to outgoing Pastoral Lessees	1,061,240
Homestead Leases	388,378
Scrub Leases and Inferior Land Leases	2,158,308
Artesian Well Leases	71,680
Snow-land Leases	52,970
Improvement Leases	5,448,966
Western Land Leases	66,436,518
Other Leases	249,248
Total	77,885,188

Adding together 81,385,296 acres practically beyond State control, and 77,885,188 acres of land leased on long contracts, a total of 159,270,484 acres shows the extent of territory which can now be more closely settled and intensely cultivated only by voluntary action of the holders, or by more systematic and probably costly resumptions. Of the balance, after allowance has been made for useless land, it will be found that at 30th June, 1914, the State probably had about 33,000,000 acres available for occupation under various tenures. There is, however, a difficulty attending any calculation of the area included in land under long leases, which might be made available for settlement. This is apparent when the conditions under which the leases are now held are taken into consideration. Except where right to renewal on expiration of the lease exists, certain areas are continually reverting to the Crown by effluxion of time, and again in respect of certain leases provisions have been made whereby the Minister may at his discretion withdraw a part, and in some cases the whole, of a leased area, or he may resume such leases for the purposes of settlement.

The progress of alienation and of conditional settlement by purchase and lease at various periods from 1861 to 30th June, 1914, is shown in the following table:—

Year.	Area Alienated to end of year.	Area Conditionally Purchased, standing good at end of year.	Area Conditionally Leased at end of year.	Area under Homestead Selection, exclusive of Homestead Grants.	Area under Homestead Grant.
	acres.	acres.	acres.	acres.	acres.
1861	7,146,579	.....	.....	.....	.....
1871	8,630,604	2,280,000	.....	.....	.....
1881	22,406,746	12,886,879	.....	.....	.....
1891	23,775,410	19,793,321	11,234,131	.....	.....
1901	26,408,169	20,044,703	13,980,942	1,491,073	35,385
1906	32,486,086	16,499,823	15,807,249	934,426	1,087,065
1911	38,569,028	15,614,036	16,978,816	679,554	1,049,600
1912	39,076,189	16,529,008	16,795,342	1,528,703	
1913	39,662,186	17,307,505	16,800,673	1,480,834	
1914	40,124,542	17,837,702	15,798,871	1,396,911	

As already stated, land held under conditional lease is virtually alienated, since the holder has the right of converting his lease into a freehold at any time during its currency.

AREAS FOR SETTLEMENT, 1913-14.

With a view to classifying and bringing forward those areas which are suitable for settlement, systematic inspections of Crown lands are made in each district. To meet the demand for land, 1,816,054 acres were made available during the year 1913-14, for the classes of holdings specified below:—

	acres.
For Crown Lease	1,455,398
Homestead Farms	227,876
Suburban Holdings	23,778
Additional Holdings	39,050
Irrigation Farms and Allotments	6,359
Settlement Purchase	9,762
Area acquired (Closer Settlement)	62,598
Conditional Purchase and Conditional Lease	293
Total... ..	1,816,054

EFFECTS OF LAND LEGISLATION.

In the agitation which culminated in the framing of the Crown Lands Act of 1861, the contention was raised that Orders-in-Council then in force favoured occupation of the country lands by the wealthier classes; and the principles of free selection before survey and of deferred payments were introduced in the new legislation, with the object of facilitating settlement of an agricultural population side by side with the great pastoral tenants of the Crown. Statistical records for the year 1861 show that at the close of that year, and just before the new legislation had come into force, there were 21,175 holders of rural lands, of whom 17,654 were in the old settled districts, in twenty counties, grouped around three principal centres—the metropolis and the county of Cumberland, the Hunter River Valley, and that portion of the central tableland of which Goulburn, Bathurst, and Mudgee were the first towns; while the remaining 3,521 settlers were scattered over the pastoral districts. The figures showing the area held by these settlers do not discriminate between the land alienated and that occupied under lease from the Crown; but they show that in the old settled districts there were 254,347 acres under cultivation—or an average of 14 acres per holding—and 8,522,420 acres used for stock, whilst in the pastoral districts 43,228 acres were cultivated, and 54,716,463 acres were occupied for grazing; so that, at that time, 63,536,458 acres, representing about one-third of the territory of the State, were in the occupation of the settlers.

In addition to the clauses inserted in the Act of 1861, in the interests of men of small means, certain provisions were retained which secured the accrued interests of the pastoralists under former legislation, of which they availed themselves to the utmost. By means of auction sales of country lands at the upset price of 20s. per acre, of unconditional selections of lots not sold at auction, of purchases made in virtue of improvements, and of pre-emptive right to certain lands under the old Acts of Council, the accumulation of immense estates was greatly facilitated. Sales of lands subject to conditions of residence and improvements, though made ostensibly to foster the settlement of a numerous class of small farmers, were also utilised in the interests of station owners, to whom the purchases were transferred in great numbers immediately upon completion of the conditions of residence and improvement required under the Act.

The evils resulting from the antagonistic interests of these two classes of settlers were partly checked by the amended law of 1884, which stopped the wholesale alienation of land by auction, unconditional selection after auction, and sales in respect of pre-emptive rights. The clause relating to improvement purchases was modified, and made applicable only to small areas in gold-fields which might be purchased by resident miners in view of certain improvements; and the area to be offered at auction sales was restricted to a maximum of 200,000 acres yearly; but conditional settlement was favoured by largely increasing the maximum area allowable to free selectors, by raising the term of residence from three to five years, and by means of more stringent conditions as to fencing and improvements.

This policy, however, did not fulfil the expectation of the legislators, as the figures relating to transfers of conditional purchases prove that, when other means of increasing the area of individual estates failed, the traffic in transfers of conditionally purchased lands, with increased areas, supplied the deficiency. The radical change introduced by the Land Act of 1895, necessitating continuous residence for a period of ten years in respect of original conditional purchases, and a further term of not less than five years in connection with additional purchases, had the effect of considerably

reducing the number of applications lodged. The following table shows the transactions under each class of conditional purchase during the last nine years:—

Year ended 30th June.	Original Conditional Purchases.		Additional Conditional Purchases.		Non-residential Conditional Purchases.		Conditional Purchase Leases—application to convert into C.P. received.		Total.	
	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.
		acres.		acres.		acres.		acres.		acres.
1906	1,438	212,744	1,647	280,386	38	3,651	...	...	3,123	496,781
1907	1,535	200,852	2,122	476,345	52	5,956	14	2,642	3,723	685,795
1908	1,618	229,044	2,108	486,491	113	16,370	11	2,220	3,850	734,125
1909	1,641	235,616	2,767	797,666	121	18,791	12	3,234	4,541	1,105,307
1910	1,206	181,097	1,031	150,074	57	8,196	22	8,357	2,286	350,724
1911	891	116,177	752	98,813	49	6,547	147	43,934	1,749	265,471
1912	584	99,604	626	81,597	48	6,768	122	39,296	1,380	230,265
1913	347	47,427	403	53,274	33	3,143	41	17,904	824	121,748
1914	250	31,543	233	31,525	26	2,233	47	27,649	559	92,955

In addition to the applications for the year 1913-14, as shown above, there were 1,529 applications, covering an area of 749,670 acres, for conversion into conditional purchase from other forms of tenure.

The experience of past years indicates that the new features introduced by the Land Act of 1895 are much appreciated by those desirous of acquiring a holding for themselves, although the residence involved is continuous and for a lengthy period. The following table indicates the applications received for homestead selections and settlement leases in the last nine years:—

Year ended 30th June.	Homestead Selections.		Settlement Leases.	
	No.	Area.	No.	Area.
		acres.		acres.
1906	333	158,739	271	967,838
1907	291	89,426	215	680,187
1908	408	103,412	170	613,934
1909	445	137,292	278	823,208
1910	263	79,787	207	525,807
1911	359	98,155	138	419,840
1912	537	119,278	126	384,505
1913	65	19,595	24	20,561
1914	19	4,941	6	7,393

The Crown Lands Amendment Act, 1912, introduced three new tenures—Homestead Farm, Crown Lease, and Suburban Holdings, which virtually superseded Homestead Selections and Settlement Leases. This accounts for the decrease in the above figures for the years ended 30th June, 1913, and 30th June, 1914. The following table shows the applications received for the new tenures:—

Year ended 30th June.	Homestead Farms.		Crown Leases.		Suburban Holdings.	
	No.	Area.	No.	Area.	No.	Area.
		acres.		acres.		acres.
1912	145	93,254	116	311,360	48	1,964
1913	400	217,186	477	554,424	543	12,704
1914	468	284,640	836	697,425	762	15,885

The principal element which contributed to the aggregation of great landed estates was that of auction sales of country lands, which, upon the application

of the run-holders, were measured in vast areas and bought generally at the upset price—at first a minimum of £1 per acre, raised in 1878 to £1 5s. per acre.

Particulars of the auction sales of country lands from the year 1862 to 30th June, 1913, inclusive, are given hereunder:—

Year.	Lots.	Total Area.	Amount realised.	Average Price per Acre.
	No.	acres.	£	£ s. d.
1862-1872	9,228	582,479	616,399	1 1 2
1873-1883	43,465	7,963,093	8,640,098	1 1 8
1884-1894	8,631	645,770	1,222,271	1 17 10
1895-1904	5,553	397,386	675,178	1 14 0
1905*	269	20,152	28,829	1 8 7
1906	496	18,119	32,877	1 16 3
1907	484	20,094	32,009	1 11 10
1908	416	9,000	19,368	2 3 0
1909	527	8,045	20,018	2 9 9
1910	480	4,574	22,595	4 18 9
1911	336	3,494	21,263	6 1 9
1912	335	2,466	10,859	4 8 1
1913	318	2,104	7,999	3 16 0
1914	60	166	1,239	7 8 6
Total ...	70,598	9,676,942	11,351,032	1 3 6

* Half year ended 30th June.

These figures show that the struggle between selector and squatter did not begin in earnest until about the year 1873, when the effects of the legislation of 1861 were felt in an acute form; but during the succeeding ten years this process of defence was applied in a wholesale manner by the pastoral tenants to save their possessions from encroachment through the operations of the selectors. The system was modified by the legislation of 1884, the object of auction sales of country lands now being to obtain revenue by the sale of select parcels of land at a high average price, and in small average areas. Since the year mentioned, this system of alienation has ceased to be of use in consolidating large pastoral estates.

Among other means offered for the unconditional purchase of Crown lands, that of indiscriminate selection at the upset price of lots not sold at auction also disappeared with the passing of the Act of 1884. During the period 1862 to 1883 when this system of purchase was in operation, 15,750 lots, of a total area of 1,716,976 acres, were selected.

The Crown Lands Act of 1861, in exempting from sale certain leased lands, provided that a lessee should be permitted to exercise a pre-emptive right of purchase over one portion of 640 acres out of each block of 25 square miles.

The lands claimed in virtue of pre-emptive right, a form of alienation which also was abolished by the Crown Lands Act of 1884, added 2,114 lots, representing 560,825 acres, to the areas bought in the interests of the pastoralists.

The consolidation of pastoral estates did not suffer a serious check when the clauses of the Act of 1861, above cited, ceased to operate, as the transfer of conditional purchases supplied fresh means by the gradual absorption of a very large number of selections, principally in the Central and Western Divisions. Some of these transfers were made by way of mortgage, and therefore it is not possible to ascertain the area absolutely transferred by the original selectors; but the fact that 19,962,338 acres out of the total area alienated should be contained in 716 holdings, giving to each one an average domain of 27,880 acres, certainly does not indicate satisfactory settlement. The number of holdings, however, does not represent the number of owners interested, as, in some cases, these large estates are held in partnership by three or four persons, or by companies and financial corporations.

RURAL SETTLEMENT.

SETTLEMENT IN LAND DIVISIONS.

The country may be classified for land purposes into five divisions viz., Coast, Tableland, Western Slopes of the Great Dividing Range, Western Plains and Riverina, and the Western Division. Each division, having its own special character, offers different natural resources according to its climatic conditions. From Sydney as centre, settlement extended first along the coast, then to the central and more readily accessible parts of the tableland, following afterwards the course of the great inland rivers towards the southern and western parts of the State; thence to the great plains of the west, and across the river Darling.

Geographical features and climate have been the primary factors in determining the trend of settlement, and other considerations, such as soil fertility, distribution of rainfall, density of timber growth, and consequent cost and difficulty of clearing, &c., naturally regulate the character of rural settlement in a given locality and the purposes to which lands are applied.

Another matter of great importance is the question of communication between the sparsely settled and the populous centres, with access to a good market which will assure to the settler some certainty of selling his products, and permit an effort to regulate supply according to the demands of the market. In this connection it is interesting to notice how agricultural settlement has clung to the closer and more accessible coastal lands; thus, of the 7,420 purely agricultural holdings in 1913, 4,026 were in the Coastal Division, and 1,381 in the Tableland.

The statements supplied below show the holdings of alienated land classified according to size, the Crown lands attached to such holdings, and the area devoted to agriculture or used for pastoral purposes. The figures for each Division are exclusive of holdings made up of Crown leases only.

COASTAL DIVISION.

From the county of Cumberland settlement advanced westward, and after the alluvial lands of the Hawkesbury and Nepean valleys had been occupied, the lower portion of the valley of the river Hunter, abounding with natural resources, agricultural as well as mineral, soon attracted settlers; so that more population is now more concentrated in this district than in any other part of New South Wales outside the metropolitan area. Settlement gradually extended to the whole of the watershed of the Hunter and Manning Rivers.

The North Coast district, occupied by a farming population, exhibits the most satisfactory results as regards settlement, which, during recent years, has extended very rapidly along the banks of the rivers.

In the early nineteenth century settlement took a southerly direction from the metropolis, and extended rapidly along the lower valleys of the rivers of the South Coast, where the best lands were alienated in grants of large areas to a few families. Later on, however, the nature of the country and a more intelligent conception of the principles which should guide settlement brought about the subdivision of these large estates into numerous small holdings.

The figures in the following table show the settlement of the Coastal Division in holdings of 1 acre and over made up of alienated lands or alienated lands in conjunction with Crown lands at 31st December, 1913,

and are exclusive of holdings within the boundaries of Sydney and suburbs :—

Size of Holding.	Number of Holdings.	Area occupied.			Area under—	
		Alienated.	Crown Lands attached to alienated holdings.	Total.	Crops.	Grazing, &c.
acres.		acres.	acres.	acres.	acres.	acres.
1— 50 ...	24,567	308,854	110,313	419,167	49,674	369,493
51— 100 ...	5,557	438,180	138,265	576,445	44,308	532,137
101— 500 ...	12,816	2,947,475	978,878	3,926,353	122,123	3,804,230
501— 1,000 ...	1,945	1,354,931	554,999	1,909,930	27,253	1,882,677
1,001— 3,000 ...	944	1,489,979	653,332	2,143,311	16,054	2,127,257
3,001— 5,000 ...	147	561,029	388,949	949,978	4,636	945,342
5,001—10,000 ...	85	593,938	376,968	970,906	2,512	968,394
Over 10,000 ...	46	1,026,694	693,404	1,720,098	3,095	1,717,003
Coastal Division...	46,107	8,721,080	3,895,108	12,616,188	269,655	12,346,533

The total area of this Division is 22,355,401 acres, of which 8,721,080 acres have been alienated, and 3,895,108 acres of Crown lands are held in conjunction with the alienated, making a total of 12,616,188 acres. Of this area, 269,655 acres are under crop, and the remainder is used for grazing and other purposes.

Holdings under 51 acres represent 53·3 per cent. of the total number, and are generally market gardens and orchards in the vicinity of towns. The moderate-sized holdings consist mainly of dairy-farms; the area under crop was 269,655 acres, being 3,943 acres less than for the previous year.

Rural settlement in the valleys of the northern coastal rivers, and in the country extending from the sea to the first slopes of the Great Dividing Range, has proceeded in a way very different from that of the tableland, which extends from north to south, and divides the rich agricultural valleys of the coastal rivers and their broken mountainous watershed from the immense plains of the western district.

TABLELAND DIVISION.

After crossing the ranges which form the western boundary of the coastal strip, settlement proceeded in the central tableland, thence south and north, and later westwards, at first following the courses of the great rivers.

In the northern tableland the disproportion between freeholders and tenants is strongly marked, the latter forming a very small minority of the occupiers of alienated land.

The following statement shows the actual state of rural settlement in the Tableland Division at 31st December, 1913 :—

Size of Holding.	Number of Holdings	Area Occupied.			Area under—	
		Alienated.	Crown Lands Attached to Alienated Holdings.	Total.	Crops.	Grazing, &c.
acres.		acres.	acres.	acres.	acres.	acres.
1— 50 ...	6,870	101,217	125,882	227,099	19,259	207,840
51— 100 ...	1,948	153,436	236,779	390,215	23,753	366,462
101— 500 ...	6,638	1,738,289	2,510,150	4,248,439	189,518	4,058,921
501— 1,000 ...	1,948	1,371,521	1,545,831	2,917,352	83,558	2,833,794
1,001— 3,000 ...	1,398	2,312,041	1,703,645	4,015,686	87,560	3,928,126
3,001— 5,000 ...	266	1,026,123	703,112	1,729,235	22,372	1,706,863
5,001—10,000 ...	227	1,545,892	793,488	2,339,380	26,997	2,312,383
Over 10,000 ...	148	2,752,801	987,185	3,739,986	25,210	3,714,776
Tableland Division ...	19,443	11,001,320	8,606,072	19,607,392	478,227	19,129,165

WESTERN SLOPES.

The districts situated on the Western Slope of the Great Dividing Range mark the transition between the agricultural settlements of the coast and the tableland, and the purely pastoral settlements of the Great Western plains. The extent of arable land in the Western Slopes is very large; and, although the proportion devoted to cultivation is greater than in any other Division, in comparison with the total area it is inconsiderable. Distance from a market has been the principal obstacle to a rapid extension of agriculture; but, with expansion of the railways during recent years, improvement in methods of wheat-growing, and extension of share farming, a considerable impetus has been given to agriculture.

In the South-western Slope, which is traversed by the principal permanent rivers of western New South Wales, the land has been alienated to a large extent, and immense areas of freehold land are in the hands of a small number of landholders. The state of settlement in the Western Slopes at 31st December, 1913, may be gathered from the following table:—

Size of Holding.	Number of Holdings.	Area Occupied.			Area under—	
		Alienated.	Crown Lands attached to alienated Holdings.	Total.	Crops.	Grazing, &c.
acres.		acres.	acres.	acres.	acres.	acres.
1— 50 ...	5,332	67,017	62,498	129,515	20,995	108,520
51— 100 ...	1,045	82,513	55,642	138,155	30,900	107,255
101— 500 ...	4,863	1,409,292	1,112,957	2,522,249	446,862	2,075,387
501— 1,000 ...	2,488	1,744,179	1,268,126	3,012,305	470,558	2,541,747
1,001— 3,000 ...	1,896	3,184,117	1,489,638	4,673,755	609,920	4,063,835
3,001— 5,000 ...	327	1,266,413	486,476	1,752,889	156,028	1,596,861
5,001—10,000 ...	271	1,857,005	735,256	2,592,261	161,844	2,430,417
Over 10,000 ...	171	3,716,353	783,877	4,500,230	131,702	4,368,528
Western Slopes...	16,393	13,326,889	5,994,470	19,321,359	2,028,809	17,292,550

WESTERN PLAINS AND RIVERINA.

The portion of the Central Land Division of New South Wales which lies beyond the Western Slopes of the Great Dividing Range constitutes the Division known as the Western Plains and Riverina. The Riverina is the southern portion, and may be considered as the most important agricultural Division of the State, not only on account of the total area alienated, but also from the fact that it contains a considerably larger area under cultivation than any other Division, except the Western Slopes; at the same time the average size of the holdings is extremely large.

Following are the figures showing the development of settlement and cultivation in the Western Plains and Riverina at 31st December, 1913:—

Size of Holding.	Number of Holdings.	Area Occupied.			Area under—	
		Alienated.	Crown Lands attached to Alienated Holdings.	Total.	Crops.	Grazing, &c.
acres.		acres.	acres.	acres.	acres.	acres.
1— 50 ...	1,914	23,211	216,194	239,405	6,223	233,182
51— 100 ...	333	26,167	70,919	97,086	7,141	89,945
101— 500 ...	2,073	668,072	832,374	1,500,446	237,480	1,262,966
501— 1,000 ...	2,372	1,672,861	2,177,477	3,850,338	466,747	3,383,591
1,001— 3,000 ...	2,071	3,411,369	3,953,156	7,364,525	550,115	6,814,410
3,001— 5,000 ...	371	1,423,610	1,413,796	2,837,406	132,813	2,704,593
5,001—10,000 ...	270	1,829,745	1,819,017	3,648,762	96,509	3,552,253
Over 10,000 ...	314	11,160,941	5,005,710	16,166,651	118,171	16,048,480
Western Plains and Riverina ...	9,718	20,215,976	15,488,643	35,704,619	1,615,199	34,089,420

THE WESTERN DIVISION.

In the extreme west of the State settlement progresses slowly. The great mining centre of Broken Hill, situated close to the boundary line between New South Wales and South Australia, has attracted a large population, but excluding this closely settled area the whole Western Division of New South Wales is given up to the depasturing of stock.

The state of rural settlement in the Western Division at 31st December, 1913, is illustrated by the figures given below:—

Size of Holding.	Number of Holdings.	Area occupied.			Area under—	
		Alienated.	Crown Lands attached to alienated Holdings.	Total	Crops.	Grazing, &c.
acres.		acres.	acres.	acres.	acres.	acres.
1— 50 ...	623	6,436	1,306,143	1,312,579	906	1,311,673
51— 100 ...	69	5,766	1,010,328	1,016,094	224	1,015,870
101— 500 ...	186	49,531	8,431,007	8,480,538	1,525	8,479,063
501— 1,000 ...	122	84,938	10,952,448	11,037,386	1,583	11,035,803
1,001— 3,000 ...	109	179,713	16,485,759	16,665,472	1,560	16,663,912
3,001— 5,000 ...	39	153,700	8,321,927	8,475,627	998	8,474,629
5,001— 10,000 ...	38	257,022	7,473,062	7,730,084	623	7,729,461
Over 10,000 ...	35	904,264	7,197,683	8,101,947	1,055	8,100,892
Western Division ...	1,221	1,641,420	61,178,357	62,819,777	8,474	62,811,303

The proportion of land alienated is little more than 2 per cent. of the total area, being an aggregate of 1,641,420 acres out of 80,368,498 acres which the division is estimated to contain. The land in the Western Division can only be alienated by auction or held under lease from the Crown. The area of Crown lands held is therefore very large, 61,178,357 acres being attached to alienated holdings. The general character of the country militates against agricultural production and the successful rearing of cattle; sheep-breeding is practically the only industry, except in the vicinity of townships, where market-gardens and fruit orchards are found.

ALL HOLDINGS.

For the years ended 31st December, 1912 and 1913, particulars are available respecting the number and total area of holdings of various sizes, irrespective of the conditions governing the tenure of the land. The results shown in the following table are inclusive of all holdings of an acre and upwards, the actual land held—whether alienated only, alienated with Crown lands attached, or Crown land only—being taken as the basis for each area group:—

Size of Holding.	Number of Holdings.		Total Area.		Percentage in each series.			
	1912.	1913.	1912.	1913.	Holdings.		Area.	
					1912.	1913.	1912.	1913.
acres.			acres.	acres.				
1— 50	39,677	40,450	501,199	506,512	40·38	40·48	·29	·29
51— 100	8,084	8,192	629,909	646,269	8·23	8·20	·36	·37
101— 500	24,299	24,535	6,277,671	6,391,891	24·73	24·56	3·60	3·66
501— 1,000	9,549	9,831	6,776,643	6,994,963	9·72	9·84	3·88	4·00
1,001— 3,000	10,069	10,248	17,317,947	17,675,923	10·25	10·25	9·92	10·11
3,001— 5,000	2,480	2,508	9,578,039	9,677,819	2·52	2·51	5·49	5·53
5,001— 10,000	1,942	1,972	13,155,684	13,363,465	1·98	1·97	7·54	7·64
10,001— 20,000	964	983	13,097,932	13,310,304	·98	·98	7·50	7·61
20,001— 50,000	703	715	21,180,029	21,337,406	·71	·72	12·13	12·20
50,001— 100,000	225	225	15,668,791	15,720,276	·23	·23	8·97	8·99
Over 100,000 ...	265	257	70,393,994	69,238,706	·27	·26	40·32	39·60
Total ...	98,257	99,916	174,577,838	174,863,534	100·00	100·00	100·00	100·00

The general tendency of areas in the holdings up to 20,000 acres is to increase, both absolutely and proportionately. In the groups over 20,000 acres the actual reduction of area during the last year was 946,426 acres, but by far the greatest number of the largest holdings are in the Western Division and consist chiefly of Crown lands only.

THE CLOSER SETTLEMENT MOVEMENT.

In discussing Land Legislation and Settlement an account is given of the progress of the movement for the extension of rural settlement on relatively small areas, which was inaugurated with the Closer Settlement Act of 1901 and adapted by subsequent Acts to prevailing conditions. Below are given figures for the year 1913, which indicate to some extent the effect of the operation of the Acts upon the holdings of the State.

The acreage of alienated land in holdings in each series is given, also the area cultivated, and a percentage column is added, showing the ratio of the latter to the former :—

Size of Holding.	Alienated Area in Holdings.		Percentage of Cultivated Area to total alienated area in Holdings.
	Total.	Cultivated.	
acres.	acres.	acres.	
1— 50... ..	506,735	89,216	17·61
51— 100... ..	706,062	99,525	14·10
101— 500... ..	6,812,709	945,460	13·88
501— 1,000... ..	6,228,430	996,610	16·00
1,001— 1,500... ..	4,214,754	568,516	13·49
1,501— 3,000 ..	6,362,465	655,031	10·30
3,001— 5,000... ..	4,430,875	310,491	7·01
5,001— 10,000... ..	6,083,602	285,677	4·70
Over 10,000 ..	19,561,053	278,717	1·42
Total	54,906,685	4,229,243	7·70

The area under crop invariably decreases in ratio per cent. as the size of the holding increases, and for the whole State the cropped area is 7·7 per cent. of the total area alienated in rural holdings of upwards of an acre. Taking this proportion as indicative of the average extent to which agriculture may be undertaken profitably it is arguable that any land devoted to agriculture to a greater extent, as indicated by a higher area percentage, is especially suited under present conditions for that purpose; and also that the largest average area of land thus utilised represents the area necessary for settlement of that description.

Reference to the table shows that the series 1,501—3,000 acres contains the largest average areas wherein more than the average 7·7 per cent. of crop area is in evidence; consequently it may be conceded that a reasonable limit for an effective agricultural area is to be found within this series. Taking a moderate view of the matter, it has been assumed that the lowest area of this series, 1,501 acres, is the area limit.

A comparative statement of the number and area of holdings of alienated lands in area groups as at 31st December, 1904, when the closer settlement

policy was commencing to operate actively, and 1913, is given below, also the proportions in each series:—

Size of Holding.	Number of Holdings.		Alienated Area.		Percentage in each series.			
	1904.	1913.	1904.	1913.	Holdings.		Area.	
					1904.	1913.	1904.	1913.
acres.			acres.	acres.				
1— 50...	31,734	39,306	486,203	506,735	41·94	42·32	1·01	·92
51— 100...	9,108	8,952	720,243	706,062	12·04	9·64	1·50	1·29
101— 500...	21,989	26,576	5,428,153	6,812,709	29·06	28·61	11·29	12·41
501— 1,000...	6,607	8,875	4,622,272	6,228,430	8·73	9·56	9·61	11·34
1,001— 1,500...	2,234	3,410	2,744,051	4,214,754	2·95	3·67	5·71	7·68
1,501— 3,000...	1,910	3,008	4,030,908	6,362,465	2·52	3·24	8·38	11·59
3,001— 5,000...	784	1,150	3,047,469	4,430,875	1·04	1·24	6·34	8·07
5,001— 10,000...	584	891	4,171,754	6,083,602	·77	·96	8·68	11·08
Over 10,000 ...	722	714	22,830,261	19,561,053	·95	·76	47·48	35·62
Total ...	75,672	92,882	48,081,314	54,906,635	100·00	100·00	100·00	100·00

The number of holdings has increased in the nine years from 75,672 to 92,882, or by 22·7 per cent., and the area from 48,081,314 acres to 54,906,635 acres, or by 14·2 per cent. There have been increases in the number and acreage of all the area series, except for the groups, 51–100 acres, and over 10,000 acres. In the smaller series, the number and area of the holdings have decreased proportionately, the average area of holdings in this class remaining stationary. In the area group over 10,000 acres, the reduction of the very large holdings has been concurrent with a percentage increase in all but two of the smaller groups.

If account be taken of the Crown lands held by a number of occupiers in addition to the alienated areas the proportionate weighting of the various groups is considerably altered. A comparative statement is therefore given, showing the acreage in occupation, inclusive of the Crown lands attached to estates in each area series as at 31st December of the years 1904 and 1913. The estates have been classified, as in previous tables, according to the extent of private land only:—

Size of Holding.	Area occupied, including Crown Lands attached to alienated holdings.		Percentage area in each series.	
	1904.	1913.	1904.	1913.
acres.	acres.	acres.		
1— 50 ...	2,050,314	2,327,765	1·33	1·55
51— 100 ...	1,713,464	2,217,995	1·16	1·48
101— 500 ...	17,261,607	20,678,075	11·66	13·78
501— 1,000 ...	19,105,229	22,727,311	12·91	15·14
1,001— 1,500 ...	11,394,537	15,307,036	7·70	10·20
1,501— 3,000 ...	19,994,336	19,555,713	13·50	13·03
3,001— 5,000 ...	16,166,642	15,745,135	10·92	10·49
5,001— 10,000 ...	15,384,516	17,281,393	10·39	11·52
Over 10,000 ...	44,973,165	34,228,912	30·38	22·81
Total ...	148,043,810	150,069,335	100·00	100·00

NEW SOUTH WALES OFFICIAL YEAR BOOK.

RURAL HOLDINGS AND TENURES.

Rural holdings may consist of alienated or Crown lands, or of both, and are classifiable in five distinct groups, according to the tenures under which they are held, viz.: (1) Freehold lands occupied by the owner, (2) rented freeholds, (3) combined freehold and rented lands, (4) alienated lands, rented or freehold, with attached Crown lands, and (5) Crown lands only.

The following statement shows the number of occupiers, as at the end of the year 1913, under the various tenures in the different defined divisions of New South Wales:—

Division.	Number of Occupiers of —					Total.
	Freehold.	Private Rented.	Freehold and Private Rented.	Holdings of Alienated and attached Crown Lands.	Separate Crown Lands Holdings.	
Coastal	30,459	9,331	2,611	3,706	995	47,102
Tableland	10,168	1,983	1,011	6,281	1,157	20,600
Western Slopes	10,779	1,259	549	3,806	1,429	17,822
Western Plains and Riverina	6,322	403	248	2,745	2,501	12,219
Western	648	64	14	495	952	2,173
New South Wales	58,376	13,040	4,433	17,033	7,034	99,916

The majority of holders own the land they occupy; the total number of occupiers of alienated lands with or without attached Crown lands was 92,882, of whom 58,376, or 62·8 per cent., occupy their own freeholds; and of 17,033 holdings which are partly Crown leases, 15,552 are made up of freeholds owned by the occupiers and worked in conjunction with the Crown leases.

A comprehensive view of the extent to which the land contained within the boundaries of the State is being used is given by the following figures which show the area taken up in holdings of one acre and over, in each division of New South Wales, according to the class of tenure at 31st December, 1913:—

Division.	Total Area of Division.	Area Alienated in Holdings.			Crown Lands.		Total Area in Holdings.
		Freehold.	Rented.	Total.	Attached to Alienated Holdings.	In Separate Holdings.	
	acres.	acres.	acres.	acres.	acres.	acres.	acres.
Coastal.. ..	22,355,401	7,195,918	1,525,162	8,721,080	3,395,108	533,821	13,150,009
Tableland	*25,831,246	10,154,744	846,576	11,001,320	8,606,072	954,571	20,561,963
Western Slopes	21,251,381	12,780,324	546,065	13,326,389	5,994,470	1,774,949	21,096,308
Western Plains and Riverina.	45,327,354	19,564,068	651,908	20,215,976	15,488,643	5,987,607	41,692,226
Western	80,368,498	1,586,580	54,840	1,641,420	61,178,357	15,543,251	78,363,023
New South Wales.. ..	198,634,880	51,282,134	3,024,551	54,906,635	95,162,650	24,794,199	174,863,534

* Including 576,000 acres, the approximate area of the Federal Capital Territory.

The figures shown in previous issues of the Year Book relating to Rural Settlement were stated for years ended 31st March, but are now given for the calendar year.

Of the total area occupied, 31·4 per cent. is freehold, and 68·6 per cent. leased from the Crown. Nearly two-thirds of the Crown lands leased are in the Western Division and are used mainly for depasturing stock; in the Western Plains and Riverina 48·5 per cent. of the land occupied is freehold.

Tenancy, as understood in older settled communities, has made comparatively little progress in this State, 93·4 per cent. of the alienated land being in the occupancy of the proprietors but, in some districts, the system of working on shares is in vogue—the owner providing the land and capital to work the farms, and the farmer supplying the labour and tools.

AVERAGE AREAS.

The following figures show for the end of the year 1913, the averages of alienated land only, and of the total area occupied of alienated and attached Crown lands, also of holdings under all forms of tenure in the various divisions of New South Wales :—

Division.	Average size of Holding.		
	Alienated Area only.	Alienated and attached Crown Lands.	All Tenures.
	acres.	acres.	acres.
Coastal	189	274	279
Tableland	566	1,008	998
Western Slopes	813	1,179	1,184
Western Plains and Riverina ...	2,080	3,674	3,412
Western	1,344	51,440	36,062
New South Wales	591	1,616	1,750

The number of holdings has increased since 1891 by 80 per cent., while the area alienated increased by 37 per cent. The average size of holdings varied from 787 acres in 1890 to a minimum of 591 in 1913.

The following table shows the average size of holdings of alienated lands at intervals since 1880, the figures being inserted for each year since 1900 in order to show the persistence and steadiness of the fall :—

Year.	Average size of Holding.	Year.	Average size of Holding.
	acres.		acres.
1880	694	1905	632
1885	778	1906	625
1890	787	1907	611
1895	699	1908	608
1900	663	1909	602
1901	658	1910	596
1902	654	1911	592
1903	641	1912	593
1904	635	1913	591

EXTENT OF ALIENATION.

In connection with the progress of land settlement, it has been shown that the total area of lands alienated and in process of alienation was 58,011,213 acres; the leased areas amounted to 121,837,047 acres, making 179,848,260 acres more or less removed from settlement, and, exclusive of the Federal Capital Territory, leaving a balance of only 18,210,620 acres, including roads, unoccupied reserves, lands unsuitable for settlement, and water surface.

The proportions of the several Divisions of the State which have been alienated in holdings are shown in the following rates derived from the figures already quoted:—

Division.	Percentage of Total Area contained in—			
	Alienated Lands.	Crown Lands.		Total Area in Holdings
		Attached.	Separate.	
Coastal	39·01	17·42	2·39	58·82
Tableland	42·59	33·32	3·69	79·60
Western Slopes	54·95	24·72	7·32	86·99
Western Plains and Riverina	44·11	33·80	13·07	90·98
Western	2·04	76·18	19·36	97·58
New South Wales	27·64	47·91	12·48	88·03

Thus slightly more than 88 per cent. of the total area contained within the boundaries of the State has been alienated in holdings of 1 acre and upwards. The highest proportion of absolute alienation, 54·95 per cent. of the area of the Division, has taken place in the Western Slopes; and the lowest, 2·04 per cent., in the Western Division; but taking the total area of holdings, the Western Division shows the maximum proportion of its area—97·58 per cent.—removed from immediate further settlement; the high proportions of 90·98 per cent. for the Western Plains and Riverina, and 86·99 for the Western Slopes show that there is but little land now available in these Western Districts for some form of alienation.

PROGRESS OF ALIENATION.

Excluding from consideration land held simply under lease from the Crown, there were in the State of New South Wales at the end of 1913, 92,882 holdings of 1 acre and upwards in extent, comprising land acquired from the Crown by grant or purchase, with, in some cases, areas of Crown lands attached.

The number of these holdings, as returned by occupiers, and the alienated area in quinquennial periods since 1880 are given below, with the figures for 1913 in comparison:—

Year.	Alienated Holdings.		Year.	Alienated Holdings.	
	Number.	Area.		Number.	Area.
		acres.			acres.
1880	39,992	27,765,318	1900	69,439	46,043,244
1885	43,727	34,031,104	1905	77,136	48,728,542
1890	49,960	38,959,225	1910	87,503	52,164,454
1895	60,529	42,321,926	1913	92,882	54,906,685

The biggest absolute increases in the number of holdings occurred in the intervals. 1890–5 (10,569) and 1905–10 (10,367), while the greatest absolute increase in the area alienated—over 6 million acres—occurred between 1880–5.

The percentage increases in the quinquennial periods from 1880, were as follows:—

Period.	Rate of Increase per cent. in—		Period.	Rate of Increase per cent. in—	
	Number of Holdings.	Area Alienated.		Number of Holdings.	Area Alienated.
1880-1885	9.3	22.6	1905-1910	13.4	7.1
1885-1890	14.3	14.4	1911	3.1	2.4
1890-1895	21.2	8.6	1912	1.5	1.7
1895-1900	14.7	8.8	1913	1.5	1.1
1900-1905	11.1	5.8			

The subjoined table shows the number of alienated holdings at quinquennial intervals since 1895 and in the year 1913. In the classification of holdings according to size, as shown in this and all but one of the subsequent tables, the area of Crown land attached to alienated holdings has not been taken into consideration; and the size of a holding, therefore, represents only the extent of alienated land which it contains:—

Size of Holding.	1895.	1900.	1905.	1910.	1913.
acres.					
1 — 50 ...	22,722	28,155	32,413	37,272	39,306
51 — 100 ...	8,274	8,929	9,217	9,159	8,952
101 — 500 ...	18,743	20,504	22,268	25,323	26,576
501 — 1,000 ...	5,629	6,105	6,735	7,911	8,875
1,001 — 1,500 ...	1,581	1,939	2,391	2,922	3,410
1,501 — 3,000 ...	1,718	1,792	1,996	2,488	3,008
3,001 — 5,000 ...	680	733	798	985	1,150
5,001 — 10,000 ...	503	579	598	738	891
Over 10,000 ...	679	703	720	705	714
Total ...	60,529	69,439	77,136	87,503	92,882

The holdings in the first area-group are, for the greater part, in the vicinity of towns, and, apart from those used for residential purposes only, consist mainly of gardens or orchards; the large increase in their number, representing 73 per cent. since 1895, is naturally to be expected from the steadily extending demand made by an increasing urban population for market-garden produce. In 1895, the holdings having an area of 51 to 1,500 acres numbered 34,227, while in 1913 they numbered 47,813, showing an advance of 40 per cent., which is considerably lower than the rate of increase, 61 per cent., in the holdings of 1,501 acres and upwards, which numbered 3,580 in 1895 and 5,763 in 1913.

The area of the alienated holdings, as returned by occupiers, in quinquennial periods since 1895 and in the year 1913 is given below:—

Size of Holding.	1895.	1900.	1905.	1910.	1913.
acres.	acres.	acres.	acres.	acres.	acres.
1 — 50 ...	409,896	468,563	488,622	503,677	506,735
51 — 100 ...	658,212	707,865	729,306	722,604	706,062
101 — 500 ...	4,596,178	5,067,934	5,508,402	6,346,299	6,812,709
501 — 1,000 ...	3,905,383	4,262,043	4,725,720	5,526,680	6,228,430
1,001 — 1,500 ...	1,963,409	2,396,373	2,949,188	3,589,526	4,214,754
1,501 — 3,000 ...	3,659,282	3,805,618	4,225,260	5,270,697	6,362,465
3,001 — 5,000 ...	2,639,264	2,844,111	3,086,162	3,771,576	4,430,875
5,001 — 10,000 ...	3,571,026	4,098,686	4,280,967	5,120,548	6,083,602
Over 10,000 ...	20,919,276	22,392,051	22,734,915	21,312,847	19,561,053
Total ...	42,321,926	46,043,244	48,728,542	52,164,454	54,906,685

ENCLOSED LANDS.

The greater portion of the alienated rural lands of the State has been enclosed; the following figures for quinquennial years since 1891, show the rate at which the enclosure has proceeded, and the small proportion of alienated holdings which yet remains to be enclosed:—

Year.	Area Enclosed.	Area Unenclosed.	Total Area of Holdings.	Unenclosed per cent. of Total Area of Holdings.
	acres.	acres.	acres.	
1891	37,347,172	2,713,114	40,060,286	6·8
1896	41,803,983	1,663,229	43,467,212	3·8
1901	45,027,795	1,590,030	46,617,825	3·4
1906	48,121,774	1,294,109	49,415,883	2·6
1911	52,473,021	933,863	53,406,884	1·7
1912	53,425,483	864,705	54,290,188	1·6
1913	54,058,580	848,105	54,906,685	1·5

PURPOSES FOR WHICH HOLDINGS ARE USED.

Analysis of the main purposes for which rural holdings of 1 acre and upwards are used, shows that of 99,916 holdings, inclusive of 7,034 which consist of Crown Lands only, 33·9 per cent. are single-purpose holdings, being devoted to one or other of the three main branches of rural industry, viz., agriculture, dairying, or grazing; of the remainder, over 53 per cent. are devoted to agriculture in conjunction with dairying or grazing, or both. The following statement shows, according to the divisions of the State, the numbers of such rural holdings and their principal method of utilisation and in comparison the totals under each head for the years 1907-1913:—

Division.	Single-purpose Holdings.				Dual-purpose Holdings.			Residential, Mining, &c.
	Agriculture.	Dairying.	Grazing.	Total.	Agriculture, with Dairying, or with Grazing.	Other.	Total.	
Coastal	4,026	3,781	8,428	16,235	11,629	2,197	13,826	17,041
Tableland	1,331	149	6,110	7,640	7,748	297	8,045	4,915
Western Slopes ..	938	52	3,180	4,120	0,789	223	10,012	3,990
Western Plains and Riverina ..	956	26	3,064	4,046	5,808	113	5,921	1,652
Western	119	10	1,115	1,244	110	8	124	805
Total, 1913 ..	7,420	4,018	22,447	33,885	35,090	2,838	37,928	28,103
Year 1907 ..	7,722	2,922	21,527	32,171	30,507	2,597	33,104	21,328
.. 1908 ..	7,244	3,575	21,874	32,693	30,422	2,347	32,769	22,871
.. 1909 ..	7,034	3,482	21,612	32,128	32,703	2,233	34,936	23,882
.. 1910 ..	6,677	3,493	21,770	31,940	33,382	2,757	36,139	25,690
.. 1911 ..	6,814	3,157	22,011	31,982	34,589	2,978	37,567	26,796
.. 1912 ..	7,175	3,831	22,641	33,647	34,007	2,836	36,843	27,677
.. 1913 ..	7,420	4,018	22,447	33,885	35,090	2,838	37,928	28,103

In the six years 1907-1913, the increase in the total number of rural holdings as recorded above was $15\frac{1}{2}$ per cent., the number of holdings returned as dual-purpose holdings having increased by $14\frac{1}{2}$ per cent., while the single-purpose holdings have increased by slightly more than 5 per cent.

EXTENT OF CULTIVATION.

The total area under crops for 1913-14 season, in all classes of holdings, was 4,568,841 acres, made up as follows:—

Division.	Area under crops.					Balance used for pasturage, grazing.	Proportion of cropped area to total area of Holdings.
	Alienated lands.		Crown lands.		Total.		
	Freehold.	Private Rented.	Attached to Holdings.	Separate.			
	acres.	acres.	acres.	acres.	acres.	acres.	per cent.
Coastal ...	197,154	71,777	724	1,709	271,364	12,878,645	2.1
Tableland ...	410,394	64,467	3,366	2,212	480,439	20,081,524	2.3
Western Slopes ...	1,846,114	81,692	101,003	57,600	2,086,409	19,009,899	9.9
Western Plains and Rivertna ...	1,497,600	55,119	62,480	103,727	1,718,926	39,973,300	4.1
Western ...	4,572	354	3,548	3,229	11,703	78,351,325	.1
New South Wales	3,955,834	273,409	171,121	168,477	4,568,841	170,294,693	2.6

The area under crops on freehold lands represented 86.6 per cent. of the total area of rural holdings under crop, or 7.2 per cent. of the holdings of alienated lands; the area of leasehold lands under crop as compared with the total leasehold area was 7.5 per cent., but the areas under crops on holdings of Crown lands is insignificant when compared with the total extent of rural holdings.

The next table shows the variation in cultivation in each series since 1904. The figures include the cropped area of Crown lands held in conjunction with alienated, and, therefore, differ from those shown in an earlier table which relates to alienated land only:—

Size of Holding.	Area cultivated.			
	Total.		Percentage in each series.	
	1904.	1913.	1904.	1913.
acres.	acres.	acres.		
1 — 50 ...	113,543	97,057	4.36	2.21
51 — 100 ...	126,692	106,326	4.86	2.41
101 — 500 ...	773,728	997,508	29.68	22.67
501 — 1,000 ...	545,943	1,049,699	20.94	23.85
1,001 — 1,500 ...	224,271	584,620	8.60	13.29
1,501 — 3,000 ...	267,793	680,589	10.27	15.47
3,001 — 5,000 ...	129,074	316,847	4.95	7.20
5,001 — 10,000 ...	124,713	288,485	4.78	6.55
Over 10,000 ...	301,208	279,233	11.56	6.35
Total ...	2,606,965	4,400,364	100.00	100.00

In proportion to the total cultivation, it is apparent that the extension of agriculture has taken place mainly on estates from 501 to 5,000 acres, the increase being most noticeable in the groups 1,001 to 1,500 and 1,501 to 2,000 acres. The proportionate decrease in the cultivation of the small holdings is due mainly to the preference now given to dairy farming in the coastal division, where the majority of these holdings are situated.

DOUBLE CROPPING.

Records available since 1898 show that there has been considerable fluctuation in the area double cropped, but on the whole there is a persistent upward tendency. The following statement shows in comparison the areas under crop and the area double-cropped at intervals since 1898 :—

Year.	Area double cropped.	Actual area under crop on—	
		Alienated lands.	Crown lands.
	acres.	acres.	acres.
1898	2,000	2,137,306	67,194
1901	1,842	2,162,666	113,862
1906	2,446	2,604,812	219,399
1911	2,852	3,335,489	293,681
1912	3,557	3,462,923	274,346
1913	3,060	4,229,243	339,598

Particulars in regard to the production from cultivated lands are given in part "Agriculture" of this Year Book.

GRASSED LANDS.

A considerable area of alienated enclosed land is under sown grasses; on Crown lands also the area grassed is appreciable. The following figures show the extension of the area under sown grasses since 1896 :—

Year.	Area under Sown Grasses on—		Total.
	Alienated land.	Crown lands.	
	acres.	acres.	acres.
1896	333,229	50,787	384,016
1901	452,201	15,638	467,839
1906	669,173	28,458	697,631
1911	1,059,956	59,808	1,119,764
1912	1,100,222	52,220	1,152,449
1913	1,175,753	58,702	1,234,455

The area of alienated holdings ringbarked, partially cleared, and under native grasses in 1913, was approximately 36 $\frac{1}{4}$ million acres, and on Crown lands nearly 31 $\frac{1}{2}$ million acres.

HOLDINGS IN AREA SERIES.

Below will be found, for the year 1913, the number of holdings of various sizes throughout New South Wales composed of alienated and attached Crown Lands :—

Size of Holding.	Freehold.	Private Rented.	Combined Freehold and Private Rented.	Combined Alienated and Crown Lands.	Total.
acres.					
1— 50	29,101	7,223	1,341	1,641	39,306
51— 100	5,162	1,845	458	1,487	8,952
101— 500	14,591	3,405	1,618	6,962	26,576
501— 1,000	5,028	376	479	2,992	8,875
1,001— 1,500	1,940	90	188	1,192	3,410
1,501— 3,000	1,521	60	177	1,250	3,008
3,001— 5,000	483	20	75	572	1,150
5,001—10,000	337	16	58	450	891
10,001—15,000	82	1	13	169	270
15,001—20,000	45	1	10	63	124
20,001—30,000	30	3	5	117	155
30,001—40,000	9	...	2	39	50
40,001—50,000	4	...	2	27	33
Over 50,000	13	...	2	67	82
Total	58,376	13,040	4,433	17,033	92,882

The total number of occupiers of freeholds only is 58,376, the proportion to the total number of occupiers being fairly constant in each size of holdings. Tenants of private lands, who number 13,040, are far more numerous in the smaller classes of holdings, and rapidly diminish both in number and in proportion as the estates become larger. The same is the case with regard to holders of freehold and private rented land, who number only 4,433. The persons who occupy alienated areas with Crown lands attached number 17,033, and nearly 48 per cent. of the holdings over 1,500 acres in extent are in this category.

Comparison of the relation of the various classes to the total number of holdings for the last two years shows a slight increase in the proportion of freeholds, corresponding practically to a decrease in the proportion of private-rented holdings, but on the whole the variations are slight.

Class.	1912.		1913.	
	Holdings.	Percentage of Total.	Holdings.	Percentage of Total.
Freehold	56,624	61·8	58,376	62·9
Private-rented	13,252	14·5	13,040	14·0
Combined freehold and private-rented ...	4,514	4·9	4,433	4·8
Combined alienated and Crown land ...	17,162	18·8	17,033	18·3
Total	91,552	100·0	92,882	100·0

AREA OF HOLDINGS.

The area of the alienated holdings referred to in the table given previously, whether freehold, private rented, or with attached Crown lands, is indicated in the figures subjoined, which also show the percentage of the total area occupied in holdings of each size as at 31st December, 1913:—

Size of Holding.	Area Occupied.				Percentage of Total Occupied.			
	Freehold.	Private Rented.	Crown Lands attached to Alienated.	Total.	Freehold.	Private Rented.	Crown Lands attached to Alienated	Total.
acres.	acres.	acres.	acres.	acres.				
1— 50	400,965	105,770	1,821,030	2,327,765	·27	·07	1·22	1·56
51— 100	536,243	169,819	1,511,933	2,217,995	·36	·11	1·01	1·48
101— 500	5,792,166	1,020,543	13,865,366	20,678,075	3·86	·68	9·24	13·78
501— 1,000	5,741,811	486,619	16,498,881	22,727,311	3·83	·32	10·99	15·14
1,001— 1,500	3,944,635	270,119	11,092,282	15,307,036	2·63	·18	7·39	10·20
1,501— 3,000	5,954,945	407,520	13,193,248	19,555,713	3·97	·27	8·79	13·03
3,001— 5,000	4,146,459	284,416	11,314,260	15,745,135	2·76	·19	7·54	10·49
5,001— 10,000	5,696,192	387,410	11,197,791	17,281,393	3·80	·26	7·46	11·52
10,001— 15,000	3,083,850	170,505	4,798,120	8,052,475	2·05	·12	3·20	5·37
15,001— 20,000	2,062,372	94,847	2,111,726	4,268,945	1·37	·06	1·41	2·84
20,001— 30,000	3,575,144	183,966	3,279,971	7,039,081	2·38	·12	2·19	4·69
30,001— 40,000	1,740,063	5,794	673,076	2,418,933	1·16	·01	·44	1·61
40,001— 50,000	1,441,357	15,251	1,549,880	3,006,488	·96	·01	1·03	2·00
Over 50,000 ...	7,165,932	21,972	2,255,086	9,442,990	4·77	·02	1·50	6·29
Total	51,282,134	3,624,551	95,162,650	150,069,335	34·17	2·42	63·41	100·00

The following table shows the alienated area and the Crown Lands attached thereto, classified according to the size of the privately-owned land at 31st December, 1913 :—

Size of Holding. acres.	Holdings.		Area Alienated.		Crown Lands attached to Alienated lands.	
	Number.	Percentage of total Holdings.	Acres.	Percentage of total Alienated Area.	Acres.	Percentage of total Crown lands attached to Alienated.
1— 15 ...	28,147	30·30	131,384	·24	451,913	·47
16— 50 ...	11,159	12·01	375,351	·68	1,369,117	1·44
51— 100 ...	8,952	9·64	706,062	1·29	1,511,933	1·59
101— 500 ...	26,576	28·61	6,812,709	12·41	13,865,366	14·57
501— 1,000 ...	8,875	9·56	6,228,430	11·34	16,498,881	17·34
1,001— 1,500 ...	3,410	3·67	4,214,754	7·68	11,092,282	11·66
1,501— 2,000 ...	1,450	1·56	2,528,640	4·60	4,230,487	4·45
2,001— 3,000 ...	1,558	1·68	3,833,825	6·93	8,962,761	9·42
3,001— 4,000 ...	717	·77	2,495,293	4·54	7,002,694	7·36
4,001— 5,000 ...	433	·47	1,935,577	3·53	4,311,566	4·53
5,001— 7,500 ...	602	·65	3,604,911	6·57	8,302,459	8·72
7,501— 10,000 ...	289	·31	2,478,631	4·51	2,895,332	3·04
10,001— 15,000 ...	270	·29	3,254,355	5·93	4,798,120	5·04
15,001— 20,000 ...	124	·13	2,157,219	3·93	2,111,726	2·22
20,001— 30,000 ...	155	·17	3,759,110	6·85	3,279,971	3·45
30,001— 40,000 ...	50	·05	1,745,857	3·18	673,076	·71
40,001— 50,000 ...	33	·04	1,456,608	2·65	1,549,880	1·63
Over 50,000 ...	82	·09	7,187,904	13·09	2,255,036	2·36
Total ...	92,882	100·00	54,906,685	100·00	93,162,650	100·00

It is one of the features of the table, that whilst the holders of estates exceeding 1,000 acres constitute but 9·88 per cent. of the total number of occupiers, the land held represents 74·04 per cent. of the total alienated area. This is still more accentuated in the case of 82 holdings of 50,001 acres and upwards, which represent only 0·09 per cent. of the total number of holdings, but embrace 13·09 per cent. of the area alienated.

CROWN LANDS.

Crown lands are held, as has been explained, either in conjunction with alienated land or as separate holdings. The total area held in conjunction with alienated lands in 1913, was 95,162,650 acres, attached to 17,033 holdings, and particulars as to the distribution, cultivation, &c., of this area are given in connection with the alienated lands. Holdings, consisting of Crown lands only, numbered 7,034, representing 24,794,199 acres, of which nearly 63 per cent. was in the Western Division. The following figures show the distribution of these holdings in the different divisions of the State :—

Division.	Number of Holdings.	Area held.	Area cultivated.
		acres.	acres.
Coastal	995	533,821	2,433
Tableland	1,157	954,571	5,578
Western Slopes	1,429	1,774,949	158,603
Western Plains and Riverina	2,501	5,987,607	166,207
Western	952	15,543,251	6,777
New South Wales	7,034	24,794,199	339,598

AGRICULTURE.

IN New South Wales the cultivation of plants indigenous to cold, temperate, and even tropical regions is possible on account of the wide range of climate and fertile soils of varying characteristics.

Very few parts of the State are so barren or unwatered as to be thereby unsuitable for cultivation; but the country which is essentially suitable for farming operations is situated in the Eastern and the Central land divisions, the whole area in those divisions, with the exception of portions of the mountain chain, being capable of profitable agricultural development. The rainfall within this region is such as to admit of the successful cultivation of about 50,000,000 acres under ordinary conditions; and that area might be extended by the application of modern scientific methods relating to intense cultivation.

The rainfall of the Great Western Plains land division is so uncertain that no reliance can be placed on payable results accruing from agricultural pursuits; moreover, from the grazier's aspect as to cost, results, and markets, the pastoral industry presents superior attractions in this part of the State.

AREA UNDER CULTIVATION.

During the season 1913-14 an area of 5,803,296 acres, including grassed lands, was under cultivation, of which the area under crops was 4,568,841 acres, and the area sown with grasses was 1,234,455 acres.

The progress of cultivation in quinquennial periods since 1881 is shown in the following table:—

Seasons ended March.	Average area under—		Acres per inhabitant under—	
	Cultivation, including grasses.	Crops.	Cultivation.	Crops.
	acres.	acres.		
1881-85	746,017	662,085	·91	·81
1886-90	1,011,567	835,367	·99	·82
1891-95	1,398,199	1,048,554	1·18	·88
1896-1900	2,232,649	1,894,857	1·73	1·46
1901-5	2,942,506	2,436,765	2·10	1·74
1906-10	3,575,873	2,824,253	2·34	1·84
1911	4,437,224	3,381,921	2·71	2·06
1912	4,748,934	3,629,170	2·79	2·13
1913	4,889,718	3,737,269	2·75	2·10
1914	5,803,296	4,568,841	3·15	2·48

Prior to the period covered by the table, exceedingly slow progress was made in agricultural development; even including grass lands, the average cultivation per inhabitant in 1891-5 was only a little over one acre, and the total area under crop did not reach a million acres until the season 1892-3. During the next six seasons expansion was much more rapid, and the recorded area increased to 2,000,000 acres. Since 1899 the rate of growth has been much slower; but for the season 1913-14 the area amounted to 5,803,296 acres, an advance of 1,366,072 acres, or 23·5 per cent., during the last three seasons. The recent increase is due mainly to the favourable ploughing seasons, to the high prices of agricultural produce, and to the subdivision of large estates.

The area actually in cultivation reached 1 acre per inhabitant in the 1889-90 season. During the next ten years the industry had so far developed that in 1900 the rate was slightly in excess of 2 acres per head; but since that year, until quite recently, the cultivation per capita has remained practically stationary. The average during each of the last three years has been about 2½ acres per head. The following statement shows, in decennial periods to 1910 and for the period 1910-13, the relative increases in population and in area under crop:—

	1870-80.	1880-90.	1890-1900.	1900-10.	1910-13.
Increase per cent. in population ...	50·0	50·0	21·6	20·1	11·9
Increase per cent. in area under crop	98·1	35·5	186·8	38·3	35·1

During the first ten years quoted above, the crop area increased much more rapidly than the population. From 1880 to 1890 these conditions were reversed, and the population increased at a faster rate by 41 per cent. than the crop area; but during the next period, 1890-1900, cultivation increased no less than 187 per cent., or nearly nine times faster than the population. This increase was due mainly to the cultivation of large areas on holdings previously devoted to pastoral purposes. Since 1900 this phenomenal increase has not been maintained, and the decline in rapidity of development has been due partly to the check induced by adverse seasons, but more materially to the increased attention given to dairying; yet in the period 1900-1910 the area cropped increased 90 per cent. faster than the population. During the last three years of the period reviewed the rate of increase of the crop was three times faster than that of the population.

The following statement of the area under crops in the seasons 1902-3, 1907-8, and 1913-14 shows the districts in which the greatest advances have been made:—

Division.	Actual Area under Crops.			Index Numbers. (1902-3=100).	
	1902-3.	1907-8.	1913-14.	1907-8.	1913-14.
Coastal—	acres.	acres.	acres.		
North Coast	113,095	91,781	94,333	81	83
Hunter and Manning	110,399	104,166	94,829	94	86
Cumberland	46,991	42,822	37,342	91	79
South Coast	58,050	46,470	44,860	80	77
Total	328,535	285,239	271,364	87	83
Tableland—					
Northern	74,765	60,468	82,822	81	111
Central	197,120	198,361	327,843	101	166
Southern	57,230	48,893	69,774	85	122
Total	329,115	307,722	480,439	93	146
Western Slopes—					
North	180,955	273,794	482,157	151	237
Central	262,754	402,090	694,722	153	264
South	338,186	404,293	909,530	119	269
Total	781,895	1,080,177	2,086,409	138	267
Western Plains—					
North	7,823	7,975	24,287	102	310
Central	157,575	231,001	378,843	147	240
Total	165,398	238,976	403,130	144	244
Riverina	627,409	645,801	1,315,796	103	210
Western Division	13,487	12,222	11,703	91	87
All Divisions	2,245,839	2,570,137	4,568,841	114	203

It is evident from these figures that during the eleven years between 1903 and 1913 there has been a general increase throughout the State, with the exception of the coastal districts and Western Division.

The largest aggregate increase as compared with 1902-3 has taken place in the South-western Slope, and amounts to 571,344 acres. Taken as a whole, the Western Slopes show an advance of 1,304,514 acres. The districts which show the heaviest proportions of the total cultivation are the Riverina, with 28.8 per cent., and the Western Slopes, with an aggregate of 45.7 per cent., in its three divisions. The remaining 25.5 per cent. of the total cultivation is distributed over the Coastal, Tableland, Western Plains, and Western Division, less than 0.3 per cent. of the area under crop being in the last-named.

The great extension of cultivation since 1892 has been fostered by wheat-growing on large estates formerly devoted almost exclusively to grazing, by the added security against bad seasons afforded by wool and wheat-farming in conjunction, also by the adoption of the system of farming on shares, and, more recently, by the subdivision of large holdings for closer settlement.

CULTIVATION IN EACH DIVISION.

In order that the figures relating to cultivation may be fully appreciated, the following table has been prepared, showing the area under crops, in conjunction with the total area, and the area in occupation, in each division during the season 1913-14:—

Division.	Total area of Division.	Area under—			Proportion of area under crops to—	
		Occupation in holdings of 1 acre and over.	Crops.	Sown grasses.	Total area.	Area under occupation.
Coastal—	acres.	acres.	acres.	acres.	per cent.	per cent.
North Coast	5,409,370	4,051,619	94,333	871,191	1.7	2.3
Hunter and Manning	10,390,920	6,087,558	94,829	130,231	.9	1.6
Cumberland	1,070,989	535,707	37,342	3,639	3.5	7.0
South Coast	5,484,122	2,475,125	44,860	179,395	.8	1.8
Total	22,355,401	13,150,009	271,364	1,184,452	1.2	2.1
Tableland—						
Northern	8,928,487	7,539,537	82,822	16,218	.9	1.1
Central	8,989,259	6,430,683	327,843	5,409	3.6	5.1
Southern	7,913,500	6,591,743	69,774	2,173	.9	1.1
Total	25,831,246	20,561,963	480,439	23,800	1.9	2.3
Western Slopes—						
North	9,813,555	8,714,227	482,157	9,389	4.4	4.9
Central	6,252,567	5,148,552	694,722	4,194	11.1	13.5
South	8,185,759	7,233,529	909,530	4,827	11.1	12.6
Total	24,251,881	21,096,308	2,086,409	18,410	8.6	9.9
Western Plains—						
North	10,030,901	8,066,793	24,287	250	.2	.3
Central	16,029,880	15,178,471	373,843	704	2.4	2.5
Total	26,060,781	23,245,264	403,130	954	1.5	1.7
Riverina	19,767,072	18,446,962	1,315,796	6,839	6.7	7.1
Western Division	80,368,498	78,363,028	11,703	...	...	...
All Divisions	198,634,880	174,863,534	4,568,841	1,234,455	2.3	2.6

Only 2.3 per cent. of the total area of New South Wales is actually devoted to the growth of agricultural produce; and if the small extent of land upon which grasses have been sown for dairy-farming purposes be added to the area under crops, the proportion reaches only 2.9 per cent., and represents about 3.15 acres per head of population. The proportion of the cultivation area on alienated holdings is only 7.7 per cent. of the total area of alienated rural lands in holdings of 1 acre and over; of the

area in occupation, 54,906,685 acres are alienated and 119,956,849 acres are leased from the Crown. The area of Crown Lands cultivated amounted to only 339,598 acres.

Purely agricultural settlements are confined to limited areas in the alluvial lands of the lower valleys of the coastal rivers, and to parts of the southern and central divisions of the tableland; and the cultivation of crops is conducted, to a large extent, conjointly with grazing operations. Tenant occupancy, so general in the United Kingdom, is but little known in New South Wales; of the total area under crop, 3,955,834 acres, or 86.6 per cent., were cultivated by owners, and 613,007 acres, being 13.4 per cent., were cultivated by tenant occupiers, including Crown land lessees.

In addition to the area shown as cultivated and under sown grasses, 67,781,413 acres were ringbarked and partly cleared and under native grasses; and 2,021,673 acres were ready for cultivation on alienated holdings, consisting of 1,257,501 acres which had been cropped previously, 340,558 acres of new land cleared and prepared for ploughing, and 423,614 acres in fallow.

Cultivation is not confined to particular districts, but is carried on in all parts of the State. Some of the best lands for producing cereals are in the hands of the pastoralists, so that farmers are not always settled on the kind of country best suited for the cultivation of their crops.

The county of Cumberland, which contains the densest population, has a large area cultivated in proportion to area under occupation; but generally the Western Slopes show the largest relative areas under cultivation, followed in order by the Riverina and Central Tableland. In the North-western Plain and the Western Division there is practically no cultivation.

RELATIVE IMPORTANCE OF EACH CROP.

The largest proportion of the area under crops is devoted to the cultivation of wheat, which in 1913-14 accounted for 70.1 per cent. of the total; the area for hay was 17.5 per cent., maize 3.4 per cent., for green food 3.2 per cent., and oats 2.3 per cent. The following statement shows the cultivated area for each of the principal crops, at intervals since 1880-1, and the relative importance of each crop:—

Crop.	Area.				Proportion per cent.			
	1880-1.	1900-1.	1910-11.	1913-14.	1880-1.	1900-1.	1910-11.	1913-14.
	acres.	acres.	acres.	acres.				
Wheat ...	253,137	1,530,609	2,123,826	3,205,397	40.2	62.6	62.9	70.1
Maize ...	127,196	206,051	213,217	156,820	20.2	8.4	6.3	3.4
Barley ...	8,056	9,435	7,082	20,610	1.3	.4	.2	.5
Oats ...	17,922	29,383	77,991	103,416	2.9	1.2	2.3	2.3
Hay ...	131,153	466,236	638,577	801,130	20.9	19.1	18.9	17.5
Green food ...	21,383	78,144	179,382	146,239	3.4	3.2	5.3	3.2
Potatoes ...	19,095	29,408	44,452	38,725	3.0	1.2	1.3	.8
Sugar-cane ...	10,971	22,114	13,763	13,232	1.7	.9	.4	.3
Vines ...	4,800	8,441	8,321	8,153	.8	.3	.2	.2
Orchards ...	24,565	46,234	47,354	50,929	3.9	1.9	1.4	1.1
Market-gardens									7,764	9,813	10,607	.3	.3	.2
Other crops ...	10,902	12,948	17,239	16,643	1.7	.5	.5	.4
Total ...	629,180	2,446,767	3,386,047	4,571,901	100	100	100	100

Since 1900 the figures include the areas double-cropped, viz., 1,203 acres, 4,096 acres, and 3,060 acres respectively.

The area devoted to wheat has always exceeded that given to other crops, and from the season 1880-1 the proportion, though fluctuating, has remained high; it now stands at over 70 per cent. of the whole area under

cultivation. During the same time the proportion under maize has decreased from 20 per cent. to 3·4 per cent.; other crops have not varied materially.

CULTIVATED HOLDINGS.

The number of holdings on which the principal crops were cultivated during the last five years is shown below:—

Crop.	Number of Holdings.				
	1909-10.	1910-11.	1911-12.	1912-13.	1913-14.
Wheat	18,432	18,261	18,263	19,469	21,453
Maize	20,142	20,951	18,472	18,187	16,831
Barley	1,973	1,447	1,445	1,869	2,159
Oats	14,193	13,187	12,754	13,483	14,683
Potatoes	8,083	8,081	7,271	6,865	7,293
Tobacco	90	94	115	148	162
Sugar Cane	1,022	927	1,163	764	739
Grapes	1,611	1,679	1,514	1,437	1,471
Fruit—Citrus	4,010	4,799	4,735	4,827	5,033
Other	8,572	9,325	9,110	8,960	9,365
Market Garden Produce	3,808	3,598	3,363	3,581	3,373
Total Cultivated Holdings	48,692	43,323	47,810	48,943	50,255

The increase in wheat holdings is pronounced throughout the period, while 1913-14 marks a sudden decline in maize holdings. In comparison to the area cultivated, the number of maize holdings is far in excess of those of wheat, due to many dairy-farmers cropping small areas of maize for use on the farms, while much of the wheat acreage—almost one-third—is cultivated under the “shares” system by which a number of growers cultivate one holding.

VALUE OF PRODUCTION.

The average value of the principal crops, with the proportion of each to the total value, during the last three years, is shown in the following table; the values are based on prices realised on the farm and not on the Sydney market:—

Crop.	Value.			Proportion per cent.		
	1911-12.	1912-13.	1913-14.	1911-12.	1912-13.	1913-14.
	£	£	£			
Wheat	4,113,400	5,238,580	5,988,200	42·2	44·3	48·4
Maize	901,470	873,300	760,770	9·2	7·4	6·2
Barley	28,170	61,400	61,670	·3	·5	·5
Oats	173,270	223,210	214,130	1·8	1·9	1·7
Hay and straw	2,084,740	3,260,810	3,220,170	21·4	27·6	26·0
Green food... ..	417,130	360,380	348,820	4·3	3·0	2·8
Potatoes	500,150	338,710	348,930	5·1	2·9	2·8
Sugar-cane... ..	143,620	140,920	179,820	1·5	1·2	1·5
Grapes	77,170	90,010	91,060	·8	·8	·7
Wine and brandy... ..	66,590	63,670	46,490	·7	·5	·4
Fruit—Citrus	289,140	239,040	219,820	3·0	2·1	1·8
Other	374,140	305,660	244,950	3·8	2·6	2·0
Market-gardens	357,230	369,480	401,060	3·6	3·1	3·2
Other crops	222,600	251,620	251,760	2·3	2·1	2·0
Total	9,748,820	11,816,790	12,377,650	100	100	100

The value of agricultural production in the season 1913-14 was the highest on record, and was due to increased production rather than to the enhanced values of products.

It is apparent that the agricultural wealth of New South Wales at present depends mainly on the return from wheat and hay, the value of these crops in 1914 being £9,208,370, or 74·4 per cent. of the total. The return of wheat for the season 1913-14 shows a total crop of 38,020,381 bushels, valued at £5,988,200. The value of maize is next in importance, but at a considerably lower level; the value of fruit, and the returns from market gardens, green food, potatoes, vines, and sugar-cane are comparatively of much smaller value.

The next statement shows the areas cultivated and the value of the production from agriculture, as well as the average value per acre over five-year periods since 1881:—

Seasons ended March.	Aggregate of Areas Cultivated.	Value of Production.	Value per acre.
	acres.	£	£ s. d.
1881—1885	3,310,427	17,971,776	5 8 7
1886—1890	4,176,834	19,229,839	4 12 1
1891—1895	5,242,770	18,940,086	3 12 3
1896—1900	9,474,285	26,003,897	2 14 11
1901—1905	12,183,823	30,827,138	2 10 7
1906—1910	14,121,264	39,875,810	2 16 6
1911	3,381,921	9,493,060	2 16 2
1912	3,629,170	9,748,820	2 13 9
1913	3,737,269	11,816,790	3 3 3
1914	4,568,841	12,377,650	2 14 2

The highest relative value received in any year was 1881-2, when the return was £7 4s. 5d. per acre. Decrease in prices, not want of productiveness, caused the decline in value after 1882. The fall in prices, especially of wheat, was very rapid down to 1896; for the next three years there was a very material increase; in 1900 they fell again to the 1896 level; but in 1902 there was a general increase; while towards the close of 1903, and almost up to the close of 1903-4, the effects of the adverse season were acutely felt, and prices rose to double those of the previous year. At the end of the 1903-4 season, when heavy crops began to arrive, prices again fell, but they recovered during the following year. The value of production per acre rose steadily from the season 1904-5, to £3 8s. 9d. in 1910, when it was the highest since 1893. During the succeeding two years the average value per acre decreased considerably, but for 1912-13 the increased production of agricultural products generally caused a much improved return. For the season 1913-14 the return per acre—£2 14s. 2d.—is approximately the mean of the last twenty years, but in that interval the area under cultivation has increased 278 per cent.

AVERAGE VALUE PER ACRE.

The average value per acre of various crops during the seasons 1912-14 are shown below in comparison with the average for the last ten years:—

Crop.	Average Values per Acre.			Average value for 10 years, 1905-14.
	1911-1912.	1912-1913.	1913-1914.	
Grain—	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Wheat	1 14 7	2 7 0	1 17 4	1 17 1
Maize	5 7 5	4 19 0	4 17 0	4 6 11
Oats	2 8 9	2 12 5	2 1 5	2 4 9
Hay	3 2 11	3 8 2	3 19 7	3 8 9
Potatoes	11 11 10	9 18 6	9 0 2	11 2 5
Sugar Cane	27 7 9	22 19 3	29 0 3	21 9 4
Vineyards	19 10 0	20 14 7	18 15 6	16 12 4
Orchards	17 19 9	14 8 3	12 19 0	10 17 9
Market Gardens	37 12 3	37 10 6	37 16 2	31 7 5

SHARE-FARMING.

The system of dividing the profits of cultivation between the owners of the land and the farmers (called share-farming) has reached such important dimensions that special statistics have been collected, and are now presented for the first time.

It will be seen that the area grown for wheat grain is the largest, and in a subsequent table will be shown the increasing importance of share-farming of wheat. The areas farmed on shares for grain in 1913-14 were as follows:—

Division.	Number of—		Area farmed on shares.	Area for grain only.					
	Holdings.	Share Farmers.		Wheat.	Maize.	Malt Barley.	Other Barley.	Oats.	Eye.
Coastal—			acres.	acres.	acres.	acres.	ac's.	acres.	ac's.
North Coast ...	5	6	81	...	71	...	..	...	...
Hunter and Manning	3	9	400	140	30	...	15	...	...
Metropolitan ...	2	2	11	...	...	...	...	...	...
South Coast	5	5	335	...	131	...	65	...	...
Total	15	22	827	140	232	...	80	...	...
Tableland—									
Northern	7	10	1,205	86	210	60	15	226	...
Central	190	314	56,181	41,937	383	239	...	1,606	78
Southern	20	29	3,045	2,199	...	2	...	174	...
Total	217	353	60,431	44,222	593	301	15	2,006	78
Western Slopes—									
North	212	490	80,648	75,937	142	208	...	120	...
Central	338	604	136,760	122,240	70	743	...	1,263	308
South	566	1,187	366,949	316,370	2	966	...	11,259	...
Total	1,116	2,281	584,357	514,547	214	1,917	...	12,642	308
Western Plains—									
North	17	23	2,551	2,251	...	...	...	...	...
Central	182	314	81,998	71,423	...	...	...	247	...
Total	199	337	84,549	73,674	...	...	...	247	...
Riverina	462	891	271,880	243,368	...	238	...	3,075	80
Western Division—	1	1	100	...	...	...	...	...	...
Total, N. S. Wales...	2,010	3,885	1,002,144	875,951	1,039	2,456	95	17,970	466

In addition to the grain grown as shown above, the following crops were also cultivated:—

Division.	Hay.			Green food.	Potatoes.	Grapes.	Fruit.	Kitchen Garden.	Pumpkins and Melons.	Tobacco.
	Wheaten.	Oaten.	Lucerne.							
	acres.	acres.	acres.	acres.	acres.	acres.	acres.	acres.	acres.	acres.
Coastal—										
North Coast ...	...	...	...	6	...	...	...	3	1	...
Hunter and Manning	25	...	130	60	...	...	...	...	...	...
Metropolitan	...	...	...	...	...	...	...	11	...	...
South Coast ...	...	92	47	...	...	...	...	...	...	...
Total ...	25	92	177	66	...	...	...	14	1	...
Tableland—										
Northern ...	64	331	...	7	206	...	...	...	...	...
Central ...	5,424	4,700	303	386	1,026	...	47	45	...	7
Southern ...	388	282	...	...	...	...	...	...	...	...
Total ...	5,876	5,313	303	393	1,232	...	47	45	...	7
Western Slopes—										
North... ..	3,290	100	37	280	...	...	...	19	...	515
Central ...	10,268	1,014	451	395	...	...	...	8	...	...
South	29,569	8,181	147	427	...	6	7	15	...	...
Total ...	43,127	9,295	635	1,102	...	6	7	42	...	515
Western Plains—										
North... ..	300	...	...	...	...	...	...	...	...	...
Central ...	10,110	95	...	123	...	...	...	...	...	...
Total ...	10,410	95	...	123	...	...	...	...	...	...
Riverina ...	22,476	2,538	...	90	...	...	...	...	...	15
Western Division—	100	...	...	...	...	...	...	...	...	...
Total, N. S. Wales...	82,014	17,333	,115	1,774*	1,232	6	54	101	1	537

* Includes 1,170 acres of wheat, 119 acres of maize, 78 acres of barley, 5 acres of rye, 2 acres of sorghum, and 400 acres of lucerne.

WHEAT ACREAGE.

In New South Wales, as in most other countries, the area devoted to wheat far exceeds that of any other cereal; and it is in this form of cultivation that the returns of the State show the greatest expansion. In the season 1913-14 the area under wheat for grain was 3,205,397 acres, which was 70 per cent. of the whole area under cultivation. The year 1897-8 may be said to mark the beginning of the present era of wheat-growing in the State, for it was in that year that the production for the

first time exceeded the consumption, and left a surplus available for export. The following statement shows the area under wheat in the various districts in the seasons ended March 1908 and 1914 in comparison with 1898:—

Division.	Area under Wheat for Grain.			Proportion in each District.		
	1897-8.	1907-8.	1913-14.	1897-8.	1907-8.	1913-14.
	acres.	acres.	acres.	per cent.	per cent.	per cent.
Coastal	16,192	4,940	4,822	1·6	·4	·2
Tableland—						
Northern	20,686	6,362	6,386	2·1	·4	·2
Central	80,318	62,587	145,218	8·1	4·5	4·5
Southern	22,421	4,990	12,666	2·2	·4	·4
Total	123,425	73,939	164,270	12·4	5·3	5·1
Western Slopes—						
North	59,330	172,907	374,229	6·0	12·4	11·7
Central	102,136	273,025	559,951	10·3	19·6	17·5
South	198,268	274,950	706,643	19·9	19·9	22·0
Total	359,734	720,882	1,640,823	36·2	51·9	51·2
Western Plains ...	31,589	142,979	323,371	3·2	10·3	10·1
Riverina	460,474	445,537	1,071,382	46·4	32·0	33·4
Western Division ...	1,936	1,894	729	·2	·1	.....
All Divisions ...	993,350	1,390,171	3,205,397	100·0	100·0	100·0

As might be expected, the proportions of land under wheat in each district generally follow the same order as shown in a previous table for the total area under cultivation. Between 1898 and 1914, however, the proportions in each district changed considerably. The Tablelands, for instance, now include only 5·1 per cent. of the whole area, as against 12·4 per cent. in 1898, and the Riverina 33·4 per cent., as against 46·4 per cent., while the Western Slopes have increased from 36·2 per cent. to 51·2 per cent., and the Western Plains from 3·2 per cent. to 10·1 per cent. The largest relative increase in area has been in the Western Plains, where it is now more than ten times the area of 1898; closely following is the North-western Slope; then Central-western and South-western Slopes. On the Northern and Southern Tablelands wheat-growing is declining in favour. The great bulk of the wheat is grown on the Western Slopes and in the eastern part of the Riverina, these districts together contributing over 84 per cent. of the whole. On the Coast, in the Western Division, and in the Central-western Plain, with the exception of the eastern fringe, the wheat area and the yield are very small. The expansion in the Western Plains is attributable to the increase around Narromine.

WHEAT YIELD.

The next statement shows the yield in each of the above-named districts in the same years:—

Division.	Yield of Grain.			Average yield per acre.		
	1897-8.	1907-8.	1913-14.	1897-8.	1907-8.	1913-14.
	bushels.	bushels.	bushels.	bushels	bushels	bushels
Coastal	329,274	23,996	62,449	20·3	4·9	12·9
Tableland—						
Northern	300,215	90,728	102,369	14·5	14·3	16·0
Central	933,296	479,404	1,593,324	11·6	7·7	11·0
Southern	242,556	42,176	159,734	10·8	8·5	12·6
Total... ..	1,476,067	612,308	1,855,427	12·0	8·3	11·3
Western Slopes—						
North	1,208,859	1,070,344	5,141,812	20·4	6·2	13·7
Central	1,398,967	2,033,284	5,766,178	13·7	7·4	10·3
South	1,849,521	2,482,004	8,085,760	9·3	9·0	11·4
Total	4,457,347	5,585,632	18,993,750	12·4	7·7	11·6
Western Plains	563,066	611,852	3,192,981	17·8	4·3	9·9
Riverina	3,725,421	2,306,188	13,912,193	8·1	5·2	12·3
Western Division	8,936	15,908	3,581	4·6	8·4	4·9
All Divisions	10,560,111	9,155,884	38,020,381	10·6	6·6	11·9

The most prolific district usually is the North-western Slope, which shows the highest average yield over the whole period covered by the table, except the Coastal Division and the Northern Tableland, where the aggregate yields are not large. The Riverina and South-western Slope, which yield the largest aggregate crops, control the general average for the State.

To further illustrate the relative extent of the acreage under wheat for grain, and the resultant yield for 1907-8 and 1913-14, the following table shows the index numbers of those years in relation to 1897-8, which is taken as a basis, and is equal to 100:—

Division.	Wheat Acreage.		Yield.	
	1907-8.	1913-14.	1907-8.	1913-14.
Coastal	30·5	29·8	7·3	19·0
Tableland—				
Northern	30·7	30·9	30·2	34·1
Central... ..	77·9	180·8	51·4	170·7
Southern	22·6	56·5	17·3	65·9
Total	59·9	133·1	41·5	125·7
Western Slopes—				
North	291·4	630·8	88·5	425·3
Central... ..	267·3	548·2	145·3	412·2
South	138·7	356·4	134·2	437·2
Total	200·4	456·1	125·3	426·1
Western Plains	452·1	1,023·7	108·8	567·1
Riverina	96·8	232·7	101·9	373·4
Western Division	97·8	37·7	178·0	40·1
All Divisions	139·9	322·7	86·7	360·0

A great proportion of the immense area of the State, hitherto devoted exclusively to pastoral pursuits, consists of land which could be profitably utilised for agriculture, much of it being more suitable for the cultivation of wheat than some of the land now under crop; and the returns show that wheat-growing, which was formerly confined to small farmers, is now engaging the attention of a number of the large landholders, who cultivate areas of thousands of acres in extent, and use the most modern and effective implements and machinery for ploughing, sowing, and harvesting.

WHEAT SHARE-FARMING.

A considerable portion of the new area which is being brought under wheat in New South Wales is cultivated on the shares system, especially in the southern portion of the State. Under this system, the owner leases his land, which is cleared, fenced, and ready for the plough, to the agriculturist for a period, for the purpose of wheat-growing only, the farmer tenant possessing the right of running upon the estate the horses necessary for working the farm, and the owner the right of depasturing his stock when the land is not in actual cultivation. It is usual for the owner to provide the seed-wheat and bluestone for pickling the seed, bags and twine for his own share of the crop, and the tenant the machinery and horses necessary to work the land; the necessary labour; his dwelling; bags and twine for his own share of the crop; and he must keep gates and fences in good repair. Up to a specified yield, the parties to the agreement take equal shares of the produce, any excess going to the farmer as a bonus; the system, however, is subject to local arrangements. The number of acres farmed on the shares system in each of the last ten seasons is shown below:—

Season.	Area.	Season.	Area.
	acres.		acres.
1904-5	340,015	1909-10	364,579
1905-6	402,234	1910-11	473,079
1906-7	429,543	1911-12	616,607
1907-8	348,444	1912-13	618,333
1908-9	307,750	1913-14	959,135

Of the area cultivated on the shares system in 1913-14, 558,044 acres were in the Western Slopes and 265,934 acres in the Riverina Division.

Further particulars regarding wheat-growing on the shares system will be found on pages 545 and 546.

EXTENSION OF WHEAT CULTIVATION.

The progress of wheat-growing for many years was slow and irregular. Prior to 1867 the area under crop had remained almost stationary—at a little more than 125,000 acres; but in 1867 the acreage increased to 175,000. Eleven years later the area reaped for grain was practically the same, although during the intervening period it had fluctuated somewhat. Then more land was laid under the cereal, and in 1879 the area increased to 233,252 acres. In 1891, twelve years later, the acreage stood at 333,233 acres, although, during the interval, it had reached as high as 419,758 acres. From 1893 onwards progress was more regular. A great impetus was given to the industry in 1897, when the area increased

to 866,112 acres; in 1901 it had advanced to 1,530,609 acres, and in 1906 to 1,939,447 acres. During the next three years the area decreased on account of unfavourable ploughing seasons, but it has since increased, and the area harvested for grain in 1914—3,205,397 acres—was the highest yet recorded.

The following statement shows the area under wheat for grain at intervals since 1875-6, together with the total production and average yield per acre:—

Season.	Area under Wheat for Grain.	Yield.		Season.	Area under Wheat for Grain.	Yield.	
		Total.	Average per acre.			Total.	Average per acre.
	acres.	bushels.	bushels		acres.	bushels.	bushels.
1875-6	133,609	1,958,640	14·66	1905-6	1,939,447	20,737,200	10·69
1880-1	253,137	3,717,355	14·69	1906-7	1,866,253	21,817,938	11·69
1885-6	264,867	2,733,133	10·45	1907-8	1,390,171	9,155,884	6·59
1890-1	333,233	3,649,216	10·95	1908-9	1,394,056	15,483,276	11·11
1895-6	596,684	5,195,312	8·71	1909-0	1,990,180	28,532,029	14·34
1900-1	1,530,609	16,173,771	10·56	1910-1	2,123,826	27,913,547	13·11
1901-2	1,392,070	14,808,705	10·64	1911-2	2,380,710	25,088,102	10·54
1902-3	1,279,760	1,585,097	1·24	1912-3	2,231,514	32,487,336	14·56
1903-4	1,561,111	27,334,141	17·51	1913-4	3,205,397	38,020,381	11·86
1904-5	1,775,955	16,464,415	9·27				

Despite the vicissitudes of the climate it will be seen from the above table that lack of capacity to produce a payable average has not been the cause of the tardiness in development of wheat cultivation. The highest averages recorded have been 17·51 in 1903-4 and 17·37 in 1886-7. The lowest was 12·4 bushels in the season 1902-3. During the whole period there were only seven seasons when the yield fell below 10 bushels per acre, the failure in each case being due to drought conditions.

In spite of the lower averages of certain seasons, it may be said that from equal qualities of soil a better yield is now obtained than was realised twenty years ago—a result due largely to extension of agricultural education, the use of fertilizers, and of more economical harvesting appliances; also to the fact that rust, smut, and other forms of disease in wheat have been less frequent and less general in recent years.

During the month of June in each year inquiries as to the area under wheat are made by the Bureau of Statistics, the particulars for each grower being entered in specially prepared books, which contain details of the actual area under, and the production of, wheat for the previous season. The area likely to be harvested for grain is stated, together with particulars of the extent of new and fallowed land placed under crop. Additional information is also required as to the proportion of early, mid-season, and late crops. Reports are furnished for each district concerning the condition of the crops, rainfall, and prospects for the season. After being tabulated the results are published, and the books are returned to the collectors during October for revision and amendment if necessary. Additional particulars are entered as to the actual or anticipated yields of grain and hay for each holding; and from the information obtained in this manner an estimate as to the probable wheat harvest is issued about the middle of December.

The question of issuing progress reports during the wheat-growing season is receiving attention, and it is probable that the present system of crop reporting will be extended.

PRINCIPAL WHEAT-GROWING COUNTRIES.

A comparison of the production of this cereal in the principal wheat-growing countries is supplied in the following table:—

Country.	Production.	Country.	Production.
	bushels.		bushels.
New South Wales	38,020,381	Austria-Hungary	232,207,000
Victoria	32,936,245	Canada	231,717,000
Queensland	1,769,432	Italy	214,405,000
South Australia	16,936,988	Argentina	198,414,000
Western Australia	13,331,350	Germany	171,075,000
Tasmania	349,736	Spain	112,401,000
		Roumania	83,236,000
Total, Australia	103,314,132	England and Wales	54,806,000
		Bulgaria	45,000,000
		Algeria	36,848,000
New Zealand	5,705,896	Egypt	30,900,000
		Japan	27,140,000
		Chile	21,000,000
Russia	962,587,000	Belgium	15,042,000
United States	763,380,000	Mexico	10,000,000
British India	358,388,000	Servia	8,524,000
France	321,571,000	South African Union	6,034,000

AREA SUITABLE FOR WHEAT-GROWING.

The area suitable for wheat-growing is defined roughly as that part of the State which has sufficient rainfall—(a) to admit of ploughing operations being carried out at the right time of the year; (b) to cover the growing period of the wheat plant—April to October, inclusive; and (c) to fill the grain during the months of September and October, or, in the case of districts where the rainfall in these months is light, to counteract the deficiency by the increased falls in the earlier or later months.

September and October are the most critical months as regards rainfall, being the time for the filling of the grain. Heavy soils require more rain than light soils, especially if the latter possess retentive subsoils. The nature of the soil, and considerations of elevation, temperature, evaporation, &c., have an important bearing on the moisture needed for wheat culture, and one of the most important considerations in determining the area of profitable wheat-growing is the seasonal distribution of the rainfall. Heavy falls early in the season may induce too vigorous growth, which would require correspondingly heavy rains in the spring or early summer. On

the other hand, comparatively light showers, in addition to encouraging surface-rooting, would result in a larger proportion of evaporation than the falls giving about one inch at a time.

The average rainfall gradually diminishes towards the western limits of the State, the figures ranging from a mean of about 50 inches on the seaboard to 10 inches on the western boundary.

In the early days of the industry wheat-growing was confined to the coastal districts, but its cultivation in these areas has been practically abandoned on account of the prevalence of rust, caused by excessive moisture, combined with the discovery that the drier districts are more suitable because the crop can be more easily and more cheaply grown.

In some of the northern districts much of the land is unsuitable for wheat-growing, as it consists of stony, hilly country, too rough for cultivation, and of black-soil plains, which bake and crack, and present mechanical difficulties in tillage. The rich soils of river flats must also be omitted from good wheat-growing areas, as such land has a tendency to produce excessive straw growth, although excellent hay can be grown in those localities.

Until recently land with an average rainfall of less than 20 inches has also been excluded from the area which is considered safe for profitable wheat-growing. With the exceptions of the coastal districts and unsuitable northern districts, it has been estimated that the area with an average annual rainfall of not less than 20 inches, suitable for wheat-growing, covers from 20 to 25 million acres.

Assuming that wheat could be profitably grown in New South Wales in areas with an annual fall of 16 inches, another 9,000,000 acres would be added to the wheat belt.

On the map attached to this "Year Book" are shown the experience lines of profitable wheat cultivation, that is, the western boundaries of the area in which wheat has been successfully cultivated, as determined in 1904 and in 1912; the western boundary of the area over which the average rainfall is not less than 10 inches during the wheat-growing period is also defined.

Considerable improvement has been manifested during recent years in the methods of wheat culture. The old system has been altered gradually to accord with modern ideas, and the adoption of scientific methods has enabled farmers—especially in the districts of scanty rainfall—to secure profitable returns with a precipitation much less than that required formerly. It is not surprising, therefore, that the boundary of successful wheat production, as laid down in 1904, has been extended further westward.

It is estimated that the wheat belt has been increased by about 13,430,000 acres since 1904, and this has been made possible by the adoption of scientific methods of cultivation. The greatest extension has taken place in the southern wheat areas, especially in the Riverina division, where the spring rainfall is more suitable than on the north-western plain for filling and maturing the grain.

South of the Murrumbidgee from 65 to 70 per cent. of the annual average rain falls between the beginning of April and the end of October; in the central wheat areas, *i.e.*, the central western slopes and parts of the western plains, the percentage of the annual means drops to between 50 and 60, and in the northern wheat country to a range from 45 to 55 only.

In determining the present wheat experience line, due consideration has been given to low yields attributable to bad farming and other preventable causes. This is a very necessary precaution, as the average wheat yields for the various districts do not always accurately disclose the

possibilities of the districts. Notwithstanding the improvement made during recent years in cultural methods generally, still the majority of the farmers do not obtain from their land anything like the results which are possible under good treatment. The conservation of moisture by fallowing and by subsequent cultivation has not received sufficient attention, and the use of artificial manures should be much more general.

The conservation of moisture in the subsoil, by fallowing and proper treatment of the fallows, may carry over an equivalent of from 5 to 8 or 10 inches of rain to supplement the falls during the growing season; and the risk of failure, in the drier western districts especially, may be greatly diminished, if not entirely eliminated, by these means.

It must not be concluded that the wheat line as now laid down will remain stationary. There are still large areas, especially in northern and western Riverina, admirably suited to wheat production. With the advance of settlement, the subdivision of large estates, and the extension of railway communication, there is every reason to believe that the area now known as the wheat belt will be extended considerably in the early future, provided the farmers are prepared to adopt the latest approved methods of cultivation.

DRY-FARMING.

The term "dry-farming," in its general significance, is applied to any method founded on scientific principles for the production of crops without irrigation in arid or semi-arid districts.

Dry-farming methods have been practised for many years, and the prosperous condition of many towns in the dry western area furnishes undoubted evidence of the success of dry-farming in New South Wales. It must be admitted that the advanced methods have not been generally adopted in this State, but conditions are steadily improving, and the problem of effective utilisation of the dry districts is now attracting considerable attention in agricultural and scientific circles.

In July, 1910, a conference was arranged by the Department of Agriculture, in conjunction with the Farmers and Settlers' Association, to which prominent farmers from the wheat-growing districts of this State were invited, to meet the experts of the Department and to discuss the subject of wheat-growing with special reference to dry-farming. The report of the conference, which has been issued as a Departmental Bulletin, contains discussions on the three main factors for successful farming in dry districts, viz., the production of suitable varieties of wheat, the conservation of fertility by the proper use of fertilisers and rotation of crops, and the conservation of soil moisture. The fixing of the wheat standard and transportation methods were also discussed, and many interesting comparisons with conditions in other wheat-producing countries were placed before the conference.

VARIETIES OF WHEAT.

Since 1897 Government agricultural experts have been trying to determine the varieties of wheat most suitable for the various districts, and to secure new types which will return the best milling results under local conditions. It is gratifying to record that their efforts have been attended with marked success.

In connection with this branch of agricultural science the name of the late William J. Farrer, Wheat Experimentalist of the Department of Agriculture of New South Wales, has become world-famous. His efforts were directed towards the production of new varieties of greater milling value and more resistant to rust than the old. Farrer wheats, which rank amongst

the most prolific grain varieties, are largely cultivated throughout the State; and he and his successors have proved that Australia can produce strong white wheat equal in flour production to the old varieties, and equal in strength to the famed standard Manitoba wheat which had hitherto been imported for blending with Australian soft wheats. Such importation has been abandoned in this State.

Wheat experiments are conducted at the Cowra Experiment Farm, as headquarters, and at the Hawkesbury College and Wagga, Bathurst, Glen Innes, Nyngan, and Yanco Farms, representing respectively the coastal districts, the Riverina, the Central Tablelands, the Northern Tablelands, the dry western country, and irrigation. At Nyngan tests are made to determine the suitability of the different varieties for cultivation in dry areas. The work at each farm consists of:—

1. Pedigree plots of the main varieties grown on the farm.
2. Crossbreds in course of fixation for local conditions of soil and climate.
3. "Seed variety trials," including standard varieties, newly-introduced wheats, and samples sent for identification.
4. "Stud bulk plots," to provide seed for planting the farm areas.
5. "Farm areas," which in their turn supply seed-wheat to the farmers.

MILLING QUALITIES OF NEW SOUTH WALES WHEAT.

The Department of Agriculture has conducted investigations regarding the variations in the strength and gluten-content of New South Wales wheats during the last fourteen years; and very interesting information regarding the milling quality of the various classes of wheat has thus become available.

For the purposes of the investigation, tests were made of seven classes, which represent fairly the typical wheats grown in New South Wales:—

1. *Farrer wheats, strong flour varieties*, including such crosses as Bobs, Comeback, Cedar, and similar varieties, as well as Departmental crosses not at present in general cultivation.
2. *Farrer wheats, medium strong flour varieties*, including Federation, Bunyip, Florence, Rymer, Yandilla King, and other varieties, as well as Departmental crosses not in general cultivation.
3. *Weak flour wheats*.—Farmers' wheats, such as some of the Purple Straw and Steinwedel type, which are being gradually replaced by the stronger varieties.
4. *Wheats at the Royal Agricultural Society's Show—strong white class*—which are confined practically to Farrer wheats—Bobs, Comeback, and Cedar—although before 1908 this class was not so rigidly defined, and included other grain of lower flour strength.
5. *Wheats at Royal Agricultural Society's Show—"soft white" class*—including both the local weak flour wheats (No. 3 supra) and the Farrer medium strong flour varieties (No. 2).
6. *F.A.Q. wheat*—part of the sample taken annually by the Sydney Chamber of Commerce for the convenience of shippers, and representing the fair average quality of the wheat grown in the State.
7. *Miller's Flour*, including typical samples from both Sydney and country millers.

The figures under the term "strength" in the table below indicate the number of quarts of water required by 200 lb. of flour to make a dough of the proper consistency for baking, and it is to be understood that a high figure means not only more loaves from the quantity of flour, but loaves of better texture, lighter, and more nutritious. The figures under "gluten" are the percentages of dry gluten in the flour.

The particulars are for the ten years ended March, 1915:—

Class of Wheat.		1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
Farrer wheats, strong flour Varieties.	Strength	52.2	50.9	52.6	54.5	51.9	53.2	52.5	53.3	51.0	54.1
	Gluten	16.1	11.5	15.6	16.9	14.1	13.2	13.8	14.5	14.3	14.4
Farrer wheats, medium strong flour Varieties.	Strength	46.5	47.3	47.1	49.5	47.5	47.1	46.8	47.0	46.0	44.9
	Gluten	12.8	10.2	15.0	17.8	12.1	13.3	12.6	12.2	12.9	10.
Farrer wheats, all kinds	Strength	49.7	49.8	50.8	53.4	49.7	49.9	49.8	48.4	48.2	47.
	Gluten	14.7	11.1	15.4	17.1	13.4	13.3	13.2	14.6	14.4	13.5
Weak flour wheats	Strength	45.8	46.9	46.5	48.7	49.1	45.8	44.9	45.0	45.2	45.7
	Gluten	10.2	9.2	13.4	12.3	14.2	11.3	10.4	11.8	10.1	12.3
Wheats at R. A. S. Show Strong white.	Strength	48.5	48.4	52.5	53.5	50.0	53.4	52.7	53.1	52.8	53.8
	Gluten	11.0	9.3	12.2	11.9	13.8	12.5	13.4	15.3	13.2	13.1
Wheats at R. A. S. Show Soft white.	Strength	45.7	45.4	46.4	49.2	47.8	47.0	45.2	47.0	46.2	46.7
	Gluten	9.8	8.3	10.2	8.6	12.1	11.0	10.6	11.2	11.3	12.9
F.A.Q. for New South Wales	Strength	45.5	46.1	48.5	48.0	48.0	45.0	45.0	46.0	45.0	47.0
	Gluten	10.2	9.4	10.6	12.2	10.4	10.2	11.9	11.9	11.5	12.9
Millers' flour	Strength	47.4	48.0	49.9	49.9	48.5	46.7	47.9	47.4	49.8	47.4
	Gluten	9.7	9.9	14.6	15.6	10.2	9.8	11.4	11.4	11.5	12.0

INCREASE IN THE WHEAT YIELD.

It has been shown that the area under wheat for grain is 3,205,397 acres, which is a small portion of the total area available; and even this area is not worked as profitably as it might be. Compared with the principal wheat-growing countries of the world, an average yield of 11.86 bushels per acre is very small, as will be seen from the table below.

The averages shown are based on the latest available returns:—

Country.	Average yield per acre.	Country.	Average yield per acre.
	bushels.		bushels.
Germany	33.68	Italy	18.14
United Kingdom	31.67	United States	15.21
Canada	20.97	Russia	13.47
France	19.75	India	12.34
Hungary	19.63	Argentina	11.61

A bare statement of average yield is, however, not entirely conclusive, as the relative cost of production should also be taken into consideration.

Moreover, in the older countries, the efforts of farmers are more concentrated, and more intense cultivation is necessary. In New South Wales, wherever agriculturists have confined their operations to a restricted area, and have made systematic efforts to till the soil completely, their returns have been much greater than those obtained by imperfect cultivation of areas which are beyond the capacity of the holder's teams and implements.

The crude methods of farming practised on many of the outlying districts are steadily improving, and it is reasonable to expect that the yield will be considerably increased. The lack of system in farming is almost necessarily prevalent amongst pioneers in new countries. In many instances the settlers have begun with insufficient capital and with very little practical knowledge; and there are probably very few places where persons without capital could have succeeded so well as in this State.

The possibilities of New South Wales are great; and if only a quarter of the area favourable for growing wheat were cultivated on scientific lines there would be a much greater surplus available for export, after satisfying all local demands.

FALLOWING.

The last six seasons have furnished excellent object lessons as to the benefits to be derived from a proper system of fallowing, from the intelligent working of the land, and from the judicious use of fertilisers. From almost every district reports indicate that, notwithstanding the dry conditions prevailing during practically the whole period of growth, the average yield on fallowed and properly cultivated land has ranged from 20 to 43 bushels per acre. The general average yield suffers by reason of the large proportion of poor crops on stubble land, and farmers generally should adopt other methods of cultivation since it has been proved by practical experience that fallowed and properly-worked land will give far better results than a much larger area of stubble land.

Striking examples are shown in the subjoined comparison of results obtained per acre in various districts during 1913-14:—

District	Highest Yield— Farmers' Experiment Plots.		General Average Yield for district.	
	bush.	lb.	bush.	lb.
Craboon (Leadville)	43	8	12	14
Gulgong	34	6	11	5
Mudgee	31	52	14	11
Boggabri	31	7	11	52
Grong Grong	30	49	11	9
Milbrulong (Lockhart)	30	33	15	33
Germanton	28	49	10	28
Ringwood (Corowa)	37	20	16	50

Perhaps no better illustration of the necessity for fallowing can be given than the results of the experiment at Nelungaloo, in the Bogan Gate district. In this case half of the area was fallowed in accordance with rules laid down by the Department of Agriculture, the other half being ploughed just prior to seeding, a practice, unfortunately, only too frequent in the State. The average yields obtained per acre are shown below for each variety of wheat grown:—

Variety of Wheat.	On Fallowed Areas.		On Non-Fallowed Areas.	
	bush.	lb.	bush.	lb.
Rymer	27	9	15	15
Yandilla King	22	38	13	36
Bayah	22	2	12	57
Comeback	18	45	9	42
Bunyip	13	29	6	36
Marshall's No. 3... ..	23	21	14	25
Federation	23	35	13	2

It is hardly necessary to comment on the above figures. They show very clearly that a system of fallowing will ensure a good harvest even in a bad season.

Farmers' Wheat Experiment Plots have been conducted by the Department of Agriculture for the last five seasons, so that a comparison of the results obtained with the average yield for the State should prove of interest:—

Season.	State Average.	Average of Experiment Plots.
	bush. lb.	bush. lb.
1909-10	14 20	24 23
1910-11	13 7	18 45
1911-12	10 32	20 17
1912-13	14 34	24 8
1913-14	11 52	21 3
Average for 5 years	12 44	21 43

PRICES OF WHEAT.

The price of wheat is subject to continuous fluctuation, as shown in the following table, which gives the average rates ruling in the Sydney market in the months of February and March of each year since 1865. These figures exhibit clearly the tendency to a gradual reduction in the value of the cereal down to 1895, when the price was the lowest of the series. In 1896, however, owing to a decrease in the world's supplies, the price rose considerably, and led to an extension of cultivation in Australasia. Until a few years ago, with a deficiency in the local production, the price in Sydney was generally governed by the rates obtained in the neighbouring Australian markets where a surplus was produced. These, again, are now determined by the figures realised in London, which are usually equal to those ruling in Sydney, plus freight and charges. The prices in the following table are for an imperial bushel of 60 lb., and, being for new wheat, are slightly below the average for the year:—

Year.	February.	March.	Year.	February.	March.	Year.	February.	March.
	per bushel	per bushel.		per bushel.	per bushel.		per bushel.	per bushel.
	s. d.	s. d.		s. d.	s. d.		s. d.	s. d.
1865	9 6	9 7½	1882	5 5	5 6	1898	4 0	4 0
1866	8 4½	8 0	1883	5 1½	5 2	1899	2 7½	2 9
1867	4 3	4 4	1884	4 3	4 3	1900	2 9	2 8
1868	5 9	5 9	1885	3 10½	3 7½	1901	2 7	2 7
1869	4 9	4 10	1886	4 3½	4 5	1902	3 2	3 2½
1870	5 0	5 1½	1887	3 10	3 11	1903	*	*
1871	5 7½	5 9	1888	3 6	3 6½	1904	3 0½	3 0½
1872	5 0½	5 3	1889	4 9	5 3	1905	3 4½	3 3½
1873	5 1	5 8½	1890	3 6	3 6	1906	3 1½	3 2½
1874	6 9	6 1½	1891	3 7½	3 10	1907	3 0½	3 1½
1875	4 7½	4 6	1892	4 9	4 9	1908	4 4	4 5½
1876	5 1½	5 6	1893	3 6½	3 6	1909	4 0½	4 6½
1877	6 1½	6 6	1894	2 11	2 8	1910	4 1½	4 1
1878	6 1½	5 7½	1895	2 7	2 7	1911	3 7½	3 5
1879	5 0	4 9½	1896	4 4½	4 5	1912	3 9½	3 8½
1880	4 8	4 9	1897	4 8	4 6½	1913	3 6½	3 7
1881	4 1	4 3				1914	3 10	3 9

* No sales.

As to recent years prices did not vary greatly in 1899, 1900, and 1901; there were no quotations in 1903, owing to the almost universal failure of the 1902-3 crop; in 1908 and 1909 the prices were higher than in any year since 1897; in 1910 they were lower than in 1909, but otherwise were better than in any year since 1898. During the period 1911-14 the prices were considerably lower than those of the previous three years.

The average values of wheat in the United Kingdom for the years 1910 to 1913 are shown below:—

Country of Origin.	Average Value per Quarter.			
	1910.	1911.	1912.	1913.
	s. d.	s. d.	s. d.	s. d.
Australia	37 2	34 10	33 5	37 6
Canada	36 9	34 10	35 2	34 8
United States	37 3	34 9	35 9	35 1
India	35 5	33 7	37 0	36 6
Argentina	34 11	33 4	35 6	35 8
Russia	35 7	33 4	37 6	33 11
United Kingdom	31 8	31 8	34 9	31 8

The comparison shows that the price of Australian wheat was generally higher than that of any other country from which large consignments were received.

COST OF GROWING AND EXPORTING WHEAT.

The cost of raising wheat depends upon the size of the holding, as a large farm with first-class agricultural appliances can be worked at a very much lower proportionate cost than a small area. An estimate of the cost of growing wheat should include rent, or interest on purchase-money of land, and carriage to the market. Careful inquiries show that in New South Wales, taking into account the producing factors, such as the proportion of lands variously prepared and sown, the proportion of crops harvested by different methods, average railway and other freights, but excluding interest on capital, rent, &c., the cost of landing wheat in Sydney may be assumed at 2s. to 2s. 6d. per bushel with a 10-bushel crop. With the increased use of improved machinery, the average cost may be much reduced, and the cost of harvesting a 10-bushel crop with a harvester is less than 6d. per bushel if carried out by contract labour. The freight to Sydney and other freight and selling charges to the Sydney market are assessed at 4½d. per bushel.

As estimated for wheat farms on large areas with a minimum expenditure per acre, the average cost includes initial expenses for seed, for ploughing, harrowing, sowing, rolling, &c.; then the cost of gathering the crop, stripping, winnowing, bagging, &c.; the cost of these operations averages from 20s. to 21s. per acre, to which must be added the expenditure for transporting the crop from the farm to the market, including road haulage and train transport. These initial charges would naturally vary with conditions—with the size of the farm, the type of machinery, and distance from market—but for a 10-bushel crop might be approximately assessed at £1 5s. per acre.

But apart from these initial charges is to be considered the cost of placing the product on the London market, for since wheat is a world product with a world market, of which London is the pivot, this cost affects selling prices. It includes charges for freight, transhipment, insurance, selling charges, and varies also with the type of vessel and other conditions, but always assists to raise the cost by another 1s. per bushel, approximately.

GRADING, HANDLING, AND MARKETING WHEAT.

The development of the wheat industry is largely dependent upon the facilities for economical transportation to the world's markets; and at the present time, when combined efforts are being made by scientists and practical farmers to extend the cultivation and improve the quality of the wheat, the co-operation of the commercial and transport agencies by the introduction of improved methods of grain handling is necessary for the success of the industry.

Grading.

Australian wheat for export is marketed on the basis of a single standard known as f.a.q.—that is. fair average quality. In New South Wales the standard is fixed annually by a committee of members of the Sydney Chamber of Commerce and two Government representatives. Samples obtained from each of the wheat districts are weighed on McGuirk's Patent Scale, and an average struck, which is used as a standard in all wheat export transactions.

The proportion of six different grades of wheat, as well as the amount of broken and pinched grain, oats, whiteheads, &c., in a standard bushel from the wheat-producing districts of New South Wales for the last five harvests, were as follows:—

Grade.	Harvest.				
	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.
3·25 millimetre mesh ...	1 12·5	0 5·5	0 0	0 0	0 0
3·00 " " ...	5 10·25	2 6·5	0 11·75	1 7	0 12
2·75 " " ...	13 0	12 9·4	7 0	10 8·5	12 1·5
2·50 " " ...	14 11·5	18 13·1	22 1·5	20 14·75	17 0·25
2·25 " " ...	20 15·5	19 8·8	24 15·75	23 2·25	21 2·75
2·00 " " ...	2 15	5 2·9	5 3	5 0	7 3
Broken and pinched grain	2 0	2 1·2	1 8	2 8	1 8·5
Oats, whiteheads, &c. ...	1 3·25	0 8·6	0 12	0 7·5	0 12
	62 4	61 8	62 4	64 0	60 8

The f.a.q. standard of New South Wales for the 1914-15 harvest has been fixed at 60½ lb. per bushel.

The chief objection raised by wheat-growers to this method of grading on a single standard is that it discourages the cultivation of grain of superior quality which does not command a price commensurate with its greater value as compared with wheat which just reaches the standard. Moreover, it is stated that the weight of the grain is not a true indication of its quality, the standard of which varies according to the purposes for which it is required.

The following comparison shows the standard in New South Wales for each season since 1898-9, and the date on which it was fixed in each year:—

Year.	Date Fixed.	Standard.	Year.	Date Fixed.	Standard.
		lb.			lb.
1898-1899	23rd Feb., 1899	61	1907-1908	24th Jan., 1908	62½
1899-1900	23rd " 1900	61	1908-1909	22nd " 1909	61½
1900-1901	21st " 1901	61	1909-1910	31st " 1910	62
1901-1902	27th Jan., 1902	61½	1910-1911	13th Feb., 1911	62½
1902-1903	None fixed—drought.		1911-1912	1st " 1912	61½
1903-1904	28th Jan., 1904	61	1912-1913	31st Jan., 1913	62½
1904-1905	19th " 1905	59½	1913-1914	19th " 1914	64
1905-1906	24th " 1906	62	1914-1915	15th Feb., 1915	60½
1906-1907	24th " 1907	62½			

Methods of Transport.

Under the present system of transport the wheat is bagged on the farm and brought to the nearest railway station, whence, if for export, it is carried in bags by rail to Sydney for shipment. At some of the stations the Railway Department has erected sheds, and a small charge is made to the farmers for storage. At Darling Harbour, Sydney, where all the grain ships are loaded, grain sheds and bag elevators have been provided.

This system has many disadvantages, apart from the cost of bags and the great amount of labour required for handling grain in bags. In the event of a large yield considerable loss is caused by delays at country railway stations, especially where the shed accommodation is insufficient, and the stacks are exposed to damage by rain as well as pests; and the supply of rolling-stock is inadequate, as the space at Sydney is too limited for the speedy manipulation of the trucks.

A contrast to these methods is found in the United States, Canada, Russia, and Argentina, where wheat is handled in bulk. In Canada, for example, the grain is brought from the farms and stored in a loose condition in elevators at country railway stations pending transport by rail to large terminal elevators in the trading and shipping centres. On depositing the grain in the country elevator the farmer may obtain a certificate of its weight and quality; this certificate is guaranteed by the Government, and practically has legal currency in the Dominion.

Comparative Rates of Freight.

The extra cost to Australia for freight to the United Kingdom will be seen in the following comparison. Freight charges, however, vary considerably throughout the year, and the averages given below—based on monthly quotations appearing in Broomhall's *Corn Trade News*—indicate that the charges during 1913 were much below those for 1912 for each country except Australia:—

Country.	Average Freight per ton (2,240 lb.)		Country.	Average Freight per ton (2,240 lb.)	
	1912.	1913.		1912.	1913.
United States—	s. d.	s. d.	Russia—	s. d.	s. d.
San Francisco ...	23 2	.....	Odessa	13 2	9 10
New York	10 9	8 11	India—		
Argentina—			Bombay	21 5	17 9
Upper River Plate ...	24 5	18 10	Karachi	20 6	17 3
Lower River Plate ...	22 9	16 11	Australia	29 3	31 3
Bahia Blanca	22 6	21 1			

This statement emphasises the necessity of adopting in Australia the most economical method of handling grain to compensate for the high cost of ocean transport as compared with the cost to other wheat-producing countries. The rates from all the ports shown above are much lower than from Australia, and the cost of insurance is also less in proportion to the length of the sea journey.

Bulk Handling in Australia.

The question of introducing the bulk-handling system has been the subject of many inquiries and investigations in Australia, but up to the present no satisfactory plan has been arranged.

This matter has been dealt with somewhat fully in the previous edition of this "Year Book."

The Department of Agriculture of New South Wales is continuously collecting information regarding the various aspects of this important question; and during 1910 inquiries were made regarding marine insurance.

of bulk shipments. Information obtained from the individual insurance companies in Sydney showed that the companies generally were reluctant to cover the risk of bulk cargoes per sailing ships, but there would be no difficulty in obtaining insurance against ordinary sea risk of grain shipped per steamer.

At all English ports to which wheat is shipped it is received in bulk as well as in bags; and at nearly all the principal docks there are elevators, by which wheat arriving in bulk can be unloaded with greater rapidity and at less expense than grain in bags. Shipowners prefer wheat to be sent in bulk on account of the economy of space and the more rapid discharge, but the merchants prefer the system of shipping in bags. The chief reason is, apparently, that wheat in bags is weighed in small lots of about 4 bushels, and on each occasion the merchant gets the benefit of the draft required to turn the scale; whereas bulk wheat is weighed in lots of 1 ton or more. However, no objection is made by merchants handling Argentina wheat, which has somewhat similar characteristics to the Australian, and is brought to England in bulk in large quantities. Wheat is also received in bulk from Russia, United States, and Canada.

In reporting on the elevator system generally the representative of the New South Wales Government in the United States considers that it is undoubtedly the only system by which grain may be handled properly, as it obviates the necessity of handling the grain in sacks, besides being much quicker in every process. It also allows of the proper grading and cleaning of the grain. The principal advantages of the system are summarised as follows:—

1. The immense saving in labour, time, and cost of handling the grain; terminal elevators in America receive, unload, store the grain for any period up to ten days, and load it into ships for a charge equal to one farthing per bushel.
2. The saving in shipping charges by the reduction of the time occupied in loading and unloading, and the consequent reduction in harbour and wharfage dues, as well as in the ship's charter time.
3. The reduction of the area of water frontage and wharfage accommodation necessary, owing to the expedition in loading and unloading.
4. The expedition in unloading railway cars, thus doing away with the congestion at the terminal point, and releasing the cars with much greater celerity than is possible at present.
5. The avoidance of the loss now accruing in handling by the leakage from torn sacks.
6. The absolute security of the grain during transportation from any condition of weather, by its being in rainproof cars, these cars also preventing any possibility of pilfering.
7. The ease of cleaning and grading grain, thus saving carriage on dirt as well as sacks.
8. The saving to the farmer of the cost of providing sacks every season.
9. The abolition of the man-killing work of handling grain in sacks.
10. The placing of our grain upon the London market in better condition by reason of its being cleaned and graded, the saving of the handling operations at that end, and the securing of better competition among the buyers (at present many of the buyers deal only in grain coming to the Continent in bulk).

More recently the Government obtained a report regarding bulk handling of wheat from the President of the Burrell Engineering and Construction Company, of Chicago, U.S.A. As a result of investigations, an elevator system is considered essential for the welfare of the wheat-growers and the consumers. The yearly production cannot yet be compared with that of the

United States or of Canada, but during recent years the annual output has increased rapidly, and owing to the good quality of the soil and the favourable weather conditions, large additional wheat tracts are being continually developed. Even now the output is far beyond the stage necessitating a bulk-handling system.

In order to inaugurate the system on an economic basis it was recommended that two terminal elevators be erected, one at Sydney and one at Newcastle. One thousand box cars of a similar type would be required to transport the grain from the country railway stations, at which it was suggested that elevators, ranging from 50,000 to 200,000 bushels in capacity, should be erected by the farmers on a co-operative basis. The approximate cost of initiating the system is as follows:—

	£
1 Terminal elevator at Sydney	163,000
1 " " Newcastle	70,000
1,000 Box cars	300,000
3,000 feet of belt galleries at Sydney	21,500
	£554,500

Should the Government decide to erect country elevators also, the cost would be increased by £300,000, made up as under:—

	£
5 Elevators—capacity, 200,000 bushels	88,000
10 " " 100,000 "	134,000
10 " " 50,000 "	78,000
	£300,000

MAIZE.

Maize ranks second in importance amongst the crops of New South Wales; but its cultivation is small in contrast to that of wheat.

This cereal is cultivated chiefly in the valleys of the coastal rivers, where both soil and climate are peculiarly adapted for its growth. On the tableland also good results accrue, but as the land rises in elevation so the average yield per acre proportionately decreases; although, in compensation, the grain produced is of more enduring quality for export and storage. The following statement shows the distribution of the area under maize for grain during the season 1913-14, with the production and average yield in each division:—

Division.	Area under maize for grain.		Yield.	
	Total.	Proportion in each division.	Total.	Per acre.
Coastal—	acres.	per cent.	bushels.	bushels.
North	59,528	38·0	2,094,854	35·2
Hunter and Manning	33,635	21·4	904,605	26·9
Cumberland	2,061	1·3	34,376	16·7
South	10,287	6·6	249,787	24·2
Total	105,511	67·3	3,283,622	31·1
Tableland—				
Northern	18,233	11·6	453,580	24·8
Central	6,340	4·1	136,030	21·4
Southern	800	·5	11,133	13·9
Total	25,373	16·2	600,743	23·6
Western Slopes... .. .	25,551	16·3	562,832	22·0
Western Plains, Riverina, and Western Division... .. .	385	·2	6,112	15·9
All Divisions... .. .	156,820	100·0	4,453,309	28·4

The North Coast, the most important maize-growing district in the State, yielded in 1913-14 over 47 per cent. of the total production, the average yield being 35·2 bushels per acre. After the North Coast, the Hunter and Manning district shows the largest area under crop. The highest average yield in any county was in Gregory, in the Central-western Plain, with 70·0 bushels per acre. On the North Coast, the best counties were Clarence and Dudley, which gave 39·7 and 37·4 bushels per acre respectively. In 1913-14 the average yield on the tableland was 23·6 bushels per acre, compared with 18·4 for 1912-13. On the western slopes the yield was 22 bushels per acre, the corresponding figure for 1912-13 being 20·9 bushels. At an early period in the history of the North Coast, maize displaced wheat as a product, but latterly dairying has been replacing maize-growing, and a larger proportion of the maize is cut as green food for dairy stock.

The next statement gives a comparative review of the maize crop since the season 1893-4:—

Season.	Area under maize for grain.	Production.		Season.	Area under maize for grain.	Production.	
		Total.	Average per acre.			Total.	Average per acre.
	acres.	bushels.	bushels.		acres.	bushels.	bushels.
1893-4	205,885	7,067,576	34·3	1904-5	193,614	4,951,132	25·6
1894-5	208,308	5,625,533	27·0	1905-6	189,353	5,539,750	29·3
1895-6	211,104	5,687,030	26·9	1906-7	174,115	5,763,000	33·1
1896-7	211,382	5,754,217	27·2	1907-8	160,980	4,527,852	28·1
1897-8	209,588	6,713,060	32·0	1908-9	180,812	5,216,038	28·8
1898-9	193,286	6,064,842	31·4	1909-10	212,797	7,098,255	33·4
1899-0	214,697	5,976,022	27·8	1910-11	213,217	7,594,130	35·6
1900-1	206,051	6,292,745	30·5	1911-12	167,781	4,507,342	26·9
1901-2	167,333	3,844,993	23·0	1912-13	176,471	5,111,990	29·0
1902-3	202,437	3,049,269	15·1	1913-14	156,820	4,453,309	28·4
1903-4	226,834	6,836,740	30·1				

During the last twenty years there have been several fluctuations in the area under cultivation. The largest area—226,834 acres—was cropped in 1903-4, but the largest yield was produced in 1910-11. The yield per acre is somewhat variable, ranging from 15·1 bushels in 1902-3 to 35·6 bushels in 1910-11, but the average has a tendency to decrease, owing to the reduction of the area on account of the increasing attention given to dairying in the coastal districts, where the average yield is highest. In the most favourable localities yields of 80 to 100 bushels per acre have been obtained, and probably few places are better suited for the growth of maize than the coastal districts. The yields during the past two years have been below the average for the decennial period ended 1914.

There is no doubt that the uncertainty as to the price that will be realised for maize—an uncertainty which applies to all produce grown only for local consumption—has caused the cultivation of this cereal to decrease in favour on the coast and tableland, while on the other hand the profit to be obtained from dairying has led to its further neglect. Another possible reason for the decline is the small attention that has been paid to the cereal as regards scientific cultivation and experiment. During recent years wheat has received very close study as to the kinds suited to various localities and climatic conditions, and as to improvements in cultivation and harvesting; but maize has received little consideration.

During the year 1913-14 the Department of Agriculture proceeded with the growing of maize on the State farms, with a view to raising improved pure seed maize. To prevent crossing, only one variety will be grown on each farm, except at Grafton, where an early and late variety may be grown without risk.

OATS.

The cultivation of oats has been much neglected in New South Wales, though the return has been fairly satisfactory, and the deficiency between the production and the consumption is considerable. The elevated districts of Monaro, Argyle, Bathurst, and New England contain large areas of land where the cultivation of oats could be maintained with good results.

This cereal is cultivated as a grain crop, principally in the wheat-growing districts; and as it is essentially a product of cold climates, it thrives best in those parts of the country which have a winter of some severity. The principal districts cultivated are the tableland, the South-western Slope, and Riverina. The area under crop for grain in 1913-14 was 103,416 acres, which produced 1,835,406 bushels, being 17·7 bushels per acre. The southern tableland gave the best average, with 27·0 bushels per acre. In the whole tableland division 18,775 acres were under crop, and yielded 421,387 bushels, or 22·4 bushels per acre; on the South-western Slope, 37,098 acres gave 634,214 bushels, or 17·1 bushels per acre, while in the Riverina the production was 519,356 bushels from 29,672 acres, or 17·5 bushels per acre. These three divisions accounted for about 85 per cent. of the total production. In the remainder of the State there were only 17,871 acres under cultivation, which yielded 260,449 bushels.

The following table illustrates the progress in the cultivation of oats for grain since 1894-5:—

Season.	Acres under oats for grain.	Production.		Season.	Acres under oats for grain.	Production.	
		Bushels.	Bushels per acre.			Bushels.	Bushels per acre.
1894-5	30,636	562,725	18·4	1904-5	40,471	652,646	16·1
1895-6	23,750	374,196	15·8	1905-6	38,543	883,081	22·9
1896-7	39,530	834,633	21·1	1906-7	56,431	1,404,574	24·9
1897-8	28,605	543,946	19·0	1907-8	75,762	851,776	11·2
1898-9	19,874	278,007	14·0	1908-9	59,881	1,119,558	18·7
1899-0	29,125	627,904	21·6	1909-10	81,452	1,966,586	24·1
1900-1	29,383	593,548	20·2	1910-11	77,991	1,702,706	21·8
1901-2	32,245	687,179	21·3	1911-12	71,047	1,155,226	16·3
1902-3	42,992	351,758	8·2	1912-13	85,175	1,674,075	19·7
1903-4	51,621	1,252,156	24·3	1913-14	103,416	1,835,406	17·7

The area under oats for grain, with slight fluctuations, remained practically stationary until the season 1893-4, when over 13,000 acres were added; the area has since increased, and in 1913-14 reached 103,416 acres. The average yield varies considerably, and in a fair season will exceed 20 bushels per acre, the average for the last ten years being nearly 20 bushels. The lowest average yield was 8·2 bushels per acre in 1903, when the crop almost failed, owing to the unfavourable season; and the highest was 24·9 bushels in 1907.

The market for oats is chiefly in the metropolitan district, and the demand depends mainly on the price of maize. The production is far from sufficient for the wants of the State, and large quantities are imported from Victoria, Tasmania, and New Zealand.

BARLEY.

Barley is an important crop, but at present is produced only on a moderate scale, although there are several districts where the necessary conditions as to soil and drainage present inducements for cultivation, and particularly with regard to the malting varieties. It is grown mostly in the Tamworth district, on the North-west Slope; the area in that part during 1913-14 being 7,387 acres, from which the bulk of the produce was for

malting purposes. The areas under crop in other districts are small, and do not call for special notice. For the State as a whole the following table shows the area under barley for grain, together with the production during the last twenty years:—

Season.	Area under barley for grain.	Production.		Season.	Area under barley for grain.	Production.	
		Total.	Average per acre.			Total.	Average per acre.
	acres.	bushels.	bushels.		acres.	bushels.	bushels.
1894-5	10,396	179,348	17·3	1904-5	14,930	266,781	17·9
1895-6	7,590	96,119	12·7	1905-6	9,519	111,266	11·7
1896-7	6,453	110,340	17·1	1906-7	7,879	152,739	19·1
1897-8	5,151	99,509	19·3	1907-8	11,890	75,148	6·3
1898-9	4,459	64,094	14·4	1908-9	9,507	166,538	17·5
1899-0	7,154	132,476	18·5	1909-10	15,091	272,663	18·1
1900-1	9,435	114,228	12·1	1910-11	7,082	82,005	11·6
1901-2	6,023	103,361	17·2	1911-12	10,803	129,008	11·9
1902-3	4,557	18,233	4·0	1912-13	16,916	289,682	17·1
1903-4	10,057	174,147	17·3	1913-14	20,610	303,447	14·7

The record exhibits considerable fluctuations as to area and as to the average production per acre, thus indicating that farmers consider it more profitable to devote their attention to the other cereals, the immensely larger areas for which clearly point to their preference.

As to yield, great variations are to be found, ranging from 4 bushels per acre in 1902-3, when the crop practically failed, to the excellent rate of 21·9 bushels obtained in 1886-7. The average crop during the last ten years has been 15 bushels per acre, but this rate should not be regarded as characteristic, as the returns for many seasons indicate that an average crop of 18 bushels per acre may be expected under normal conditions.

RYE.

Rye is cultivated to a very limited extent, and is grown either in separate areas or in combination with leguminous crops, largely as green food for dairy cattle, the supply for grain being obtained mainly in the central part of the tablelands of the State. The area under this cereal for grain during 1913-14 was 4,918 acres with a yield of 13·1 bushels per acre. In 1904, an average of 16·3 bushels was obtained.

BROOM MILLET.

Broom millet is a small valuable crop, and during the last ten seasons the return from fibre alone gave an average of £25,000 per season. In 1913-14 owing to unfavourable conditions, the area under broom millet and the average production per acre were much smaller than in previous years, and 1,970 acres yielded 12,044 cwt. of fibre and 8,285 bushels of seed, valued at £18,070 and £1,660 respectively. The average yield of fibre during the last ten seasons was 7·1 cwt. per acre. In 1904, and in the seasons 1910-12, the averages exceeded 8 cwt. per acre. The greater part of the crop is grown in the Hunter River Valley and in the valleys of the northern coastal rivers.

HAY.

A very considerable proportion of the areas under wheat, oats, barley, and lucerne is utilised for the production of hay for farm stock and chaff for the markets. The areas are increasing, but the extent of the increase depends on the climatic conditions of the season, which determine the future of the crops for grain purposes.

The following statement shows the area under each crop for hay, the total production, and the average return per acre during the last six seasons:—

Type of Hay.	1908-09.	1909-10.	1910-11.	1911-12.	1912-13.	1913-14.
AREA.						
	acres.	acres.	acres.	acres.	acres.	acres.
Wheaten	490,828	380,784	422,972	440,243	704,221	534,226
Oaten	169,441	178,968	142,805	147,710	182,955	211,606
Barley... ..	1,566	1,844	1,014	1,246	1,708	1,395
Lucerne	54,061	68,995	70,559	63,824	56,420	52,479
Rye, &c. ... ..	.....	73	1,227	1,126	1,762	1,424
Total	715,896	630,664	638,577	654,149	947,066	801,130
PRODUCTION.						
	tons.	tons.	tons.	tons.	tons.	tons.
Wheaten	426,916	565,549	467,669	423,262	779,500	588,127
Oaten	186,243	255,781	193,064	155,653	212,266	256,814
Barley... ..	1,757	2,451	1,128	1,201	2,108	1,552
Lucerne	115,098	157,331	179,860	147,423	112,761	107,045
Rye, &c. ... ..	.....	89	1,359	935	1,640	1,509
Total	730,014	981,201	843,080	728,474	1,108,275	955,047
AVERAGE PRODUCTION PER ACRE.						
	tons.	tons.	tons.	tons.	tons.	tons.
Wheaten	·87	1·49	1·11	·96	1·11	1·10
Oaten	1·10	1·43	1·35	1·05	1·16	1·21
Barley... ..	1·12	1·33	1·11	·96	1·23	1·11
Lucerne	2·13	2·28	2·55	2·31	2·00	2·85
Rye, &c. ... ..	.....	1·22	1·17	·83	·93	1·06
All varieties	1·02	1·56	1·32	1·11	1·17	1·19

In 1913-14 about 56 per cent. of the total area under cultivation for hay was taken up by the area under wheaten hay. Until 1894 the area for wheaten hay increased at a much greater rate than that for grain, but during subsequent years there has been a greater development in the cultivation for grain.

In general, oat crops are grown in parts of the State which, on account of the climate, are unsuitable for maturing the grain, and preference is given to cultivation for hay; moreover, the prices obtainable for the hay are usually so profitable as to prevent any material development of the grain harvest.

The area under barley for hay is inconsiderable. Lucerne is always in good demand, and consequently realises remunerative prices. It gives the best return of all hay crops, the average yield during the last ten years having been over 2 tons per acre for lucerne, and slightly more than 1 ton each for oaten, barley, and wheaten hay. In favourable districts, if it has received careful attention, lucerne grows so rapidly that a series of crops may be secured. As many as eight cuttings have been procured, with an average result of 1 ton per acre for each.

GREEN FOOD AND SOWN GRASSES.

The great advance in the dairying industry, the details concerning which are treated elsewhere, has caused a corresponding increase during recent years in the cultivation of cereals, lucerne, and grasses, for green

food. The sowing and improvement of artificial grasses have received great attention, particularly in the northern and southern coastal districts, the great centres of the dairy farming of the State. Considerable areas have been sown also in the centre of the tableland, and smaller cultivations have been undertaken in the northern and southern tablelands and in the Murray Valley. The following statement shows the increase in the area cultivated for green food and sown with artificial grasses since the season 1885-6:—

Season.	Area cultivated for green food.	Area sown with grasses.	Season.	Area cultivated for green food.	Area sown with grasses.
	acres.	acres.		acres.	acres.
1885-6	26,318	130,392	1906-7	122,914	697,631
1890-1	37,473	388,715	1907-8	260,810	736,080
1895-6	66,833	300,862	1908-9	235,539	807,924
1900-1	78,144	422,741	1909-10	118,960	888,937
1901-2	113,060	467,839	1910-11	179,382	1,055,303
1902-3	109,287	477,629	1911-12	211,874	1,119,764
1903-4	77,130	552,501	1912-13	154,535	1,152,449
1904-5	87,718	607,997	1913-14	146,239	1,234,455
1905-6	95,058	627,530			

The great advance in cultivation indicated by the table shows the appreciation by the farmers of the necessity for enriching the deteriorated pastures, and for replacing the grasses which have disappeared.

Lucerne is grown in considerable quantities on the Hunter River flats, and the cultivation of this fodder is extending throughout the country, principally along the banks of the rivers on the western slope of the Dividing Range. The opinion that lucerne grows only on river flats is not now accepted and much success has been obtained from hillside cultivation and from growths on red wheat lands. In the far western pastoral districts attempts have been made to cultivate lucerne under irrigation, and with marked success. During 1913-14 there were 53,830 acres grown for green food, and if these be added to the area previously shown as being under hay, viz., 52,479 acres, there were altogether 106,309 acres under this form of cultivation.

ENSILAGE.

New South Wales is liable, at intervals, to long periods of dry weather, hence the necessity for conserving green foods in the form of ensilage must be readily admitted. Ensilage is also clearly an advantage in the dairying districts of the coast, where the conditions are unfavourable to the growth of winter fodder.

The quantity of ensilage made during the last five years is shown in the following table:—

Divisions.	Ensilage made.				
	1909.	1910.	1911.	1912.	1913.
	tons.	tons.	tons.	tons.	tons.
Coastal	11,133	18,125	12,099	8,222	6,633
Tableland	3,414	2,328	1,649	608	920
Western Slopes	10,632	2,654	3,097	4,527	3,450
Western Plains and Riverina...	9,334	6,409	3,632	5,162	7,363
Western Division	334	100	...	...	...
Total	34,847	29,616	20,477	18,519	18,366

Comparatively little attention has been devoted to the construction of silos and to the storing of ensilage; but the necessities of the grazier, when the policy of closer settlement shall have reduced the large areas of land hitherto available for feeding stock, will compel him to make provision by preserving and storing the green food when opportunities occur in the growing season of the year.

The quantity of ensilage made each year during the last decade has varied considerably, especially during the first half of the period. The year of maximum production was 1909, when 34,847 tons were made on 364 farms. The production has since decreased steadily, until, in 1913, the quantity made was only 18,366 tons. This amount was made on 130 farms, and was valued at £21,339; but it is particularly noticeable in the above table that the quantities of ensilage made are almost negligible in the Western Division, where there is the greatest need of such provision. It is possible that the amount of fodder required to tide over even a moderately severe drought is so great as to deter pastoralists from attempting to conserve even small quantities.

In the dairying districts, particularly the South Coast, the making of ensilage is more general, the quantity made in the coastal division being larger than in any other, though there has been a marked increase in the Riverina.

POTATOES.

In the potato is another illustration of the great neglect in the cultivation of a staple article of food, although many parts of the State are eminently suitable for its growth. The bulk of the production is on the tableland, especially in the central portion, where, in 1913-14, there were 17,497 acres under cultivation. One county, Bathurst, had 11,585 acres, or nearly one-third of the whole area in the State devoted to potatoes. After the tableland, the coastal districts grow the largest crop, and in this division the highest average—2·64 tons per acre—was returned for the North Coast. The following statement shows the area under cultivation and the production at intervals since the season 1885-6:—

Season.	Area under crop.	Production.		Season.	Area under crop.	Production.	
		Total.	Average per acre.			Total.	Average per acre.
	acres.	tons.	tons.		acres.	tons.	tons.
1885-6	15,166	38,695	2·55	1906-7	36,815	114,856	3·11
1890-1	19,406	52,791	2·72	1907-8	31,917	55,882	1·75
1895-6	24,722	56,179	2·27	1908-9	26,301	71,794	2·73
1900-1	29,408	63,253	2·15	1909-10	35,725	100,143	2·80
1901-2	26,158	39,146	1·50	1910-11	44,452	121,033	2·72
1902-3	19,444	30,732	1·58	1911-12	43,148	75,166	1·74
1903-4	20,851	56,743	2·72	1912-13	34,124	91,642	2·69
1904-5	23,655	48,754	2·04	1913-14	38,725	106,849	2·76
1905-6	26,374	50,386	1·91				

There was a marked increase in cultivation in the season 1894-5, when 30,089 acres were planted; but the continuous fluctuation in the area from year to year since that time clearly shows that the possible advantages of this crop have been much neglected.

The average yield during the last ten years has been 2.45 tons per acre, and the highest 3.11 tons per acre, in 1906-7.

The average wholesale prices per ton of potatoes at Sydney during the season 1913-14 are shown below:—

Month.	Local.	Victorian.	Tasmanian.	Month.	Local.	Victorian.	Tasmanian.
1913.	£ s. d.	£ s. d.	£ s. d.	1914.	£ s. d.	£ s. d.	£ s. d.
July ...	4 11 9	4 15 0	7 9 3	January ...	5 6 9	6 0 0	7 13 4
August ...	3 13 3	4 13 0	6 18 6	February...	4 5 9	4 7 6	6 7 6
September...	3 0 9	3 14 3	7 2 6	March ...	3 15 0	4 17 6	5 15 0
October ...	2 15 0	3 3 9	6 2 6	April ...	5 10 0	6 7 6	7 8 9
November...	3 0 0	3 10 0	5 4 0	May ...	3 18 3	4 18 9	5 16 5
December ...	6 3 3	3 11 3	.....	June ...	3 16 9	.....	5 12 6

The slow progress in the cultivation of potatoes is caused largely by the cost of carriage to market, as compared with the cheap water transport from Victoria and Tasmania. Some years ago the coast districts produced large quantities; but the cultivation was abandoned, owing to the prevalence of pests, which continually devastated the crops, and for which, at the time a remedy was not available.

MINOR ROOT CROPS.

The cultivation of root crops other than potatoes requires brief notice, as, in addition to those included in market gardens, only 1,422 acres were planted with onions, turnips, mangel-wurzel, carrots, sweet potatoes, and artichokes. The area under turnips was 384 acres, which yielded 1,327 tons, or 3.46 tons per acre. The probable reason for the small attention paid to the growth of onions, of which there were 208 acres, yielding 598 tons, is the uncertainty as to the price to be obtained for the produce, as there is no lack of soil suited to cultivation. Large importations are necessary to meet the local demand.

The area under sweet potatoes was 795 acres, and the estimated yield 5,061 tons. In many cases the yield could only be stated approximately, as pigs were turned in on the crops. Of mangel-wurzel there were only 27 acres under cultivation, which yielded 207 tons. In some of the more elevated dairying districts, mangel-wurzel is now being grown as winter fodder for cattle. Excellent results in the cultivation of arrowroot have been obtained at the Wollongbar Experiment Farm, near Lismore.

TOBACCO.

The growing of tobacco as an industry has been undertaken for many years, but with considerable fluctuation in the annual production. This may be attributed to the necessity for special knowledge and care in its cultivation and curing, and probably no material advancement will be made until trade pressure in other countries forces attention to new fields of production.

With the exception of 65 acres in the Hunter River district, 82 in the Riverina district, of which 67 are in the Murrumbidgee area, and 11 acres on

the North Coast, tobacco culture is confined to the northern and southern portions of the western slope and the central tableland. The following statement shows the cultivation of tobacco during the last ten seasons:—

Season.	Area.	Production.		Season.	Area.	Production.	
		Total.	Average per acre.			Total.	Average per acre.
	acres.	cwt.	cwt.		acres.	cwt.	cwt.
1904-5	752	5,015	6·7	1909-10	1,096	6,498	6·8
1905-6	809	7,327	9·1	1910-11	959	8,513	7·8
1906-7	601	5,371	8·9	1911-12	1,501	15,045	10·0
1907-8	533	3,438	6·5	1912-13	1,914	13,863	7·2
1908-9	618	3,838	6·2	1913-14	1,992	18,117	9·1

For seven or eight years prior to 1889 the area under cultivation grew steadily, until in that year it reached the maximum of 4,833 acres. As, however, the local product did not compare favourably with the American leaf, it could not be exported profitably, so that a large proportion of the crop remained upon the farmers' hands; and as the quantity sold realised very unsatisfactory prices, due mainly to the failure to produce a first-grade article, many growers abandoned tobacco in favour of other crops. With disappointing fluctuations the area had declined in 1907-8 to 533 acres. Since that year the area has increased to 1,992 acres, owing to the increased attention paid to the curing of the leaf; and tobacco manufacturers have endeavoured to stimulate the industry by offering good prices for suitable leaf, and by employing an expert to assist and instruct the growers.

That it is possible to produce leaf of the required standard has been amply demonstrated in districts where the soil and climate are suitable, and the aim of growers should be not so much to increase the acreage as to improve the quality of the leaf produced.

The Commonwealth Government in 1907 provided for the payment of a bounty of 2d. per lb. up to £4,000 per annum on Australian tobacco leaf, for the manufacture of cigars of a prescribed quality. Up to the present the quantity of suitable leaf produced in New South Wales has been very small.

SUGAR-CANE.

Sugar-cane was grown as far back as 1824, but it was not until 1865 that anything like systematic attention was given to its cultivation. In the latter year experiments were carried out on the Clarence, Hastings, Manning, and Macleay Rivers, which on the whole proved successful, and were followed by more extensive planting. The Macleay was the principal seat of the industry during its earlier stages; but it proved to be unsuitable to the growth of the cane, and the risk of failure from frosts compelled the planters to keep more to the north. In a few years the richest portions of the lower valleys of the Clarence, the Richmond, the Tweed, and the Brunswick, were occupied by planters. Mills were erected in the chief centres of cane-cultivation, and cane-growing and sugar-manufacturing became established industries in the north-eastern portion of the State, where the soil and climate are in most respects well adapted to successful cultivation, and on account of the proximity to Queensland and the similarity to the conditions which rule the sugar production of the northern cane-fields, the producers of the raw material in this State may benefit by any experimental work. Continual efforts are being made to improve the quality of the cane

product; varieties and seedlings are carefully tested, soils are closely analysed, the effects of irrigation and fertilising noted, and consequently the cane-yield has been greatly increased.

The yield of sugar from the cane crushed varies considerably, the variation approximating, between a maximum and minimum year, to 1 ton of cane in the quantity required to produce 1 ton of sugar, according to the saccharine density of the cane. As compared with Queensland, where the average yield of cane per acre for 1913 was 20·29 tons, the yield for this State, 30 tons, may be regarded as satisfactory, but as compared with the produce which could be gathered by the application of more scientific methods of culture, there is evidence that considerable improvement might be made.

The following table shows the progress of this industry since the season 1863-4, when only 2 acres were recorded as under cultivation. As sugar-cane is not productive within the season of planting, the area under cultivation has been divided, as far as practicable, into productive and non-productive, the former representing the number of acres upon which cane was cut during the season, and the latter the area over which it was unfit for the mill, or allowed to stand for another year. On the average the area cut for cane represents about one-half of the total area planted:—

Season.	Area.			Production of cane.	
	Cut for crushing.	Not cut.	Total.*	Total.	Average per acre.
	acres.	acres.	acres.	tons.	tons.
1863-4	.....	.....	2	.....	.....
1864-5	.....	.....	22	.....	.....
1865-6	.....	.....	141	.....	.....
1870-1	1,475	2,607	4,082	.....	.....
1875-6	3,654	2,800	6,454	.....	.....
1880-1	4,465	6,506	10,971	121,616	27·22
1885-6	9,583	6,835	16,418	239,347	24·98
1890-1	8,344	12,102	20,446	277,252	33·23
1895-6	14,398	18,529	32,927	207,771	14·43
1900-1	10,472	11,642	22,114	199,118	19·01
1901-2	8,790	12,019	20,809	187,711	21·35
1902-3	8,734	11,492	20,226	183,105	20·97
1903-4	10,368	9,814	20,182	227,511	21·94
1904-5	9,772	11,753	21,525	199,640	20·43
1905-6	10,313	11,492	21,805	201,998	19·59
1906-7	10,378	10,202	20,580	221,560	21·34
1907-8	9,916	8,037	17,953	277,390	27·97
1908-9	6,951	10,030	16,981	144,760	20·83
1909-10	6,480	7,603	14,083	131,081	20·23
1910-11	5,596	8,167	13,763	160,311	28·65
1911-12	5,244	8,663	13,907	147,799	28·18
1912-13	6,137	7,777	13,914	140,914	22·83
1913-14	6,198	7,034	13,232	185,970	30·00

* Exclusive of areas cut for green food or plants since 1910.

From the small beginnings of 1863-4 there was a continual increase of land put under cane until the year 1884-5. During succeeding years there was, however, a retrograde tendency, and the area in 1888-9 was less by 2,236 acres than that cultivated in 1884-5. The low price of the product and the disturbed state of the markets of the world during these years forced the sugar manufacturers to reduce the price offered for the cane, and so caused, for a time, the abandonment of this cultivation by the small farmers, who found in the growth of maize less variable results for their labour.

In 1889-90 there was a revival, with further increases in successive years until 1895-6, when the largest area on record, 32,927 acres, was planted. In 1895-6 alterations were made in the Customs tariff as regards sugar, and about that time there were great developments in the dairying industry on the northern rivers, both of which diverted attention from sugar-planting. After 1895-6 the area under cane steadily declined for five years, until in 1900-1 there were only 22,114 acres under cultivation. From 1900-1 the area remained practically stationary for six years at a little over 20,000 acres; there has been a further diminution, and in 1913-14 there were only 13,232 acres.

In 1896-7 the highest production of 320,276 tons of cane was obtained; but the average production per acre was only 17·60 tons—with the exception of that of 1895-6 and 1884-5, the lowest on record. The cane-disease, prevalent principally on the Clarence, caused the low averages during the period 1895-7, and in 1895-6 the crop was further damaged by frost. The comparatively low yields of 1899-1901 were due to unfavourable seasons. The area of cane cut during 1913-14 was 6,198 acres, with a total yield of 185,970 tons, or an average of 30·00 tons per acre.

The county of Clarence is the principal centre of cultivation, containing 5,867 acres devoted to the production of sugar. The yield obtained in 1913-14 from 2,641 acres of productive cane amounted to 78,665 tons, showing an average of 29·8 tons per acre. In the county of Rous cane is grown on 4,808 acres. The yield in the county of Rous last season was 71,141 tons, or an average of 29·3 tons per acre, cut on an area of 2,431 acres. In the county of Richmond the area under sugar-cane was 2,557 acres, of which 1,126 acres were cut, giving a total yield of 36,164 tons of cane, or an average of 32·1 tons to the acre.

The majority of the farmers cultivate sugar-cane in conjunction with dairying, and only a few estates are devoted entirely to its production. Cane was grown during 1913-14 on 739 holdings, 549 of which had areas ranging up to 25 acres; 161 plantations ranged from 26 to 50 acres, 27 from 51 to 100 acres, and only 2 had areas in excess of 100 acres.

Sugar-cane is cut usually in the second year of its growth, the fields being replanted after they have given crops for three or four seasons; and as the cane has been planted at irregular intervals, the seasons of large production have sometimes been followed by small crops in the succeeding year. Sugar manufacturers invariably purchase the year's crop of cane standing, and cut it at their own cost. From plantations in full bearing the average weight of the cane cut varies from 25 to 32 tons, and the value received by the grower, exclusive of bounty on sugar grown by white labour, was, in 1912, about 10s. 11d. per ton of uncut cane. An additional 3s. 2d. per ton was paid for cutting, which, in most cases, was done by the growers. The field work on the sugar plantations of New South Wales has been performed generally by white labour, and in 1913 the number of farmers employing black labour represented only 1·5 per cent. of the total. Since that year figures have not been available.

In October, 1911, a Commission was appointed by the Commonwealth Government to inquire into and report upon the sugar industry in Aus-

tralia, and more particularly in relation to (a) growers of sugar-cane and beet; (b) manufacturers of raw and refined sugar; (c) workers employed in the sugar industry; (d) purchasers and consumers of sugar; and (e) costs, profits, wages, and prices.

The report was issued on 2nd December, 1912, and contains the following recommendations:—

- (a) (1) That the bounty and excise be abolished, provided that the Commonwealth Government, by co-operation with the States or otherwise, take whatever steps may be necessary to promote the white-labour policy, and to ensure the maintenance of a living wage in the sugar industry generally.
- (2) That, pending the abolition of the bounty and excise, the amount of bounty be raised to the excise, this equalisation, if practicable, to date as from 1st July, 1912, in view of the Special Order of August last raising the wages.
- (3) That the customs duty on sugar, raw or refined, should fluctuate in accordance with foreign market prices, falling as those prices rise, rising as those prices fall.
- (4) That the amount of the duty should be the difference between foreign market price of sugar, of grade equal to 1A (as declared from time to time by the Department of Customs), and a standard price for Australian refined sugar fixed on the basis of not less than £21 10s. a ton (1A grade), as representative of Australian costs of production.
- (5) That the import duty be the same for beet as for cane sugar.
- (6) That an import duty be imposed on molasses at the rate of £1 10s. per ton.
- (b) (1) That the Parliament of the Commonwealth should endeavour to acquire, by an amendment of the Constitution or otherwise, such powers as would enable Commonwealth authorities to control the prices of raw sugar and sugar-cane.
- (2) Should such powers be acquired—
- (a) That the price of raw sugar be fixed on a sliding scale by the Inter-State Commission;
- (b) that the price of cane be fixed by a Board for each mill, consisting of a representative of the growers, a representative of the millers, and a chairman to be appointed by the Inter-State Commission.
- (c) (1) That the minimum wage for adult workers in the sugar industry should be not less than 8s. per day of eight hours.
- (2) That remuneration for overtime should be fixed on a basis which takes into due consideration the fact that a worker's keep is really part of his wage.
- (3) That the matters relating to working-men's blocks, cheaper railway facilities, the control of the drink traffic, the accommodation of the workers, and the increase of facilities for recreation—being matters in which the amelioration of industrial conditions is necessarily in the hands of the States—be referred to the Governments concerned.
- (d) That the existing system of rebate of sugar duty on export of manufactured products be retained.

In connection with the beet sugar industry, it is recommended that the Commonwealth Parliament consider the advisableness of passing an Excise Act imposing a special excise of £2 a ton on the manufacture of sugar from beet, subject to the proviso that the excise shall only be levied in any year when the total output of beet sugar within the Commonwealth shall exceed 10,000 tons.

GRAPE VINES.

In almost every part of the State, with the exception of the sub-tropical portion and the higher parts of the mountain ranges, grape-vines thrive well, and bear large crops, equal in size, appearance, and flavour to the products of Europe. The principal vineyards are situated in the valleys of the Murray and Hunter Rivers, where considerable expense has been incurred to introduce skilled labour, and to provide manufacturing appliances. The vine-growing and wine-manufacturing industries are in their infancy, but with an increasing local demand, and with the establishment of a market in England, where the wines of New South Wales have gained appreciation, the future of grape culture appears to be fairly assured. At present the production is comparatively insignificant, as shown in the following table:—

Season.	Total area under vines.	Area under vines for wine-making only.	Production of Wine.		Season	Total area under vines.	Area under vines for wine-making only.	Production of Wine.	
			Total.	Average per acre.				Total.	Average per acre.
	acres.	acres.	galls.	galls.		acres.	acres.	galls.	galls.
1860-1	1,584	622	99,791	160	1903-4	8,940	5,101	1,086,820	213
1865-6	2,126	1,243	168,123	135	1904-5	8,840	5,298	928,160	175
1870-1	4,504	2,371	342,674	145	1905-6	8,754	5,279	831,700	157
1875-6	4,459	3,163	831,749	263	1906-7	8,521	4,951	1,140,000	230
1880-1	4,800	2,907	602,007	207	1907-8	8,483	4,644	778,500	168
1885-6	5,247	2,876	555,470	193	1908-9	8,251	4,472	736,262	165
1890-1	8,044	3,896	842,181	216	1909-10	8,330	4,561	808,870	177
1895-6	7,519	4,390	885,673	202	1910-11	8,321	4,354	805,600	185
1900-1	8,441	4,534	891,190	197	1911-12	8,231	4,260	850,210	200
1901-2	8,606	4,889	868,479	178	1912-13	8,163	4,403	719,100	163
1902-3	8,790	5,041	806,140	160	1913-14	8,153	4,498	561,100	125

The total production has fluctuated much during the last ten years, the total area planted being now 8,153 acres, of which 4,498 acres yielded 561,100 gallons of wine. The total number of vineyards in 1914 was 1,471.

The average area of each vineyard was 5½ acres, and the area planted with vines still in an unproductive stage was 825 acres. The average yield in 1913-14 was 125 gallons per acre, and during the last ten years 175 gallons. Wine produced in New South Wales during the year 1913-14 was valued at £43,250, and brandy distilled by vignerons for fortifying purposes at £3,240.

The desire of the Government to extend the application of the most scientific methods for wine-making and for the general cultivation of the vine, and to extirpate the phylloxera disease, has led to the establishment of Viticultural Stations at Howlong, near Albury, and at Narara for the propagation of resistant stocks, and for conducting various experiments in connection with wine-growing.

Phylloxera has not affected the Hunter Valley District, and the station at Narara was established to supply the demands of the clean and other districts.

Arrangements are being made by the Department of Agriculture to conduct a systematic examination of the wines of the State in order to determine the nature of the wines from different varieties of grapes and from different districts, and to compare them with those of other countries.

The culture of grapes is not restricted to the production of fruit for the purposes of wine manufacture only, as a considerable area is devoted to the cultivation of table-grapes, particularly in the neighbourhood of Sydney, and in Ryde, Parramatta, and other districts of Central Cum-

berland. The extent of country devoted to this branch of the industry in 1913-14 included 2,376 acres, with a production of 3,883 tons of grapes, an average of 1.63 tons of fruit per acre.

Although there is a large local demand, and a possibility of an export trade for raisin fruits, no extensive effort has been made in that direction. In 1913-14 there were 454 acres cultivated for drying purposes, and the yield was 4,874 cwt. At the Wagga and Hawkesbury experiment vineyards, raisins and sultanas are dried every season and placed on the local market, where they are regarded as equal in every respect to the imported article.

The cultivation of vines is also conducted at the Yanco Irrigation Farm, which has been established for the education of settlers to be placed on the land within the operations of the Murrumbidgee irrigation scheme.

ORCHARDS.

The cultivation of fruit does not receive much attention, although the soil and climate of large areas throughout the State are well adapted to fruit-growing. With these areas and with climatic conditions so varied, ranging from comparative cold on the high lands to semi-tropical heat in the north coast district, a large variety of fruits can be cultivated. In the vicinity of Sydney, oranges, peaches, plums, and passion-fruit are most generally planted. On the tableland, apples, pears, apricots, and all fruits from cool and temperate climates thrive well; in the west and south-west, figs, almonds, and raisin-grapes can be cultivated; and in the north coast district, pineapples, bananas, and other tropical fruits grow excellently.

Citrus Orchards.

The cultivation of citrus fruits has been undertaken largely in the districts adjacent to the metropolis. Orange groves were planted first near the town of Parramatta, and afterwards in the neighbouring districts of Ryde, Pennant Hills, Lane Cove, the whole of Central Cumberland, the valleys of the Hawkesbury and Nepean Rivers, and the slopes of the Kurrajong Mountains.

In the collection of statistics of citrus and other fruit orchards during the season 1909-10 a new system was adopted by which the area under each kind of fruit-trees, productive and non-productive, may be ascertained with accuracy. Under the system previously in vogue there is no doubt that, in mixed orchards, some of the area devoted to citrons was included with other fruits, and that a proportion of the unproductive area was returned as productive.

Statistics relating to citrus orchards since the season 1890-1 are shown in the subjoined statement:—

Season.	Area under cultivation.			Production.	
	Productive.	Not bearing.	Total.	Total.	Average per acre.
	acres.	acres.	acres.	dozen.	dozen.
1890-1	8,737	2,551	11,288	11,562,000	1,058
1895-6	8,759	3,197	11,956	5,954,940	680
1900-1	11,013	3,952	14,965	6,486,276	589
1901-2	11,670	4,091	15,761	7,254,552	622
1902-3	12,550	3,657	16,207	5,092,392	406
1903-4	13,418	3,310	16,728	7,841,544	584
1904-5	14,486	2,918	17,404	7,918,380	547
1905-6	15,054	2,795	17,849	8,864,928	589
1906-7	15,173	2,582	17,755	7,837,488	516
1907-8	16,430	2,087	18,517	12,957,216	789
1908-9	16,570	2,040	18,610	7,847,580	474
1909-10	17,214	2,644	19,858	12,501,072	726
1910-11	17,465	2,643	20,108	14,783,064	847
1911-12	17,271	3,152	20,423	16,823,100	974
1912-13	17,213	3,360	20,573	16,735,680	972
1913-14	16,643	3,800	20,443	11,539,800	693

In 1890-1 the area under citrus fruit was 11,288 acres; in 1913-14 this had increased to 20,443 acres, of which 16,643 were productive. The latest production was equal to 693 dozens per acre. It is estimated that over 3,000 dozens of fruit to the acre can be obtained during an average season from fair-sized trees in full bearing, and it is, therefore, probable that the figures returned by the growers include the production of a considerable number of young trees. The number of orangeries cultivated during the year 1913-14 was 5,033, and of these the average area was 4·1 acres.

The production of oranges has attained such proportions that the growers are obliged to seek markets abroad for the disposal of their crop, as the supply, both in New South Wales and in the adjacent States, in some seasons, exceeds the local demand. The principal market outside Australia is in New Zealand. Efforts are being made to establish a trade with the United Kingdom and America, and in view of the success that has been attained in other countries in carrying these fruits long distances by sea, there is reason to hope that a profitable export trade in Australian fruits may be developed.

Other Orchards.

The following table shows the area under orchards and fruit-gardens, exclusive of orangeries, together with the total value of each season's yield, since 1890-1:—

Season.	Area of productive fruit-gardens and orchards.	Area of fruit-gardens and orchards not bearing.	Total area cultivated for fruit-gardens and orchards.	Total value of the production of fruit-gardens and orchards.	Approximate average value per acre.
	acres.	acres.	acres.	£	£ s. d.
1890-1	16,081	6,274	22,355	213,934	13 6 0
1895-6	20,635	8,145	28,780	130,735	6 7 0
1900-1	25,766	5,503	31,269	270,081	10 10 0
1901-2	27,044	5,302	32,346	155,579	5 15 0
1902-3	27,161	4,216	31,377	173,535	6 8 0
1903-4	27,576	4,012	31,588	211,318	7 13 0
1904-5	26,196	3,740	29,936	162,670	6 4 0
1905-6	26,189	3,577	28,766	189,195	7 10 0
1906-7	24,708	3,714	28,422	230,135	9 6 0
1907-8	23,992	4,205	28,197	153,110	6 8 0
1908-9	23,170	4,100	27,270	231,370	10 0 0
1909-10	20,060	5,799	25,859	233,050	11 12 4
1910-11	20,498	6,748	27,246	271,930	13 5 4
1911-12	19,602	8,166	27,768	373,800	19 1 5
1912-13	19,375	9,109	28,484	305,660	15 15 6
1913-14	19,248	11,238	30,486	244,950	12 14 6

Owing to the subdivision of orchards for residential and other purposes the area under fruit declined from 32,346 acres in 1901-2 to 25,859 acres in 1909-10; since that season it has increased, and in 1913-14 was greater than in any season since 1903-4.

About one-half of the area devoted to fruit culture is in the county of Cumberland, the actual acreage in 1913-14 being citrus, 11,330 acres; other, 8,291 acres. For the year 1913-14, production of fruit other than citrus was valued at £10 15s. per acre, as compared with £12 14s. for the State.

The fruit-production of New South Wales, with the exception of oranges, is far below average demands. The State is, therefore, obliged to import large quantities, the greater portion of which could be successfully grown within its own boundaries.

The extent of cultivation of each kind of fruit may be seen in the following table. After citrus fruits, apple and peach trees are the most numerous, peaches being largely used for canning. Efforts have been made to establish an export trade principally in apples, but during recent seasons the prices in the local markets have been so satisfactory that only small quantities have been exported.

Fruit.	1912-12.				1913-14.			
	Number of Trees not yet Bearing.	Trees of Bearing Age.		Number of Trees not yet Bearing.	Trees of Bearing Age.			
		Number.	Yield.		Number.	Yield.		
Oranges	198,521	867,613	bushels. 817,500	242,643	866,843	bushels. 661,217		
Lemons	30,554	239,096	276,400	33,921	231,330	180,597		
Mandarins	57,043	408,323	438,000	59,915	398,298	310,318		
Other citrus	1,693	2,283	2,100	2,076	2,178	1,848		
Apples	355,484	524,284	548,801	406,921	535,797	495,898		
Peaches and Nectarines ...	173,802	508,025	468,814	244,919	501,926	354,054		
Pears	79,091	122,629	142,104	93,898	127,064	152,537		
Cherries	65,041	133,093	206,296*	80,606	139,638	166,963*		
Apricots	17,098	87,128	88,782	28,970	87,532	86,572		
Plums and Prunes	43,957	120,742	144,718	66,102	125,731	133,465		
Quinces	6,335	41,370	61,310	7,318	38,375	41,384		
Persimmons	936	6,483	8,445	1,386	5,714	8,377		
Passion Fruit ... ..	.....	.....	38,809	.....	.....	38,809	
All other	9,723	17,064	16,285	11,556	16,423	24,376		

* 12-lb. boxes.

For 1913-14 the number of passion-fruit vines was stated as 147,612, of which 124,879 were bearing fruit; the vines are frequently planted among the trees of other fruits, especially in young citrus orchards. The passion vine is easily grown and cheaply maintained; and, on account of its early maturity, it forms a valuable means of providing returns until the fruit trees become productive.

The cultivation of the passion fruit could be considerably extended, as the present supply is not sufficient to meet the local demand; and there is little doubt that, by systematic advertisement, an enormous demand for the fruit could be created in the United Kingdom and America. A trial shipment sent to London met with only partial success, as buyers, not knowing its qualities, imagined the fruit worthless on account of its shrivelled appearance.

MARKET-GARDENS.

In 1913-14 there were in the State 3,373 holdings, comprising 10,607 acres, cultivated as market-gardens, the average size of each garden being 3·1 acres. The value of the production for the year was £401,060. About one-third of the total area laid down for market-gardens is in the county of Cumberland, and until recent years the industry was almost entirely in the hands of the Chinese, but latterly it has received much attention from European farmers in the districts in the vicinity of the metropolis.

The subjoined statement gives the number and area of market-gardens, and the value of the produce since the season 1900-1:—

Season.	Market-gardens.	Area.	Value of production.	
			Total.	Average per acre.
	No.	acres.	£	£ s. d.
1900-1	2,266	7,764	192,450	24 15 9
1901-2	2,215	7,834	213,462	27 5 0
1902-3	2,283	8,263	225,061	27 4 9
1903-4	2,559	8,754	219,040	25 0 5
1904-5	2,783	8,827	229,530	26 0 1
1905-6	2,842	9,119	248,678	27 5 5
1906-7	3,437	9,550	258,000	27 0 4
1907-8	3,324	10,052	262,786	26 2 10
1908-9	3,462	10,331	298,740	28 18 4
1909-10	3,808	10,254	311,580	30 7 9
1910-11	3,598	9,813	333,820	34 0 1
1911-12	3,368	9,498	357,230	37 12 3
1912-13	3,581	9,847	369,480	37 10 0
1913-14	3,373	10,607	401,060	37 16 2

One branch of gardening—tomato culture—has not received sufficient attention. As this cultivation entails light labour, and is particularly remunerative, the vegetable could be grown by persons unaccustomed to heavier labour on farms, and it is surprising that the industry should have been so long neglected. In 1913-4 there were 599 acres, outside market-gardens, under cultivation for tomatoes, which yielded 135,513 half-cases, or 226 half-cases per acre.

MINOR CROPS.

In addition to the crops already specified, there are small areas under various kinds of products—as, for instance, pulse and cucurbit crops.

Pulse.—During the season 1913-14 there were 460 acres under crop for peas and beans, which gave a total yield of 9,867 bushels, being 21·5 bushels per acre.

These peas and beans were grown mainly as hard fodder for horses and pigs, and must not be confounded with the peas and beans cultivated in the kitchen and market gardens for table use as green vegetables.

Cucurbit Crops.—The area devoted to pumpkins and melons during the season 1913-14 was 4,206 acres, and the yield 13,656 tons, being 3·25 tons per acre. The principal places of cultivation are the maize districts and the metropolitan county.

Pumpkins are grown for table use as vegetables, but are also used extensively as fodder for cattle and pigs. The number of acres under gourd-vines mentioned above is somewhat below the true figures, as crops of pumpkins and melons are sometimes raised in orchards and vineyards amongst the fruit-trees and vines, and in market gardens, and particulars respecting the production are not returned.

Other branches of agriculture have hardly been considered, although, no doubt, as the rural population increases, their importance will gain recognition. Little has been attempted in the cultivation of any of the following, although experiment has proved that they can all be raised in the State:—Olives, castor-oil plant, flax, ramie fibre, hops, silk, coffee, and cotton. The varieties of the soil and of climate are so diverse that almost any kind of produce can be raised, and there is every reason for hope for future extension.

A number of olive trees have been planted at the Yanco Experiment Farm in the Murrumbidgee Irrigation Area.

The castor-oil plant grows luxuriantly in the humid coastal districts.

Hops have been cultivated to a slight extent in the neighbourhood of Orange; other suitable districts are Armidale, Goulburn, and Cooma.

IMPORT AND EXPORT OF FRUIT, VEGETABLES, AND PLANTS.

The following quantities of fruit, &c., were received into New South Wales from the other States of the Commonwealth during the year ended June, 1914:—

1,923,021 cases and half-cases of fruit, tomatoes, and cucumbers.

96,206 bunches of bananas.

4,646 crates of cauliflowers, cabbages, and melons.

925,644 bags of vegetables.

2,044 packages of plants and nuts.

Of the above, 31,340 cases of fruit and 524 bags of potatoes were infected with disease. The condemnations thus represent 1·08 per cent. of the importations.

Under the Quarantine Act, 565,728 bunches of bananas, 26,218 cases of pines and bananas, 133,288 centals of fruit, 636,426 centals of cereals, seed, pulse, &c., 42,398 centals of vegetables, bulbs, &c., 21,624 centals of nuts, and 206,118 plants were examined. The condemnations amounted to 0·7 per cent. of the total, which was lower than the condemnations from interstate ports. It appears that the Act has practically stopped the shipment of diseased or otherwise undesirable fruit, seeds, vegetables, plants, &c.

Under the Commerce Act, 86,738 cases of fruit, 22,076 bags of vegetables, 7,055 bags of maize and seed, and 831 packages of plants were passed for export. These figures are 14·5 per cent. lower than those of the previous year on account of a decrease in the New Zealand trade.

MACHINERY AND LABOUR.

The introduction of improved machinery has materially reduced the cost and labour of producing the various crops. For harvesting grain-crops the reaper and binder, the stripper and the harvester are used, and there is a vast difference of opinion regarding the relative efficiency of the different implements. The reaper and binder is used almost exclusively in moist districts, and over the greatest portion of the wheat areas conditions are favourable for the use of the harvester. A modern type of harvester, particularly adapted for Australian conditions, produced and developed locally, has largely contributed to the expansion of wheat cultivation.

In a previous issue of this Year Book a list of implements and machines used in each of the rural industries was shown.

The estimated value of the agricultural machinery in use in 1913 was £5,029,938, or an average of £1 2s. per acre cultivated.

Division.	Area farmed.	Value of machinery.	Value, per acre.
	acres.	£	£ s. d.
Coastal	271,364	569,961	2 2 0
Tableland	480,439	690,475	1 8 9
Western Slopes	2,086,409	2,093,792	1 0 1
Western Plains and Riverina ...	1,718,926	1,617,453	0 18 10
Western Division	11,703	58,257	4 19 7
Total	4,568,841	5,029,938	1 2 0

A comparison of the value of farming implements and machinery in use during each year since 1901 in each of the rural industries is shown in the following table:—

Year.	Farming.	Dairying.	Pastoral.*	Total Value.
	£	£	£	£
1901	2,677,902	234,846	446,151	3,358,899
1902	2,236,850	254,678	660,447	3,151,975
1903	2,368,072	300,107	710,885	3,379,064
1904	2,459,346	345,208	779,244	3,583,798
1905	2,557,262	365,436	1,120,991	4,043,689
1906	2,645,930	417,006	1,082,043	4,145,029
1907	2,599,156	443,197	1,110,953	4,153,306
1908	2,851,974	458,720	1,256,857	4,567,551
1909	3,042,364	510,852	1,332,427	4,885,643
1910	3,414,621	534,745	1,483,081	5,432,447
1911	4,859,037	519,467	1,128,666	6,507,170
1912	4,633,809	525,637	1,514,636	6,724,082
1913	5,029,938	617,109	1,744,891	7,391,938

* The figures for years other than 1901 and 1911 include, in many cases, Farming Implements used on Pastoral Holdings.

The following statement gives a comparative view of the machinery used and the labour employed in agricultural pursuits during the last ten years. The apparent excess in the value of farming machinery in the last three years is partly due to a stricter classification, which has been rendered

possible by the collection of fuller particulars regarding the machinery used in each of the rural industries. In other years the agricultural machinery used on pastoral holdings was in many cases included with the pastoral machinery:—

Year.	Area farmed.	Value of Machinery.	Persons Employed.			Machinery, per acre.	Persons employed per acre.
			Males.	Females.	Total.		
	acres.	£				£	
1904	2,672,973	2,459,346	63,111	5,742	68,853	·92	·022
1905	2,838,081	2,557,262	62,419	5,008	67,427	·90	·024
1906	2,824,211	2,645,980	63,448	5,715	69,163	·94	·021
1907	2,570,137	2,599,156	57,327	5,385	62,712	1·01	·024
1908	2,713,971	2,851,974	55,324	5,409	60,733	1·05	·022
1909	3,174,864	3,042,364	59,541	4,770	64,311	·96	·020
1910	3,381,921	3,414,621	59,091	5,228	64,319	1·01	·019
1911	3,629,170	4,859,037	56,476	3,496	59,972	1·34	·017
1912	3,737,269	4,633,809	57,209	2,848	60,057	1·24	·016
1913	4,563,841	5,029,938	59,337	2,699	62,036	1·10	·014

In stating the number of persons employed in agricultural pursuits it must be remarked that these figures are obtained from returns supplied by the farmers; but in cases where agriculture is carried on conjointly with other rural industries, it is difficult to differentiate, and persons may be returned as engaged in agriculture in one year and in other rural occupations in another year. The decrease shown in agricultural labour is partly explainable in this manner. Probably also the doubling of the value of machinery during the last ten years has been an important factor.

Of the females the majority are engaged only partly in agricultural work, portion of their time being spent in the discharge of domestic duties. At the census of 1911, 79,235 persons—77,599 males and 1,636 females—were returned as engaged in agricultural pursuits.

The labour employed in all rural industries is discussed in the chapter "Employment and Industrial Arbitration."

FERTILISERS.

The most important method of maintaining the productive power of the soil—which is a fundamental principle of a permanent system of agriculture—is the application of fertilisers to supplement the supply of plant food, and to improve the physical and biological condition of the soil.

The essential elements of plant production are ten in number—carbon and oxygen, obtained from the air; hydrogen, obtained from water; and nitrogen, sulphur, phosphorus, potassium, iron, magnesium, and calcium, obtained from the soil. Of these, nitrogen, phosphorus, and potassium are the most likely to be deficient in normal soils, and must be supplied to enable a full crop to be grown; sometimes it is necessary to augment the supply of calcium.

Apart from their value in supplying plant food, fertilisers are also beneficial in promoting fertility by neutralising organic toxic substances, improving the texture, and strengthening the moisture-retaining and capillary power of the soils, and by assisting the development of useful bacteria.

As soils show considerable variations in their composition the most important factor in the use of fertilisers is the determination of the requirements of each soil intended for cultivation. This question may be determined satisfactorily only by systematic local experiment.

In New South Wales superphosphate is the only artificial fertiliser used in any considerable quantity, the soils in the wheat areas being generally deficient in phosphoric acid. Tests of manure conducted on the Farmers' Experiment Plots indicate that, as a general rule, the benefits derived from the application of superphosphates to wheat lands are most marked in the southern portion of the wheat belt, viz., the south-western slopes and Riverina; the beneficial results gradually diminish throughout the western districts which form the central portion of the wheat belt; and in the north-western districts no advantage is gained by the use of this fertiliser. The results may be affected by the fact that fallowing is more common in the south than in the west, and much more than in the north.

The return shows the area of land and the quantity of manures which were used during the year 1913:—

Division.	Natural (Stable-yard, &c.).		Artificial (Superphosphates, Bone-dust, &c.).	
	Area.	Quantity used.	Area.	Quantity used.
Coastal—	acres.	loads.	acres.	cwt.
North Coast	13	280	339	679
Hunter and Manning	556	14,485	1,741	4,557
County of Cumberland... ..	3,774	123,295	12,580	102,671
South Coast	1,785	11,546	4,556	15,555
Total	6,128	149,606	19,266	123,462
Tableland—				
Northern	39	1,256	281	250
Central	337	7,441	79,281	36,854
Southern	171	1,718	13,480	8,318
Total	547	10,415	93,042	45,622
Western Slopes—				
North	8	100	512	479
Central	7	380	150,173	59,267
South	163	2,144	759,176	325,342
Total	178	2,624	909,861	395,088
Western Plains and Riverina—				
North ... ..	.....	.....	.....	.....
Central	28	370	107,519	32,979
Riverina	75	2,456	1,059,836	423,265
Total	103	2,826	1,197,355	456,244
Western—				
East of Darling	27	626	208	180
West of Darling	27	656	.....	.....
Total	54	1,282	208	180
Total, New South Wales... ..	7,010	166,753	2,219,732	1,010,596

The small proportion of manured land in relation to the total cultivation shows that the farming community do not fully appreciate the necessity and practical value of applying fertilisers to enrich poor soils, or to restore fertility depleted by successive croppings. The proportion of manured area in relation to the total cultivated in 1913 was only 48·7

per cent.; but, as the following table shows, a steady increase in the use of fertilisers has taken place since 1907, when the proportion was only 16·5 per cent. This increase furnishes a reliable indication of improvement in methods of cultivation:—

Year.	Total Area cultivated.	Manures used—				Area Manured, per cent. of Total cultivated.
		Natural.		Artificial.		
		Area.	Quantity.	Area.	Quantity.	
	Acres.	Acres.	Loads.	Acres.	cwt.	
1907	2,570,137	14,419	144,021	409,259	276,120	16·5
1908	2,713,971	18,046	216,078	491,216	310,899	18·8
1909	3,174,864	13,635	189,008	812,562	433,187	26·0
1910	3,381,921	11,457	186,204	1,019,079	500,342	30·5
1911	3,629,170	7,967	178,689	1,399,886	676,409	38·8
1912	3,737,269	7,665	170,312	1,636,123	779,123	44·0
1913	4,568,841	7,010	166,753	2,219,732	1,010,596	48·7

The sale of artificial fertilisers is regulated by the Fertilisers Act of 1904; the vendor is required to furnish to the purchaser a statement as to the nature and chemical composition of such fertilisers.

BOUNTIES ON AGRICULTURAL PRODUCTS.

In order to encourage the production of certain goods in Australia the Federal Government has provided for the payment of bounties to producers. The agricultural products included in the schedule of bounties payable under the Bounties Act, 1907-1912, are shown hereunder.

Products.	Period from 1 July, 1907, during which bounty may be paid.	Rates of Bounty.	Maximum amounts payable in any one year.
Cotton, Ginned	Years. 8	10% on market value...	£ 6,000
Fibres—			
New Zealand Flax	10	„ „ ...	3,000
Flax and Hemp	10	„ „ ...	8,000
Jute	10	20% „ „ ...	9,000
Sisal Hemp	10	10% „ „ ...	3,000
Oil materials supplied to an oil factory for the manufacture of oil—			
Cotton Seed	8	„ „ ...	1,000
Linseed (flax seed)	10	„ „ ...	5,000
Rice, uncleaned	10	20s. per ton	1,000
Rubber	15	10% on market value...	2,000
Coffee, raw, as prescribed	8	1d. per lb.	1,500
Tobacco Leaf for manufacture of cigars, high grade	10	2d. per lb.	4,000
Fruits—			
Dates (dried)	15	1d. per lb.	1,000
Dried (except currants and raisins) or Candied, and exported	10	10% on market value...	6,000

DEPARTMENT OF AGRICULTURE.

The Department of Agriculture which was created in 1890 to advance the interests of the farmers and fruit-growers of New South Wales deals with all matters essential to agriculture, and its principal functions are to collect information by scientific investigation and practical experiments, to be placed at the disposal of the farming community, regarding the causes of failures, improved methods of cultivation, means of combating pests, effects of fertilisers, drainage and irrigation, the introduction of new plants, uses of new implements, surplus products, and the transport of produce to the best markets.

The Department, in conjunction with the Stock Branch, and the Forestry Department, is administered by a Minister of the Crown. The scientific staff has been thoroughly organised, and experts have been appointed to direct operations in agricultural chemistry, viticulture, entomology, botany, irrigation, fruit-growing, tobacco growing, veterinary science, biology, poultry-farming, apiculture, dairying, cattle and sheep breeding, cold storage and export, and forestry; also there are a number of experimentalists, inspectors, and instructors. The Agricultural College and experiment farms are controlled by the Minister.

The Stock Branch conducts investigations in animal pathology, while similar investigations relating to plant diseases, and to bacteriology of soils, milk, cheese, wines, &c., are made by the Biological Branch.

Bulletins are issued for the guidance of various classes of rural workers, and most of the publications of the Department are supplied free to persons engaged in rural industry. The officials answer all inquiries for advice or assistance, and visit various parts of the country throughout the year to give demonstrations to the farmers, conduct experiments, and advise them generally regarding agricultural methods.

The *Agricultural Gazette*, the official organ of the Department, is issued monthly. It presents to the farmers of the State the results of scientific researches and investigations of the official experts, gives practical advice on the economic results dictated by these investigations, and supplies seasonable notes on matters of scientific, practical, and industrial interest.

Arrangements were made in 1910 to supply for publication in the country newspapers weekly notes of the investigations and educational operations of the Department regarding improved methods of agriculture, dairying, stock-raising, &c. Since 1911-12 efforts have been made by means of these notes to encourage fallowing in connection with wheat cultivation; rotation in cropping and the cultivation of maize have also been specially treated.

The revenue and expenditure of the Department of Agriculture for the year ended 30th June, 1914, were as follows:—

<i>Revenue.</i>		£	<i>Expenditure.</i>		£
Agricultural College, Experiment			Departmental ... ..	...	53,436
Farms, &c.	30,691		Subsidies and Grants ... ..	...	17,862
Repayments for Seed-wheat	489		Miscellaneous ... ..	...	1,769
Fees for fumigation, &c.	8,207		Agricultural College, Experiment		
Botanic Gardens, &c.	277		Farms, &c. ... ..	...	84,521
Miscellaneous	61				157,588
Stock Branch, &c.	4,731		<i>Less Refunds</i> ... ..	...	5,904
Forestry	98,963				151,684
	143,419		Forestry ... ..	...	45,669
			Stock and Brands, Pastures Pro-		
<i>Less Refunds</i>	302		tection ... ..	...	42,189
			Botanic Gardens, &c. ... ..	...	31,163
			Commercial Agents ... ..	...	2,948
Total	£143,117		Total		£273,653

EXPERIMENT FARMS.

In order to obtain a thorough knowledge of local conditions and to afford an education in agriculture on scientific bases, the Government has established agricultural colleges, experiment farms, and farmers' experiment plots; and has engaged agricultural lecturers and experts to guide and assist the farmers.

The Government agricultural and experiment farms consist of the Hawkesbury Agricultural College, ten experiment farms, three demonstration farms, two demonstration orchards, and two viticultural stations. The total area of experiment farms is 25,737 acres, of which 5,568 acres were under cultivation during the season 1913-14, the areas for various crops being as follows:—

	acres.
Cereals and hay	2,508
Fruit-trees and vines	407
Green fodder	1,353
Sown grasses and forage plants	1,203
Root and other crops	97

Much of the remaining area allotted to these farms is cleared partially; portion of it is under fallow, and portion ready for ploughing.

The Hawkesbury Agricultural College provides accommodation for resident students, and gives theoretical and practical instruction in a three-years' course, which embraces every department of agriculture. Instruction is given also in dairying, pig-raising, and poultry-breeding; experimental research work is conducted in connection with cereal and other crops, and with fertilisers, and soil culture, &c. All subsidiary branches of farm labour are taught, including blacksmithing, carpentering, sheep-killing, bee-keeping, and other farm occupations. An area of 116 acres has been leased on the banks of the Hawkesbury River, on which a complete system of irrigation is being instituted. The fees payable are £33 for the first year, £23 for the second, and £13 for the third. Special courses of instruction are also provided, notably at the Farmers' Winter School and Public School Teachers' Summer School. In July, 1914, there were 141 regular students in attendance, and 1,204 acres out of the total of 3,551 acres attached to the College were under cultivation.

The experiment farms have been established in various districts of the State, and the experiments and education vary with the particular climatic conditions. At Wagga Farm the specialties are seed wheats, fruits for drying, breeding of dairy cattle (notably Jerseys) and swine (Berkshire) and sheep (Dorset Horn), and the area under cultivation is 958 acres out of 3,228 acres. The course is for two years; a fee of £15 is charged for the first year, and £10 for the second year. During 1914 there were 63 students in attendance.

At Bathurst, particular attention has been devoted to the orchard, and to mixed farming and irrigation. Of the total area of 610 acres, 515 are cleared and under crop, 109 acres being under wheat, 64 under lucerne, 52 under oats, and the remainder under other crops. There were twenty students in July, 1914, the fees charged being similar to those at Wagga.

Practical dairy instruction is provided at two farms in the coastal division. Wollongbar Farm, with an area of 263 acres, is utilised in dairy-farming suitable for the North Coast district, grasses and fodder plants are grown, the breeding of dairy cattle and pigs is conducted; and at the Duck Creek Farm area 470 acres sugar-cane is cultivated.

At the Grafton Experiment Farm a rotation in crops was observed, wheat, cowpeas, potatoes, and maize being obtained from the same land in two years.

Accommodation has been provided with the view of training students in mixed farming suitable for sub-tropical districts; also special attention is given to maize in establishing new varieties, and to experiments regarding methods of cultivation and fertilisation.

High-class stock is bred at the Berry Experiment Farm, situated in the centre of the South Coast dairying district. This farm was previously conducted on a leasehold area, but in May, 1911, portion of the old farm and an additional adjoining area were acquired by the Government.

The Glen Innes Farm is utilised for mixed farming and fruit-growing suitable for the Northern Tablelands. Cowra Farm, with an area of 1,068 acres, is used as a wheat-breeding and experiment station, special courses of training having been arranged for the scientific cadets and junior experimentalists of the Department of Agriculture. Apprentice Farm Schools have been opened at Glen Innes and Cowra.

At Pera Bore Irrigation Orchard, experiments have been made with bore water in agriculture, the culture of citrus fruit, and with methods of neutralising the chemical constituents in artesian water.

Operations at the Raymond Terrace Viticultural Station were discontinued during 1913 in favour of a new site at Narara, in the Gosford district. In connection with the new nursery, instruction and advice in regard to vine-growing are given, phylloxera-resistant rootlings and cuttings are grown, and grafted vines are raised for distribution to vine-growers to enable them to replant vineyards destroyed by phylloxera.

At the Howlong Viticultural Station there is a mother-stock vineyard to supply the necessary material for the propagation of vines at the Narara nursery.

At Yanco, experimental irrigation work is conducted for the benefit of settlers on the Murrumbidgee Irrigation Area, and a farm school for students was inaugurated in January, 1914. The area of the farm is 2,055 acres, of which 653 acres are irrigable, including 63 acres of orchard. A mother-stock vineyard has been established to provide cuttings of varieties largely in demand. Ostrich-farming and mule-breeding will be important features of the work at this farm, a number of imported ostriches and five imported donkeys having been already stationed there.

At the Nyngan Demonstration Farm, established in 1909, investigations are being continued relating to problems of dry-farming which had been conducted previously at Coolabah, and the educational work will be directed towards combining wheat-farming with sheep-raising. The area of the farm is 5,050 acres, and an experimental area of 203 acres was used in 1913-14 for experiments in fertilising, rotation, mulching, double manuring, &c. The operations at Coolabah were abandoned on account of its distance from any railway.

The Dural Demonstration Orchard is used for conducting experiments in fruit-growing and in combating diseases, also for the education of fruit-growers in the county of Cumberland. Short courses of orchard and garden work are provided.

Wheat farming on an extensive scale has been undertaken by the Department of Agriculture at Tottenham and Trangie. At Tottenham an area of 27,000 acres had been cleared at the end of March, 1915. Steam-engines and oil-tractors are employed in the ploughing, and it is expected that 14,000 acres will be sown at once for wheat. A further block of 23,000 acres is being cleared, and it is hoped that in the year 1916 there will be 36,000 acres under cultivation.

In the Trangie district, 2,300 acres are being sown this season.

The Emu Plains Irrigation Farm of 107 acres has been acquired, and will be devoted to growing vegetables with prison labour. This will aid

an interesting phase of prison reform while supplementing the supply of fresh vegetables for the Metropolis.

In March, 1911, an Experiment Farm, with an area of 1,945 acres, was opened at Coonamble in connection with modern dry-farming methods, so that the wheat belt may be extended. Wheat and sheep will be combined on this farm in conjunction with a proper system of rotation. An artesian bore is being sunk, and eventually experiments in connection with the growth of crops by means of irrigation with bore water will be carried out.

The Condobolin Demonstration Farm has an area of 1,348 acres, and is used to demonstrate rotation of crops.

In July, 1914, the number of apprentices at the Apprentice Farm Schools was 85, viz., Cowra 22, Dural 4, Glen Innes 17, Grafton 18, and 24 at Wolongbar. The instruction at these schools is entirely practical, the fee is £5 for six months, and a second half-year's maintenance and training may be given in return for apprentices' labour.

In order to secure the maximum advantage of experimental work and to co-ordinate the methods employed, a committee of experts supervise all scientific farming investigations and field experiments.

Dairy Science Schools for the instruction of factory managers and assistants were held at Port Macquarie in July, 1911; at Grafton in June, 1912; at Singleton and Lismore in July and August of 1913 respectively, and a school for cream graders and testers at Gloucester in June, 1914. These schools are held periodically in dairying centres.

In the chapter on "Education," information is given relating to agricultural training in schools and the University.

Government Agricultural Training Farm, Pitt Town.

This farm is controlled by the State Labour Branch of the Department of Labour and Industry. As at 31st December, 1914, there were on the farm 50 students and 38 men, including 15 men who were engaged in clearing operations. There were 14 lads receiving training at the farm under the Dreadnought scheme during February, 1915.

DREADNOUGHT FARM TRUST.

An agreement was made early in 1911 between the Government of New South Wales and the Trustees of the Dreadnought Farm as to the introduction of a number of lads from 17 to 20 years of age to this State for the purpose of following rural pursuits. Upon arrival, the boys are either placed in employment with farmers by the Immigration and Tourist Bureau or are sent to the Pitt Town Training Farm, near Windsor, where they receive general training, and three months afterwards are engaged to farmers in different localities, or are placed in one of the Agricultural Colleges for twelve months to receive practical and theoretical training in farming. From April, 1911, to 31st December, 1914, 1,659 boys arrived, 814 having been sent out as workers, 728 as trainees at Pitt Town Farm, and 117 as students at Agricultural Colleges. The training of these prospective farmers is under the care of the Superintendent of Labour, who places them in remunerative employment at the end of their term.

The Trustees have recently decided upon an extension of their operations and are advancing portion of the fares required for lads. Subject to the approval of their London representative a lad is only required to deposit £3 towards his passage and landing money, and sign an undertaking to repay £8 in instalments extending over a period of eighteen months.

FARMERS' EXPERIMENT PLOTS.

A number of experimental plots, ranging from 1 to 20 acres, have been established throughout the State to give practical demonstrations to farmers regarding advanced methods of agriculture, improved varieties of seed, comparative values of manure, and new crops for the respective districts. The State has been divided into seven divisions, and in each an inspector supervises the plots, gives lectures and demonstrations, and advises the farmers generally on agricultural matters. This system has been extended to the Murrumbidgee Irrigation Area.

At the establishment of the plots in 1908, they were conducted on the following terms:—The land was provided by the farmer, the seed and manure by the Department of Agriculture; the Department paid the farmer for the work of preparing the land, and sowing, cultivating, and harvesting the crops, the farmer taking two-thirds and the Department one-third of the resulting produce. It has now become a general rule that the farmers carry out the work without cost to the Department other than for seed, manure, and supervision, and the farmer receives the whole of the crop.

These plots have proved valuable media of practical education for the farming community, special attention being directed towards the improvement of cultural methods for wheat and other cereals, potatoes, and grasses; and to the extension of the cultivation of leguminous plants, either in combination with cereals or alone, with the object of improving the feeding value of the green fodder, ensilage, and hay fed to the farmers' stock, and of increasing the fertility of their soils.

In 1913-14 the number of plots cultivated was 157, while numerous trials were made on a small scale. The area used for experimental purposes aggregated 850 acres.

FARRER SCHOLARSHIPS.

The Farrer Memorial Fund has been established by public subscription in honour of the late William J. Farrer, whose work in the production of new wheats has afforded great benefit to the industry. The money has been vested in Trustees, and the interest is to be used for the Farrer Research Scholarship, the specific object of which is the improvement of wheat cultivation. The scholarship, valued at about £100 per annum, is granted to a candidate selected by the Trustees from applicants possessing one of the following qualifications:—

- (a) A graduate in Science, to pursue studies with original research in Cambridge University Laboratory, or elsewhere outside the State. In such a case, the revenue for two years may be given for one year's research.
- (b) Graduate or undergraduate, to pursue study of plant-breeding in University laboratories under supervision of Science Faculty.
- (c) Student who has taken diploma from Hawkesbury Agricultural College, or similar institution, to pursue study of plant-breeding in field or in other approved way.
- (d) A young farmer, or other person, possessing necessary qualifications and aptitude for investigating this subject in the field under supervision of the Trustees.

The selected scholar will present his results at the close of the year in the form of a paper to be published by the Trustees. At the end of the year the holder of the Scholarship may be re-appointed or a new selection made.

The Government Farrer Scholarship is offered for competition amongst students wishing to enter the Hawkesbury Agricultural College with a

special view to study wheat cultivation. The value of the Scholarship is £91; it is awarded after competitive examination, and provides for the full education of the recipient during the three years' course, for the purchase of books and apparatus, and the payment of medical, sport, and other fees. The Trustees of the Farrer Memorial Fund are specially authorised to give priority in the matter of the Farrer Research Scholarship to a Government Farrer scholar at the close of his College course, if he shows special aptitude for research work in connection with wheat cultivation.

The *Daily Telegraph* Farrer Scholarship consists of a grant of books, apparatus, &c., to the value of £10, given each year by the *Daily Telegraph* Newspaper Co., Ltd., to the best wheat student at the Bathurst or Wagga Experiment Farm.

AGRICULTURAL BUREAU.

An Agricultural Bureau has been established under the direction of the Department of Agriculture. Its objects are to collect and disseminate information respecting plants, animals, or products likely to prove of value to cultivators; to discover the best methods of cultivating suitable economic crops, breeding and feeding domestic animals, and preparing products for market; to settle for each district the best times for fallowing, sowing, and harvesting; to prevent the introduction and spread of insect and fungus pests; to encourage social intercourse; and generally to advance the interests of persons engaged in rural industries. Government assistance is granted in the form of subsidies payable to each branch at the rate of 10s. for every £ of membership fees; by lectures and demonstrations by the Departmental experts; and by the supply free of charge of the publications of the Department, including the *Agricultural Gazette* and *Farmers' Bulletins*.

The Bureau was established in 1911, and there were ninety-six branches, with 3,168 members, at the end of 1914.

AGRICULTURAL SOCIETIES.

A number of Agricultural Societies have been formed throughout the State mainly for the purpose of holding exhibitions of agricultural, horticultural, and pastoral products, of live-stock, machinery and implements, arts and manufactures, and for other purposes relating to rural industries. The exhibitions assist rural development by maintaining a high standard of products and other exhibits, and by familiarising the people with modern methods and appliances. The subscriptions of members are augmented by Government subsidies, paid at a rate not exceeding 10s. in the £ on prizes awarded for *bonâ-fide* agricultural and other approved exhibits and competitions. At 30th June, 1914, there were 169 Agricultural Societies registered for subsidy, and during that year 138 societies received subsidies amounting to £17,485. The membership of the subsidised societies was 32,529, the members' subscriptions amounted to £27,289, and the total value of prize money was £54,350, of which £40,469 was the basis for subsidy.

From 1879 to June, 1914, the sum of £557,560 has been paid to these societies.

CO-OPERATION OF AGRICULTURISTS.

Endeavours are being made, through the agency of the Agricultural Bureau to encourage co-operative efforts amongst agriculturists. Notable examples of its success are found in this State in the dairy factories, and in South Australia, where a large proportion of the exportable wheat is handled by a co-operative union. In addition to the advantages of

co-operation as a means of successful marketing of produce, the principle can be extended to the purchase of materials, manures, machinery, and seed. The farmers could combine for the joint-ownership of labour-saving machinery and stud-stock, for herd-testing, and for insurance, and, as a body, would be able to obtain concessions from manufacturers, agents, &c., and as regards freight which, as individuals, they could not procure.

The matter has been brought under the notice of the various branches of the Agricultural Bureau for general discussion, and in order that the most suitable method of applying it to local requirements may be decided.

STATE ADVANCES TO SETTLERS.

To meet the demand for capital, and impelled by the necessity for affording assistance to settlers whose prospects had been affected by the prevalent drought conditions, the Government inaugurated a system in 1899, by which advances are made to settlers on the basis of the French *Crédit Foncier*, at rates of interest and of repayment which are intended to be available for the benefit of every settler offering adequate security. The original Act of 1899 received several amendments, till finally, in 1906, the powers of the Advances to Settlers Board were transferred to the Commissioners of the Government Savings Bank of New South Wales, and the maximum and minimum advances fixed at £2,000 and £50 respectively.

On 31st December, 1913, 12,278 advances (total value, £3,195,228) had been made to settlers, equivalent to £260 per loan, of which 7,184, representing £1,144,096, were repaid, leaving 5,094 advances current at that date, the average balance of principal being £339 per loan.

The operations of the bank, relating to advances to settlers, for the last five years, have been as follows:—

Year.	ADVANCES MADE.			REPAYMENTS.		BALANCES REPAYABLE.		
	Number.	Total Amount.	Average.	Number.	Total Amount.	Number.	Total Amount.	Average.
		£	£		£		£	£
1909	778	300,228	386	666	95,554	3,623	796,752	220
1910	658	254,339	387	622	123,005	3,659	928,086	254
1911	838	331,693	395	743	185,420	3,754	1,074,359	286
1912	940	475,070	505	572	153,393	4,122	1,396,336	339
1913	1,386	771,272	556	414	116,476	5,094	2,051,132	403

The Commissioners are empowered to make advances upon mortgages of land in fee-simple and of land held under conditional purchase or lease, settlement purchase or lease, homestead grant or selection. The advances are made for the purposes of repaying existing encumbrances, of purchasing land, or to effect improvements, utilise resources, or build homes.

The conditions under which loans are repayable vary according to the circumstances of the individual case; the maximum loan to any one person is £2,000; the rate of interest ranges between 4½ and 5 per cent.; and the maximum period for repayment is thirty-one years.

It is clear that the system is intended to confer, and does afford, material assistance to men who contemplate settling on the land, as well as to those already engaged in agriculture; but necessarily this system was not initiated to meet every instance in which farmers might require credit in small amounts, and for a comparatively short period.

WATER CONSERVATION AND IRRIGATION.

Since 1st January, 1913, irrigation has been recognised in the State of New South Wales as of sufficient importance to warrant the formation of an entirely separate Department, the head of which is the Commissioner for Water Conservation and Irrigation.

The provision of an adequate water supply for other than domestic purposes is essential to the well-being of all primary industries, and particularly in a country which is liable to dry seasons which affect extensive areas. Much of the area of the State receives an adequate and regular rainfall, but over a considerable extent of country all the factors exist which are requisite to success in agricultural pursuits, except a constant water supply. The recognition of the fact that the area suitable for cultivation might be extended largely by a comprehensive system of water conservation and irrigation has led the State to undertake various schemes in detached groups, which will constitute portion of the ultimate irrigation system necessary to serve the whole State.

Murrumbidgee Irrigation Scheme.

The main features of the work include a storage dam across the Murrumbidgee to retain the flood-waters, which will be released for use lower down the river during the dry summer months; a movable diversion weir, about 220 miles below the dam, to turn the required amount of water from the river into the main canal; a main canal, leaving the river near the weir; a main branch canal; and a series of subsidiary canals and distributing channels through the area to be irrigated.

The site of the storage dam is at Burrinjuck, 3 miles below the confluence of the Murrumbidgee and Goodradigbee Rivers. The dam-wall is being constructed of cyclopean masonry and concrete, and when completed will have a maximum height of 240 feet, and will impound the waters in a lake covering 12,740 acres. Sufficient water is being stored to meet the requirements of the farms already occupied. The reservoir will have a capacity of 33,381 million cubic feet, the catchment area being about 5,000 square miles, drained by three principal streams—the Murrumbidgee, Goodradigbee, and Yass Rivers—up which the water will be backed, when the dam is full, to distances of 41 miles, 13 miles, and 11 miles, respectively. Direct communication between Burrinjuck and the Main Southern railway has been provided by the construction of a 2-foot gauge line from Goondah, a distance of 26 miles.

The diversion weir being designed for irrigation purposes, the supply is regulated, in the first place, from Burrinjuck Dam, and then at the weir, by means of sluices. The weir is situated at Berembed, about 40 miles by river and 19 miles in a direct line above the town of Narrandera. It is founded on a solid granite bar extending across the river, and has a length over all of 270 feet between abutments, divided into a sluiceway 40 feet wide in the clear; a lock chamber, 40 feet wide, capable of taking barges up to 100 feet in length; and 55 movable wickets, manipulated from a punt moored up-stream. The weir and regulating works have been completed.

The main canal branches from the river just above the weir, and, after passing through Narrandera, continues in a north-westerly direction, skirting the hills abutting on the plains. A scheme for enlarging the canal to double its present capacity is now under discussion by the Public Works Committee. There are two main branch canals, viz., the Gogeldrie Canal

which starts at 47 miles from Berembé and runs approximately parallel to the Narrandera-Hay railway through the Yanco Area, and the Mirrool branch, which commences at 78 miles from Berembé and supplies portion of the Mirrool Area.

The scheme as described above, applies only to the land on the northern side of the Murrumbidgee River. It was originally intended to provide a canal to supply the land on the southern side, but subsequently it was decided to apply all the water available from the Burrinjuck dam to the northern areas, these lands being eminently suitable for irrigation. For this reason the main canal is to be enlarged, and when complete will be capable of supplying an area of about 250,000 acres, which, in the opinion of the experts, may be worked profitably in small sub-divisions devoted to mixed farming, dairying, and stock raising, or fruit and vegetable growing, tobacco culture, &c. In addition there is an area of about a million acres to be set aside for use as "dry" lands in conjunction with those under irrigation. When the areas are fully settled it is estimated that there will be nearly 7,000 farms and 100,000 people. By means of irrigation the soils and climate of these areas are suitable for the production, with most profitable results, of apricots, peaches, nectarines, prunes, pears, nuts, almonds, melons, cantaloupes, and citrus fruits, also wine and table grapes, raisins, sultanas, figs, olives, and most varieties of vegetables. Other products are tobacco, lucerne, and fodder crops, such as sorghum, maize, and millet. Dairying, pig-raising, mixed farming, and ostrich farming are already being successfully undertaken.

The Murrumbidgee Irrigation Act, passed in December, 1910, constituted a trust for the administration of the scheme, and provided the necessary authority for the acquisition of land, construction of improvements, levying rates, and generally for administering the irrigation areas and work. This Act was repealed in December, 1912, and the whole scheme is now under the control of a Commissioner of Water Conservation and Irrigation.

The lands acquired for irrigation under the provisions of the Act include the North Yanco Estate, the Gogeldrie holding, and various holdings in the Brobenah and Mirrool Creek districts—the total area resumed to 30th June, 1914, being about 312,100 acres, at an estimated cost of £827,430.

The first area made available for settlement was in the vicinity of Yanco Siding, on the Hay railway line. The second, which is situated on the northern side of the Mirrool Creek, will be served by an extension of the railway from Barellan, which will be completed early in the year 1915. There are available farms varying in size from 2 acres to 200 acres. The smaller farms—2 acres to 15 acres—are intended for the vegetable grower, the small orchardist, the farm labourer, and in some cases the business man of the adjoining towns. Each acre has a permanent water right attached to it, *i.e.*, a right to such a quantity of water, 12 inches deep, as would cover an area of 1 acre. To satisfy the requirements of the man with large capital, and also to provide employment for the man of lesser means, farms with 100 water rights attached may be obtained under certain special conditions, one of which is that the holder must expend during the first two years of his occupation not less than £6 per acre in the improvement of his holding, such improvements to be exclusive of the value of his homestead and outbuildings. Although the condition of residence attaches to every lease, suspension of residence may be allowed. This admits of an intending settler having a farm developed for him for four or five years by the Commissioner or by a private contractor. In this way the early preparation work is avoided by the lessee, who is thus enabled to take possession when his orchard or vineyard is in full bearing. Areas of non-irrigable or

"dry" lands in the proportion of double or three times the irrigable area taken up are available for the depasturing of stock, and may be acquired either as additional holdings for the individual, or as a commonage for the joint use of groups of settlers.

The conditions for the disposal of irrigation blocks are contained in the Crown Lands Consolidation Act of 1913 and the Crown Lands and Irrigation (Amendment) Act of 1914. Any person over the age of 16 years, if a male, or 18 years, if a female (other than a married woman not living apart from her husband under decree of judicial separation)—or two or more such persons jointly—may apply for a farm or block. The tenure is perpetual leasehold, rent being charged at the rate of 2½ per cent. of the capital value.

The improvement conditions attached to the farm holdings include fencing, planting of trees for wind-breaks, construction of dwellings, destruction of noxious plants, and the cultivation of a specified area in each year.

The assistance granted to settlers is both practical and liberal. Aid is given in connection with the erection of homesteads, barns, and outbuildings, the degree of the assistance varying according to the size of the holding. Repayments for assistance in this direction may be spread over twelve years. The construction of head ditches or other work entailed in the actual practice of irrigation is carried out on the settler's behalf; repayments for this form of assistance may be spread over a period of ten years. Fencing posts are available for purchase on ten years' terms. Fruit-trees and vines may be bought at the Government nursery, and terms for the repayment for these are based on the period which will elapse before the settler will obtain revenue from his cultivation work. Lucerne seed is supplied during the first planting season.

A settler who adopts dairying as a temporary expedient while trees or vines are coming into bearing, or as a permanent revenue producer, is assisted in the purchase of dairy stock. The amount of help given depends on the quantity of planted feed he has in sight. A deposit is payable in respect of each cow purchased, the payment of the balance being by monthly instalments spread over two years. Pedigree bulls may be leased. Machinery and implements may be hired at reasonable rates, and, if desired, expert labour will be provided at the settler's expense. The Government Savings Bank Commissioners have statutory power to grant loans upon a mortgage of irrigation farm leases. Concessions in railway fares and freights are made on New South Wales railways to *bona fide* applicants for land.

The annual charge for water supply is 5s. per water right; but this charge is reduced to one-half for the first year, and is then increased yearly by 6d. per water right, so that a settler is not required to pay the full charge until he is in the sixth year of occupation. The assistance granted may be altered from time to time.

Townships have been established at centres of the Yanco and Mirrool Areas; the Commissioner is empowered to construct streets, and to provide water supply and other services. A butter factory, equipped with the latest plant and with the capacity for dealing with the product of 10,000 cows, has been established. Cash payments are there made monthly for cream supplied by the settlers, who are thus assured of an immediate and regular income, and placed in the position to turn their attention to other forms of farming if they so desire. A large, up-to-date vegetable and fruit canning factory has also been provided, at which vegetables and fruits grown by the settlers are purchased from them. A bacon factory and cheese factory are in course of construction.

A State demonstration farm and nursery are in operation, and various commercial crops are tested as to their suitability for local cultivation. The process of treatment and the preparation for market of the different products are fully investigated, and the experience thus gained is at the disposal of settlers, free information and instruction being afforded on all agricultural matters and irrigation methods. An electric power-house has been erected near Yanco Siding; electric light and power are supplied to the business people, and are available for settlers when the number of applicants warrant the connections.

From the date of the first subdivision, in July, 1912, to 31st December, 1914, 805 farms have been granted, representing a total area of 36,015 acres, the settlers on which have a declared capital of £447,029.

In addition, 114 township and village blocks have been granted, and 259 miles of roads, 289 miles of reticulation channels, and 197 miles of drains have been constructed. In the matter of cultivation, the following particulars indicate the extent of the work performed by the settlers:—750 acres under stone fruits, 200 under vines, 150 under trees, 3,750 under lucerne, 10,000 under other fodder crops, and 350 acres under vegetables. The estimated population of the irrigation area is about 4,750 persons. The rents payable amount to £14,850, the annual total revenue, including £6,900 for water rates, being £21,750.

Other Irrigation Schemes.

The following proposals are under investigation by the Water Conservation and Irrigation Commission:—

Murray River.

The Burrinjuck Dam on the Murrumbidgee River in New South Wales and the storages on the Upper Goulburn River in Victoria are the only works at present in operation for regulating the flow of the Murray River.

In 1911 a Conference of Engineers representing the three States interested was appointed to report and make recommendations essential or conducive to the settlement of the question of the Murray River and its tributaries. This Conference, whose report was presented in July, 1913, recommended that a storage of about one million acre-feet capacity be provided on the Upper Murray, and that Lake Victoria be converted into a storage basin. The basis of an equitable agreement was formulated by the Victorian and New South Wales representatives with regard to the apportionment of the regulated water, and the foundations of the site of the proposed storage dam at Cumberoona are now being further investigated. Certain suggestions with regard to the navigation of the Murray River were submitted in a minority report by the South Australian representative and this matter formed one of the subjects of discussion at a Conference held on 7th April, 1914, between the Prime Minister of the Commonwealth and the State Premiers. At this Conference certain resolutions were passed, having for their object the economical use of the waters of the Murray River and its tributaries for the purposes of irrigation and permanent navigation, and the reconciling of the interests of the Commonwealth and the riparian States. Pending the results of the investigation of the dam foundations of the proposed storage dam at Cumberoona, surveys are being made by officers of the Water Conservation and Irrigation Commission of the lands on the New South Wales side of the Murray River which are capable of irrigation from that stream. The lands suitable for irrigation are much in excess of the area which can be served by the volumes of water which will be available, and it is therefore necessary that the most suitable and high-class land shall be selected for that purpose.

Darling River.

A preliminary investigation has been made of the Darling River, which shows that the most suitable site for the storage of large volumes of water for irrigation purposes is in the lake system to the east of the river, comprising Lakes Boolabooka, Ratcatcher's Lake, and Victoria Lake, and a number of other lakes fed from the river in high floods from the Talyawalka Creek, which takes off from the river about 260 miles above Menindie. A large area of high-class land can be commanded from this storage, and this area will be served by the Condobolin-Broken Hill railway when constructed.

Lachlan River.

The construction of a storage reservoir at Wyangala below the confluence of the Abercrombie River has been investigated with the intention of affording water in the river channel for pastoral purposes and for the irrigation of small areas along the river banks by pumping. In view, however, of the unsatisfactory nature of the run-off from this catchment it is unlikely that the scheme will be further considered at present; but an alternative proposal is being investigated for the increase of the storage in Lake Cudgellico, which is fed from the Lachlan River, and for the pumping thence of the water for the irrigation of an area adjacent to the lake.

Macquarie River.

The construction of a storage reservoir has been proposed on this river at Burrendong, below the confluence of the Cudgegong River, for the purpose of affording water by gravitation for the irrigation of certain lands to the west of Narromine. A smaller scheme which has received consideration also is the construction of a storage dam on Campbell's River at Bathurst. The run-off from this catchment is too uncertain to permit of the construction of any large irrigation scheme, but perennial supplies can be made available for the use of individual irrigators by the construction of storage works on this river and also on the Namoi, Peel, Gwydir, and McIntyre Rivers.

Hunter River.

A scheme has been prepared for supplementing the water supply of the Hunter River District, and providing water for irrigation, by means of pumping on the area adjacent to the Hunter River, which is one of the most fertile districts in the State and is capable of carrying a dense population under the conditions of intense culture by irrigation. Alternative proposals have been investigated for the construction of a storage dam either on the Upper Hunter or Goulburn Rivers, and an examination has been made for storage sites on the whole of the tributaries of the Hunter River. It is probable that this matter will be considered shortly by the Public Works Committee, together with an alternative proposal for supplying water from the Namoi River.

Warragamba River.

The Warragamba project will serve the dual purpose of amplifying the Sydney Water Supply and irrigating the best lands in the Hawkesbury Valley. The percentage increase in the population of the metropolitan area during recent years, if maintained, will in a short space of time cause the consumption of water to overtake the capacity of the present catchment area of the Sydney Water Supply, and the next available source of supply will then be the Warragamba River, a scheme for the storage of water from which has been prepared. It

is proposed to construct a large storage dam capable of supplying at least 80 million gallons daily for the domestic service, 30 million gallons daily for trade purposes, and 80 million gallons daily for irrigation purposes in the Hawkesbury Valley. The waters made available by this project will be so valuable that they can be applied only to the highest class lands for irrigation purposes, and the area to be served will accordingly be limited to probably about 30,000 acres in the vicinity of the Nepean and Hawkesbury Rivers. Surveys are being made and details prepared of the irrigation portion of the scheme for submission to the Public Works Committee.

Irrigation Settlements.

Irrigation settlements have been established at Hay and at Wentworth, and were, in 1913, placed under the control of the Commissioner for Water Conservation and Irrigation. In Wentworth Irrigation Area, embracing 10,600 acres, 1,520 acres have been subdivided into 107 blocks; 1,377 acres are held under lease in ninety-four blocks; the balance is still available for lease. During 1913-14, 1,000 acres were under cultivation, the greater part being devoted to fruit-trees, oranges, grapes, sultanas, and currants. In this area is instituted a dual scheme of irrigation and intense cultivation of small areas, and the results of the experiment will be regarded with interest, as of exceptional value from the educational standpoint. The pumping machinery consists of a suction-gas plant, supplying two engines of about 55 brake horse-power each, working two centrifugal pumps, with an average combined capacity of about 4,600 gallons per minute. With eight pumpings during the 1913-14 season, 144,172,050 cubic feet of water were supplied, and the results achieved by the settlers on this area have been highly satisfactory. The length of the main channels is about 4 miles 24 chains, and of subsidiary channels 4 miles 31 chains; total length, 8 miles 55 chains. The land may be leased for periods not exceeding thirty years, the rent varying from 1s. to 5s. per acre; the rate for water varies from 10s. to 20s. per acre. Each lessee is entitled to receive a quantity of water equivalent to a depth of 30 inches per annum, limited to 4 inches in any one month.

The Hay Irrigation Area consists of about 3,842 acres, and previous to 1913 was controlled by a Trust, appointed in 1897. The area held and used for irrigation purposes is 900 acres by seventy holders. The lands may be leased for periods not exceeding ninety-nine years, at rentals varying from 5s. to 10s. per acre; the water rate is fixed half-yearly, the present rate being 10s. per acre. The pumping machinery is similar to that at Wentworth, the capacity of the pumps being 4,000 gallons per minute. During 1913-14 season 595,212,000 gallons of water were supplied.

Water Rights.

The Water Act, 1912, consolidates the Acts relating to water rights, water and drainage, drainage promotion, and artesian wells. Part II of the Act vests in the Crown the right to the use, flow, and control of the water in all rivers and lakes which flow through or past, or are situate within, the land of two or more occupiers. It abolishes "riparian rights," and establishes a system of licenses for works of water conservation, irrigation, and drainage. Prior to the passing of the Act such works or creeks and rivers, constructed by private individuals, were liable to destruction by any person who considered their existence opposed to his interests. It is now illegal to interfere with any work for which a license has been granted. The security provided is stimulating the construction of irrigation works of a better class throughout the State, and up to the end of December, 1914, the number of applications for licenses under the Act was 3,294.

Water Trusts and Bore Trusts.

Part III of the Water Act, 1912, provides for the supply of water either for irrigation, stock, or domestic purposes, and for drainage, the liabilities on which are repaid to the Crown with interest spread over a period of years, and the works are administered by trustees appointed from among the beneficiaries under the Act.

For the supply of water, trusts have been constituted in connection with (a) seventy-one artesian wells; (b) four schemes for the improvement of natural off-takes of effluent channels, for the purpose of diverting supplies from the main rivers; (c) in three instances for the construction of dams across stream channels; and (d) two pumping schemes from natural water-courses. The total area included within these trusts amounts to 4,925,986 acres.

Artesian Water Supply.

The necessity of providing a constant water supply for domestic use, and also for stock in the dry portions of the interior of New South Wales, induced the Government to devote certain funds to the purpose of bringing to the surface such supplies as might be obtained from the underground sources which exist in the tertiary drifts and the cretaceous beds which extend under an immense portion of the area of the State.

The New South Wales portion of the great Australian Basin, comprising approximately 70,000 square miles, is situated in the north-western portion of the State.

The probability of the existence of underground water had long been a subject of earnest discussion, but doubts were set at rest in 1879 by the discovery of an artesian supply of water on the Kallara run, at a depth of 140 feet. The Government then undertook the work of searching for water, and since the year 1884 the sinking of artesian wells has been conducted in a systematic manner, under the direction of specially-trained officers.

The following statement shows the extent of the work which has been successfully effected by the Government, and by private owners up to the end of the year 1913 :—

Bores.	Flowing.	Pumping.	Total.	Total Depth.
				feet.
For Public Watering-places, Artesian Wells, &c.	121	30	151	261,654
For Country Towns Water Supply	3	.....	3	4,354
For Improvement Leases	39	3	42	66,287
Total, Government Bores	163	33	196	332,295
Private Bores... ..	231	49	280	413,853

The average depth is 1,695 feet in the case of Government bores, and of private bores, 1,480 feet.

The deepest bore is at Boronga, in the Moree district, where boring has been carried to a depth of 4,338 feet; this well yields a supply of 1,044,749 gallons per day. The largest measured flow obtained from Government bores is from Boobora, in the Moree district; the depth of this well is 3,225 feet, and the flow 1,079,766 gallons per day. The State flowing bores

yield about 60 million gallons of water per day, and in addition there are pumping bores. In many cases the flow is estimated only, and in others no data are available.

Of the 520 bores which have been sunk, 394 are flowing, and give an aggregate discharge of 108,083,412 gallons per day; 82 bores give a pumping supply, the balance of 44 being failures; the total depth bored represents 852,411 feet.

The flow from seventy-one bores is utilised for supplying water for stock on holdings served in connection with Bore Water Trusts or Artesian Districts under the Water Act of 1912. The total flow from these bores amounts to 39,869,046 gallons per day, watering an area of 4,331,176 acres by means of 2,597 miles of distributing drains. The average rating by the Bore Trusts to repay the capital cost, with 4 per cent. interest, in twenty-eight years, is 1-515d. per acre, including the cost of maintenance and administration.

In the majority of cases the remaining bores are used by pastoralists for stock-watering purposes only, but in a few instances the supply is utilised in connection with country towns.

The watering of the north-western country by means of bore water has largely increased the carrying capacity of the land; but what is of perhaps greater importance, it has made comparatively small pastoral settlement practicable in country previously confined almost entirely to the operations of companies holding immense areas.

A general yearly decrease in the flow from the bores is still being recorded, and action is being taken to prove whether this observed decrease is due to loss in supply under pressure, or to local causes, such as lateral leakage.

Experiments at the State Farms at Moree and Pera Bore, in the use of artesian water for cultivation, have proved that the bore water can produce satisfactory crops for a considerable number of years. With a view to further demonstrating this in respect of large areas, a special bore is being sunk at the Coonamble Farm, on a site where there is available a considerable quantity of soil typical of that occurring in the districts within the artesian area. Such crops as lucerne, sorghum, maize, and other fodders will be grown on a commercial scale by means of irrigation from the bore.

Private Artesian Bores.

Much has been done in the way of artesian boring by private enterprise. As far as can be ascertained, 303 private bores have been undertaken in New South Wales, of which twenty-three were failures. The yield of the flowing bores is estimated at over 48 million gallons per day. No data are available regarding the pumping bores.

PASTORAL INDUSTRY

LIVE STOCK.

No systematic record of the arrival of live stock was kept in the early days of settlement in New South Wales ; but it appears that in the period between Governor Phillip's landing in 1788 and the year 1800 there were some small importations, chiefly of sheep from India. The numbers of each class of stock at various periods up to 1850, prior to the separation of Victoria, were as follow :—

Year.	Horses.	Cattle.	Sheep.	Swine.
1788	7	6	29	12
1792	11	23	105	43
1796	57	227	1,531	1,869
1800	203	1,044	6,124	4,017
1825	6,142	134,519	237,822	39,006
1842	56,585	897,219	4,804,946	46,086
1850	132,437	1,738,965	13,059,324	61,631

In 1851 the severance of Victoria from New South Wales reduced the number of stock considerably ; the separation of Queensland at the close of 1859 involved a further reduction, and at the end of the latter year the numbers of each kind of live stock within the existing boundaries of New South Wales were 251,497 horses, 2,408,586 cattle, 6,119,163 sheep, and 180,662 pigs. The following table shows the number of stock at the end of each decennial period from 1861 to 1913 inclusive :—

Year.	Horses.	Cattle.	Sheep.	Swine.
1861	233,220	2,271,923	5,615,054	146,091
1871	304,100	2,014,888	16,278,697	213,193
1881	398,577	2,597,348	36,591,946	213,916
1891	469,647	2,128,838	61,831,416	253,189
1901	486,716	2,047,454	41,857,099	265,730
1911	689,004	3,194,236	44,947,287	371,093
1913	746,170	2,822,740	39,850,223	288,090

In addition to the live stock shown above, at the end of 1913 there were 51,675 goats (including 7,620 Angora), 1,792 camels, 80 donkeys, 158 mules,

and 622 ostriches. Since 1891 the sheep have diminished in number to the extent of nearly 22 millions, but the other classes of stock show increases—horses 280,000, cattle 700,000, and swine 35,000. In order to indicate the districts in which the changes in the flocks and herds have occurred, the following table has been prepared, showing the number of live stock in each district at the end of various years since 1896:—

District.	1896.	1901.	1906.	1911.	1913.
SHEEP—					
Coastal District	964,759	1,097,471	1,316,580	1,433,037	1,287,569
Table-land	7,036,738	8,859,069	8,842,332	8,961,344	8,055,465
Western Slopes	10,988,844	11,671,524	11,675,425	11,193,621	9,799,124
Western Plains and Riverina	18,541,961	14,578,523	15,098,996	16,048,376	14,251,550
Western Division	10,806,993	5,522,953	6,299,068	7,305,909	6,466,515
Unclassified .. .. .	.....	127,559	.....	.....	.....
Total.. .. .	48,818,790	41,857,099	44,132,421	44,947,287	39,850,223
DAIRY COWS IN MILK—					
Coastal District	238,530	284,099	355,288	492,242	476,066
Table-land	32,487	70,224	66,745	70,571	55,713
Western Slopes	46,578	39,732	49,002	43,609	43,138
Western Plains and Riverina	26,372	19,790	21,178	24,137	22,790
Western Division	6,216	3,900	2,657	2,906	2,713
Total.. .. .	400,183	417,835	494,820	638,525	600,420
OTHER CATTLE.					
Coastal—					
Dry Cows	612,797	667,282	100,919	136,790	130,808
Heifers			25,652	23,755	21,111
All other			709,484	915,692	861,850
Total.. .. .	612,797	667,282	836,055	1,076,147	1,013,769
Table-land—					
Dry Cows	541,493	500,974	26,440	31,207	22,442
Heifers			7,213	5,178	3,553
All other			468,574	549,874	472,320
Total.. .. .	541,493	500,974	502,227	586,259	498,315
Western Slopes—					
Dry Cows	403,294	305,789	25,199	26,112	17,653
Heifers			7,051	3,849	4,943
All other			365,980	422,273	323,769
Total.. .. .	403,294	305,789	398,230	452,234	345,765
Western Plains and Riverina—					
Dry Cows	199,817	114,327	15,409	20,153	15,110
Heifers			4,367	3,437	3,068
All other			204,901	892,103	238,930
Total.. .. .	199,817	114,327	224,677	325,693	257,138
Western Division—					
Dry Cows	68,579	41,247	4,921	4,331	3,756
Heifers			1,058	1,407	373
All other			87,956	109,640	103,184
Total.. .. .	68,579	41,247	93,935	115,378	107,313
New South Wales—					
Dry Cows	1,825,980	1,629,619	172,888	218,593	189,769
Heifers			45,341	37,626	32,478
All other			1,588,895	2,290,492	2,000,073
Total.. .. .	1,825,980	1,629,619	2,055,124	2,555,711	2,222,320
HORSES—					
Coastal District	160,285	160,704	171,485	207,074	218,756
Table-land	115,314	112,294	110,077	128,602	130,522
Western Slopes	108,493	110,845	130,947	179,728	196,474
Western Plains and Riverina	85,622	77,650	97,009	140,140	163,778
Western Division	40,922	25,223	28,244	35,640	36,640
Total.. .. .	510,636	486,716	537,762	689,904	746,170

SHEEP.

The suitability of the land for grazing was undoubtedly the means of inducing the early colonists to enter upon pastoral pursuits, and the relative ease with which operations could be conducted, in comparison with the difficulties attendant upon other primary industries, confirmed their choice.

In the year 1795, Captain John Macarthur, one of the first promoters of sheep-breeding in New South Wales, had accumulated a flock of a thousand sheep; but, not satisfied with the natural increase of his flocks, he sought also to improve the quality of their fleeces. By good fortune, in 1797, Captain Waterhouse arrived from the Cape of Good Hope with a number of very fine Spanish-bred sheep, which he sold to various stockowners. With the advantage of this superior stock, Macarthur gradually improved his strain, and in a few years obtained fleeces of very fine texture.

Prior to the nineteenth century the production of the finest wool had been fostered chiefly in Spain, so that woollen manufactures were necessarily somewhat restricted, and it was at this favourable period that Macarthur arrived in England with specimens of the wool obtained from his finest sheep, proving conclusively the capabilities of Australia as a wool-producing country. In this way he established a small trade, which, as Australian wool rose in public estimation, gradually increased until it has reached its present enormous dimensions; so that, although not the first to introduce merino sheep into Australia, there is no doubt that to him is due the credit of having been the first to prove that the production of fine wool could be made a profitable industry in this country.

As might have been anticipated, natural conditions in Australia have somewhat varied the character of the Spanish fleece. The wool has become softer and more elastic, and while diminishing in density it has gained in length, so that the weight of the fleece has increased. The quality of the wool has improved under the influence of the climate, and Australian wool is recognised as the best in the world.

The following table shows the number of sheep at the close of each quinquennial period since 1861 and illustrates the progress of sheep-breeding in New South Wales:—

Year.	Sheep.	Year.	Sheep.	Year.	Sheep.
1861	5,615,054	1881	36,591,946	1901	41,857,099
1866	11,562,155	1886	39,169,304	1906	44,132,421
1871	16,278,697	1891	61,831,416	1911	44,947,287
1876	25,269,755	1896	48,318,790	1913	39,850,223

Considering the unimproved condition of the pasturage over a great portion of its area, it was apparent in 1891 that the State was overstocked, and graziers restricted the natural increase of their flocks by breeding only from the better-class ewes. In addition, the following season proved unfavourable, so that during the year there was a large decrease in the number of sheep. The adverse season of 1892 was, unfortunately, the forerunner of many others, so that with the exception of 1900, the whole of the years up to 1902 were distinctly unfavourable to the pastoral industry. The climax was reached during the 1902-3 season, which was particularly disastrous. The number of sheep fell from 41,857,099 at the beginning of 1902 to 26,649,424 at its close. In 1903 the flocks increased by little more than 2 millions, and as the number of lambs marked during the year exceeded 7 millions, there is abundant evidence that further heavy losses of grown sheep

occurred during the early part of the year, when the sheep could not have exceeded 25 millions, or 37 millions less than in 1891.

From 1902 there was a steady increase in sheep until 1909, when the number had risen to 46,202,578, the highest recorded since 1898. The flocks have since decreased considerably, the principal causes being heavy losses in lambs and grown sheep through drought, the subdivision of large holdings, and change from pastoral industry to dairying.

The decrease in the total was accompanied by great changes in the sizes of individual flocks, and these changes may be traced in the following table, which gives an approximate classification of the flocks, for various years from 1891 to 1913. In the former year there were only 13,187 holdings, but in 1913 the number had increased to 25,023, although the sheep had decreased by nearly 22 millions. It is significant that while in 1891 there were 73 holdings which each carried over 100,000 sheep, the number of such in 1901 was 12, and in 1913 only 3. The sheep in flocks of over 20,000 comprised 62 per cent. of the total in 1891, but only 25½ per cent. in 1913, while for 1891 the flocks under 2,000 comprised 9·3 per cent. of the total sheep compared with 24·3 per cent. in 1913. The greatest change has occurred since 1894, when a very large number of sheep perished, and pastoralists realised that the best method of meeting droughty seasons lay in the subdivision of their large flocks. Since 1904 the application of the closer settlement policy to large estates has caused a further subdivision of the flocks.

Size of Flocks.	Number of Flocks.				Number of Sheep.			
	1891.	1901.	1911.	1913.	1891.	1901.	1911.	1913.
1-1,000 ..	7,606	11,800	17,773	17,654	2,794,751	3,797,114	5,252,546	4,954,318
1,001-2,000 ..	1,954	2,351	3,510	3,257	2,979,168	3,560,849	5,149,618	4,745,097
2,001-5,000 ..	1,696	1,722	2,735	2,555	5,493,942	5,519,008	8,554,299	7,910,587
5,001-10,000 ..	686	729	847	807	4,943,221	5,210,117	5,977,233	5,691,926
10,001-20,000 ..	495	465	507	450	7,056,580	6,666,429	7,143,273	6,325,250
20,001-50,000 ..	491	344	296	263	15,553,774	10,552,373	8,737,927	7,672,244
50,001-100,000 ..	186	76	53	34	12,617,206	4,835,547	3,434,698	2,217,510
100,001 and over ..	73	12	6	3	10,392,774	1,588,103	697,693	333,291
Total ..	13,187	17,499	25,727	25,023	61,831,418	41,857,099*	44,947,287	39,850,223

* Includes 127,559 sheep in unclassified flocks.

After allowing for the causes which naturally impede the increase, such as the demands of the meat supply, the requirements of the neighbouring States, and the losses occurring from causes other than drought, it is found that the rate of annual increase has been as high as 20 per cent., so that it is possible for the flocks of New South Wales to double themselves within four years, and actual experience shows that this rate of increase occurred in 1904 and in several of the earlier years. During the period of five years from 1861 to 1866 there was an increase of 100 per cent.; and the flocks of the State were again doubled in the eight years from 1866 to 1874, and in the thirteen years from 1874 to 1887.

Until recent years the demand for sheep for local consumption was so small compared with the supply that it did not appreciably affect the increase of the flocks of the State. This, however, is not now the case; the annual demand for food consumption within the State is nearly 9 per cent. of the number of sheep depastured—equal to slightly more than three-fourths of the cast. The "cast" implies the number of sheep which, from breeding or wool-growing considerations, it is more profitable to kill than to feed. Expressed as a percentage of the total number of sheep depastured, the "cast" is a variable quantity, which, however, may be taken approximately as 11½ per cent. The number required for export in a frozen or preserved

state, and for tallow brings up the total killed per annum to nearly 14½ per cent. of the entire flocks.

The following table gives the number of sheep in each State of Australia at the end of 1913, together with the proportion of the total owned in each:—

State.	Sheep.	Proportion owned in each State.
	No.	per cent.
New South Wales	39,850,223	46·85
Victoria	12,113,682	14·24
Queensland	21,786,600	25·61
South Australia	5,073,057	5·96
Northern Territory	75,808	·09
Western Australia	4,421,375	5·20
Tasmania	1,745,356	2·05
Commonwealth	85,066,101	100·00

The introduction of sheep and cattle into New South Wales was forbidden for many years, lest the flocks and herds might be contaminated by scab and various diseases prevalent in other countries; but these restrictions were removed at the beginning of the year 1888, and pure-bred sheep are now imported from the United Kingdom, and other countries. So far, the principal breed imported has been the Merino; but Lincoln, South Downs, Vermont, Shropshire, and other well-known breeds have been introduced. During 1913 the sheep imported from Great Britain numbered 17, the breeds being 3 Devon, 3 Wensleydale, and 11 Romney Marsh.

The principal breeds of sheep in New South Wales are the Merino, Lincoln, Leicester Downs, and Romney Marsh, and crosses of the long-woolled breeds, principally with the Merino. In addition, Suffolk Downs sheep, which appear to be pre-eminently adapted for farming purposes, and for the production of a weighty lamb for the export trade, were introduced into the New England district during 1904. At the close of 1913, the respective numbers of merino and cross-breeds were as shown below; the figures are based on returns collected by the Chief Inspector of Stock, and are exclusive of 1,850,681 sheep, particulars of which are not available:—

Class of Sheep.	Rams.	Ewes.	Wethers.	Lambs.	Total.
Merino	428,390	15,927,965	9,110,170	5,993,522	31,460,047
Other Breeds—					
Coarse Wool	140,208	2,908,899	1,497,979	1,992,409	6,539,495
Total	568,598	18,836,864	10,608,149	7,985,931	37,999,542

Of the coarse-woolled sheep the largest proportion are Lincolns and their crosses with merino. The proportion of English and cross-bred sheep has increased considerably. In 1893 the proportion of coarse-woolled and cross-breeds rose from about 2½ to 4·3 per cent., but with the development of the meat export trade it has now advanced to 17·3 per cent.

The climate of New South Wales is so mild that there is no necessity for housing stock during the winter months, except on the highlands. The

sheep are kept either in paddocks or under the care of shepherds, though on some stations they are both shepherded and paddocked.

The advantages of the paddock system are numerous, and are now fully recognised by stockowners. Sheep kept in paddocks thrive well, and are less liable to foot-rot, and other diseases; they grow a better fleece and the wool is sounder and cleaner; the sheep increase in size and live longer; in addition, the expenses of the station are less than if worked under any other system.

The increased attention paid to cross-breeding to supply the demands of the frozen-mutton trade, and the large increase in the number of small farmers who combine grazing with agriculture, have emphasised the necessity of conducting experimental breeding on a scientific basis, and of providing instructions for sheep-farmers. To meet this necessity a Sheep and Wool Expert at the Department of Agriculture organises the experimental work conducted at State Experiment Farms, and gives lectures and demonstrations in country centres.

WOOL.

The wool-clip is the most important item of production of New South Wales, and the prosperity of the State very largely depends upon the wool market. The following table shows the production in quinquennial periods since 1876, distinguishing the exports and local consumption. The exports comprise both washed and greasy wool, and, as regards quantity, the actual weight of exports would not show the production clearly. As the proportion of washed and greasy wool varies each year, the washed wool should, therefore, be stated, as in grease. This has been done for the purposes of the following table, and adding to the exports the quantity of wool used locally in woollen mills, the total production, stated as in the grease, was as follows:—

Period.	New South Wales Wool.—Quantity.			Value.		
	Exported.	Used locally.	Total production.	Exported.	Used locally.	Total Value (F.O.B., Sydney).
	lb.	lb.	lb.	£	£	£
1876-1880	713,518,500	4,878,500	718,397,000	31,076,350	222,250	31,298,600
1881-1885	939,605,700	4,208,300	943,814,000	40,381,380	181,720	40,563,100
1886-1890	1,290,919,900	3,861,100	1,294,781,000	44,641,580	130,920	44,772,500
1891-1895	1,808,007,600	5,622,400	1,813,630,000	48,893,010	131,590	49,024,600
1896-1900	1,401,170,000	7,070,000	1,408,240,000	42,782,450	201,250	42,983,700
1901-1905	1,297,118,300	5,466,700	1,302,585,000	46,528,630	190,470	46,719,100
1906	324,605,600	835,400	325,441,000	14,072,400	26,600	14,099,000
1907	366,501,900	944,100	367,446,000	17,158,500	26,500	17,185,000
1908	337,128,900	1,000,100	338,129,000	12,800,300	29,700	12,830,000
1909	369,734,800	1,073,200	370,808,000	13,755,000	33,000	13,788,000
1910	413,775,200	1,562,800	415,338,000	15,651,000	57,000	15,708,000
1911	369,144,000	2,402,000	371,546,000	13,178,000	86,000	13,264,000
1912	324,384,000	2,420,000	326,804,000	12,727,000	96,000	12,823,000
1913	355,501,000	2,484,000	357,985,000	14,237,500	99,500	14,337,000

The values given in this table represent the export prices free on board, Sydney, and, consequently, differ from those on a later page, which show the values at the place of production. As particulars of the interstate trade were not collected subsequent to 13th September, 1910, the figures for the last three years are approximate.

No distinction was made prior to 1876 between washed and greasy wool, so that any attempt to estimate the production is surrounded with difficulty. From the information available, however, it would appear that

the production in 1861 was 19,254,800 lb., and in 1871 the weight in grease was 74,401,300 lb. An estimate of the production for the intervening years is rendered impossible because in several instances the greater portion of the wool clip was held over for a considerable period, awaiting an opportunity for shipment.

The above figures show how greatly the prosperity of the State is affected by fluctuations in the market value of its staple export, for, taking the average annual production during the past five years at 368,000,000 lb., a rise of 1d. per lb. in the market price means an addition of £1,533,000 to the wealth of the people.

As the season for exporting wool does not fall wholly within the calendar year, the exports for any year consist partly of that season's clip and partly of the previous clip. The following table shows the total number of sheep shorn, according to the returns collected by the Chief Inspector of Stock, during each year since 1891:—

Year.	Sheep and Lambs shorn.	Year.	Sheep and Lambs shorn.	Year.	Sheep and Lambs shorn.
1891	57,702,702	1899	34,569,924	1907	40,338,706
1892	55,602,188	1900	38,400,241	1908	41,912,546
1893	54,090,109	1901	40,417,263	1909	43,356,535
1894	54,234,997	1902	27,639,804	1910	43,179,665
1895	45,695,657	1903	26,994,870	1911	42,468,227
1896	45,997,583	1904	31,804,772	1912	36,243,837
1897	42,429,750	1905	37,145,686	1913	33,454,612
1898	41,220,440	1906	41,704,814		

WOOL SALES.

Formerly almost all the wool was shipped on the grower's account and sold in London, but during recent years over 86 per cent. has been sold in the Sydney market, as purchasers have realised the advantages of buying on the spot. The attached table exhibits the growing tendency to operate in Sydney:—

Seasons.	Total deep-sea exports (from Sydney and Newcastle).	Sydney Wool Sales.		
		Offered.	Sold at auction and privately.	Proportion of deep-sea exports sold in Sydney.
	bales.	bales.	bales.	per cent.
1887-88--1889-90	1,318,351	764,520	580,000	43·99
1890-91--1892-93	1,823,085	1,093,766	886,541	48·63
1893-94--1895-96	2,158,220	1,382,517	1,241,858	57·54
1896-97--1898-99	1,971,513	1,318,579	1,204,373	65·65
1899-1900--1901-02	1,766,922	1,330,747	1,309,915	74·14
1902-03--1904-05	1,549,598	1,232,819	1,252,817	80·85
1905-06--1907-08	2,356,811	1,969,061	1,939,916	82·31
1908-09--1910-11	2,771,200	2,265,155	2,364,555	85·33
1911-12	897,814	788,794	779,099	86·78
1912-13	773,458	665,978	669,235	86·53
1913-14	853,323	780,977	775,443	93·14

Of the 775,443 bales of wool sold in Sydney during 1913-14 24,312 bales were the product of other Australian States and of New Zealand. On the other hand 158,723 bales of New South Wales wool were sold in other Australasian markets.

The proportions of fleece and lambs' wool sold in the Sydney markets were 95 per cent. and 5 per cent. respectively; only 12 per cent. of the wool was scoured.

The great bulk of wool sold in New South Wales (*i.e.* 90 per cent.) was merino.

Of the wool sold in Sydney during the last season, approximately 629,305 bales were purchased for the Continent of Europe, 77,930 bales for the English trade and for London on speculative account, 26,050 bales for America, 14,658 bales for Japan, China, and India, the balance—27,500 bales—being taken by local scourers. The average prices per bale realised in Sydney and in London since the year 1903 are shown in the following table:—

Year.	Average Prices per Bale realised.					
	In Sydney. Year ended 30th June.			In London. Year ended 31st December.		
	£	s.	d.	£	s.	d.
1903	12	8	8	13	10	0
1904	12	17	1	14	10	0
1905	12	17	1	15	15	0
1906	13	19	6	17	0	0
1907	14	3	0	16	10	0
1908	13	9	0	13	5	0
1909	11	15	10	15	0	0
1910	13	14	4	16	5	0
1911	12	10	11	15	0	0
1912	11	19	0	15	0	0
1913	13	13	10	16	10	0
1914	13	6	6	17	0	0

In comparing the prices of the Sydney and London markets, it should be noted that in the former the season ends with June and in the latter with December, also that a much larger proportion of the lower qualities of wool, such as pieces, bellies, locks, &c., are sold in Sydney.

The prices realised for the different descriptions of wool at the Sydney wool sales during the last two seasons are given below:—

Description.	Superior.		Good.		Medium.		Inferior.	
	1912-13.		1913-14.		1912-13.		1913-14.	
	per lb. d.	per lb. d.	per lb. d.	per lb. d.	per lb. d.	per lb. d.	per lb. d.	per lb. d.
Greasy—								
Fleece ..	14½ to 18½	14½ to 16½	11½ to 14	11½ to 14	8½ to 11½	8½ to 11½	7 to 8½	7 to 8½
Pieces ..	11 ,, 13½	11 ,, 13	9 ,, 10½	9½ ,, 10½	7½ ,, 8½	7½ ,, 9	6½ ,, 7½	6½ ,, 7½
Bellies ..	8 ,, 11	8½ ,, 11½	6½ ,, 7½	7 ,, 8½	5½ ,, 6½	5½ ,, 6½	4½ ,, 4½	4½ ,, 5½
Lambs ..	12½ ,, 14½	12½ ,, 14½	10 ,, 12½	10½ ,, 12½	7½ ,, 9½	7½ ,, 10	5½ ,, 7½	5½ ,, 7½
Crossbred—								
Fine ..	12 ,, 15	11½ ,, 16	11 ,, 11½	10 ,, 11½	9½ ,, 10½	8½ ,, 9½	8½ ,, 9½	7 ,, 8½
Coarse ..	9 ,, 11	8½ ,, 11	7½ ,, 8½	7½ ,, 8½	6½ ,, 7½	6 ,, 7	4 ,, 6	4 ,, 5½
Scoured—								
Fleece ..	22 ,, 25	28 ,, 26½	20 ,, 21½	21 ,, 22½	18 ,, 19½	18½ ,, 20½	16 ,, 17½	16 ,, 18½
Pieces ..	18½ ,, 22	19½ ,, 23½	17 ,, 18½	17½ ,, 19½	15 ,, 16½	15½ ,, 17½	13½ ,, 14½	13½ ,, 15½
Bellies ..	16 ,, 20	17 ,, 22½	14½ ,, 15½	15 ,, 16½	12½ ,, 14½	13 ,, 14½	11 ,, 12½	11 ,, 12½
Locks ..	11½ ,, 15	12 ,, 18½	10 ,, 11½	10 ,, 11½	8½ ,, 9½	8½ ,, 9½	6½ ,, 8	7 ,, 8

In order to illustrate the fluctuations in value, the following table has been compiled, which gives a fairly correct idea of the average value realised for

greasy wool in the London market at each of the principal sales during the last thirteen years:—

Year.	1st Series.	2nd Series.	3rd Series.	4th Series.	5th Series.	6th Series.	7th Series.
	per lb. d.	per lb. d.	per lb. d.	per lb. d.	per lb. d.	per lb. d.	per lb. d.
1902	10½	10½	11½	11½	12	12½	...
1903	12½	12	11½	11	11	10½	...
1904	11	10	10½	11	11½	12	...
1905	12	11¾	12½	12½	12½	12½	...
1906	12	12½	12½	12½	12	12½	...
1907	12¼	12½	12½	12¾	12¾	11¾	...
1908	11¾	10	9¾	10¾	10¾	11¾	...
1909	11½	11¾	12	12	12½	12½	...
1910	12¼	12½	12¾	12¾	12½	12½	...
1911	12	12½	12	12	11½	11½	...
1912	11½	...	11¾	12	12	12¼	...
1913	12½	12½	12½	12	12	12	...
1914	12½	12¾	12¾	12¾	11¾	11½	10¾

During the period covered by the table, Sydney-shipped greasy wool realised 12¾d. to 9¾d. The maximum prices were realised during 1907, when the sales twice closed at 12¾d. per lb., and also in 1910 and 1914. The 1902 sales opened at 10½d., and the prices rose gradually to 12½d. at the close. In 1903 there was a gradual fall to 10½d., but at the last sales in 1904 prices again reached 12d. This value was more than maintained during the next three years. During 1908 the value fell to 9¾d., but rose to 11¼d. at the close of the year. In 1909 prices opened at 11½d. and gradually rose to 12¾d. in 1910, finishing at the last sales at 12¾d. During 1911, the ruling price was 12d.; the price did reach 12¾d., but receded to 11½d. at the close of the year. This was also the opening quotation for the following season, and although the second series had to be abandoned on account of the coal strike in March, 1912, the prices rose gradually to 12¼d. at the last series in November and December. For 1913 the sales opened at 12½d., and the price declined slightly during the year. In 1914 the market opened at 12½d. In the second, third and fourth series 12¾d. was the ruling price, but owing to the war the prices receded to 10¾d. It will be noticed that seven series were held.

CATTLE.

Though still a very important industry, cattle-rearing does not now occupy so prominent a position as formerly. The number of cattle returned at the close of various years since 1861, as given in the subjoined table, shows that there was a great decline in the total from 1876 to 1886, that the number steadily increased from 1886 to 1896, when it stood at 2,226,163, and then, owing to unfavourable seasons the number decreased until in 1902 the total was only 1,741,226. From 1902 the number increased until it reached 3,194,236 in 1911, but in 1913 the total was 2,822,740.

Year.	Cattle.	Year.	Cattle.	Year.	Cattle.
1861	2,271,923	1896	2,226,163	1907	2,751,193
1866	1,771,809	1901	2,047,454	1908	2,955,934
1871	2,014,888	1902	1,741,226	1909	3,027,727
1876	3,131,013	1903	1,880,578	1910	3,140,307
1881	2,597,348	1904	2,149,129	1911	3,194,236
1886	1,367,844	1905	2,337,973	1912	3,040,834
1891	2,128,838	1906	2,549,944	1913	2,822,740

The principal breeds of cattle now in the State are the Durham or Shorthorn, Hereford, Devon, Black-polled, Ayrshire, Alderney, Jersey, and crosses from these various breeds. At the close of the year 1913 the numbers of each breed, as far as could be ascertained, were :—

Breed of Cattle.	Pure and Stud.	Ordinary.	Total.
Shorthorn	78,863	542,701	621,564
Hereford	31,397	129,724	161,121
Devon	10,277	31,817	42,094
Black-polled	2,366	11,363	13,729
Red-polled	547	883	1,430
Ayrshire	8,694	54,901	63,595
Alderney	1,515	5,137	6,652
Guernsey	1,086	9,836	10,922
Holstein	728	4,085	4,813
Jersey	16,081	65,667	81,748
Red Lincoln	20	.....	20
Kerry	10	.....	10
Highland	40	120	160
Total	151,624	856,234	1,007,858
Crosses (first crosses)—			
Shorthorn—Hereford ... ..	.....	284,311	284,311
Shorthorn—Devon ... ..	.....	122,327	122,327
Hereford—Devon ... ..	.....	52,084	52,084
Ayrshire—Shorthorn ... ..	.....	180,448	180,448
Ayrshire—Holstein ... ..	.....	200	200
Alderney—Shorthorn ... ..	.....	1,350	1,350
Black-polled—Shorthorn ... ..	.....	22,566	22,566
Black-polled—Hereford ... ..	.....	3,500	3,500
Jersey—Shorthorn ... ..	.....	86,320	86,320
Jersey—Ayrshire ... ..	.....	557	557
Jersey—Holstein ... ..	.....	90	90
Jersey—Kerry ... ..	.....	6	6
Unrecognisable ... ..	.....	662,026	662,026
Total ... ..	.....	1,415,785	1,415,785
Total—All Breeds	151,624	2,272,019	2,423,643

There were, in addition, 399,097 cattle not classified, which were for the most part in the towns.

In 1913 the number of calvings recorded was 756,881.

There has been an appreciable increase in the number of milking cattle, many of the farmers in the coastal districts having turned their attention to dairying, with very satisfactory results. The number of milch cows at the close of the year 1913 was 600,420.

The breed of cattle throughout the State is steadily improving—a result due to the introduction of good stud stock; to greater attention and care exercised in selection and breeding, more particularly for dairying purposes; and to culling and keeping in paddocks. In order to encourage and assist dairy farmers in improving breeds the Government imported some high-class stud bulls from England, and these and their progeny are sold, or kept for service at the State farms. There are now about thirty of these bulls available.

Importations from Europe and America were discontinued for many years owing to the natural dread of the stockowners lest their herds should contract diseases which have devastated the cattle of other countries. The prohibition was removed in 1888, and cattle are now admitted after quarantine; the number so admitted in 1913 was thirty-four—six bulls and twenty-eight

The exports of New South Wales cattle to countries oversea during 1913 numbered 373. Of these 345, valued at £2,457, were ordinary cattle, and 28, valued at £1,140, were cattle for stud purposes.

Horses.

At an early period the stock of the country was enriched by the importation of some excellent thoroughbred Arab horses, so that Australian horses have acquired a high reputation. The number in the State steadily increased from 1883 to 1894, when it stood at 518,181; but, owing to the drought, the total in 1895 fell to 499,943. In 1896 there was an increase to 510,636, attributed to increased settlement, more breeding, and fewer sales for export. By successive decrements the number of horses had fallen in 1902 to 450,125; since that year there has been a substantial increase, and the number at the end of 1913 reached 746,170. There was a great advance in horse breeding between 1910 and 1914 in consequence of the increased demand owing to additional settlement and the prosperous seasons, and to the defence requirements.

The following table shows the number of horses in New South Wales at the end of various years since 1861:—

Year.	Horses.	Year.	Horses.	Year.	Horses.
1861	233,220	1896	510,636	1907	578,326
1866	274,437	1901	486,716	1908	591,045
1871	304,100	1902	450,125	1909	604,784
1876	366,703	1903	458,014	1910	650,636
1881	398,577	1904	482,663	1911	689,004
1886	361,663	1905	506,884	1912	716,457
1891	469,647	1906	537,762	1913	746,170

For purposes of classification the horses have been divided into draught, light-harness, and saddle horses, and the number of each particular kind, so far as could be ascertained from returns collected by the Stock Department, was as follows:—

Class.	Thoroughbred.	Ordinary.	Total.
Draught	31,619	228,917	260,536
Light-harness	16,508	134,964	151,472
Saddle	29,676	174,266	203,942
Total... ..	77,803	538,147	615,950

Returns relating to the remaining 130,220 animals were not received.

New South Wales is specially suitable for the breeding of saddle and light-harness horses, and it is doubtful whether in these particular classes the Australian horses are anywhere surpassed. On many of the large holdings thoroughbred sires are kept, and the progeny combine speed with great powers of endurance. Fed only on the ordinary herbage, these animals constantly perform long journeys across difficult country, and become hardy and sure-footed to a high degree. It is the possession of these qualities which gives them great value as army remounts.

The approximate number of animals fit for market is as follows:—Draught, 40,110; light-harness, 29,303; saddle, 38,305; total, 107,718. Of these it is estimated that about 26,253 are suitable for the Indian and other markets.

IMPORT OF HORSES.

During 1913-14 the importations of horses from Great Britain and America numbered 78, including 50 thoroughbred horses. The horses were subject to the prescribed quarantine. In December, 1914, the Government landed a draft of 20 Clydesdale mares, purchased principally in Scotland, with the object of improving this breed in the State.

EXPORT OF HORSES.

There is a considerable export trade annually to countries outside Australia, the number of New South Wales horses in 1913 being 1,826, valued at £54,098. The following table shows the number and value of horses bred in New South Wales exported to countries outside Australia in the years 1900, 1905, 1910, and 1913 :—

Countries.	Number.				Value.			
	1900.	1905.	1910.	1913.	1900.	1905.	1910.	1913.
Burmah ... ..	.....	95	85	...	£	£ 2,625	£ 2,743	£
Fiji	48	446	190	106	1,220	11,189	4,566	3,215
Hong Kong	5	404	...	...	115	15,021	.....	...
India	1,688	1,922	925	950	18,521	42,774	20,522	23,370
New Zealand	189	118	106	42	3,276	4,188	6,460	2,994
South Africa	7,714	8	1	...	124,485	1,780	25	...
Straits Settlements	295	121	42	66	7,440	3,110	6,645	1,975
China	1,489	85	1	...	41,600	2,041	60	...
Japan ... ..	.....	1,631	31	58	.....	26,495	1,620	2,820
Java	36	265	98	553	720	3,345	2,747	16,290
Philippine Islands	35	190	397	10	1,060	3,085	9,985	302
Other Countries ...	73	121	50	41	4,848	3,311	1,743	3,132
Total	11,572	5,406	1,926	1,826	203,285	118,964	57,116	54,098

For many years India has offered the best market for Australian horses; the trade with Java has increased, but shows great fluctuations.

The large number exported from New South Wales in 1900 was due to the despatch of mounted troops to the South African war; but, apart from this, there has been a considerable decrease in the number exported, mainly on account of the greater local demand.

VETERINARY EXAMINATION.

To raise the standard of horses generally in the State, the Minister for Agriculture recently decided in connection with Agricultural Societies desiring to participate in the Government subsidy, that all stallions entered as such for prizes at agricultural shows shall be subject to veterinary examination with a view to detecting hereditary unsoundness, and deciding their suitability

otherwise for stud service. It has been recognised, however, that to effect a general improvement compulsory regulation by the State authorities is absolutely necessary. As a step towards this end, a system of examination and certification of stallions by Government veterinary officers was initiated in 1909; it applies only to horses voluntarily submitted by owners for inspection. Primarily the horses examined were chiefly those submitted at Agricultural and Pastoral Shows, but arrangements were subsequently made to hold parades at numerous centres throughout the State. Examination at Shows, except in the case of the Sydney Royal Show, has now been discontinued.

Lists have been published giving the names of stallions for which certificates for life have been issued to the end of 1913, and include particulars respecting 862 draughts, 477 thoroughbreds, 386 trotters, 157 lights, and 548 ponies.

As the scheme has been in operation for a very short period it is not possible to foreshadow its ultimate effect on the industry; but it has already brought about some desirable results, as, for instance, depreciation in selling value of uncertificated stallions and corresponding increase to the value of the certificated; greater care in the selection of animals for importation; and the education of owners in a practical manner regarding various forms of unsoundness. It prevents unsound horses from being exhibited, and ensures breeders, if they demand the production of the certificate at time of service, from using unsound sires. By means of the examinations also the veterinary officers have been able to collect accurate information which will be useful as a basis of future measures in connection with horse-breeding.

At the present time horses rejected for certificate are not prevented from doing stud work, and many stallions have not been presented for examination.

During the year ended 30th June, 1914, 1,235 stallions were examined for certificates; of these 463 or 37½ per cent. were rejected. The principal causes being deficiency in type, breeding, and conformation. Over 25 per cent. of the rejections resulted from these causes.

Shown in classes the examinations and rejections were as follows:—

Class.	Examined.	Rejected.	
		Number.	Per cent.
Draught ...	674	243	36
Light ...	314	132	42
Ponies ...	247	88	35½
Total ...	1,235	463	37½

At the Interstate Conference of Chief Veterinary Officers and Chief Inspectors of Stock of the Departments of Agriculture of the various States in 1912-13, respecting the examination and certification of stallions, it was resolved—

- (a) That early legislation be enacted to provide that uncertificated horses should not be allowed to travel or stand for stud purposes.
- (b) That, in the interests of the scheme for examination and certification of stallions, it is highly desirable that stud books of the recognised breeders of horses should be established in each State forthwith.

Recognising the importance of improving the breed, and of further developing the industry, the Government has established a Chair of Veterinary Science at the Sydney University.

LIVE STOCK IN PRINCIPAL COUNTRIES.

A comparison of the numbers of horses, cattle, sheep and swine in New South Wales and other countries is afforded by the subjoined table, the figures being the latest available :—

Country.	Horses.	Cattle.	Sheep.	Swine.
Australia—				
New South Wales... ..	746,170	2,822,740	39,850,223	288,090
Victoria	562,331	1,528,553	12,113,682	221,277
Queensland	707,265	5,322,033	21,786,600	140,045
South Australia	283,641	352,905	5,073,057	64,119
Northern Territory	18,382	405,552	75,808	1,500
Western Australia... ..	156,636	834,265	4,421,375	47,966
Tasmania	43,941	205,743	1,745,356	37,990
Total	2,518,366	11,471,791	85,066,101	800,987
New Zealand				
United Kingdom	404,284	2,020,171	24,191,810	348,754
Argentina	1,985,355	11,874,594	28,886,561	3,979,754
Austria	8,894,931	28,786,168	80,401,486	2,900,000
Belgium	1,802,848	9,160,009	2,428,101	6,432,080
Canada	262,709	1,830,747	*	1,348,514
Chile	2,378,204	6,596,860	2,084,594	3,153,680
Denmark	420,786	1,760,272	4,168,572	165,673
France	535,018	2,253,982	726,879	1,467,822
Germany	3,222,140	14,705,900	16,467,700	6,903,750
Hungary	4,523,059	20,182,021	5,803,445	21,923,707
Italy	2,351,481	7,319,121	8,548,204	7,580,446
Japan	906,820	6,198,861	11,162,926	2,507,798
Russia in Europe	1,576,146	1,405,026	3,736	298,709
Spain	23,860,178	35,547,348	*	11,944,568
Union of South Africa	525,853	2,561,894	15,829,954	2,571,359
United States of America	719,414	5,796,949	30,656,659	1,081,600
Uruguay	20,567,000	56,527,000	51,482,000	61,178,000
	556,307	8,192,602	26,286,296	180,099

* Not available.

GOATS AND OTHER LIVE STOCK.

The number of goats in New South Wales at the end of 1913 was 51,675, including 7,620 Angora goats. Angora goats are chiefly valued by pastoralists on account of their effectiveness as scrub exterminators, though the dry climate of the western districts is eminently suitable for the production of the finest mohair. Although the mohair industry is but in its infancy, a shipment from this State, which was sold in London in November, 1910, realised 12½d. per lb.

Camels are used as carriers in the Western Plains, the number in 1913 being 1,792, compared with 971 in 1911.

Donkeys and mules are not extensively used in New South Wales, the numbers in 1912 and 1913 being 63 donkeys 138 mules, and 80 donkeys 158 mules, respectively. It is claimed that mules have many points of advantage in comparison with horses for farm work, especially in areas of limited rainfall—for instance, longer period of utility, smaller cost of maintenance, combined with a readiness to labour, and comparative freedom from disease. As regards the profitableness of mule breeding, there is generally a good demand for them in the world's markets.

Ostrich farming is successfully conducted in New South Wales, though not on an extensive scale. The number of ostriches at the end of 1913 was 662,

as compared with 555 at the close of the previous year. As the climate of certain portions of the State is considered very suitable for ostrich farming the industry is believed to have a great future.

WATERING PLACES FOR STOCK.

Watering places are established on all the main stock routes of the State, and consist of tanks, dams, wells and artesian bores. At the close of 1913 there were 708 public watering places, viz., 531 tanks and dams or reservoirs, 103 wells, and 74 artesian bores. Except at those dams and reservoirs which are of large extent and capacity, stock are not allowed direct access to the tanks, but are watered at troughs which are filled by means of service reservoirs, into which the supply is raised by steam, horse, or wind power. From the wells the water is usually drawn by whims and self acting buckets.

PASTURES PROTECTION DISTRICTS.

New South Wales is divided into sixty-seven Pastures Protection Districts, which are in charge of sixty Inspectors of Stock.

The number of horses, cattle, and sheep which travelled along the various stock routes during the year ended June, 1914, was:—Horses, 114,691; cattle, 1,693,035; sheep, 39,526,339. There were 27,996 inspections made by the Inspectors of Stock, at which 107,465 horses were inspected, 1,249,171 cattle, and 18,458,274 sheep. 27,762 permits were issued, and 199 renewed permits.

SHEEP BRANDS AND MARKS.

Under the Pastures Protection Act, 1912, all sheep above the age of six months must be branded and kept legibly branded by the owner thereof with an "owner's brand" which has been duly recorded. Only one fire brand and one paint or tar "owner's brand," and one owner's ear-mark is allotted to each sheepowner for every run held by him. During the year 1913-14 the number of sheep brands and ear-marks recorded and transferred were as follow:—

	Recorded.	Transferred.	Total Registered.
Fire Brands... ..	45	39	84
Tar Brands	1,314	210	1,524
Ear Marks	1,173	203	1,376
Total	2,532	452	2,984

HORSE AND CATTLE BRANDS.

The number of horse and cattle brands registered up to 30th June, 1914, was 120,967. The number of brands registered during the year was:—Horse brands (alone), 305; cattle brands (alone), 336; horse and cattle brands, 1,668; and camels, 10; making a total of 2,319. The brands are registered under the provisions of the Stock Act, 1901.

PRICES OF STOCK.

As may be seen from the following table, the prices of fat stock for 1914 show great variations, due to supply and demand, quality, and in the case of

sheep, woolly or shorn skins. The months at which maximum and minimum prices prevailed are also shown :—

Class of Stock.	Highest Price.		Lowest Price.	
	£ s. d.	Month.	£ s. d.	Month.
Fat Stock—				
Bullocks and Steers—				
Prime Handy Weights ...	14 0 0	Aug. and Dec.	8 10 0	January
Good Weighty & Good ...	12 0 0	August	7 0 0	January
Cows—Good... ..	8 10 0	April, Aug., Nov. and December	5 0 0	Feb. and Aug.
Medium and Light...	6 10 0	April, Nov., and December	3 0 0	February
Sheep—				
Merinos—				
Wethers & Hoggets—				
Good, Woolly	1 1 0	June and July	0 16 0	Aug., Sept., Oct. and Nov.
Good, Short Wool ...	1 0 0	April	0 14 0	March
Good, Shorn	0 17 6	June	0 10 0	November
Medium, Woolly	0 17 0	May	0 11 6	July, November
Medium, Short Wool ...	0 16 6	April	0 10 6	March
Medium, Shorn	0 14 0	August	0 8 0	October
Ewes—				
Good, Woolly	0 19 6	April	0 14 0	Jan., Feb., Mch., Oct., Nov., Dec.
Good, Short Woolly ...	0 17 6	April	0 11 6	March
Good, Shorn	0 12 0	December	0 8 0	Oct., Nov., Dec.
Medium & Light Woolly	0 15 6	May	0 10 6	December
Medium & Light Short Wool	0 14 0	April	0 5 0	Nov., Dec.
Medium & Light, Shorn	0 9 6	September	0 4 0	November
Crossbreds—				
Wethers & Hoggets—				
Good, Woolly	1 3 0	May, June	0 16 0	Oct., Nov.
Good, Short Wool ...	1 2 6	April	0 12 0	December
Good, Shorn	1 0 0	June	0 12 0	December
Medium, Woolly	0 18 6	May	0 12 0	November
Medium, Short Wool ...	0 17 0	April	0 13 6	March
Medium, Shorn	0 13 6	September	0 9 0	December
Ewes—				
Good, Woolly	1 1 0	June	0 15 0	Oct., Nov.
Good, Short Wool ...	0 18 0	March	0 11 6	December
Good, Shorn	0 16 0	Sept., October	0 11 0	November
Medium, Woolly	0 17 0	May, June	0 11 0	Oct., Nov.
Medium, Short Wool ...	0 15 6	April	0 9 6	Nov., Dec.
Medium, Shorn	0 14 0	September	0 9 0	December
Lambs—				
Good Suckers and Woolly	0 16 6	May, June, July	0 8 6	November
Medium, Young, & Light	0 14 6	May	0 4 6	November

The prices of live stock, other than fat stock, show more stability, though there is a noticeable increase in the case of dairy cattle. For 1914 the estimated values were as follows:—

Class of Stock.	Estimated Price.	Class of Stock.	Estimated Price.
	£ s. d.		£ s. d.
Horses—			
Draught—Extra Heavy ...	37 0 0	Figs—Porkers—Heavy ...	2 0 0
Medium ...	26 0 0	Medium ...	1 13 0
Light ...	17 10 0	Light ...	1 6 0
Saddle and Harness ...	18 0 0	Baconers—Heavy ...	3 10 0
Carriage ...	30 0 0	Light ...	2 15 0
Working Bullocks—Best ...	8 10 0	Backfatters ...	3 15 0
Other ...	6 5 0	Slips and Suckers ...	0 10 6
Dairy Cattle—		Goats—Angora ...	3 17 6
Milkers—Best ...	14 0 0	Other ...	0 15 0
Good ...	10 0 0	Camels ...	27 10 0
Inferior ...	5 0 0	Mules ...	27 10 0
Springers—Best ...	8 0 0	Donkeys—Jacks (for breeding)	55 0 0
Other ...	5 0 0	Jennies ...	35 0 0
Dry—Best ...	5 10 0		
Other ...	4 0 0		

In the case of the horses, the average maximum price was £40 for carriage horses, and the minimum £7 for saddle and harness horses. In fat cattle, £15 15s. was the maximum for extra prime bullocks, and the minimum for extra prime cows £6 10s. Working bullocks ranged from £12 to £50. For dairy cattle, the maximum for best milkers was £14, and the minimum for good milkers, £6 10s. The pigs brought prices ranging from £8 for backfatters to £1 for light porkers. The maximum price of Angora goats was £5 5s.; of camels, £35; and of donkeys, £60.

VALUE OF PASTORAL PRODUCTION.

The grazing industry constitutes the greatest source of wealth in New South Wales, consequently information relating to pastoral returns and income is most desirable; but unfortunately it is not possible to ascertain with precision the values of land occupied for pastoral purposes alone, nor can the worth of the improvements be estimated. Returns collected in respect of all holdings used other than for residential or business purposes, show that at the end of 1911 the fair market value of 52,988,070 acres of alienated land was estimated at £129,577,500, the improvements thereon being valued at £77,114,200. The improvements include the value of buildings, tanks and dams, fencing, ringbarking, clearing, &c. On 120,546,052 acres of Crown lands similarly occupied, the value of the improvements was set down at £14,775,000 approximately.

From the nature of the industry, it is difficult to arrive at a correct estimate of the return from pastoral pursuits as at the base of production; but taking the Sydney prices as a standard, and making due allowance for incidental charges, such as agistment, railway carriage or freight, and commission, the value in 1913 would appear as £20,738,000. The returns

received from the different kinds of stock during the years 1891-1913 are shown in the following table:—

Year	Annual Value of Pastoral Production.					
	Sheep for Food.	Wool.	Cattle.	Horses.	Total.	Per Head of Population.
1891	£ 2,367,000	£ 9,996,000	£ 1,535,000	£ 827,000	£ 14,725,000	£ s. d. 12 17 10
1896	1,745,000	8,619,000	990,000	420,000	11,774,000	9 5 4
1901	2,071,000	8,425,000	1,374,000	682,000	12,552,000	9 3 8
1902	1,446,000	7,152,000	1,322,000	811,000	10,731,000	7 14 7
1903	2,327,000	8,361,000	1,339,000	750,000	12,777,000	9 1 7
1904	2,206,000	9,133,000	1,347,000	687,000	13,373,000	9 7 2
1905	2,753,000	12,103,000	1,533,000	724,000	17,113,000	11 15 3
1906	3,514,000	13,792,000	1,592,000	845,000	19,743,000	13 6 0
1907	3,222,000	16,459,000	1,574,000	1,026,000	22,281,000	14 13 7
1908	3,034,000	12,680,000	2,032,000	1,100,000	18,846,000	12 3 10
1909	2,742,000	13,128,000	1,878,000	1,292,000	19,040,000	12 1 5
1910	2,704,000	14,727,000	1,704,000	1,893,000	21,028,000	13 0 2
1911	2,811,000	12,933,000	1,689,000	2,001,000	19,434,000	11 13 6
1912	3,127,000	12,497,000	1,754,000	2,062,000	19,440,000	11 3 8
1913	2,885,000	13,620,000	2,041,000	2,192,000	20,738,000	11 9 3

In order to exhibit clearly the extent of the variation in the prices of pastoral products, the following table has been prepared, showing the price-level in each year since 1905 as compared with 1901. The figures are calculated on the average prices of exports to the United Kingdom free on board at Sydney. The prices of 1901, represented by the number 1,000, are taken as a basis:—

Article.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.
Wool—greasy	1,300	1,433	1,553	1,272	1,200	1,266	1,200	1,200	1,300
„ scoured	1,396	1,509	1,585	1,258	1,245	1,188	1,132	1,151	1,283
Tallow ...	937	1,031	1,303	1,176	1,135	1,250	1,188	1,215	1,261
Leather ...	1,078	1,183	1,150	1,017	972	1,100	1,133	1,161	1,333
Frozen Beef ...	1,000	875	1,010	1,008	1,250	1,250	1,375	1,375	1,625
„ Mutton	1,031	1,125	1,055	1,021	1,063	1,250	1,250	1,500	1,500
Skins—Hides	1,250	1,375	1,316	1,053	950	1,100	1,113	1,204	1,467
„ Sheep, with wool	1,541	2,000	1,863	1,175	1,279	1,311	1,164	1,299	1,499
All articles...	1,192	1,316	1,354	1,122	1,137	1,214	1,194	1,327	1,367

PASTORAL IMPLEMENTS AND MACHINERY.

A list of the implements and machinery in use on pastoral holdings appears in a previous issue of this Year Book. The aggregate value of the implements and machinery in the year 1913 was £1,744,891.

On all the large holdings devoted to wool-growing, shearing machines have been installed. In addition to shearing their own sheep, the owners of the machines often contract for the shearing of small flocks in the vicinity. Carts and waggons used on all rural holdings are included with farming machinery, as stated in the chapter relating to Agriculture, in which a comparative table of the value of farming, dairying and pastoral machinery is shown also.

MEAT SUPPLY.

Slaughtering for food is permitted only in places licensed for the purpose, such establishments being very numerous. In the metropolis there are 58, and in the country districts, 1,217 slaughter-yards, employing respectively 625, and 4,022 men; in all, 1,275 establishments and 4,647 men.

The following table shows the number of stock slaughtered during 1913:—

Stock	Metropolis.	Country.	Total.
Sheep	2,307,723	3,601,454	5,909,177
Lambs	86,576	429,822	516,398
Bullocks	148,873	217,032	365,905
Cows	83,973	152,108	236,081
Calves	62,910	15,281	78,191
Swine	114,358	166,315	280,673

These figures represent the stock killed for all purposes. Of the sheep and lambs, 3,886,902, including 1,206,826 killed on stations and farms, represent the local consumption; 385,475 sheep were required by meat-preserving establishments; 2,137,900 for freezing for export; and 15,298 were boiled down for tallow. All the cattle killed, except 112,018 treated in the meat-preserving works, 31,615 exported frozen, and 6,172 boiled down, were required for local consumption.

The following table shows the stock slaughtered in the various establishments for ten years:—

Year.	Establishments.	Employees.	Stock Slaughtered.					
			Sheep.	Lambs.	Bullocks.	Cows.	Calves.	Swine.
1904	1,593	3,961	2,927,078	131,458	211,839	72,778	14,472	232,955
1905	1,563	4,570	3,959,577	324,054	236,306	64,838	19,713	289,096
1906	1,522	4,391	4,229,407	252,648	237,722	94,955	26,200	251,650
1907	1,352	4,553	4,882,206	302,851	242,261	109,263	23,518	238,488
1908	1,216	4,056	4,840,367	361,125	233,006	114,639	23,879	210,319
1909	1,249	5,293	5,959,985	430,501	243,150	123,705	40,021	202,303
1910	1,232	4,323	7,032,102	448,932	275,497	156,110	52,540	290,323
1911	1,237	4,343	6,146,739	400,186	306,773	132,178	59,969	316,331
1912	1,271	4,294	5,387,573	424,604	329,133	206,228	77,679	352,173
1913	1,275	4,647	5,909,177	516,398	365,905	236,081	78,191	280,673

The stock for the supply of meat for Sydney and suburbs are for the most part sold at the Flemington saleyards, near Sydney, and slaughtered in abattoirs at Glebe Island. The stock sold at Flemington are inspected *ante-mortem*, and any found diseased are destroyed or declared unfit for food,

while "doubtful" beasts are marked for further special attention at the Abattoirs. At Glebe Island the *post-mortem* inspection is carried out by a Chief Inspector and twelve assistants, and there are twenty-five inspectors stationed at private slaughtering premises, canning works and cold stores. The work of these officers is supervised by the Veterinary Inspector in charge of export meat. All inspectors have authority to condemn meat which, from any cause, is unwholesome or unfit for food.

The carcasses of animals are conveyed from the slaughtering premises in covered louvred vans for distribution to retail shops, which are regulated by municipal authorities.

The particulars of operations at Glebe Island abattoirs during 1913 and 1914 are shown in the following statement:—

Animals.	1913.			1914.		
	Slaughtered.	Condemned.		Slaughtered.	Condemned.	
		Number.	Per cent.		Number.	Per cent.
Bulls	1,801	230	12·77	3,698	307	8·46
Bullocks	125,496	593	·47	111,247	621	·55
Cows	78,838	3,572	4·53	83,281	2,619	3·14
Calves	60,834	3,412	5·61	56,359	1,108	1·96
Sheep	2,188,789	716	·03	1,807,760	87	...
Pigs	90,817	1,702	1·87	65,566	787	1·20

In order to cope with the expanding requirements of the meat trade, new abattoirs have been constructed at Homebush Bay, where facilities are provided for both railway and steamer traffic.

The average prices of the best beef during 1913 ranged from 24s. per 100 lb. in January to 38s. in April and December.

MEAT EXPORT TRADE.

The table below shows the growth of the oversea export trade in New South Wales beef and mutton since 1904. The export of frozen meat varies, of course, with the seasons. It having been proved that a great expanse of country is suited to the breeding of large-carcass sheep, pastoralists have lately turned their attention in this direction, with a view to securing a greater share in the meat trade of the oversea countries:—

Year.	Frozen or Chilled Meat.				Preserved Meat.	
	Beef.	Mutton.	Total Weight.	Total Value.	Weight.	Value.
	cwt.	cwt.	cwt.	£	lb.	£
1904	3,721	202,135	205,856	280,899	4,751,029	70,770
1905	18,470	434,940	453,410	599,892	6,919,561	128,054
1906	32,640	455,165	487,805	579,294	3,121,933	62,307
1907	18,905	498,551	517,456	639,253	4,569,718	81,303
1908	6,473	398,594	405,067	535,473	5,756,395	105,702
1909	9,127	503,249	512,376	563,489	11,734,019	202,499
1910	74,868	810,175	885,043	1,101,247	16,492,876	288,341
1911	65,097	535,259	600,356	758,155	20,783,779	401,384
1912	70,516	375,338	445,854	653,801	15,556,834	310,192
1913	162,255	798,748	961,003	1,463,812	25,907,217	575,855

There has been considerable expansion in the meat export trade during recent years, and the prospects of its continuance are most favourable. The European countries are gradually opening their ports to frozen meat, and the trade in the East is increasing. In order to establish a high reputation for this product it is necessary for exporters to exercise the greatest care in preparation and transport. Stringent regulations have been issued by the Department of Trade and Customs regarding inspection and shipment, which work is carried out for the Commonwealth authorities by the Meat Export Branch of the Department of Public Health. All stock killed for export are examined in a similar manner to those for local consumption, and again after having been in cold storage just prior to shipment. In all the large modern steamers visiting the ports of New South Wales accommodation has been provided for this class of trade.

There were at least sixty-seven steamers permanently engaged at 30th June, 1914, in the frozen meat trade between Australia and the United Kingdom. These steamers are fitted with refrigerating machinery, and have a carrying capacity of approximately three and a-half million carcasses.

The following statement, compiled from the British trade returns, shows the imports of frozen mutton into the United Kingdom during the past ten years, and also the quantity imported from New South Wales.—

Year.	Total Imports.		Imports into the United Kingdom from New South Wales.	
	Quantity.	Value.	Quantity.	Value.
	cwt.	£	cwt.	£
1904	3,494,782	6,861,531	67,200	130,839
1905	3,811,069	7,336,490	244,033	470,482
1906	4,082,756	7,645,935	341,963	609,275
1907	4,578,523	8,687,407	391,500	723,148
1908	4,385,771	8,140,029	315,998	564,326
1909	4,761,838	7,839,195	448,011	715,764
1910	5,405,923	9,802,858	776,084	1,261,173
1911	5,330,070	9,576,446	612,620	1,000,556
1912	5,021,529	9,698,783	342,422	591,513
1913	5,330,290	10,907,992	695,955	1,285,397

The value of frozen mutton from New South Wales imported into the United Kingdom during 1913 is twice as great as in the previous year, and is easily the highest figure of the decennium.

The statement below shows the average wholesale prices obtained during the past ten years for Scotch and frozen mutton sold in London. From an examination of the figures, it would seem that the class of people requiring locally-grown mutton in England is quite distinct from that using frozen mutton:—

Year.	Best Scotch.	New Zealand.	Australian.	River Plate.	Year.	Best Scotch.	New Zealand.	Australian.	River Plate.
	d.	d.	d.	d.		d.	d.	d.	d.
1904	8	4½	4	3¾	1909	6½	3½	3	3½
1905	7½	4½	3½	3¾	1910	7½	4½	3½	3¾
1906	7½	4	3¾	3½	1911	6½	4½	3½	3½
1907	7½	4¾	3½	3½	1912	7½	4¾	3¾	3¾
1908	7¾	4½	3½	3½	1913	7½	4½	4	4½

The frozen beef imported into England from New South Wales in 1913 amounted to 91,290 cwt. valued at £145,591. The value of rabbits imported was £430,894, while preserved meat, other than salted, was valued at £547,417.

OTHER PASTORAL PRODUCTS AND BY-PRODUCTS.

The minor products arising from pastoral occupations include tallow, lard and fat, skins and hides, furs, hoofs, horns, bones, bone-dust, glue pieces and hair. Some of these are more specially discussed in the chapter relating to Manufacturing Industry, and need only brief mention here.

The following return shows the quantity of Tallow produced, locally consumed and exported during the ten years ended 1913:—

Year.	Estimated Quantity of Tallow.		
	Produced.	Locally consumed.	Exported.
	tons.	tons.	tons.
1904	17,654	5,897	11,757
1905	24,758	5,686	19,072
1906	24,391	5,837	18,554
1907	24,527	5,788	18,739
1908	21,031	5,881	15,150
1909	32,006	5,810	26,196
1910	37,110	5,923	31,187
1911	36,467	6,187	30,280
1912	28,425	6,580	21,845
1913	39,833	7,179	32,654

The oversea exports of skins and hides, from New South Wales, are of considerable value, and show a large increase during the last decade, as will be seen from the following statement. The other products of the pastoral industry are of minor importance, and leather, valued at £354,000 in 1913, is classified as a product of the manufacturing industry:—

Products.	Value of Oversea Exports.			
	1901.	1906.	1911.	1913.
	£	£	£	£
Skins and Hides—				
Cattle	86,017	84,893	292,193	907,733
Horse	170	428	790	2,320
Rabbit and hare...	9,379	293,260	295,476	310,501
Sheep	151,144	314,722	260,007	439,525
Other	184,522	140,050	296,672	611,555
	431,232	833,353	1,145,138	2,271,634
Hoofs, horns, and bones ...	13,765	14,673	15,390	24,165
Bone dust	14,848	13,817	33,280	24,051
Hair	9,833	13,524	16,503	16,105
Lard and animal fats ...	312	2,557	4,841	4,361
Tallow	362,631	461,540	871,018	999,468
Glue-pieces and sinews ...	6,020	8,103	8,781	10,479
Furs	767	1,540	117	478
Total	839,408	1,349,107	2,095,068	3,350,741

CATTLE AND SHEEP DOGS.

In the successful handling of sheep and cattle in large numbers the assistance of well-trained dogs is of great importance, and much attention has been directed in New South Wales towards breeding dogs possessing the speed, endurance, and intelligence, necessary for the special work required. Of the various types of cattle dogs used the following may be mentioned:—the merlin or blue heeler, the Welsh heeler or merle, the red and the black bob-tails.

The merlin or blue heeler is a variety founded by crossing the blue-gray Welsh merle with the Australian dingo; by careful breeding and selection a distinct type has been established.

The classes of sheep dogs are the Barbs and Kelpies, and smooth-haired collies. Numerous cattle and sheep dogs of nondescript type are used, some of which have proved most useful, but, being of doubtful origin, are not satisfactory for breeding purposes.

Under the Dog and Goat Act of 1898 all dogs must be registered, the annual fee being 2s. 6d. each. No exemption is granted for cattle and sheep dogs.

NOXIOUS ANIMALS.

The only large carnivorous animals in Australia dangerous to stock are the dingo, or native dog, and the fox; but graminivorous animals, such as kangaroos, wallabies, hares, and rabbits, are deemed by the settlers equally noxious. In recent years foxes have become a pest, since in addition to making ravages on poultry-yards, they destroy large numbers of young lambs.

The estimated losses in sheep by dogs and foxes during the three years ended 30th June, 1914, were as follow:—

Destructive Agent.	Losses in Sheep.					
	Number.			Value.		
	1912.	1913.	1914.	1912.	1913.	1914.
			£	£	£	
Native Dogs	56,585	60,263	62,806	23,525	29,847	33,800
Tame Dogs	23,525	21,890	25,461	10,853	11,351	15,853
Foxes	39,196	77,918	61,366	15,348	30,432	26,157
Total	119,306	160,071	149,633	49,726	71,630	75,810

Rabbits, which are the greatest pests, first found their way into this State from Victoria, where some were liberated about fifty years ago in the Geelong district. Their presence first attracted serious attention in 1881, when complaints were heard in the south-west portion of this country of the damage done. They multiplied so rapidly that, in 1882, they were to be met on most of the holdings having frontages to the Murray River. Attempts to cope with them under the Pastures and Stock Protection Act were ineffectual, and the Rabbit Nuisance Act was passed. This Act

provided for the compulsory destruction of rabbits by the occupiers of the land, who were to receive a subsidy from a fund raised by an annual tax upon stockowners, but the fund soon proved inadequate, and from 1st May, 1883, to 30th June, 1890, when the Act was repealed, it was supplemented by £503,786 from the Consolidated Revenue. The tax upon stockowners yielded £831,457, and landowners and occupiers contributed £207,864, so that the total cost during the whole period exceeded £1,543,000.

The Rabbit Act of 1890 repealed the 1883 Act and those provisions of the Pastures and Stock Protection Act relating to rabbits. It also provided, as occasion required, for the proclamation of Land Districts as "infested," and for the construction of rabbit-proof fences. From 1st July, 1890, to 30th April, 1902, the State expenditure under this Act was £41,620, nearly all of which has been devoted to the erection of rabbit-proof netting. From May, 1902, to December, 1903, the expenditure was £10,548.

Under the Pastures Protection Act of 1902 the State was divided into districts, the protection of the pastures being supervised by a board elected in each district by the stockowners. The Pastures Protection Boards are empowered to levy a rate upon the stock, and to erect rabbit-proof fences on any land, take measures to ensure the destruction of all noxious animals and pay rewards for such destruction. The State expenditure on rabbit extermination since the establishment of the Boards has consisted mainly of payments to the Railway Commissioners for the maintenance of rabbit-proof fences, amounting to £9,935 to the end of June, 1914.

Rabbit-proof Fencing.

In order to prevent the spread of the pest, and also with a view of assisting in its destruction, fences have been erected by the Government of the State at numerous places. The longest of these traverses the western side of the railway line from Bourke, *via* Blayney and Murrumburrah, to Corowa, in the extreme south of the State, a distance of 612 miles, the Railway Commissioners undertaking the work of supervision. On the border between New South Wales and South Australia there is a fence which extends from the Murray River northwards, a distance of about 350 miles. On the Queensland border a rabbit-proof fence has been erected between Barrington and the river Darling, at Bourke, a distance of 84 miles; while another has been erected at the joint expense of the Governments of Queensland and New South Wales, from Mungindi to the Namoi River, a distance of about 115 miles. The total length of rabbit-proof fences erected by the State up to 30th June, 1914, was, approximately, 1,332 miles, at a cost of £69,888; by private persons, 96,341 miles, at a cost of £5,649,059; and by Pastures Boards, 550 miles, at a cost of £23,985.

The chief means adopted for the destruction of the pest are poisoning and trapping, but it has long been recognised that these methods are inadequate to cope with the evil. In 1906 Dr. Danysz, an eminent French scientist, claimed to have discovered a disease which was fatal to rabbits and easily propagated amongst them, while proving harmless to other animals or to birds. A liberal offer was made by the pastoralists of the State for the introduction of the disease, and experiments were conducted under the supervision of a Government medical officer, who in November, 1907, reported that although the microbe used could be made to infect small animals, there was no reason to apprehend danger from its practical use, but the efficacy of the virus as a destroyer of rabbits had not been demonstrated.

Bonuses for Destruction of Noxious Animals.

Bonuses are offered by the Pastures Protection Boards for the destruction of noxious animals. During the year ended 30th June, 1914, the total amount paid as bonus by the Boards was £11,538 :—

Noxious Animals.	Animals Destroyed.	Bonus Paid.	Noxious Animals.	Animals Destroyed.	Bonus Paid.
		£			£
Native Dogs ...	8,993	4,594	Wombats	2,042	753
Foxes	13,424	1,904	Hares	70,706	515
Wallabies	47,835	221	Eaglehawks	4,217	356
Kangaroo Rats ...	21,548	206	Crows	107,998	2,968
Paddymelons ...	4,518	21	Total ..	281,281	£11,538

RABBITS AND HARES.

Although rabbits and hares have commercial value, both as food and for skins, the return furnished is but poor compensation for the enormous inroads upon pastures.

The following table shows the exports of frozen rabbits and hares and skins from New South Wales to countries outside Australia during the last ten years :—

Year.	Value of Domestic Exports beyond Australia.		
	Frozen Rabbits and Hares.	Rabbit and Hare Skins.	Frozen Rabbits, Hares, and Skins.
	£	£	£
1904	54,286	96,810	151,096
1905	143,768	153,779	297,547
1906	246,803	293,260	540,063
1907	301,115	209,754	510,869
1908	247,525	138,403	385,928
1909	329,020	159,904	488,924
1910	406,762	327,874	734,636
1911	330,741	295,476	626,217
1912	252,053	318,930	570,983
1913	373,633	310,694	684,327

Within the State, these animals now form a common article of diet, both in the metropolis and country, especially during the winter months, when large numbers of men are engaged in their capture and disposal. The fur is largely used in the manufacture of hats.

CATTLE TICK.

The regulations prohibiting and controlling the admission of stock entering this State from Queensland have been strictly enforced, the border being divided into four sections, which are governed by different conditions. The fences have been continuously patrolled and kept in good order, and the care of Departmental dips and yards maintained.

In order to obtain comprehensive information as to methods of dealing with the cattle tick in the United States of America a Royal Commission was appointed in June, 1912, to visit that country. The recommendations of this Royal Commission have since been adopted in New South Wales.

WATER CONSERVATION AND PUBLIC WATERING PLACES.

Information relating to Water Conservation and Public Watering Places which in previous years appeared in this section of the Year Book, may now be found in chapter "Water Conservation and Irrigation," of Part Agriculture.

DAIRYING INDUSTRY.

DAIRY FARMING.

The dairying industry is now a very important factor in the wealth and prosperity of New South Wales. Although the first dairy farm for the manufacture of butter was established on the Nepean River, dairying as a profitable pursuit was in later years conducted mainly on the South Coast, in the Shoalhaven and Illawarra districts; but it was not until the introduction of the creamery and factory system that any great development occurred. With the manufacture of butter by machinery, and the perfection of the cold-storage system, the real business of dairying commenced.

The first creamery and factory were established in the South Coast district, and for some years dairying was confined mainly to this district; but eventually it became firmly established in the North Coast district, especially on the Clarence and Richmond Rivers.

The following figures show the dairy production in each division of the State during 1913:—

Division.	Dairy Cows in Milk at end of year.	Total yield of Milk.	Butter made.	Cheese made.
Coastal—	No.	gallons.	lb.	lb.
North Coast	251,198	107,462,642	43,650,510	401,677
Hunter and Manning ...	118,061	43,316,291	15,795,808	279,878
County of Cumberland	21,919	10,451,436	886,258	29,760
South Coast	84,888	32,422,910	8,299,161	4,763,903
Total	476,066	193,653,279	68,631,737	5,475,218
Tableland—				
Northern... ..	25,205	6,318,851	2,138,261	85,197
Central	18,124	5,585,364	1,241,116	94,060
Southern	12,384	3,077,663	758,984	6,010
Total	55,713	14,981,878	4,138,361	185,267
Western Slopes—				
North	17,720	6,085,531	1,356,293	273,097
Central	7,579	2,241,683	453,919	6,500
South	17,839	6,479,872	2,039,800	534,926
Total	43,138	14,807,086	3,850,012	814,523
Western Plains—				
North	2,300	718,319	40,076	.....
Central	5,712	1,363,391	143,583	.....
Total	8,012	2,081,710	183,659	.....
Riverina	14,778	5,269,732	927,259	145,640
Western Division	2,713	798,315	48,169	.....
Total, New South Wales	600,420	231,592,000	77,779,197	6,620,648

Although dairying is confined mainly to the coastal regions, where grass is available for food throughout the year, it is also actively pursued in the more favoured parts of the non-coastal regions for the purpose of supplying local wants, and already in places remote from the metro-

polis well-equipped factories have been established. In these localities the industry is generally carried on in conjunction with wheat-farming and sheep-raising, and sufficient fodder must be grown to carry the cattle through the winter months.

The system of share-farming has been applied to dairying chiefly in the northern coastal divisions. As a general rule, one party supplies the farm and stock and the other conducts the farm work. In 1913 the area of dairy farms under this system was 80,533 acres, of which 13,567 acres were in the North Coast, 42,692 acres in the Hunter and Manning Division, the balance being distributed as follows:—Western Slopes, 10,599 acres; South Coast, 5,260 acres; Riverina, 4,585 acres; Tablelands, 3,800 acres; and county of Cumberland, 30 acres.

Most of the native grasses of the State are particularly suitable for dairy cattle, as they possess milk-producing as well as fattening qualities, and these are supplemented in winter by fodder, such as maize, barley, oats, rye, lucerne, and the brown variety of sorghum or planter's friend. Ensilage is also used as food, but not so generally as it should be, and the quantity made varies considerably in each year. The area of land devoted to sown grasses has been largely extended during recent years, and in March, 1914, it amounted to 1,234,455 acres. The produce of this land is used mainly as food for dairy cattle, and as the area is still below the present requirements, an extension of this form of cultivation may be anticipated. The number of dairy cows in milk, and the area under sown grasses at the end of the year, also the quantity of ensilage made in each district of the State during 1913, were as follows:—

Division.	Dairy Cows in Milk.	Area of land under Sown Grasses.	Ensilage made.
Coastal Division—	No.	acres.	tons.
North Coast	251,198	871,191	615
Hunter and Manning	118,061	130,231	503
County of Cumberland	21,919	3,635	1,255
South Coast	84,888	179,395	4,260
Total	476,066	1,184,452	6,633
Tableland Division—			
Northern	25,205	16,218	210
Central	18,124	5,409	698
Southern	12,384	2,173	12
Total	55,713	23,800	920
Western Slopes—			
North	17,720	9,389	1,491
Central	7,579	4,194	294
South	17,839	4,827	1,665
Total	43,138	18,410	3,450
Western Plains—			
North	2,300	250	2,976
Central	5,712	704	1,067
Total	8,012	954	4,043
Riverina	14,778	6,839	3,320
Western Division	2,713	.....	.....
Total, New South Wales ...	600,420	1,234,455	18,366

YIELD OF MILK.

The number of dairy cows shows a considerable increase during the last decennium, and there has been a corresponding expansion in the milk supply, as shown in the following figures:—

Year.	Dairy Cows in Milk at end of year.	Total Yield of Milk.	Average Yield of Milk per Cow.
	No.	gallons.	gallons.
1904	424,936	158,650,768	373
1905	442,950	162,918,600	368
1906	494,820	185,941,230	376
1907	506,395	183,303,474	362
1908	527,843	188,518,562	357
1909	566,378	201,183,337	355
1910	632,786	235,577,702	372
1911	638,525	237,623,000	372
1912	620,730	225,446,209	363
1913	600,420	231,592,000	386

It would be more accurate to base the average yield on the mean number of cows in milk during the year. Owing, however, to the great difficulty in ascertaining that number, which depends not only on the actual number of cows, but on the length of time during which they were in milk, the average has been deduced as above, and probably is as accurate as can be obtained.

Almost as important as the average yield of milk is the percentage of butter-fat, and it is satisfactory to note that this has been well maintained throughout the period reviewed in the following table, which shows the quantity of butter made per 100 gallons of milk treated on farms and in factories:—

Year.	Quantity of Butter per 100 gallons of Milk treated.		
	On Farms.	In Factories.	On Farms and in Factories.
	lb.	lb.	lb.
1904	35.4	41.7	41.1
1905	34.0	41.5	40.7
1906	32.0	38.0	37.8
1907	32.4	39.8	39.2
1908	33.6	40.2	39.6
1909	33.2	38.7	38.2
1910	32.5	39.8	39.2
1911	33.0	42.9	42.2
1912	33.1	42.4	41.8
1913	33.6	42.5	41.9

The decreased proportion of butter-fat in 1906 and 1909 was due to unfavourable seasons in parts of the coastal dairying districts. During the winter and spring months of the year 1910 the South Coast districts were affected by the abnormally low rainfall.

The following statement shows the purposes for which the milk produced in 1912 and 1913 was treated:—

Purpose for which treated.	1912.	1913.
	gallons.	gallons.
Used on farms for making butter	12,601,510	13,484,060
" " " " cheese	2,025,292	3,244,531
Separated on farms; cream being sent to factories ...	169,552,020	171,136,221
Sent to butter factories or separating stations for butter.	1,175,404	1,109,094
Sent to butter factories or separating stations for sweet cream.	211,472	298,532
Sent to cheese factories	3,655,593	3,657,979
" condensers	1,056,140	1,062,270
Pasteurised at factories for metropolitan market ...	5,107,980	10,694,468
Balance sold or otherwise treated	30,060,798	26,904,845
Total	225,446,209	231,592,000

As already stated, it was the manufacture of butter by machinery which made the dairying industry really important, and it is to the introduction of the factory system in convenient centres that it owes its present development. When the factory system was introduced, the processes of cream separation and butter making were carried on together. This arrangement was improved by the establishment of public "creameries" or separating stations, where the cream is separated and then sent to the factories. In recent years there has been another great change, and most of the farmers now treat the milk in their own dairies by means of hand separators. The subjoined table shows to what extent this system has been adopted since 1904:—

Year.	Milk Separated for making Butter.			
	On Farms.		In Public Separating Stations.	Total.
	By hand.	By steam, &c.		
	gallons.	gallons.	gallons.	gallons.
1904	108,029,663	6,184,480	16,276,016	130,490,159
1905	103,438,591	7,577,972	19,347,767	130,364,330
1906	140,859,572	5,899,445	9,290,331	156,049,348
1907	142,843,911	3,775,899	6,488,604	153,108,414
1908	145,623,868	5,352,269	3,896,794	154,872,931
1909	156,189,009	5,962,492	2,302,239	164,453,740
1910	181,281,265	11,589,744	2,715,550	195,586,559
1911	176,983,192	17,835,035	2,162,984	196,981,211
1912	165,341,882	16,811,648	1,175,404	183,328,934
1913	165,898,111	18,722,170	1,109,094	185,729,375

PRODUCTION OF BUTTER.

As evidence of the enormous increase in butter production, the following statement has been prepared, showing the quantity of butter made and the milk used for that purpose during each of the last ten years. In

distinguishing between the milk treated on farms and in factories, the quantity used in farm factories, whether worked by separate staff or by the farm employees, has been included with factories:—

Year.	On Farms.		In Factories.		Total.	
	Milk used.	Butter made.	Milk used.	Butter made.	Milk used.	Butter made.
	gallons.	lb.	gallons.	lb.	gallons.	lb.
1904	12,791,709	4,530,771	117,698,450	49,060,472	130,490,159	53,591,243
1905	13,640,534	4,576,076	116,723,796	48,464,174	130,364,330	53,040,250
1906	14,288,379	4,636,642	141,760,969	54,304,495	156,049,348	58,941,137
1907	12,750,602	4,128,256	140,357,812	55,913,193	153,108,414	60,041,449
1908	12,876,805	4,329,241	141,996,126	57,051,635	154,872,931	61,380,876
1909	14,562,520	4,840,049	149,891,220	58,025,559	164,453,740	62,865,608
1910	15,751,415	5,126,790	179,835,144	71,498,040	195,586,559	76,624,830
1911	14,034,132	4,631,585	182,947,079	78,572,983	196,981,211	83,204,568
1912	12,424,315	4,116,762	170,904,619	72,492,766	183,328,934	76,609,528
1913	13,341,711	4,473,859	172,387,664	73,305,338	185,729,375	77,779,197

The proportion of factory-made butter in the total production has increased from 72 per cent. in 1895 to over 94 per cent. in 1913; and naturally, as in factories butter of the highest quality may be produced at a very reduced cost as compared with farms.

Full particulars regarding dairy factories are given in the chapter "Manufacturing Industry" of this volume.

CHEESE-MAKING.

The advance in cheese-making has not been commensurate with the expansion of the butter trade; in 1913 the quantity of cheese made was only 39 per cent. more than in 1903, but the production of butter had increased by 101 per cent. The demand for cheese is much more limited but as the production does not meet the requirements of the local market, it is evident that the manufacture of butter has been found more profitable. The manufacture of cheese will never command the same attention as butter, owing to its great disadvantages as an article of export. Cheese matures quickly, and, unlike butter, cannot be frozen; and it decreases in value after a certain period. Moreover, it has only half the money value of butter, while the cost of freight is practically the same; so that it is not surprising that even where cheese can be produced in New South Wales under excellent conditions, its manufacture is not being greatly extended.*

From a previous table showing the manufacture of cheese in districts it will be seen that cheese-making is practically confined to the South Coast; in fact, the quantity made in other parts of the State is becoming smaller each year. The South Coast production in 1913 was equivalent to 72 per cent. of the total in all divisions.

The following table shows, for each year since 1904, the production of cheese in factories and on farms:—

Year.	Production of Cheese.		
	In Factories.	On Farms.	Total.
	lb.	lb.	lb.
1904	2,677,830	1,545,791	4,223,621
1905	2,997,982	1,627,998	4,625,980
1906	3,459,641	1,999,004	5,458,645
1907	3,261,894	1,324,963	4,586,857
1908	3,260,389	1,502,971	4,763,360
1909	3,248,515	1,526,753	4,775,268
1910	3,892,506	1,298,583	5,191,089
1911	4,617,387	843,265	5,460,652
1912	4,428,304	1,026,381	5,454,685
1913	4,599,128	2,021,520	6,620,648

The production exhibits a striking advance of more than 21 per cent. during 1913, the amount of increase for the year being larger than that which prevailed over the previous eight years.

CO-OPERATIVE AND PROPRIETARY FACTORIES.

Most of the factories dealing with dairy produce are established on the co-operative principle, which has steadily gained favour, until in 1913 nearly 88 per cent. of the factory butter was made in these establishments. The following figures, comparing the co-operative and proprietary factories, are exclusive of butter and cheese made in factories worked in conjunction with farms:—

Year.	Butter.		Cheese.	
	Factories.	Output.	Factories.	Output.
	No.	lb.	No.	lb.
Co-operative Factories.				
1907	73	36,228,183	8	786,649
1908	81	41,178,645	9	812,889
1909	90	44,632,044	10	1,002,361
1910	103	59,050,647	10	1,009,834
1911	105	66,194,003	10	1,140,731
1912	103	62,701,971	11	1,616,910
1913	102	64,376,531	11	1,393,196
Proprietary Factories.				
1907	87	19,520,957	19	2,039,281
1908	69	15,777,276	23	1,958,258
1909	60	13,213,979	20	1,746,745
1910	46	12,339,452	21	2,071,051
1911	46	12,227,509	18	2,345,188
1912	43	9,719,799	18	1,846,126
1913	39	8,863,852	18	2,058,514

OTHER MILK PRODUCTS.

In addition to butter and cheese, there are other milk products which should receive more attention than at present. The manufacture of condensed milk, for instance, is not sufficient for local requirements, and large importations are necessary to meet demands. At present there are two factories in the State, one situated at Bomaderry, and the other in the Singleton district. A somewhat similar product, known as concentrated milk, is also being manufactured at these factories, and is used principally on ocean-going steamers. The total quantity of milk used in the manufacture of the two products in 1913 was 1,062,270 gallons, and the output of the articles totalled 3,682,812 lb., valued at upwards of £50,000.

SWINE.

The breeding of swine, which is usually carried on in conjunction with dairy-farming, has been much neglected in New South Wales, as the fluctuations in the following table tend to show:—

Year.	Swine.	Year.	Swine.	Year.	Swine.
	No.		No.		No.
1860	180,662	1900	256,577	1907	216,145
1865	146,901	1901	265,730	1908	215,822
1870	243,066	1902	193,097	1909	237,849
1875	199,950	1903	221,592	1910	321,632
1880	308,205	1904	330,666	1911	371,093
1885	208,697	1905	310,702	1912	293,653
1890	283,061	1906	243,370	1913	288,090
1895	223,597				

The breeding of swine is an important factor in successful dairy-farming. Until recent years there was some difficulty in obtaining suitable pigs for breeding purposes, but as stock from the best imported strains may now be purchased at the Government Experiment Farms and other Institutions, this difficulty has been overcome. The breeds most general in New South Wales are the improved Berkshire, Poland, China; and Yorkshire strains.

The following statement shows the number of pigs in each Division at the end of 1913, and the quantity of bacon and ham made:—

Division.	Swine.	Bacon and Ham cured.
	No.	lb.
Coastal—		
North Coast	113,637	7,170,090
Hunter and Manning	54,782	346,617
County of Cumberland	18,276	5,191,096
South Coast	25,173	552,272
Total	211,868	13,260,075
Tableland—		
Northern	8,693	348,213
Central	12,516	288,020
Southern	5,410	197,320
Total	26,619	833,553
Western Slopes—		
North	9,999	133,846
Central	5,334	129,361
South	12,629	361,401
Total	27,962	624,608
Western Plains—		
North	1,166	4,267
Central	3,087	62,742
Total	4,253	67,009
Riverina	12,428	386,766
Western Division	4,960	20,252
Total, New South Wales	288,090	15,192,263

As with butter and cheese, the production of bacon and ham is confined chiefly to the coastal districts, but the breeding of pigs is more evenly distributed throughout the State.

INSPECTION OF MARKETS AND PIGGERIES.

The work of the Veterinary Staff of the Department of Agriculture during the year 1914 included the inspection of markets and piggeries within the metropolitan area; 189 premises and 77,648 pigs were inspected. There was no outbreak of swine fever, consequently the free movement of pigs within the area was not hampered with quarantine restrictions.

BACON AND HAMS.

The production of bacon and hams should be largely increased, as, except in rare instances, it has not been sufficient to meet local requirements. The production has varied with the seasons, as may be seen from the following table:—

Year.	Production of Bacon and Hams.		
	Factory.	Farm.	Total Production.
	lb.	lb.	lb.
1904	7,343,220	3,337,312	10,680,532
1905	6,931,217	4,721,223	11,652,440
1906	7,337,910	4,505,685	11,843,595
1907	7,240,685	3,117,841	10,358,526
1908	7,296,532	2,191,767	9,488,299
1909	7,856,466	2,074,911	9,931,377
1910	10,183,441	2,436,626	12,620,067
1911	13,393,536	2,709,291	16,102,827
1912	13,766,482	2,759,804	16,526,286
1913	12,874,666	2,317,597	15,192,263

LARD.

Statistics showing the total production of lard are not available; during the year 1913 the quantity made in bacon factories amounted to 579,176 lb., valued at £15,826, but as the manufacture of this product is carried on in many other establishments and on farms this quantity represents only a portion of the total output. It is apparent, however, that the production is not sufficient for local requirements, which are supplied by importation mainly from the other Australian States.

During 1913, the oversea exports of lard and refined animal fats produced in New South Wales amounted to 143,126 lb., valued at £4,162, and the direct imports from oversea countries to 466,611 lb., valued at £13,231.

DAIRY INSTRUCTION.

Educational and experimental work relating to dairying is conducted by the Department of Agriculture at several of the State institutions, notably at the Hawkesbury Agricultural College, at Wagga and Grafton Experiment Farms, and at the Wollongbar Dairy Farm in the North Coast, and at the Berry Stud Farm in the South Coast district.

The Berry farm is devoted to the breeding and raising of pure bred stock, and at Wollongbar and Grafton experimental work is done in connection with the cross-breeding of cattle; at Wagga Jersey cattle are bred. At each of these institutions and at the Hawkesbury College provision is made for students, and it is intended to establish a dairy school in connection with the Berry farm, where special courses of veterinary instruction will be given.

In order to enable factory managers and butter-makers to improve their scientific knowledge dairy science schools are held for short terms at different dairying centres.

A staff of instructors travel throughout the principal dairying districts during each year to give instruction and advice in cream-grading, butter and cheese-making, and all other matters connected with the industry.

Lectures and demonstrations in the theory and practice of milk and cream testing are given to senior pupils in State schools in the dairying districts.

HERD-TESTING ASSOCIATIONS.

Efforts are being made by the Department of Agriculture to encourage the organisation of herd-testing associations as a most effective means of improving the dairy herds and increasing the milk yield. In many localities the associations will be conducted in connection with the dairy factories, where samples supplied by the farmers could be tested with a minimum of expense. Acting upon the results of the tests, the farmers would be enabled to cull unprofitable animals from their herds, and with stricter attention to breeding they should reap considerable benefit by reason of increased quantity and the higher quality of their products.

EXPORTS OF DAIRY PRODUCTS.

The following table shows the oversea exports of butter, cheese, and bacon, exclusive of ships' stores, during the last eight years. The export of bacon during the last four years was much greater than formerly, owing to the opening up in England of a market for heavy sides of green bacon:—

Year.	Overseas Exports.					
	Butter.		Cheese.		Bacon and Ham.	
	lb.	£	lb.	£	lb.	£
1906	22,991,303	962,877	99,918	2,652	83,862	2,932
1907	17,832,354	769,463	134,468	3,813	80,346	3,368
1908	17,261,331	813,490	53,554	1,921	82,899	3,742
1909	17,381,117	752,487	53,117	1,732	62,380	2,670
1910	27,047,481	1,223,518	82,294	2,413	500,296	14,551
1911	32,629,324	1,500,709	85,395	2,508	487,845	12,836
1912	20,456,300	1,076,851	84,866	3,219	377,352	11,498
1913	21,950,967	987,793	85,760	2,721	336,560	12,626

Under the Customs regulations dairy produce for export must be submitted to inspection and graded before shipment, and the exportation of inferior products is prohibited unless the goods are labelled as below standard. The examination in this State is conducted by a special staff of Inspectors connected with the Department of Agriculture.

The export trade in butter is carried on almost entirely with the United Kingdom, where an immense population presents a ready market for all products of the dairying industry. The imports of New South Wales butter into the United Kingdom during the last eight years are shown hereunder:—

Year.	Imports of Butter from New South Wales.	Proportion of Total Butter imported into United Kingdom.
	cwt.	per cent.
1906	180,655	4·17
1907	195,289	4·64
1908	138,953	3·30
1909	132,708	3·27
1910	217,780	5·03
1911	281,588	6·54
1912	186,695	4·61
1913	155,936	3·77

PRICES OF BUTTER IN LONDON.

The prices per cwt. for New South Wales butter in London during the last four seasons were as shown below:—

Month during which Sales were effected in London.	1910-1911.		1911-1912.		1912-1913.		1913-1914.	
	Top.	Bottom.	Top.	Bottom.	Top.	Bottom.	Top.	Bottom.
	1910.		1911.		1912.		1913.†	
	s.	s.	s.	s.	s.	s.	s.	
August ...	*	*	119	113	114	112	106½	
September ...	116	112	122½	119	118	114	109½	
October ...	112	110	133½	131	119½	...	119	
November ...	107	104	127	124	114½	113½	121	
December ...	103	101	129	127	117½	...	120½	
	1911.		1912.		1913.†		1914.	
	s.	s.	s.	s.	s.	s.		
January ...	106	104	131	128	112	113½		
February ...	102½	98½	129	127	111½	112½		
March ...	101½	98	125	123	111½	110½		
April ...	104	100	113½	111½	109	104½		
May ...	98	95½	107½	106	109	104		
June ...	101	99	110½	110	107½	104½		
July ...	*	*	107½	102	108	109½		

*No quotations.

† General average given for this year.

In earlier years there was difficulty in securing ocean freights during the export season, but the trade has assumed such important dimensions that it is the subject of keen competition among shipping companies.

The freight on butter forwarded by mail steamers from Sydney to London during the seasons 1900-1 to 1904-5, was 3s. 6d. per box of 56 lb., while other steamers accepted shipments at rates varying from 10d. to 1s. 9d. For the season 1905-6 mail steamers contracted to accept 1s. 10d. per box, while other steamers charged 1s. 9d. Since 1st January, 1908, the rates have been 2s. 6d. per box by mail steamers, except those of the Orient Company, by which the charge has been 2s. 4d. since the date of the mail contract with the Federal Government. The charge by all other steamers, including the cargo boats of the Peninsula and Oriental Company, is 2s. per box.

DAIRYING INDUSTRY.—VALUE OF PRODUCTION.

The value of the production from the dairying industry during 1913 was £4,955,000, to which may be added £500,000 obtained from the sale of swine, making a total of £5,455,000:—

	£
Butter	3,450,000
Cheese	170,000
Milk (not used for butter or cheese)	950,000
Milch cows	385,000
Swine	500,000
Total	£5,455,000

MACHINERY.

A list of dairying implements and machinery in use was given in the Official Year Book of 1912. The value of farm implements and machinery used in the dairying industry during 1913 was £617,109.

A comparison of machinery used in rural industries is shown in chapter dealing with Agriculture.

POULTRY-FARMING.

Poultry-farming was conducted formerly in conjunction with the dairying industry; but the interests involved have become so important commercially, that a distinct industry relating to poultry alone has now been developed. Great attention is given to secure the most modern methods in the conduct of the farms, both as to the excellence of breeds for egg-producing and for table, and as to the treatment of the birds in view of expected profitable results. Information is not available regarding the full production, but a general estimate based on the accessible records shows the value for 1913 to be approximately £1,579,600.

The following statement contains particulars for a series of years regarding poultry of all descriptions on farms or holdings of 1 acre and upwards. The absence of information as to the poultry kept on areas of less than 1 acre detracts much from the value of the statement:—

Year.	Poultry of all descriptions on Farms or Holdings of 1 acre and upwards on 31st December.					Eggs obtained during year. All kinds.
	Fowls, Chickens, &c.	Ducks, &c.	Geese, &c.	Turkeys, &c.	Guinea Fowls.	
	No.	No.	No.	No.	No.	dozen.
1908	2,736,986	234,870	25,631	193,613	4,514	11,305,299
1909	2,692,385	268,741	25,878	224,187	5,000	12,096,859
1910	3,092,375	325,550	28,980	244,456	5,015	13,204,904
1911	3,199,163	321,596	26,127	232,529	4,663	13,637,129
1912	3,351,639	261,075	23,948	216,274	5,988	13,768,865
1913	3,878,234	273,919	24,545	245,693	5,920	15,136,938

Since 1901, egg-laying competitions organised by private subscription have been conducted at the Hawkesbury Agricultural College, with the object of stimulating this branch of the poultry industry. These competitions have attracted widespread interest, and birds for competition are sent from all parts of New South Wales, the other Australian States, and New Zealand, and some from America.

By this means much valuable information has been gained by practical experiment and research; tests are arranged and records kept of the results obtained from the various breeds of poultry and by different methods of treatment.

BEE-KEEPING.

The bee-keeping industry at the present time is of very small importance, and there is ample inducement for further expansion.

The production of honey and of beeswax varies considerably from year to year, as will be apparent from the attached table, relating to the last ten years:—

Year.	Bee Hives.			Honey.	Average Yield of Honey per productive Hive.	Beeswax.
	Productive.	Un-productive.	Total.			
	No.	No.	No.	lb.	lb.	lb.
1904	53,043	11,687	64,730	3,023,468	57·0	58,610
1905	36,589	12,043	48,632	1,841,236	50·3	39,620
1906	37,306	11,964	49,270	1,907,744	51·1	34,690
1907	53,240	15,148	68,388	2,660,363	50·0	48,427
1908	53,612	16,347	69,959	3,064,526	57·2	58,637
1909	47,807	17,992	65,799	2,066,330	43·2	53,006
1910	55,958	14,308	70,266	2,765,618	49·4	72,617
1911	62,254	11,801	74,055	3,433,253	55·1	67,358
1912	50,285	13,023	63,308	2,410,000	47·9	49,734
1913	43,990	11,029	55,019	1,866,835	42·4	39,244

Owing to the unfavourable season, a low yield resulted during 1909; and, although the average per productive hive showed a decided improvement during the following two years, the dry conditions which prevailed in some divisions during 1912 caused a diminished production, the yield per hive, 47·9 lb., being below the decennial average. In 1913, owing to a continuation of the dry conditions, the yield fell to 42·4 lb., the lowest figures in the decennium.

The estimated value of the production in 1913 of honey was £27,500, and of beeswax £2,500, the production for each division being as follows:—

Division.	Honey.	Beeswax.
	lb.	lb.
Coastal	875,664	18,288
Tableland	414,255	10,223
Western Slopes	490,575	8,950
Western Plains and Riverina	78,486	1,671
Western	7,905	112
Total	1,866,835	39,244

FORESTRY.

The forest lands of the State containing timber of commercial value consist of about 15 million acres, three-fifths of which are Crown lands, and two-fifths alienated; over $7\frac{1}{2}$ million acres of State lands have been reserved for the preservation and growth of timber.

The total forest area, although not large, contains a great variety of useful timbers, which in hardwoods number about twenty different kinds of good commercial value, including such renowned constructive woods as ironbark, tallow-wood, and turpentine, whilst in soft or brush woods there are about twenty-five varieties, including such valuable timbers as cedar, beech, pine, and teak. It is estimated that, approximately, five-sixths of the timber supply consists of mixed hardwoods and one-sixth of soft and brush woods.

The earliest evidence of attention to State forestry is found in the publication of Timber License Rules in the year 1839; in 1871 the first timber reserves were notified; and in 1877 regulations were made as to the cutting and use of timber.

During the ensuing years little was done to protect the forest resources; timber was cut as requirements prompted, no head being given to the necessity for systematic replacement to meet the wants of the future; and as there was no specially constituted body with powers of supervision or conservation, large tracts of country were denuded and much valuable timber destroyed.

Realising the necessity for remedial measures, the Government in 1907 appointed a Royal Commission to report upon the effectiveness of the forest laws, and to indicate what steps should be taken in the direction of afforestation and reafforestation.

The Royal Commission estimated that at the current rate of consumption local supplies of hard and soft wood timbers could last about forty-seven and twenty-eight years respectively; and recommended the passing of Forestry legislation, the strengthening of supervisory machinery, and the permanent dedication of all lands reserved for forestry purposes, for the preservation, growth, and regrowth of timber. Among other recommendations were the prohibition of export of certain timbers which are of special value locally for constructive purposes, the establishment of a Department of Forestry, the appointment of a Director of Forests, and the initiation of a vigorous policy of afforestation and reafforestation.

Following this report, the Forestry Act, 1909, was passed, establishing a Forestry Department, with a Director of Forestry and others officers.

The Government may purchase, resume, or appropriate land for the purpose of a State forest, and may dedicate Crown lands as State forests or

timber reserves. Timber-getters' and other licenses are granted by the Minister's authority, and exclusive rights to take timber products from specified areas of State forest or timber reserves may also be granted.

Every person conducting a sawmill for the treatment of timber must obtain a license, keep books and records, and make prescribed returns. Royalty must be paid on all timber felled and on all products taken from any State forest, timber reserve, Crown lands, or lands held under any tenure from the Crown which require the payment of royalty; but such royalty is not payable on timber exempted by terms of the license or by the regulations, or on timber required for use on any holding not comprised within a timber or forest reserve; allowance may be made also for any timber which is not marketable. Trees on any State forest, timber reserve, or Crown lands, with the exception of lands held under conditional lease granted before the passing of the Act, must not be ringbarked except under permit.

The Minister may impose conditions for afforestation and reafforestation in all exclusive rights or licenses.

The Act makes provision for regulations on the following matters:— Licenses, &c., and the fees and royalties payable; the periods and the conditions under which licenses, &c., may be granted; the protection and preservation of timber; the inspection, cutting, marking, and removal of timber; the kinds, sizes, and quantities which may be cut or removed; the conditions under which fires may be lighted in State forests; and the organisation of a system of education in scientific forestry.

The Act provides also for the classification of forest lands and for proclamation of State forests; and survey work is in progress for this purpose.

As an aid to forest management, arrangements are being made for the enrolment of forest cadets, and for the establishment of a training school with a curriculum of educational and scientific subjects.

A large amount of regenerative work has been done already in connection with the Murray River and the inland forests; experimental works have been started in various parts of the coast and highlands to test the reafforestative capacity of different classes of hardwood forest, and to ascertain the best methods of treatment; and stations have been selected for the promotion of afforestation by the establishment of State nurseries, with the object of utilising some of the waste lands of the State, of which about 300,000 acres are suitable for the purpose.

On 30th June, 1914, the total area of State lands reserved for the preservation of timber was 7,508,938 acres, as compared with 7,607,587 in the previous year.

RATE OF GROWTH OF INDIGENOUS COMMERCIAL TREES.

An investigation is being conducted in the Department of Forestry regarding the rate of growth of the indigenous commercial timbers in New South Wales; of the hardwoods, the flooded gum, blue gum, spotted gum, and blackbutt are the fastest growers, and the red ironbark and the grey

gum are the slowest. The evidence to date indicates the approximate rate of growth to be as under:—

Species of Tree.	Mean average annual diameter growth.	Pre-scribed diameter growth at maturity.	Approximate age when matured.	Species of Tree.	Mean average annual diameter growth.	Pre-scribed diameter growth at maturity.	Approximate age when matured.
COASTAL HARDWOODS.				INLAND HARDWOODS.			
	Inches.	Inches.	Years.		Inches.	Inches.	Years.
Grey ironbark ...	0·50	30	60	Ironbark ...	0·44	24	54
Red „ ...	0·35	24	68	Red stringybark ...	0·61	16	26
Tallow-wood ...	0·58	30	52	White „ ...	0·44	16	36
Blackbutt ...	0·68	30	44	Blackbutt, N.E. ...	0·35	18	51
Spotted gum ...	0·77	21	27	Murray red gum ...	0·52	34	65
Grey box ...	0·52	24	46	Cypress pine ...	0·43	12	28
Blue gum ...	0·87	28	32				
Grey „ ...	0·35	24	68	Average, inland	0·47	...	46
Red mahogany ...	0·44	24	54	hardwoods.			
Woollybutt ...	0·65	28	43				
Flooded gum ...	0·87	28	32	BRUSH AND SOFTWOODS.			
Turpentine ...	0·44	30	68	(Coastal and highlands.)			
Bloodwood ...	0·57	18	31	Silky oak ...	0·65	24	37
				Red cedar ...	0·50	32	64
				Hoop pine... ..	0·48	30	62
				Colonial teak ...	0·61	28	46
				Rosewood ...	0·61	28	46
				Coachwood ...	0·87	12	14
				Sassafras ...	0·44	20	45
Average, coastal	0·58	...	48	Average, brush	0·59	...	45
hardwoods.				and softwoods.			

STATE FOREST NURSERIES AND PLANTATIONS.

A State Forest Nursery is maintained at Gosford for the propagation of economic plants. The planted area is about 44 acres, and arrangements are being made for its extension; exchanges of seeds and plants are made with similar institutions in various parts of the world. At Hogan's Brush, an adjunct to the State Nursery, there is a planted area of 20 acres, which will be extended by the resumption for forestry and agricultural purposes of an adjoining area of 100 acres.

As an experiment in acclimatisation, a shipment of plants was sent from Gosford to the Northern Territory during the year 1913-14.

The distribution of plants from Gosford during the year ended 30th June, 1914, was as follows:—

Plantations—

Hogan's Brush	1,000
Tuncurry	86,200
Armidale	9,160
Departmental Grants	7,920
Agricultural Farms and Public Institutions	11,165
Exchanges	1,340
Total... ..	116,785

Branch nurseries have been established recently at Tuncurry, in the North Coast district, and at Armidale, on the Northern Tableland. In addition, a camp for good-conduct prisoners has been erected near Tuncurry, where an area of 500 acres is being planted; at 30th June, 1914, over 73,000 trees had been planted out. Preliminary arrangements have been made to establish a wattle plantation for convalescent consumptives at Boonoo Boonoo, near Tenterfield. Experimental areas for reforestation treatment have been selected near Grafton, Bellingen, and Cooperbrook; and reforestation work has been done on reserves in the Armidale, Manning, Kempsey, Ourimbah, and Cessnock districts.

TIMBER FOR PUBLIC WORKS.

In consequence of the difficulty experienced in obtaining an adequate supply of timber for public works and railway construction, forest reserves, 281,800 acres in extent, were set apart during the year ended 30th June, 1913, to supply timber for such purposes.

A Committee on Timber Supply, comprising representatives of various Government Departments, was appointed during the year 1914. The Committee estimated that the State's annual consumption of timber is 500 millions superficial feet; the average supply, calculated on the production of existing forest reserves, is 5,000 superficial feet to the acre.

FOREST INDUSTRIES.

During the year ended 30th June, 1914, there were 665 sawmills licensed. The employees numbered 5,799, and the value of plant and machinery was estimated at £619,264. The output of timber amounted to 164,888,000 superficial feet, valued at the mills at £1,140,331.

IMPORTS AND EXPORTS OF TIMBER.

In the following table is shown the import and export values of timber to and from New South Wales for the last six years:—

Year ended 30th June.	Import value.	Export value.	Year ended 30th June.	Import value.	Export value.
	£	£		£	£
1909	1,011,934	299,803	1912	1,147,414	279,900
1910	879,701	247,428	1913	1,436,922	248,020
1911	1,014,058	285,572	1914	1,495,779	261,807

FORESTRY LICENSES AND PERMITS.

The following return shows the licenses and permits current during the years 1913 and 1914:—

Description.	Amount of Fee.			Total Fees collected during year.	
	Per Month.	Per Quarter.	Per Year.	1913.	1914.
	s. d.	s. d.	s. d.	£	£
Timber License (subject to Royalty).	2 6	7 6	.....	6,841	7,607
Fuel License ...	5 0	10 0	40 0		
Products License ...	2 6	7 6	.....	
Grazing Permit ...	1 0	.....	.....
	(Subject to payment of agistment fees, as assessed by Forestry Officers.)			609	635
Saw-mill License ...	.....	.....	20 0		
	(When issued after 30th June in any year, 10s. for unexpired portion of the year.)			486	625
Special License ...	.....	7 6	30 0		
Occupation Permit ...	1 0	.....	.....	861	850
	(Subject to payment of rent to the Crown and compensation to the lessee or licensee (if any), assessed by the Minister.)				
Ringbarking Permit ...	(Prescribed fee, £2). Net amount received ...			8,597	9,717
	Total £				

TIMBER LICENSES.

The revenue collected by the State from Timber Licenses and from Royalty on timber during each of the last ten financial years is given in the subjoined table:—

Year.	Timber Licenses, &c.	Royalty on Timber.	Total.	Year.	Timber Licenses, &c.	Royalty on Timber.	Total.
	£	£	£		£	£	£
1905	7,540	30,414	37,954	1910	10,877	70,960	81,837
1906	9,199	38,981	48,180	1911	11,153	79,165	90,318
1907	9,953	45,775	55,730	1912	10,998	85,967	96,965
1908	10,546	46,583	57,129	1913	12,251	85,362	97,613
1909	10,486	46,755	57,241	1914	13,137	86,196	99,333

The practice of forestry in Europe and America has shown that greater expenditure by the Government means vastly increased profits, and there is reason for expecting increased revenue as the result of forest improvement in New South Wales, where timber grows more rapidly and to larger size.

TIMBER PHYSICS.

A series of timber tests has been undertaken at the University of Sydney. The tests were carried out in accordance with the latest methods, and are of scientific and practical value. They proved the correctness of the favourable opinion held by users of the timbers of New South Wales as to its great strength and durability.

INTERSTATE FORESTRY CONFERENCES.

Interstate Conferences of Forest Officers of Australia were held in 1911 and 1912, with the object of securing uniformity in procedure and administration. The subjects discussed include the following:—

Forest policy and legislation, training of Forest Officers, afforestation of waste lands, establishment of an Australian Forestry League, maintenance and extension of coniferous forests, fire protection, preservation of forest vegetation on mountain water sheds, identification and uniform nomenclature of indigenous timbers, economisation of waste material, mixed planting of eucalypts, &c.

TREE-PLANTING BY LOCAL AUTHORITIES.

Under the Local Government Act, 1906, the functions of a Shire Council include the making of provision—

For the prevention or mitigation of bush-fires, including the organisation of bush-fire brigades.

For the construction and maintenance of streets, including tree-planting.

The primary functions of municipalities include the care and management of parks and recreation grounds, public reserves and commons, the care of which is not under any statute vested in other bodies or persons. A Council of a municipality or shire may plant trees in any public road or street; and may set apart and fence portions of public roads or streets as tree reserves.

FISHERIES.

THE waters along the coast of New South Wales teem with numerous varieties of fish, but the fishing industry has not been developed commercially; and the vast mineral resources, pastoral and agricultural potentialities, of the State have presented more profitable avenues for the investment of capital, so that the development of the fisheries has been left mainly to a few individuals with limited capital and primitive appliances.

CONTROL OF THE FISHERIES.

Under the Fisheries Act, 1902, control of the fisheries of the State, previously administered by a Commission, was placed in the hands of a Board to supervise the industry, to carry out investigations likely to be of service, and to ensure observance of the regulations in regard to the dimensions of nets, closure of inland and tidal waters, net-fishing, and other such matters. Under an amending Act, in 1910, the Fisheries Board was dissolved, and its powers vested in a Minister of the Crown, the Chief Secretary being charged with the administration of the Act.

FISHING LICENSES.

A license must be obtained for his fishing boats, by every fisherman in tidal waters, the annual fee being 5s., which is reduced to half that amount if the license is issued after 30th June and before 1st December.

The number of licenses granted to fishermen during the year 1914 was 2,982, and of fishing-boat licenses 1,478; the fees received from these 4,460 licenses amounted to £1,015.

OYSTER LEASES.

For the purposes of oyster-culture, tidal Crown lands below an approximate highwater mark may be leased at yearly rentals, determined by the Minister, for every hundred yards of frontage; the areas are classified as average, special, or inferior lands.

The leases of average lands are for fifteen years, but may be renewed for a like period; no area upon which an aggregate rental of less than £5 per annum is payable, may be leased to any person not already an oyster lessee.

Leases of special lands are granted for areas of special value after the land has been offered by auction or tender, and are subject to the same conditions as leases of average lands, but need not be reduced along the approximate highwater mark.

Leases of inferior lands are granted for a term not exceeding ten years with the right of renewal for a further term of five years.

During the year 1914 applications for leases numbered 320, aggregating 102,811 yards; while at the end of the year the existing leases numbered 2,175, and 302 special authorities to remove oysters; the length of foreshores held was 790,079 yards, and there were deep-water leases to the extent of 92 acres. The deposits paid with the applications for leased areas were £715, while the rentals received during the year for leased areas were £4,955. Licenses issued to oyster vendors numbered 331, the fees received being £303.

PRODUCTION.

The most important kinds of fish marketed are snapper, bream, black-fish, whiting, mullet, jewfish, flathead, garfish, and Murray cod—a fresh-water fish; salmon, tailer, trevally, leather-jacket, and others are gradually gaining favour in the local markets.

Particulars regarding the marketing of fish and oysters are given in the chapter of this Year Book relating to Food and Prices.

Fish.—The amount of fish delivered to recognised distributing markets during 1914 totalled 177,634 baskets, or, approximately, 13,322,489 lb. In addition, a quantity equal to about 825,825 lb. is recorded as having been sold in various fishing centres in coastal areas, but these figures are incomplete. A basket of fish is calculated at 75 lb. weight, although an average of actual baskets would probably give about 84 lb. net, but included with the above totals are many boxes of fish which reduce the net average.

As usual the bulk of the supplies came from the estuaries and lakes on the northern half of the coast-line. A small proportion (snapper, chiefly) came from the ocean, this being principally the produce of the long-line ("Jacob") fishery. The six most important sources of the fresh fish supply were:—

Clarence River	2,774,362 lb.	Botany Bay and George's	
Port Stephens	1,621,575 "	River	911,400 lb.
Cape Hawke	993,694 "	Lake Macquarie	713,363 "
Tuggerah Lakes... ..	981,319 "		

Notwithstanding the immense shipping development and consequent increase of traffic, and the large reclamation of foreshores of Port Jackson of recent years, it is of special interest to note that the marketed production from this source was as much as 347,763 lb. The actual production was very much greater, because a considerable quantity was sold in the suburbs of Sydney without passing through the markets.

Crayfish.—The number of marine crayfishes (*Palinurus*) marketed during 1914 was 132,865; the number captured was very much greater, but many were lost by death before marketing. The principal source of supply was the northern crayfish grounds, from Newcastle to Port Macquarie. In addition, the records of local sales show that 637 were disposed of; these figures, however, are incomplete, as they do not cover the whole coast.

Prawns.—A quantity of 5,493 baskets, or, approximately, 219,720 quarts, of marine prawns (*Penæus*) was marketed during 1914. Local returns (incomplete as before mentioned), show an additional production of 20,230 quarts, and, approximately, 4,000 baskets not included in this total were sold for bait.

Crabs.—A large number of edible crabs were marketed. These comprised several species of swimming-crabs, notably the Blue (*Luça*) and the Mangrove (*Scylla*). The number of crabs marketed amounted to 1,296 dozens.

Oysters.—For the year 1914 the oyster production of the State amounted to 21,257 sacks, equivalent to about 29,800,000 of the "Rock" Oyster (*Ostrea cucullata*). This output was principally the result of artificial cultivation.

Whaling.—The modern Norwegian Whaling Company, which began operations in 1912, at Jervis Bay, continued operations in 1913. In 1912 work began about half-way through the season, and was conducted for about two and a half months, during which time no less than 158 whales were captured. From these approximately 3,500 barrels (583½ tons) of oil, valued at £12,000, were taken. During 1913 operations were begun in May, and, notwithstanding nearly two months of very bad weather, the season closed in mid-November with 329 whales, yielding 16,000 casks of oil; and making a total of 487 whales during two seasons. The following species of whale were taken:—Blue or sulphur-bottom, finback or finner, pollock or fish, humpback, and sperm. The most numerous, and at the same time the most valuable as oil-producers, were the humpbacks. The whales measured from 35 feet to

85 feet in length, and yielded from five or six casks up to as high as 150 casks or 25 tuns, worth about £520.

There is ample scope on the coast of the State for two shore stations, working under modern conditions, with two steam whaling gunboats each. The season begins about June and ends about November—though whales may be taken before and after that period.

Dolphin Fishing.—Some attention has been given to the Dolphin (porpoise) fishery, and there has been a material advance in development lately. The dolphins are harpooned from a swiftly moving motor launch; at present the teeth only are saved, each dolphin yielding on an average, about 160; the teeth are used as currency in certain Pacific Islands, and are worth about 10s. per hundred to the captors. The returns of the Fisheries Department, show that a total of not less than 360,000 teeth were obtained during 1912. Probably the demand for these teeth will decline, but, in the meantime, the pursuit of the dolphin is helping the development of ocean fisheries.

General.—There is a small consumption of marine mussels, cockles, and whelks, various squids and octopi and the "Mutton Fish" or "Ear-shell" (*Haliotis*), but they are not of great importance in the food supply. In the western areas of the State there is a fair consumption of the Freshwater Crayfish (*Astacopsis*), which attain a large size; a few are sent to Sydney markets.

VALUE OF PRODUCTION.

Excluding crayfishes and prawns sold locally in coastal districts, and not recorded, the product of the whale and dolphin fisheries, freshwater crayfishes ("Lobsters") and shrimps sold in country districts, molluscs other than oysters, and a small amount of fish used for fertiliser and oil, the value of the production from fisheries of New South Wales for the year 1914 was approximately £209,912, made up as follows:—

	£.
Fresh Fish...188,645 baskets	150,916
Crayfish ... 11,125 dozen	5,006
Prawns ... 6,000 baskets	6,000
Crabs ... 1,296 dozen	162
Oysters ... 21,257 sacks	47,828
Total Value ...	£209,912

The value of fish, fresh and preserved, imported into the State of New South Wales during 1914 was £294,538.

FISH PRESERVING.

The fishes especially suitable for treatment by canning, smoking, or salting include pilchard, sandy sprat, anchovy, tailer, samson fish, cow-anjung, kingfish, trevally, mackerel, bonito, little tunny, southern tunny, and Spanish mackerel. Canneries have been established at various times in New South Wales, but the irregularity of supplies under present conditions has militated against their success.

Under the Bounties Act (Commonwealth), provision has been made to foster the fishing industry by subsidising the fish-preserving industry. To qualify for bounty, the fish preserved must have been caught by white labour only, in waters and under conditions prescribed. The bounty is fixed at ½d. per lb., and is payable for ten years from 1st July, 1907, with a maximum aggregate of £10,000 in any one year.

FISHERIES INVESTIGATION.

In 1898 the s.s. "Thetis" was equipped by the Government to conduct an extensive investigation of the waters along the coast of New South Wales. The outcome of the expedition was a considerable addition to the

knowledge of Australian deep-sea fauna, but from a commercial point of view no practical results were obtained.

Subsequent to the appointment of the Fisheries Board comprehensive investigations were undertaken regarding rates of growth, life conditions, and habits of various fishes, prevailing currents, and their correlation to spawning migration, location of spawning grounds, &c., and acclimatisation of species not indigenous to Australian waters.

In 1907 the Commonwealth Government decided to conduct investigations regarding Australian deep-sea fisheries, and the Federal ship "Endeavour" was built for the purpose. Operations were commenced in March, 1909, trawling being the principal method used. As the result of cruises along the New South Wales coast it has been demonstrated that trawling is commercially possible over large areas of the sea bottom particularly to the south of Sydney.

FISH CULTURE AND ACCLIMATISATION.

Experiments in the acclimatisation of non-indigenous fishes, such as carp, perch, and trout, have met with success in New South Wales, particularly in regard to Californian rainbow trout, which has been introduced in many mountain streams. Trout fishing now constitutes an important attraction for tourists and sportsmen in the districts watered by the Murrumbidgee and Snowy Rivers and their tributaries. A trout hatchery is maintained at Prospect, and considerable numbers of young fry are distributed annually.

POTENTIALITIES OF NEW SOUTH WALES FISHERIES.

It is easily possible, without exhausting the grounds, to obtain a greatly increased output of fresh fish from the coastal lakes and estuaries, which now constitute the principal sources of supply. Increased and greater facilities for transport, and improved methods of handling the fish on arrival at the markets, to avoid loss of time in reaching the consumer, would provide regular daily employment for many fishermen, who, under present conditions, work intermittently. The output of Murray cod from the waters of the Murray River system would greatly increase, if more convenient transport arrangements were made. It is not in these places, however, that the most extensive development may be expected, but in the ocean waters, and chiefly among the immense shoals of deep-sea fish such as great Tunnies, Spanish Mackerel, Bonito, Mackerel, Kingfish, Tailer, Salmon, and many other truly pelagic fishes, which travel in large shoals. There are also immense quantities of Pilchards, Sprats, and other "Herring-kind," as well as Sea Garfish and others.

For the capture of these fishes special surface-nets, like the American purse-seine, the drift-net, surface trawls, &c., are most suitable.

In addition to the surface fisheries, bottom fishing, by means of the long-line ("Jacob" or Bultow) the trammel-net and the trawl-net, is capable of large development. A very considerable section of the 8,960,000 acres of bottom lying within the 100-fathom line is known to be suited to the operation of the trawl-net. The experiments of the "Endeavour," the "Thetis," and of other vessels, have clearly shown that suitable conditions exist, and justify the opinion that well-planned trawling operations would be successful.

Crayfishing is also capable of great development, but better means of handling during transport must be introduced to prevent the present waste.

The development of the oyster industry depends simply on a diffusion of that knowledge of successful oyster culture which has begun to manifest

itself recently among a number of oyster growers. With intense cultivation, it is not too much to say that one locality—Port Stephens—could produce in one year the whole of the present output of New South Wales.

There is opportunity for the development of a large Mussel fishery as this mollusc may be easily and successfully farmed in a somewhat similar way to oysters, and, in many cases, in waters or in zones of the littoral in which the oyster will not flourish.

The Whaling Industry also may be expected to improve as a result of the work already conducted at the latter end of 1912 and 1913, to ensure success the work should be done with shore stations and with steam gunboat whalers, using the most modern equipment.

Seaweed Industry.—There is considerable scope for the development of seaweed industries along the coast, since varied marine flora occur in abundance. Seaweeds are used in the manufacture of certain food products, vegetable isinglass, jellies, condiments, and for decorative purposes; also as fertilisers for the soil, and in the manufacture of iodine; secondary products are common salt, sodium sulphate, potassium chloride, and sulphur.

Sponges.—Many kinds of sponges occur on the coastline. A number of species would be valuable for domestic purposes, and many others would be suitable in various trades. The most valuable from a domestic standpoint, belong to the genera *Hippospongia* and *Euspongia*. The numbers of sponges to be found on coastal beaches after storms are evidence of the existence of large natural supplies.

OYSTERS AND THEIR CULTIVATION IN NEW SOUTH WALES.

Cultivation is carried out by laying down in suitable places one or other of the following:—Stones, sawn-timber, branches of black or white mangrove, stakes cut from mangrove, oak (*Casuarina*), &c., shingles (made from various timbers), tiles and slates composed of compressed asbestos and cement, as well as empty oyster and other shells.

The available zone of oyster growth is governed largely by the density of the water and varies in the different waters, and in various sections of the same water. Oysters cannot live permanently in water that is either very fresh or very salt, but must have a certain admixture of both. In localities in which the entire body of water is suitable for oyster growth, there is no limit nor zone in the oyster beds; and they may commence near the limits of high-tide, and extend continuously across the bottom of the bed of the estuary to the opposite shore. In the lower, and salter, parts of estuaries and other coastal inlets, the oysters are found to occur in a very narrow and limited zone—usually between tide-marks only. Instances of this may be seen in the Lower Hawkesbury (Broken Bay), Middle Harbour (Port Jackson), Port Hacking, and on the training walls at the entrances of some of our rivers.

The food of the oyster consists principally of the microscopic plants known as *Diatoms*, which occur in profusion in estuarine waters and wherever there is a soakage from the shore.

The local distribution of growing oysters, in a natural state, depends primarily on two things—Density of the water, and suitability of the bottom; but their local distribution under proper systems of cultivation depends principally on the former only, as it is often possible by artificial means to render bottom suitable, and oysters may be made to grow profusely in many localities in which they would not grow naturally. For instance—and this is only one of many varied cases that might arise—a bottom may consist of soft squelchy mud in which, if placed there, the oyster would

gradually sink out of sight. In such a case it may be necessary only to spread a good layer of old oyster or other molluscan shells over the mud bottom. Many intending lessees are misled by first appearances, and are inclined to take up only areas which already show a good deposit of oysters, whereas there may be abundant signs of the suitability of other areas which have few or no oysters upon them.

There are many oyster areas which show great natural recuperative powers even after serious depletion, but usually a good deal of artificial cultivation is necessary to obtain the new stock in a reasonable time after the first natural stock has been thinned out.

Oysters attain their greatest perfection and size in the vicinity of muddy bottoms or bottoms of mud and sand, but not on pure sand. Their food supply is most abundant in the vicinity of the mud.

Oysters show an enormous fecundity; each one of 2 inches or more in length produces many millions of ova each year, the power of production increasing with size. They also become sexually mature at a very early age, and have been found containing ripe eggs when only three months old. The wonderful fecundity often leads to the belief that a rapid recuperation should always naturally follow the thinning out of oyster beds, and that a few mature oysters should be able to do the work. But, on the contrary, enormous fecundity is an unfailing sign of correspondingly enormous destruction. Millions of oyster spat are deposited, which last only a few days, and countless millions of eggs are destroyed at once. At the outset, and when spawning actually takes place, the destructive influences are infertile eggs, unsuitable water, unsuitable catchment and microscopic enemies; while a large number of the eggs and motile embryos are consumed by the oysters themselves. The common oyster is dioecious, or bisexual.

Even after the spat has gone through its short free swimming existence, and has settled down, it is surrounded by enemies—both active and passive. Among the numerous active enemies are various fishes, boring molluscs, worms, starfishes, and a boring sponge. Among the passive forms may be included vegetable and animal growths in the shape of seaweed, barnacles, mussels, &c., which grow round and gradually envelope the oyster. Other detrimental conditions are the times of unsuitable water, when there are either prolonged freshets or periods of drought in which the water becomes too salt.

Growth of Oysters.—There is no fixed period for the growth of the oysters. Some attain a marketable size in fifteen months, while others might take three, four, or five years to attain the same size; or, indeed, might be so dwarfed as never to attain the size. Oysters that are submitted to a prolonged existence in water of too strong a density always become stunted. The average time taken to produce a marketable oyster ranges from two to three years approximately.

Persons and Boats employed in Oyster Culture.

At the end of December, 1912 (the latest figures available), there were 427 men and youths employed in connection with the actual business of oyster cultivation, on the leases, and the number of boats employed in oyster work was 492. In the general term "boats" are included punts of various shapes and sizes, ordinary pulling or sailing boats, and motor launches. The total value of the gear used was £18,169.

SOCIAL CONDITION.

PUBLIC HEALTH.

Until recently practical measures by the Government of New South Wales to promote the well-being of the people, through the prevention or relief of sickness and destitution, as distinct from the maintenance of order and good government and the extension of educational facilities, were directed mainly towards the protection of infant life, the removal of children from unsuitable environments, the housing and care of mental defectives and of the aged and infirm, and the enactment of laws to safeguard the public from preventable disease. With the exception of the Coast Hospital for the treatment of general diseases, the institutions for the care of the sick were controlled by non-political organisations, and maintained by voluntary subscriptions, supplemented in many cases by Government subsidy.

Thus the cure and care of sickness and destitution have been left to a considerable extent to private initiative, but of late years the State intervention in this branch of social work has been steadily extended. The inauguration of old-age and invalidity pensions caused a diminution in the inmate population at the Government Asylums for the Infirm, and these institutions are now utilised to a great extent for the treatment of the sick. In 1909 the State Hospital for Consumptives at Waterfall was established, and since 1913 the Lady Edeline Hospital for Babies and two convalescent homes were opened, also the construction of a large general hospital was commenced on a portion of land attached to the Coast Hospital. The David Berry Hospital, in the Shoalhaven district, established by private endowment, became a State institution subsequent to the enactment of the David Berry Hospital Act of 1906.

Quarantine, and the making of laws with respect to trade and commerce and immigration, are functions of the Commonwealth authorities; but matters pertaining to public health other than of quarantine, to the maintenance of high standards in regard to food, to the supervision of sources of supply and distribution, and to the enforcement of sanitary and hygienic conditions locally, are functions of the State Government.

DEPARTMENT OF PUBLIC HEALTH.

The Department of Public Health undertakes the general medical work of the Government, safeguards public health, and advises Local Government bodies. Acts relating to public health, private hospitals, pure food, supervision of dairies and dairy cattle, noxious trades, sanitation, cattle slaughtering and diseased animals and meat, are administered by the Department, and the various State hospitals and asylums and the Metropolitan Abattoirs are under its control. It also exercises supervision over public and private hospitals.

The institution of a separate ministerial portfolio for the Department of Public Health in April, 1914, was an important step in connection with the reorganisation of the State health administration, and in 1915 the Public Health (Amendment) Act was passed to extend the powers of the Department.

The Board of Health consists of ten members, nominated by the Government, with the President, who is Director-General of Public Health, and Chief Medical Officer to the Government. Several other Boards have been established in connection with the Public Health Department, such as the Tuberculosis Advisory Board, to furnish expert advice for the treatment and prevention of tuberculosis; the Metropolitan Hospitals Advisory Board,

consisting of the secretaries of the hospitals, to co-operate with the Department in matters concerning hospital administration; the Pre-Maternity, Baby Clinics, and Home Nursing Board, to organise measures with the object of lessening the infantile death rate, and safeguarding the health of women and children generally; the Meat Industry and Abattoirs Board, to control the meat industry and the Metropolitan Abattoirs.

In July, 1908, the laboratory of the Public Health Department, hitherto used for investigation regarding hygienic conditions, and infectious diseases of human beings and animals, was constituted as a Bureau of Microbiology, and its functions were extended to embrace matters pertaining to parasitic and microbic diseases of plants and stock; also to farming and other problems in connection with the industrial development of the State. In August, 1913, the bacteriological and chemical work affecting agriculture was transferred to the Department of Agriculture, and the Bureau now deals exclusively with matters directly appertaining to public health.

A Publicity Department has been established in the Public Health Department; the work consists of the preparation and dissemination of pamphlets for the hygienic instruction of the people, especially with regard to the preservation of infant life.

STATE EXPENDITURE ON HOSPITALS AND CHARITABLE RELIEF.

The amount paid by the State towards the maintenance of hospitals and charitable institutions, including institutions for protection of State children and the care of the insane, was for the year 1913-14 approximately £787,400. The State expenditure includes the cost of maintenance of State institutions and departments administering relief, and subsidies to other institutions—granted on condition that an equal amount be raised by private annual contributions, and that the Government through approved officers have the right of recommending the admission of patients. In addition to these payments made from Consolidated Revenue, there is usually a considerable annual expenditure from Public Works Account for buildings, &c. The following is a statement showing the growth of such expenditure in the five years ended 30th June, 1914:—

Payments from—	1910.	1911.	1912.	1913.	1914.
	£	£	£	£	£
Consolidated Revenue	531,363	553,264	593,030	693,090	734,511
Public Works Account	68,764	85,614	48,755	87,857	52,919
Total	£ 600,127	638,878	641,785	780,947	787,430

There has been an increase in the Government expenditure on hospitals and charities throughout the period reviewed, the total amount expended for the year 1913-14, exceeding that for the year 1910 by £187,303, or an increase of 31 per cent. during the four years.

Grouping the items of expenditure from the Consolidated Revenue Fund under various headings, a comparison of the respective items for the last two years is shown below:—

	1912-13.	1913-14.
	£	£
General Hospitals and Charitable Institutions	168,461	186,464
Mental Hospitals and Institutions	263,831	271,942
Children's Relief	108,755	120,199
Government Asylums for the Infirm	96,892	100,996
Destitute and Deserted, Sick and other	33,013	32,846
Aborigines Protection	16,849	17,145
Charitable Societies	2,226	3,062
Leper Lazaret	1,727	1,772
Miscellaneous	1,336	85
Total	693,090	734,511

Analysis of the detailed statement for 1913-14 reveals an increase of 6 per cent. in the expenditure from Consolidated Revenue, the increases being greatest in connection with children's relief and hospitals, &c.

To these figures are to be added the cost shown subsequently of State subventions to Friendly Societies, the maintenance of the Department of Public Health, and similar agencies for the public benefit.

PROTECTION OF THE ABORIGINES.

For the protection and training of the aboriginal natives in New South Wales, a Central Board was appointed in June, 1910, under the Aborigines Protection Act, 1909, and replaced local boards in the various districts of the State. All officers in the police force of the State are *ex officio* guardians of the aborigines, and local committees co-operate with them in the protective work. The Central Board, consisting of the Inspector-General of Police, and a maximum of ten other members appointed by the Governor, controls the disbursement of moneys available for the education, maintenance, and relief of the aborigines.

The area of the reserves controlled by the Board was 24,693 acres at the end of December, 1913. At the various stations and camps, dwellings, and in some cases dormitories, have been erected. In the schools of the State there were 1,048 aboriginal children in attendance, viz., 964 at public schools, and 84 at private schools. Schools exclusively for the use of aborigines have been established at Euraba, near Boomi, at Terry-hie-hie, and Angledool; every aboriginal child under 14 years of age is required to attend school.

Aboriginal children may be apprenticed by the Board, and to this end their education is conducted so as to render them efficient members of society.

A home was established at Cootamundra in 1912 for orphans and neglected aboriginal children, and to train them for domestic service. At the close of the year 1913 the home contained 20 inmates. A home-finder has been appointed to obtain situations and to arrange apprenticeships for them. An Amending Act passed in 1915 authorises the Board to assume custody of the child of any aborigine if such a course is in the interest of the child.

At the census taken on 2nd April, 1911, there were 2,022 full-blooded aborigines in New South Wales—viz., 1,157 males, and 865 females.

On 1st September, 1914, there were under the control of the Board 6,779 aborigines, viz., 1,730 full-bloods, and 5,049 half-castes. The following statement shows the classification as recorded at that date:—

Aborigines.	Adults.		Children.	Total.
	Males.	Females.		
Full-bloods	745	469	516	1,730
Half-castes	1,261	1,029	2,759	5,049
Total	2,006	1,498	3,275	6,779

The ages of the 6,779 aborigines were as follows:—Under 20 years, 3,275; 20-40 years, 2,089; 40-60 years, 1,025; over 60 years, 390.

The expenditure during 1913 amounted to £31,768, including £16,711 for general maintenance, £6,091 for the purchase of blankets, clothing, &c., £2,994 as disbursements from the Board's produce and sale store account, £5,010 for educational purposes, £912 for medical attention, and £50 for other services; an amount of £3,103 was received as revenue from sales, so that the net expenditure was £28,665.

CHILD HYGIENE.

The law of New South Wales relating to the protection of children, and to the conditions of child-life, is contained for the most part in the following statutes:—State Children Relief Act, 1901; Deserted Wives and Children Act, 1901, and Amendment, 1913; Children's Protection Act, 1902; Infant Protection Act, 1904; and Neglected Children and Juvenile Offenders' Act, 1905.

The State Children Relief Act of 1901 consolidated Acts passed in 1881 and 1896 relating to the establishment of a system of boarding-out children who, prior to 1881, had been relegated to various institutions. Under the provisions of the Act the State Children Relief Board, composed of not more than nine persons, have authority to board-out children who are inmates of an asylum or charitable institution, wholly or partly supported by grants from the public revenue, also of children whose admission to such institution has been authorised. The board may issue licenses for the reception of these children as boarders, may apprentice them to suitable persons, or may arrange for their adoption or restoration to parents or natural guardians. Children may be boarded-out with their own mothers. The period of boarding-out usually terminates at 12 years of age; but in special cases it may be extended to age 14. At the end of the boarding term the children may be apprenticed for a maximum term of five years.

The Children's Protection Act, 1902, which consolidates Acts passed in 1892 and 1900, regulates the adoption of young children. The reception of a child under 3 years of age to be maintained for payment apart from his parents or guardians is allowed only on the written authority of a Justice of the Peace; persons who receive two or more children under 3 years of age must apply annually for registration; the children and the premises of persons having custody of them are subject to inspection by the officers of the State Children Relief Board; persons in charge of maternity homes are required to furnish records of all births occurring in the homes; the employment of young children in dangerous or unsuitable occupations is prohibited; and provision is made for the protection of any boy under 14 years of age, or of any girl under 16 years, subject to neglect or ill-treatment.

The Infant Protection Act of 1904 regulates the protection and maintenance of infants, and the supervision of institutions used for the reception of children up to 7 years of age. The Act provides for the payment by the father of expenses, up to a maximum amount of £20, incidental to the birth of an illegitimate infant, and for the maintenance of the child up to the age of 14 years, if a boy, and to 16 years if a girl. The mother also may be required to contribute towards the maintenance of an illegitimate infant. Cases in respect of the foregoing provisions of the Act are heard at the Children's Courts. Disobedience of an order of the Court may be punished by imprisonment. Institutions used for the reception and care of children under 7 years of age must be licensed, and are subject to inspection by officers of the State Children Relief Board.

The Deserted Wives and Children Act, 1901, which relates to the maintenance of wives and legitimate children, provides that a man who has left his wife or child without means of support may be ordered to contribute towards their maintenance, and may be required to enter into recognisances for the performance of the order. In default of finding security he may be imprisoned for a period not exceeding twelve months; non-compliance with a maintenance order may be punished by imprisonment. An important amendment of this Act, passed in 1913, prescribes that any person committed to prison for failing to find security, or for non-compliance with an order under the Deserted Wives or Children Act, or the Infant Protection Act, may be required to perform work, the earnings, after deducting his

cost of living, being applied to the satisfaction of the order. It provides also that in cases of wife desertion the court may place any child of the marriage under the legal custody of the wife, or other approved person, and may order the husband to contribute towards the child's maintenance; similar procedure is authorised in cases of child desertion. Orders in respect of children cease at age 16.

The Neglected Children and Juvenile Offenders Act of 1905, which repealed the Reformatories and Industrial Schools Act, 1901, authorised the establishment of shelters for the temporary detention of children, also the providing of industrial schools and reformatories. Special courts were established to deal with cases in respect of children over 5 years and under 16 years of age, and of offences by and against children, and with affiliation cases under the Infant Protection Act. In 1913 the jurisdiction of the Children's Courts was extended to complaints under the Deserted Wives and Children Act. Where practicable the Children's Courts must be held in proximity to a shelter, and not in the ordinary Courts; persons not directly interested may be excluded from the court-room. In the disposal of children the Courts may release on probation to an asylum or person willing to undertake care, may commit to an institution, or may punish an offence, in which case the child may be detained in a reformatory for a term ranging from one to five years. Pending removal to an institution, children may be placed in a shelter for a maximum term of three months; children in an institution may be removed to another institution or to an asylum, or may be apprenticed or transferred to the State Children Relief Board for boarding-out. Children released on probation, or sent to an asylum, are supervised by probation officers.

The Neglected Children and Juvenile Offenders Act regulates also the issue of licenses to children engaged in street-trading, this part of the Act being administered by the State Children Relief Board.

The Juvenile Smoking Suppression Act of 1903 restricts the use of tobacco by juveniles. Any person who supplies a child under 16 years of age with tobacco, cigars, or cigarettes is liable to a fine of £50.

The laws relating to factories and shops, and to apprenticeship, &c., regulate the conditions of child labour. Particulars are shown in the chapters of this volume relating to the manufacturing industry and employment.

THE STATE CHILDREN RELIEF BOARD.

The State Children Relief Board, established in 1881, is charged with the administration of the State Children Relief Act. The Department also administers the Children's Protection Act, supervising institutions licensed under the Infant Protection Act, and children placed under its jurisdiction by the Children's Courts as boarded-out wards, children on probation, or inmates of institutions. The Board's officers undertake also the licensing of children engaged in street-trading, and the supervision of the school attendance of all children subject to enrolment at State schools.

The total number of children under supervision by the officers of the Board in terms of the various Acts, as at 5th April, 1914, was 13,891 classified as under:—

Boarded out apart from their mothers	4,695
" with their mothers	5,970
In foster homes licensed under Children's Protection Act	925
In institutions licensed under Infant Protection Act	331
Engaged in street trading	477
Released on probation	1,213
Employed in theatres	280
Total	13,891

The supervision of these children is undertaken by salaried inspectors, whose efforts are supplemented by honorary officers. Four female inspectors, charged specially with the supervision of the conditions of infant life, visit and inspect infants placed out apart from their mothers; and the regulations prescribe that all such infants in the Metropolitan area must be submitted to medical examination every fortnight during the first twelve months of life.

EXPENDITURE OF STATE CHILDREN RELIEF DEPARTMENT.

The gross amount expended by the Government during the year ended April, 1914, on account of the services of the State Children Relief Department was £132,383; of this amount £56,127 represented the cost of maintenance of children boarded-out apart from their parents, while allowances to widows and deserted wives towards the support of their children amounted to £54,975. Contributions by parents and relatives and repayments of maintenance allowances amounted to £4,599, being £455 more than was contributed in the previous year, but the Department experiences the need for comprehensive and remedial legislation to enable the recovery of fuller maintenance contributions from any near relative of a destitute person.

The following statement shows the increase in the expenditure of the State Children Relief Department since 1901:—

Year ended April.	Expenditure by Government.					Contributions by Parents and other Revenue.	Net Expenditure by Government.
	Boarding-out.		Cottage Homes.	Children's Protection and Neglected Children's Acts and Supervision of School Attendance.	Total.		
	With Mothers.	Apart from Mothers.					
	£	£	£	£	£	£	£
1901	41,322	18,775	3,069	66*	63,232	1,442	61,790
1906	38,573	22,835	4,621	1,459*	67,488	1,727	65,761
1907	37,034	20,934	5,444	6,360	69,772	2,078	67,694
1908	40,688	20,027	6,917	8,278	75,910	3,024	72,886
1909	42,901	23,757	10,860	9,045	86,563	3,587	82,976
1910	43,497	27,563	10,253	10,951	92,264	3,419	88,845
1911	44,193	29,152	11,085	9,634	94,064	3,712	90,352
1912	46,001	33,743	13,242	10,187	103,173	4,361	98,812
1913	50,680	44,461	12,541	8,972	116,654	5,884	110,770
1914	56,127	54,975	11,496	9,785	132,383	6,371	126,012

* Children's Protection Act only.

THE PRESERVATION OF INFANT LIFE.

Reference to the chapter of this volume relating to vital statistics will show that a large number of deaths of infants are due to preventable causes. With the object of reducing this wastage the work of health-visiting amongst mothers was commenced by the Sydney Municipal Council in 1904, and subsequently extended to the more populous suburbs; and in 1914 the Baby Clinics, Pre-Maternity and Home-Nursing Board was appointed as an Advisory Board to establish organisations in the Metropolis and large country centres to supply advice and instruction in the care and nurture of infants. The first baby-clinic was opened at Alexandria, a populous suburb of Sydney, and others have been equipped in the metropolitan area, and in Newcastle.

The Notification of Births Act was passed in February, 1915, to provide that a written notification of every birth must be sent within a prescribed period to the Under-Secretary of the Department of Public Health, or other

authorised person; the Act is operative only in districts to which it is applied by proclamation. Previously the health authorities were dependent upon the notification of births to the Registrar-General in connection with which a period of sixty days is allowed, consequently the benefits of the baby-clinics were not applied during the period when they might have been most effectual.

In February, 1915, the Notification of Births Act was proclaimed in Sydney and Newcastle, and their most populous suburbs, and in these areas a notification must be sent within 36 hours after birth.

Maternity Allowances.

The payment of maternity allowances to mothers of children born in Australia was provided by the Maternity Allowance Act, passed by the Commonwealth Parliament in 1912. A sum of £5 is payable in respect of each birth taking place in Australia after the commencement of the Act, one allowance only being payable in cases of plural births. The allowance is payable to women who are inhabitants of the Commonwealth or who intend to settle therein; Asiatic women and aboriginal natives of Australia, Papua, and the Pacific Islands are excepted from the benefits of the Act.

The following statement shows number of claims for maternity allowances passed for payment in each State from 10th October, 1912, the date when the Act came into operation, to 31st December, 1914:—

State.	1912. (From 10th Oct.)	1913.	1914.	Total.
New South Wales... ..	5,604	51,564	53,690	110,858
Victoria	4,763	36,636	36,571	77,970
Queensland	2,211	19,709	20,298	42,218
South Australia	1,366	12,484	13,107	26,957
Western Australia... ..	806	9,305	9,404	19,515
Tasmania	758	5,969	6,089	12,816
Total	15,508	135,667	139,159	290,334

Infants' Homes.

Homes licensed under the Infant Protection Act are classified in two groups—those for the reception of five or less children, being generally private homes, and those for six children or more, mainly institutions of a charitable nature for the care of infants.

The number of licensed places during the years 1907-13 is shown below:—

Year.	Private Dwellings Registered.	Institutions.	
		Number.	Inmates under 7 years of Age.
1907	97	13	189
1908	124	14	170
1909	145	15	251
1910	137	15	238
1911	144	17	263
1912	155	19	229
1913	173	21	331

With the exception of the Infants' Home, Ashfield, subsidised by the Government, the institutions are supported entirely by voluntary contributions.

The Sydney Benevolent Asylum and the Randwick Asylum are institutions used for the reception of children, but operate under special Acts, and are exempted from the provisions of the Infant Protection Act.

The twenty-one institutions licensed during 1913 provided accommodation for 533 children, but the provisions of the Act apply only to those under age 7; the number in each age group is shown below:—

Age group.	Number.	Age group.	Number.
Under 1 year	36	5-6 years	51
1-2 years	36	6-7 years	70
2-3 years	41		
3-4 years	36	Total	331
4-5 years	61		

Three Homes for Mothers and Infants are maintained in the metropolitan area under the direction of the State Children Relief Department; and the Lady Edeline Hospital for Sick Babies, opened in November, 1913, under the direction of the Public Health Department, provides accommodation for infants suffering from gastro-enteritis. The homes are established on the principle that the accommodation of a small number of inmates in a cottage home is more efficacious for the preservation of infant-life than the aggregation in large institutions.

During the year ended 5th April, 1914, 122 mothers and 183 infants were treated in the Homes for Mothers and Infants; 11 infants died; and 86 mothers and 122 infants were discharged. Two homes were in operation for part of the year only.

Registrations under Children's Protection Act.

The number of children registered under the Children's Protection Act, during 1913, was 1,447, and at the end of 31st December there were 925 under supervision; 280 theatre licenses for children were issued, as compared with 321 during the previous year. Theatre licenses may be issued to children over 10 years of age in the metropolitan area, but those under 14 years are not permitted to travel with touring companies. Strict supervision is necessary to protect the interests of children engaged in this class of work.

The transactions under the Children's Protection Act during the years 1909-13 may be seen in the following statement:—

Particulars.	1909.	1910.	1911.	1912.	1913.
Registrations from Lying-in Homes ...	2,683	4,203	3,796	2,830	4,430
Foster Homes registered	91	114	71	95	82
Children registered	1,235	1,138	1,188	1,215	1,447
" died	76	51	62	41	41
" discharged from supervision ...	636	511	567	491	481
" under supervision at 31st Dec....	523	576	559	683	925
Theatre Licenses for Children	257	188	216	321	280

Of the children under supervision during 1913 the deaths numbered 41, the principal cause of death being gastro-enteritis, 33.

DEPENDENT, NEGLECTED, AND DELINQUENT CHILDREN.

Since its inception in 1881, 21,976 children have been placed under the control of the State Children Relief Board to be boarded-out apart from their parents. Of this total, 17,281 children had been removed from the control of the Board, so that there were 4,695 remaining under its charge on 5th April, 1914, of whom 2,726 were boys and 1,969 were girls. In addition

to these children, the Board was paying allowances towards the support of 5,970 children living with their mothers, who are widows or deserted wives; thus the total number of children under the supervision of the Board, in terms of the State Children Relief Act, was 10,665.

Children maintained apart from parents.

The State wards are boarded out to persons deemed to be eligible after strict inquiry by the Board, the maximum number of children under the care of one guardian being three, except in cases of families comprising a greater number, brothers and sisters being usually placed in the same home. Strict supervision is exercised by the officers of the Board to prevent ill-treatment or neglect, and visiting ladies voluntarily assist in the various districts, keeping a constant watch upon the children, and the conditions under which they live. The distribution of the children provided for apart from their parents at 5th April, 1914, was as follows:—

Classification.	Boys.	Girls.	Total.
Boarders	1,601	1,202	2,803
Without subsidy	52	37	89
Apprentices	741	516	1,257
Adopted	43	64	107
In Hospitals	23	19	42
Cottage Homes	234	92	326
Depôt	13	21	34
Absconded	18	16	34
Unofficial	1	2	3
Total	2,726	1,969	4,695

The Central Depôt for State Children at Ormond House, Paddington, is used as the reception-house into which children, under the Board's control, are received from their parents, and from the police or inspectors who may have rescued them from unsuitable surroundings. It serves also for the housing of State children in transit from one foster home to another, and as a shelter in connection with the Children's Court for girls and for boys under 7 years of age. Excluding children admitted in connection with the operations of the Children's Court, 1,650 wards of the State Children Relief Board passed through the depôt during the twelve months ended 5th April, 1914.

The number of children who were wards of the State Children Relief Board is shown in the following table, at five-year intervals since 1881:—

Year ending April.	Boys.	Girls.	Total.	Year ending April.	Boys.	Girls.	Total.
1881	24	35	59	1901	2,205	1,705	3,910
1886	779	587	1,366	1906	2,114	1,776	3,890
1891	1,417	952	2,369	1911	2,551	1,947	4,498
1896	1,954	1,502	3,456	1914	2,726	1,969	4,695

The following table shows, for a period of five years, the ages of children when received by the Board for boarding out:—

Age.	Year ending April—				
	1910.	1911.	1912.	1913.	1914.
Under 1 year ...	140	196	191	170	188
1 year ...	48	56	72	71	85
2 years ...	46	55	66	48	55
3 „ ...	45	34	46	42	46
4 „ ...	46	32	45	40	49
5 „ ...	40	48	45	55	49
6 „ ...	44	46	56	53	48
7 „ ...	46	45	52	53	50
8 „ ...	60	55	49	53	75
9 „ ...	65	55	54	58	59
10 „ ...	79	74	85	58	82
11 „ ...	84	88	93	87	74
12 „ and over ...	184	183	285	290	217
Unknown ...	84	32	30	31	127
Total ...	1,011	999	1,169	1,109	1,204

There has been a marked increase in the number of children placed under the direct control of the Board as a result of the operations of the Neglected Children and Juvenile Offenders Act.

Of the children received by the Board during 1913-14, 445 were committed from the Children's Courts, 71 were transferred from the Sydney Benevolent Asylum, and 24 were received from other sources, while 664 were boarded-out direct from the State Children's Depot.

Children boarded-out with their mothers.

In April, 1914, 2,095 widows and deserted wives were receiving allowances towards the support of 5,970 children under 14 years of age. The new cases during 1913, numbered 867; aid was granted in 674 cases, and refused in 193. The number of such cases considered since payments were authorised in 1896 was 11,376, allowances were approved with regard to 8,339 applications, and refused in 3,037 cases. The mothers receiving allowances in April 1914, were 1,192 widows, 425 deserted wives, and 478 wives deprived of their husbands' support through insanity (165), imprisonment (105), detention in hospital (139), or in asylum for infirm and destitute (69). There is no law in operation in New South Wales to compel relatives, other than parents, to contribute towards costs of maintenance.

Payment for Children Boarded-out.

The rates of payment for children boarded-out, as prescribed by regulation, are 7s. per week for children under 3 years of age, and 5s. per week for children between 3 years and 14; the board may modify or increase the rates at their discretion. Prior to April, 1912, this regulation did not apply to children over 12 years of age, except in special cases, nor to children boarded-out with their own mothers, who were paid for at rates fixed by the Board up to a maximum to any one mother of £1 per week.

Of 5,970 children boarded-out with their mothers the allowances in respect of 2,021 were at the rate of 5s. per week, the others varied from 4s. 6d. to 2s.

per week. Of 2,803 boarders apart from parents, 2,543 were paid for at the rate of 5s. per week, and 260 at rates ranging from 6s. to 10s.; there were 89 boarders without subsidy.

Cottage Homes for Children.

Cottage homes have been established by the State Children Relief Board for State children requiring special treatment. The homes form a valuable adjunct to the boarding-out system; the first was opened in Mittagong in 1882, and there are now eleven at Mittagong, and three in the Pennant Hills district, near Parramatta, all situated amid rural surroundings. At Mittagong five of the cottages form the Farm Home for boys, two are occupied by feeble-minded children, and one by crippled boys; and at Parramatta one home is for feeble-minded girls; the remainder are used for sick and debilitated children.

The Farm Home at Mittagong provides suitable industrial occupation and training for boys committed from the Children's Court for reasons which do not warrant the more drastic measure of detention in a reformatory. The boys are taught bootmaking, carpentering, blacksmithing, and general farm-work; and the products of the farm are available for the invalid children in the Cottage Homes. Since the opening in October, 1906, 2,311 boys have been admitted and 2,140 discharged, boys who proved their trustworthiness being released on probation. The number of boys under supervision in the Farm Home at 5th April, 1914, was 171.

The admissions to the Cottage Homes and the discharges during the last ten years were as follows:—

Year ended 5th April.	Admissions.	Discharges.	Year ended 5th April.	Admissions.	Discharges.
1905	222	225	1910	444	525
1906	157	169	1911	370	383
1907	306	271	1912	555	517
1908	392	325	1913	534	520
1909	465	406	1914	518	490

On 1st April, 1914, 326 children remained in the various Homes, 234 boys and 92 girls, inclusive of 38 feeble-minded wards in the special Homes.

In addition to these, two probationary Farm Homes for boys were maintained for mentally and morally deficient boys who were unsuitable for boarding-out in private families. Each home was conducted by a farmer, who received 10s. per week for each inmate. One farm is at Toronto; four boys were admitted during 1913-14, and 14 were discharged, leaving 6 in the Home at 5th April, 1914. The other at Dora Creek was closed in October, 1913, and replaced by a home for feeble-minded boys at Raymond Terrace; 27 boys were admitted during the year, and 31 discharged, 17 being under supervision at 5th April, 1914.

Permanent Adoption of Children.

The State Children Relief Act provides that children whose parents are dead, or who have been surrendered for adoption, may be adopted for life; the permanent adoption of 170 State wards—67 boys and 103 girls—has been arranged by the State children Relief Board. The law, however, does not forbid private arrangement of adoptions, and many are arranged without the cognisance of the Board.

Apprenticeship of State Children.

The following statement shows the number of apprentices placed by the Board during the five years ended 5th April, 1914:—

	1910.	1911.	1912.	1913.	1914.
Boys ...	338	291	288	220	298
Girls ...	208	169	183	103	174
Total ...	546	460	471	323	472

At the end of April, 1914, there were 1,257 apprentices (741 boys and 516 girls) still under indentures. The terms of indenture prescribe a wage payment and pocket-money on a specified scale, the wages being banked half-yearly to the credit of the apprentice; one-third of the accumulated amount is paid over on completion of the apprenticeship, the balance remaining at interest till age 21 is attained, unless exceptional circumstances arise before this time, when the Board may allow the money to be paid earlier. From 1887 to April, 1914, the total collections of the Apprentices' Fund were £77,844, of which £60,641 had been paid over on completion of the indentures, and £17,203 remained to the credit of the fund, the collections for the year having been £4,794. The majority of the girls are apprenticed in domestic service, and the boys to farmers, orchardists, and artisans in country districts; as a preliminary to the apprenticeship system, and to give opportunity for the children in a wider range of industrial occupations, training homes are essential.

Reformatories and Industrial Schools.

The number of children sent to reformatories has diminished considerably since the development of the probationary system; such institutions are needed, however, for a certain number of delinquents who show positively criminal tendencies. In addition to the Farm Home at Mittagong, where truants and minor delinquents are detained for short periods, there are two State institutions, viz., the Farm Home for Boys at Gosford, and the Girls' Industrial School at Parramatta, to which a training home is attached.

The Gosford Home replaces the Nautical School Ship "Sobraon," and the Brush Farm for Boys, and is used for the reception and treatment of the older juvenile offenders. The work of establishing this institution was commenced in July, 1912, and the labour of the boys was utilized largely in clearing the site, which was practically virgin forest, and in constructing the necessary buildings, &c. The plan of the institution was designed to allow the inmates to be classified and segregated; for this reason it would be suitable for the reception of youths from 16 to 20 years of age, who, under existing legislation, are received in prisons.

In connection with this phase of the reformatory system, an experiment was made recently, when a number of youths between the ages 16 and 18 years were transferred under license from the gaols to complete their term of detention at the Gosford Farm Home.

During the year ended 31st December, 1913, 74 boys were admitted, and 82 discharged; of the latter 18 were apprenticed to masters principally in the country, 42 were released on probation, and for 22 suitable employment was found.

At the Girls' Industrial School a training home was established in 1912, to enable a more effective classification of the inmates. On 31st December, 1913, there were 119 girls in the institution—98 in the Industrial School and 21 in the Training Home; 50 girls were admitted during the year, and 38 were discharged.

There are a number of institutions conducted by religious bodies and other organisations, in which destitute children are placed by their natural guar-

dians in preference to boarding-out. These institutions receive a small number of children from the Children's Courts, and at the end of the year 1913, supported 1,820 children, a classification of whom is shown below:—

Institutions.	Boys.	Girls.	Total.
General Public	234	147	381
Church of England	16	153	169
Roman Catholic	416	678	1,094
Methodist	10	16	26
Presbyterian	49	26	75
Salvation Army	40	35	75
Total	765	1,055	1,820

Children's Courts.

The majority of cases in respect of neglected children and juvenile offenders are conducted at the Metropolitan Children's Court; the transactions in the Country Children's Courts being comparatively few. Two shelters have been established in Sydney in connection with these Courts; they are used for the detention of children apprehended by the police, or awaiting decisions of the Courts, or due for transfer to institutions to which they have been committed; they also serve for the detention of those sentenced to imprisonment in default of payment of fine, or on remand for discipline, medical examination, or other inquiry.

As the number of girls passing through the Shelter is small, the work is conducted at the Central Depot for State Children, where boys under 7 years of age are received also. The Shelter for boys over 7 years is attached to the Metropolitan Children's Court. The number of children who passed through the Shelters during the year ended 5th April, 1914, was 1,157—boys, 1,049, and girls, 108.

During the year ended 5th April, 1914, the number of children brought before the Metropolitan Children's Court was 1,889, of whom 1,717 were boys and 172 girls; 352 were uncontrollable children, 211 were neglected or under improper guardianship, 132 were charged with breaking conditions of release on probation, and 1,194 with other offences. The proved cases numbered 1,421, excluding those of a minor character, which were formally withdrawn on payment of costs to avoid the record of a conviction. The disposal of the children brought before the Court is shown in the following statement:—

Disposal.	Uncontrollable Children.	Children neglected or under improper guardianship.	Breach of terms of probation.	Other offences.	Total Children.		
					Boys.	Girls.	Total.
Released on Probation to Parents	190	68	..	450	659	49	708
Do do do Other persons	19	15	..	26	46	14	60
Committed to care of Military Authorities .. ..	..	..	..	128	128	..	128
Do do do State Children's Relief Board.	6	13	..	6	19	6	25
Do do do Ormond House, Paddington.	12	37	3	6	20	38	58
Do do do Farm Home, Mittagong	66	5	52	41	164	..	164
Do do do Farm Home, Gosford ..	4	3	7	15	29	..	29
Do do do Industrial School, Parramatta.	3	5	2	2	..	12	12
Do do do Private Institutions	12	4	3	3	7	15	22
Fined .. ..	..	..	..	214	214	..	214
Committed for Trial .. ..	..	..	..	1	1	..	1
Withdrawn	21	45	56	256	351	27	378
Dismissed or Discharged	19	16	9	46	79	11	90
Total	352	211	132	1,194	1,717	172	1,889

Boys committed to the care of the Military Authorities for neglect of training as prescribed by the Defence laws, are allowed to remain in their homes, and to report to the Military Authorities when required as an alternative to continuous detention at a camp for defaulters.

Further particulars regarding offenders charged at the Children's Courts are given in the chapter of this volume relating to Law Courts.

Release on Probation.

The probationary system by which truants and other juvenile offenders are released under supervision has proved a more effective measure for the reform of juvenile delinquents than the former method of committing them to institutions. Where parental control has been lax, or home conditions unsatisfactory, the children may be released to the care of their parents, whose supervision is supplemented by periodic investigation by probation officers; where natural guardians are unfit or incompetent the children may be placed under the care of other persons.

At 5th April, 1914, there were 1,213 children under probation, 1,091 boys, and 122 girls; 286 were released by the State Children Relief Board, all for a period of one year, and 927 were released by the Children's Courts for periods ranging up to 3 years. Of the latter 87 were neglected, 235 were uncontrollable, 371 were convicted for stealing, and 234 for other offences.

Since its inauguration approximately 6,184 children have been released on probation by the Metropolitan Children's Court, the proportion of failures has been very small.

Street-trading by Children.

Street-trading is defined by law as hawking newspapers, matches, flowers, or other articles, singing, or performing for profit, or any like occupation carried on in a public place. Girls are not allowed to engage in street occupations. Licenses are issued by the State Children Relief Department to boys under 16 years, and the trading hours prescribed for boys between ages 12 and 14 are from 7 a.m. to 7 p.m., for boys over 14 years of age, from 6 a.m. to 10 p.m. The minimum age at which a license may be granted was fixed in 1911, at 12 years in case of certain occupations, and at 14 years in others; previously boys over 10 years were allowed to hold a license. Licenses are renewable half-yearly, and licensees are required to wear an arm-badge whilst trading.

Precautions are taken by supervisors to ensure the regular school attendance of licensees under 14 years of age.

During the period ended March, 1914, 477 boys were licensed, their ages and the purposes for which licenses were granted were as follows:—

Street-trading.	12 years and under 14.	14 and under 16.	Total.
Hawking newspapers	306	144	450
„ flowers, &c.	1	4	5
„ other articles	10	12	22
Total	317	160	477

The average weekly earnings of newspaper-sellers are:—Age 12-14 years from 9s. to 15s.; 14-16 years, 15s. to 25s.

Royal Commission of Inquiry.

In 1912 the President of the State Children Relief Board was appointed as a Royal Commissioner to inquire into the various methods adopted in Great Britain, Europe, and America for the amelioration of the condition of dependent and neglected children, for the reformation of juvenile delinquents, and for the treatment of the feeble-minded. As the result of his investigations the Commissioner recommended that the laws relating to neglected, dependent, or delinquent children be codified and amended, with the object of extending their scope, and of securing simplicity and uniformity in administration, and that legislation be introduced in connection with the following matters:—The extension of the scope of the Children's Courts, and the age of children and young persons to whom the provision of the Acts may be applied; the supervision of the feeble-minded; the registration and inspection of all child agencies and organisations; the supervision of children attending picture-shows; the regulation of the circulation of pernicious literature; the appointment of a guardian for every illegitimate child; and, in regard to wife and child desertion, measures to assist affiliation proceedings, to enforce contributions from near relatives and to compel defaulting husbands and fathers to maintain their families. The Commissioner recommended also that the State Children Relief Board be re-organised by the substitution of a Children's Council, consisting of a president, three women, and three men—one of each sex to be a medical practitioner; that young children be judged by a psychological and sociological standard, and not merely by a legal standard; that boarding-out on probation be adopted as a general principle, and detention in a reformatory or other institution as a final resource only; and that steps be taken to secure the co-operation of the various public and private organisations dealing with child reform.

MEDICAL INSPECTION OF SCHOOL CHILDREN.

As the school population represents one-sixth of the total population of the State, the question of physical fitness of children is of considerable importance to the community. In the effort to remedy physical defects disadvantageous to educational progress, to prevent the spread of epidemic disease, and to check children's ailments in the early and curable stages, initiatory observations were made, and measurements obtained from a limited number of public school pupils during 1901. Since that period more attention has been given to the question of physical fitness; and Swedish drill, exercises, and sports have been embodied as essentials in the school curricula.

The first systematic medical inspection and anthropometric survey of the children attending State schools were commenced in 1907, and the inaugural work was restricted to the more populous centres of Sydney and Newcastle; during 1911 the medical inspection was extended to the South Coast districts and to a number of inland towns; and in the following year four school nurses were appointed to supplement the work of the doctors. In 1908, 1909, and 1911 dental inspections were made in a few State schools by the Dental Association of New South Wales; the percentage of pupils with defective teeth was high. This work is now conducted in conjunction with the medical inspection.

Most important developments took place in connection with the medical inspection during the year 1913, when it was decided to inspect medically all pupils attending State schools—formerly the inspection was restricted to those children who were submitted by the teachers or selected by the medical officers, after a general survey of the classes. Free medical inspection was offered also to the pupils of non-State schools, and the offer was

accepted in respect of the Roman Catholic Denominational schools, and of a large proportion of the other private schools. Thus provision was made for the medical inspection of practically all the school children of the State under a uniform scheme. A self-contained Medical Branch of the Department of Public Instruction was created with a staff of ten medical officers and five nurses, and a bacteriological laboratory for the investigation of outbreaks of disease in schools. The work of the medical branch includes the inspection of school buildings, and delivery of lectures to teachers, senior students, and parents.

The following statement shows the extent of the inspection work to the end of the year 1911; similar information has not been compiled since the period of re-organisation:—

Extent of Inspection.	May, 1907, to April, 1908.	April, 1908, to June, 1909.	1910.	1911.
Schools visited	50	98	127	144
Enrolment	36,118	66,000	75,854	67,577
Children presented	4,000	14,360	16,036	16,909
Complaints disclosed	4,795	22,824	21,558	18,341

Under the re-organised scheme a medical examination will be made every four years of all children present at each school; as the term of compulsory attendance is eight years, the children will be examined at least twice during their school life. The medical inspections in 1913 were commenced at State schools on 1st September, and at non-State schools on 1st November; the number of children examined up to the commencement of the Christmas vacation, 12th December, was 25,638, of these 15,135 showed defects needing treatment. For the purpose of inspection the children are classified in three groups, viz., those attending schools (1) in the metropolitan district, (2) in the large country towns on or near the railway, (3) in small country towns, villages, and remote settlements:—

Schools.	Enrolment at Schools examined.			Pupils examined.			Pupils notified as defective.		
	Boys.	Girls.	Total.	Boys.	Girls.	Total.	Boys.	Girls.	Total.
State Schools—									
Metropolitan district	4,434	4,116	8,550	3,550	3,234	6,784	2,663	2,058	4,721
Large country towns	5,124	4,818	9,942	4,267	4,143	8,410	2,868	2,776	5,644
Small country areas	5,818	5,222	11,040	5,149	4,737	9,886	2,258	2,131	4,389
Total, State Schools... ..	15,376	14,156	29,532	12,966	12,114	25,080	7,789	6,965	14,754
Other Schools	331	610	941	205	353	558	130	251	381
Total, all Schools	15,707	14,766	30,473	13,171	12,467	25,638	7,919	7,216	15,135

The proportion of pupils who showed defects needing treatment was 59 per cent. of those examined; it was lowest in the small country schools, being

44.4 per cent., as compared with 69.6 per cent. in the metropolitan district. There was not an appreciable difference between the proportion of each sex, except in the metropolitan district, where the percentage of boys showing defects was 75.0 as compared with 63.6 for the girls. Owing to the paucity of data, however, no important conclusions can be deduced from the particulars:—

Schools,	Percentage showing defects of pupils examined.		
	Boys.	Girls.	Total.
State Schools—			
Metropolitan district ...	75.0	63.6	69.6
Large country towns... ..	67.2	67.0	67.1
Small country areas	43.9	45.0	44.4
Total State Schools	60.1	57.5	58.8
Other Schools	63.4	71.1	68.3
Total all Schools.	60.1	57.9	59.0

The investigation disclosed that defects of the teeth were very numerous, the majority being in the first teeth; other common ailments were defective tonsils, adenoids, enlarged glands, and defective vision. A summary of the defects is shown below:—

Defects.	State Schools.			Other Schools.	Total.
	Metropolitan District.	Large Country Towns.	Small Country Areas.		
Eyes—Vision	1,968	1,618	1,316	118	5,020
Other	208	500	450	19	1,177
Ears—Hearing, gross	414	523	203	57	1,197
Slight	1,204	1,645	658	128	3,635
Other	137	24	39	.....	200
Nose and Throat—					
Tonsils, Adenoids	4,293	2,963	3,361	160	10,777
Other	1,127	459	96	7	1,689
Teeth—Second, gross	687	1,254	1,011	118	3,070
slight	1,542	2,626	1,840	155	6,163
First	3,303	2,696	4,312	205	10,516
Hair, unsatisfactory condition ...	394	701	277	87	1,459
Skin, unsatisfactory condition ...	141	107	128	13	389
Deformities—Round Shoulders... ..	484	313	735	32	1,564
Other	21	25	22	1	69
Hernia	2	3	2	.....	7
Enlarged Glands	3,433	2,698	2,301	180	8,612
Anæmia	148	278	116	30	572
Defective Nutrition	1,238	193	476	42	1,949
Defective Speech	96	84	138	4	322
	20,840	18,710	17,481	1,356	58,387

The main difficulty to be overcome in order to attain the object of the medical inspection scheme is that of ensuring satisfactory treatment for all children suffering from defects. Returns received by the Medical Branch with respect to notifications sent to parents of children examined under the re-organised scheme in 1913 show the following results; the returns are

incomplete as, at the date of compilation, full particulars had not been received from many schools, especially those in remote districts:—

Division.	Notifications sent.	Children subsequently treated.	Percentage treated of number notified.
Metropolitan area	4,163	1,920	46·1
Large country towns	3,170	801	21·6
Small country towns	2,770	635	22·9

The figures represent the results attained after first notices only, and it is expected that a considerable improvement will be shown when further action has been taken by the Department. Although the non-treatment of some children is due to the indifference of parents, in many other cases it is due to inability to afford the cost of treatment, or to the absence of facilities, as, even in some of the larger country towns, treatment is not obtainable for serious defects of vision and teeth. To supply this deficiency the Department established a travelling hospital, and a travelling ophthalmic clinic for school children during 1914.

ANTHROPOMETRIC SURVEY OF SCHOOL CHILDREN.

In conjunction with the medical inspection an anthropometric survey of children is made in order to show the physical development in relation to mental progress, and the effect of environment on physical condition, as well as to establish a basis of comparison of the children of this State with those of other countries. The numbers of records made during 1913 was small for the purposes of comparison, owing to the re-organisation of the medical inspection, but it is anticipated that ample data will soon be obtained.

In order to show the variation in the measurements of children in the metropolitan districts and those in the country, the particulars have been classified in divisions. The comparison indicates that the children in the small country towns are on an average the tallest and heaviest, and the children in the metropolitan district the shortest and lightest. With few exceptions the records of the metropolitan children were obtained at schools in the most thickly populated portions of the metropolis, inhabited mainly by industrial workers.

PUBLIC HOSPITALS.

Public hospitals embrace all institutions for the care of the sick, except those owned and maintained entirely by private persons; hospitals conducted by charitable and religious organisations, some of which are not subsidised by the Government, and the Thomas Walker Convalescent Hospital, maintained by private endowment, are included. The Public Hospitals Act of 1898, and its amendment, define the procedure in the election of officers, and in matters relating to the property of the public hospitals to which the provisions of these Acts have been extended. With few exceptions the hospitals receive financial assistance from the public funds.

There were in New South Wales, at the end of 1913, 151 general hospitals for the treatment of the sick. Twenty-five of these were in the metropolitan

area, and 126 in country districts; the accommodation provided was 5,602 beds, viz., 2,336 in the metropolitan hospitals, averaging 93 beds per hospital; and 3,266 in country districts, averaging 22 beds per hospital. The cubic capacity of metropolitan hospitals was 2,844,609 cubic feet, averaging 1,218 cubic feet per bed; in the country hospitals the average was 1,194 cubic feet, the average for New South Wales being 1,204 cubic feet per bed. The following statement shows the extent to which the general hospital services have increased since 1901:—

Particulars.	1901.		1911.		1913.	
	Metro-politan.	Country.	Metro-politan.	Country.	Metro-politan.	Country.
Hospitals	15	103	21	120	25	126
Beds	1,453	1,938	2,086	2,962	2,336	3,266
Indoor patients	16,919	16,093	29,610	26,954	34,772	30,418
Outdoor patients	72,645	7,614	104,466	11,880	119,173	11,212
Indoor patients per 1,000 of mean population	24.1		34.0		36.0	

The number of indoor patients is exclusive of those treated in Government asylum hospitals, and in the Carrington Convalescent Hospital; the outdoor patients are exclusive of those treated at the dental hospital.

Private Hospitals.

In addition to the public hospitals, there are numerous private hospitals which, prior to 1909, were entirely free of State supervision; but since the passing of the Private Hospitals Act, 1908, a private hospital (which includes any place in which medical, surgical, or lying-in cases are received) is not allowed to carry on business unless it is licensed by the Department of Public Health, and complies with the regulations as to structure and management. The hospitals thus licensed on 31st December, 1914, numbered 519, viz., 145 in Sydney, and 374 in the country.

The following statement shows the classification of private hospitals:—

Type of Hospital.	Sydney.	Country.	Total.
Medical, surgical, and lying-in	47	134	181
Medical or surgical... ..	8	8	16
Lying-in	90	232	322
Total	145	374	519

The country hospitals were scattered over 164 towns, in the majority of which the accommodation provided was from 1 to 3 beds; only in 23 hospitals, 22 in Sydney and 1 at Richmond, were more than 20 beds available.

HOSPITAL FINANCE.

The following statement shows the revenue and expenditure of the public hospitals for the year 1913:—

Items.	Metropolitan.	Country.	New South Wales.
Receipts—	£	£	£
State aid	125,569	104,800	230,369
Subscriptions and donations	74,333	82,812	157,145
Patients' contributions	28,968	32,645	61,613
Miscellaneous	12,973	9,621	22,594
Total Receipts	£ 241,843	229,878	471,721
Expenditure—			
Buildings and repairs	81,765	44,842	126,607
Salaries and Wages	84,137	79,122	163,259
Provisions, Stores, &c.	86,653	87,423	174,076
Miscellaneous	20,262	17,878	38,140
Total Expenditure	£ 272,817	229,265	502,082

The expenditure in connection with the Coast Hospital, and the State institutions at Waterfall and Berry, has been included in the figures stated above; these institutions are controlled entirely by the Government.

According to the hospital accounts the total amount of State aid received by the hospitals in the metropolitan area in 1913 was £125,569, and by the country hospitals £104,800. The total for the State was £230,369, comprising special grants amounting to £45,590 for metropolitan, and £24,536 for country hospitals, and subsidies, £79,979 to metropolitan and £80,264 to country institutions. These amounts are irrespective of payments for attendance on aborigines, and of expenses in connection with special outbreaks of disease, which are met from the general Medical Vote, nor do they include cost of maintenance of a large number of chronic and incurable cases in asylums for the infirm and destitute.

The revenue and expenditure of public hospitals at intervals since 1900 are shown below:—

Year.	Revenue.					Expenditure.			
	State aid.	Subscriptions and Donations.	Patients' contributions.	Other.	Total.	Building and Repairs.	Salaries and Wages, Provisions, Stores, &c.	Other.	Total.
	£	£	£	£	£	£	£	£	£
1900	88,463	65,634	20,458	16,474	191,029	17,362	131,932	14,339	163,633
1905	100,976	72,430	27,635	14,824	215,865	34,541	167,815	22,808	225,164
1910	146,638	102,690	45,417	19,603	314,348	33,652	241,607	29,054	304,313
1911	159,147	131,244	50,099	22,867	363,357	50,902	263,037	34,877	348,816
1912	204,361	144,518	58,416	22,170	429,465	64,421	305,749	40,149	410,319
1913	230,369	157,145	61,613	22,594	471,721	126,607	337,335	38,140	502,082

The following are the percentage increases under the several headings since 1910:—

	Per cent.		Per cent.
State aid	57	Building and repairs	276
Subscriptions and donations	53	Maintenance	40
Patients' contributions	36	Total expenditure	65
Total revenue	50		

Hospital Funds.

The balances of the funds of the hospitals as at the beginning and end of the year 1913 are shown in the following statement:—

Hospitals	Current Account.		Invested Funds.	
	At 1st Jan., 1913.	At 31st Dec., 1913.	At 1st Jan., 1913.	At 31st Dec., 1913.
	£	£	£	£
Metropolitan ...	(—) 8,220	(—) 43,667	133,917	138,390
Country ...	26,173	27,052	97,230	96,993
Total ...	17,953	(—) 16,635	231,156	235,383

(—) Indicates debit balance.

Cost of Maintenance of Hospital Patients.

The average annual cost of maintenance per patient in the hospitals during 1913 was £91; the average is calculated on the average daily number of patients, and is exclusive of cost of buildings, repairs, outdoor treatment, and district nursing:—

Average Daily Number Resident.	Number of Hospitals.	Average Annual Cost per Occupied Bed.			
		Wages.	Provisions, Stores, &c.	Miscellaneous.	Total.
		£	£	£	£
Under 1	5	537·98	331·25	98·08	967·31
1 to 3	12	156·78	87·32	22·59	266·69
3 „ 5	17	87·08	69·25	15·30	171·63
5 „ 10	30	61·93	53·72	10·96	126·61
10 „ 15	25	46·38	48·20	10·24	104·82
15 „ 20	11	39·30	43·41	8·11	90·82
20 „ 25	7	23·07	41·09	8·40	72·56
25 „ 30	8	30·22	37·89	7·69	75·80
30 „ 35	6	28·76	39·11	6·67	74·54
35 „ 40	7	26·22	38·83	5·56	70·61
40 „ 100	10	34·81	39·55	9·90	84·26
Over 100	7	39·72	40·61	8·65	88·98
Total ...	145	39·77	42·45	8·95	91·17

STAFFS AND PATIENTS IN PUBLIC HOSPITALS.

The following statement shows the medical and nursing staffs attached to public hospitals during 1913:—

Hospitals.	Medical Staff.		Nursing Staff.			
	Honorary.	Salaried.	Qualified Nurses.	Nurses Training.	Others.	Total.
Metropolitan ...	332	70	570	233	24	827
Country ...	211	135	399	307	82	788
Total ...	543	205	969	540	106	1,615

During the year 65,190 persons were under treatment as indoor patients, 34,772 in metropolitan, and 30,418 in country hospitals, and the number remaining in hospitals at the close of the year was 3,824 (2,107 males and 1,717 females). The average time during which each person was under treatment was: of those who died—males, 29.6 days, and females, 23.4 days; and of those who recovered—males, 22.1 days, and females 21.5 days.

The following statement shows the number of indoor patients treated, and the discharges and deaths during the past ten years:—

Year.	Patients under Treatment.	Discharges.	Deaths.	Fatality Rate Per Hundred Treated.	Number of Patients at the end of Year.
1904	38,430	33,532	2,431	6.3	2,467
1905	38,646	33,581	2,529	6.5	2,536
1906	41,552	36,402	2,576	6.2	2,574
1907	44,667	39,133	2,767	6.2	2,767
1908	47,349	41,391	3,020	6.4	2,938
1909	50,541	44,208	3,194	6.3	3,139
1910	54,683	48,370	3,224	5.9	3,089
1911	56,564	49,605	3,550	6.3	3,409
1912	61,711	53,538	4,488	7.3	3,685
1913	65,190	56,908	4,458	6.8	3,824

The increase in the number of patients treated has been steady, and has been more rapid than the growth of population; the proportion of the population treated in hospitals having risen gradually from 26.9 per 1,000 in 1904 to 36.0 per 1,000 in 1913.

The death-rate per 100 persons under treatment during 1913 was 6.8 as compared with 6.3 in 1904. The death-rate in hospitals in New South Wales is apparently high, but this to a large extent is due to the number of deaths from accidents, which cause a considerable proportion of the total deaths. A majority of the accidents are treated in the hospitals; and these institutions, especially in country districts, are utilised principally for the treatment of surgical cases.

Outdoor Hospital Patients.

During 1913, 130,385 persons were treated as out-door patients of the general hospitals, viz., 119,173 at metropolitan hospitals, including 1,701 at the dental hospital, and 11,212 at country hospitals.

Sickness in Public Hospitals.

The principal diseases of patients under treatment in the public hospitals during 1913 are shown below; patients treated at the hospitals attached to the Government Asylums for the Infirm are not included, but are shown separately on a subsequent page. The cases under treatment during 1913 numbered 65,190—males, 35,205, and females, 29,985. The number who died, or were discharged as recovered, relieved, or unrelieved, numbered 61,366, leaving 3,824 under treatment at the end of the year. These figures represent the aggregate of the number of cases treated at each hospital, and include transfers, with the exception of 995 cases transferred to the Carrington Convalescent Hospital; cases admitted more than once during the year are counted each time admitted.

Disease.	Total under Treatment during 1913.		Number of those discharged during the year who—					
	Males.	Females.	Recovered.		Were Relieved.	Were unrelieved.	Died.	
			Males.	Females.	Persons.	Persons.	Males.	Females.
Typhoid	1,176	662	920	516	11	1	126	58
Smallpox	591	478	559	454	10	5	...	1
Diphtheria and croup ...	1,944	2,535	1,618	2,122	325	17	88	106
Influenza	571	278	544	263	19	1	3	2
Tuberculosis of lungs ...	1,174	627	81	50	716	136	232	112
Tuberculosis, other organs	370	306	102	83	277	38	45	44
Venereal Diseases	1,296	474	287	102	1,229	62	16	9
Cancer	786	526	256	178	261	224	198	107
Rheumatism	1,120	583	672	333	538	20	14	15
Diseases of the eye	731	507	400	283	283	51	3	1
Heart diseases	728	366	71	41	615	23	206	81
Hæmorrhoids, &c.	645	360	538	287	106	19	3	3
Diseases of nose	632	615	601	593	26	19	...	2
Bronchitis	659	394	463	289	181	14	49	20
Pneumonia	1,619	885	1,249	698	44	14	278	124
Diseases of the Stomach	860	796	655	603	265	24	15	15
Diarrhœa and enteritis	946	705	629	485	103	20	183	125
Appendicitis, typhlitis...	1,576	1,619	1,347	1,393	151	22	55	37
Intestinal obstruction ...	1,020	318	859	237	56	30	58	38
Nephritis, Bright's disease	493	223	96	58	248	18	170	77
Diseases, female genital organs ... ..	...	3,156	...	2,610	266	74	...	40
Puerperal condition ... ..	...	5,584	...	4,942	226	58	...	140
Diseases of skin, &c.	1,140	524	883	420	232	10	22	17
Accidents	6,290	1,282	4,801	931	983	69	288	90
All Diseases	35,205	29,985	22,980	21,997	10,425	1,506	2,827	1,631

Duration of Illness.

The following figures show the condition under which discharges during 1913 were effected for all cases, and the average period of treatment in hospital.

Discharges.	Proportion Discharged.		Average period of Treatment in Hospital.	
	Males.	Females.	Males.	Females.
Recovered	per cent. 69·4	per cent. 77·8	Days. 22·1	Days. 21·5
Died	8·6	5·8	29·6	23·4
Relieved	19·5	14·0	.....	.....
Unrelieved	2·5	2·4	.....	.....
Total	100·0	100·0	24·3	22·7

Fatality Rates in Age-Groups.

For all cases of sickness treated in hospital, the fatality rates were 8·5 per cent. for males and 5·8 per cent. for females; the rates for various age-groups were as follows:—

Age-group.	Fatality Rates.		Age-group.	Fatality Rates.	
	Males.	Females.		Males.	Females.
	per cent.	per cent.		per cent.	per cent.
Under 1 year	26·7	24·8	45-64 years	12·2	10·0
1-4 years	8·9	11·2	65 and over	21·3	17·4
5-19 „	3·5	2·9	All ages	8·5	5·8
20-44	5·6	3·9			

The fatality rates per 100 cases of various diseases treated during 1913 are shown below; the cases of persons remaining in the hospitals at the end of the year are not included:—

Disease.	Cases.		Fatality Rate.	
	Males.	Females.	Males.	Females.
			per cent.	per cent.
Typhoid Fever	1,055	577	11·9	10·1
Diphtheria and Croup	1,855	2,421	4·7	4·4
Tuberculosis—Lungs	874	453	26·5	24·7
Other	331	258	13·6	17·1
Cancer	736	488	26·9	21·9
Diseases of the Heart	690	347	29·9	23·3
Bronchitis	633	383	7·7	5·2
Pneumonia	1,559	848	17·8	14·6
Diarrhoea and Enteritis	883	662	20·7	18·9
Appendicitis	1,481	1,524	3·7	2·4
Intestinal Obstruction	981	297	5·9	12·8
Nephritis	465	202	36·6	38·1
Accident	5,953	1,209	4·8	7·4

STATE ASYLUMS FOR THE INFIRM.

Five asylums for the infirm are maintained by the Government—four for men and one for women—and in addition twenty-one cottage homes for aged couples have been erected. These institutions were established as asylums for aged and destitute persons, but the introduction of the Old-age and Invalidity pension systems and the prosperous conditions prevalent throughout the State have caused a considerable decrease in the number of persons requiring relief. In consequence the character of the work of these institutions has changed considerably and the treatment of the sick is rapidly developing into a primary feature of administration, the majority of inmates being those requiring medical care.

The average number resident during the year 1913 was 3,039, as compared with 3,606 during the year ended 30th June, 1909. The weekly cost per inmate for each of these periods is shown below:—

Head of Expenditure.	1908-9.		1913.	
	s.	d.	s.	d.
Salaries and money allowances	2	2	3	5
Provisions, extras, medical comforts, and forage	3	4	4	8
All other expenses	2	8½	2	1
Gross weekly cost for maintenance per inmate	8	2½	10	2
Average weekly contribution towards Revenue per inmate...	0	5	1	5
Net weekly cost per inmate	7	9½	8	9

ASYLUM HOSPITALS.

In the hospitals attached to these institutions 5,057 cases of illness were treated during 1913—males, 4,377, and females, 680; at the end of the year 1,224 cases remained under treatment.

Particulars regarding the diseases treated, the deaths, recoveries, &c., are shown below:—

Disease.	Cases Treated during 1913.		Discharged during 1913.						
			Recovered.		Relieved.	Un-relieved.	Died.		
	Males.	Females.	Males.	Females.	Persons.	Persons.	Males.	Females.	
Tuberculosis--									
Lungs	415	27	1	.....	247	36	61	1
Other	39	4	6	1	13	5	2	.....
Veneral diseases	237	37	121	18	75	8	2	.....
Cancer	186	9	21	2	13	42	75	3	
Rheumatism	335	45	134	11	107	5	10	2	
Cerebral hæmorrhage, &c.	135	42	2	.....	28	18	48	5
Diseases of the eye	78	13	15	2	17	20	4	.....
Other diseases of the nervous system.	358	57	56	5	82	55	51	1	
Heart diseases	215	12	9	2	99	2	74	2	
Hæmorrhoids, &c.	123	46	42	28	60	8	.....	.....
Bronchitis	151	30	46	9	45	3	30	2	
Diseases of the stomach	62	16	30	6	11	3	9	.....
Diarrhœa and enteritis	63	9	22	3	12	.....	13	2
Intestinal obstruction	51	5	17	.....	16	14	3	2
Nepritis	159	4	.....	1	77	4	60	1
Diseases of the skin, etc.	277	29	194	16	38	1	11	.....
Senility	498	148	34	14	133	17	177	19	
Accident... ..	236	21	170	14	27	7	4	1	
All diseases	4,377	680	1,273	201	1,294	300	706	59	

As a large proportion of the patients were aged persons suffering from chronic and incurable complaints, the period under treatment was longer and the percentage of recoveries lower than in the general hospitals:—

Discharges.	Proportion of Total Discharges.		Average Period of Treated.	
	Males.	Females.	Males.	Females.
Recovered.	36·8	54·4	43·1	68·8
Died	20·4	16·0	239·3	447·4
Relieved	35·2	19·8	.....	.....
Unrelieved	7·6	9·8	.....	.....
	100·0	100·0	91·8	123·7

HOSPITALS IN GAOLS.

The health of prisoners receives special attention from medical officers at hospitals attached to gaols. The following return shows the total number of cases treated in gaol hospitals:—

Year.	Cases of Sickness treated.	Year.	Cases of Sickness treated.
1906	704	1910	525
1907	626	1911	732
1908	683	1912	728
1909	673	1913	718

At Bathurst Gaol special provision has been made for the treatment of tuberculous prisoners.

TREATMENT OF COMMUNICABLE DISEASES.

Measures for the treatment and prevention of infectious diseases are taken under the authority of the Public Health Act. Cases of such diseases as leprosy, bubonic plague, smallpox, scarlet fever, typhoid fever, diphtheria, and infantile paralysis must be notified to the Board of Health; no case of typhus, yellow fever, or cholera has occurred in New South Wales, and bubonic plague is practically non-existent. In March, 1915, acute malarial fever was added to the list of notifiable diseases; this precautionary measure was taken to prevent its spread amongst the residents of the State by soldiers returning from service in the tropics.

Where necessary special provision is made for the isolation of infectious cases. The majority in the metropolis are treated at the Quarantine Station, or at the Coast Hospital, and the country cases are accommodated in special wards of the local hospitals.

In the chapter relating to police and prison services particulars are given of persons treated in lock hospitals under the Prisoners Detention Act.

Leprosy.

The Leper Lazaret for the segregation of persons suffering from leprosy was opened for the admission of patients in 1883, though statutory provision for the compulsory notification of the disease and for the detention of lepers

was not made until 1890. The number of cases admitted to the lazaret since 1883 was 130; of these 59 died, 11 were discharged, 39 were repatriated, and 21, of whom 16 were males, remained in the lazaret at 31st December, 1913. The birth-places of the patients are shown below:—

Birthplaces.	Admitted.	Died.	Dis- charged, &c.	Repatri- ated.	Inmates at end of Year.
White (European descent)—					
New South Wales ...	32	20	5	.....	7
Other Australian States	2	1	.....	.....	1
United Kingdom ...	13	8	3	.....	2
Other Countries ...	8	6	.....	1	1
Coloured—					
China ...	50	16	.....	32	2
Pacific Islands ...	16	6	.....	4	6
Other Countries ...	9	2	3	2	2
Total ...	130	59	11	39	21

During 1913 two patients were admitted, and one died; the cost of management was £1,890, or an average of £94 18s. 8d. per inmate.

Smallpox.

An outbreak of smallpox of a very mild type was discovered in Sydney in 1913. The first cases occurred in April, but owing to the mildness of attack, escaped detection for some weeks. Only a small proportion of the population was protected by vaccination, but the disease had apparently a very low infective power, and did not spread rapidly, being transmitted as a rule, by personal contact only. Stringent measures were taken to restrict the epidemic; where practicable the patients were transferred for treatment to the hospital in the Sydney Quarantine Area, and a large number of people were vaccinated. The number of smallpox cases notified during 1913 was 1,070, and during the following year, 628; the death-rate was remarkably low, one death occurring in 1913, and three in 1914.

Tuberculosis.

A remarkable reduction in the mortality from tuberculosis has been effected since the enactment of the Dairies Supervision Act of 1886, and other legislation for the protection of the food supply from insanitary conditions, but the fact, as shown in the chapter dealing with vital statistics, that 7.3 per cent. of the deaths in New South Wales during 1913 were caused by tuberculosis, demonstrates the necessity for drastic measures to prevent the spread of the disease. In July, 1912, an Advisory Board was appointed to advise the Government on matters relating to the treatment of tuberculous diseases. This Board is composed of medical practitioners representing the University, the hospitals, the Government Medical Service, the general practitioners, and the various branches of medical science, medicine, surgery, pathology, State medicine, and diseases of women and children, also a veterinary scientist.

The Public Health Amendment Act of 1915 contains clauses for the compulsory notification of pulmonary tuberculosis, and for the application of the public health laws relating to infectious diseases, but those clauses, which may apply only within areas proclaimed by the Governor, have not been brought into operation.

Under the by-laws of the City of Sydney medical practitioners are required to notify cases of phthisis within the city area.

Persons suffering from pulmonary tuberculosis may receive treatment of a temporary character at the general hospitals, and there are special institutions for their care and treatment, such as the State Hospital at Waterfall, the Queen Victoria Homes for Consumptives, at Wentworth Falls and Thirlmere, and the R. T. Hall Sanatorium, at Hazelbrook, as well as various private hospitals; tuberculous cases are received also at the Sacred Heart Hospice for the Dying, Sydney.

The Waterfall Hospital was established in 1909, and persons suffering from pulmonary tuberculosis in early as well as advanced stages of the disease are treated there; male patients only were admitted prior to 1912, when a department for females was opened. There are 330 beds in the institution; 607 males and 240 females were accorded hospital treatment, and a number of persons in the initial stages of consumption, but not requiring hospital treatment, were given employment in the grounds attached to the hospital. The expenditure during the year was £18,566, and the patients contributions £794; the average cost of treatment, excluding buildings, repairs, &c., was £56 per occupied bed. It is proposed to establish a wattle plantation in the Tenterfield district to provide remunerative occupation as well as curative treatment for patients in whom the disease has been arrested.

The National Association for the Prevention and Cure of Consumption has inaugurated an educational campaign, and in September, 1912, opened the first tuberculin dispensary in Sydney. Medical advice is given at the dispensary to persons suffering from tuberculous diseases, and a nurse is employed to visit their homes and instruct the inmates in precautionary measures to prevent the spread of tuberculosis.

The dispensary system is being extended with the co-operation and financial assistance of the Government; throat and chest dispensaries have been established in connection with three metropolitan hospitals. The patients treated at the two dispensaries which were in operation in 1913 numbered 785, of whom 426 were males and 359 females.

CHARITABLE INSTITUTIONS AND SOCIETIES.

In addition to hospitals for the treatment of sickness or disease, there exist, both in the metropolis and in the country, other institutions for the alleviation of distress in its various forms, such as homes for women, and for the blind, deaf, and dumb; for granting casual aid to indigent persons; for the help of discharged prisoners.

In addition to the State asylums for the infirm and the cottage homes for State children, a number of charitable institutions are maintained partly by State aid and partly by private contributions, and others are wholly dependent on private aid.

During 1913 the recorded admissions to the various charitable institutions numbered 15,089, viz., 10,160 males, and 4,929 females, and at the end of 1913 there were 6,158 persons in the institutions, of whom 2,217 were children. The estimated value of outdoor relief afforded during 1913 was £5,057, State aid amounted to £199,108, the total revenue and expenditure being respectively £324,174 and £316,355.

In addition to the institutions which afforded both indoor and outdoor relief numerous societies are engaged in distributing relief in various forms. During 1913 these societies distributed outdoor relief to the value of £13,869, their total revenue and expenditure being £88,892 and £85,185 respectively, State aid amounting to £32,292.

The following is a comparative statement of the revenue and expenditure of the charitable institutions and societies:—

Particulars.	1905.	1910.	1913.
Number of Institutions and Societies	167	179	179
Revenue—	£	£	£
State Aid	164,040	189,584	231,400
Subscriptions, &c.	49,670	66,815	78,991
Other	50,357	67,806	102,675
Total	264,067	324,205	413,066
Expenditure—			
Buildings and Repairs	9,195	13,912	21,964
Maintenance, Salaries and Wages	223,198	278,590	332,612
Other	29,088	26,103	46,964
Total	261,481	318,605	401,540

Ambulance and First Aid.

In the work of rendering first aid, and transporting invalid or injured persons, several organisations are engaged, viz., the St. John Ambulance Association and Brigade, the Civil Ambulance and Transport Corps, and the New South Wales Marine Ambulance, none of which is subsidised by the Government.

The primary object of the St. John Ambulance Association is the dissemination of general information as to the preliminary treatment of the sick and injured; a large number of classes for First Aid instruction are held throughout the State, certificates of competency being awarded by the Association. Ambulance Corps connected with the Railway and Tramway Department and with the Department of Mines, also encourage first aid instruction. The Royal Life-saving Society promotes technical education in life-saving and resuscitation of the apparently drowned.

Nursing Associations.

In the matter of nursing, the District Nursing Association, the Bush Nursing Association, and the Sydney Day Nursing Association are active. The District Nursing Association restricts its operations to Sydney and its suburbs, and during 1913 the nurses connected with the Association made 23,837 visits to 1,224 patients. The association is maintained by public subscriptions, but received a grant of £250 from the Government in 1913.

To provide nursing for the sick in districts sparsely settled or remote from an established hospital the Bush Nursing Association was instituted during 1911, and during its first year four nurses were installed, viz., one each at Jindabyne, Euston, Lake Cudgellico, and Carinda. In each town a cottage was furnished and equipped for the use of the nurse; the costs of equipment and services are guaranteed by local committees, promoted and subsidised by the Association which was inaugurated with an endowment provided by public subscriptions, and is maintained by annual contributions subsidised by the Government. During 1914 the Association was re-organised with Government representation and endowment in order to extend the service to all remote settlements. Arrangements are being made also to subsidise doctors in small centres where the resident population

is insufficient to provide a fair remuneration to medical practitioners. Where practicable the residents will be expected to guarantee a certain sum to the doctor, and his earnings will be further supplemented by Government subsidy. The subsidised doctors and nurses will be required to co-operate with the medical officers attached to the travelling hospitals of the Education Department.

GOVERNMENT RELIEF ORDERS.

To the various hospitals and asylums the Government issues orders authorising the holders to secure relief from the institutions. During 1913 11,431 orders were granted, of which 6,451 were to the Government asylums, 2,498 were to the Coast Hospital, and 1,623 were for out-door treatment at hospitals; the balance were distributed among other institutions. The total applications numbered 11,851 in 1913, as compared with 13,048 in 1912; 420 were refused, but it frequently happens that applicants who have been refused Government orders receive recommendations to institutions not under State management. More than half the applicants in 1913 were over 40 years of age, 2,881 being over 60.

PUBLIC CHARITABLE COLLECTIONS.

Numerous public collections have been made for the relief of distress occasioned by mining disasters, floods, drought, &c. A fund thus established is usually administered by a committee formed at a public meeting of citizens summoned for the purpose of inaugurating the fund. On the outbreak of the present war numerous funds were initiated in New South Wales, the total amount of subscriptions at the end of February, 1915, being nearly £500,000.

With the object of increasing the revenue of the hospitals and charitable agencies, public collections are made annually in the Metropolitan and several country districts. Particulars of the Hospital Saturday Fund and the United Charities Fund, both operating in the metropolitan area, are shown below; no information is available of similar collections in other districts.

National Relief Fund of New South Wales.

The National Relief Fund of New South Wales was formed in 1914 by the amalgamation of certain funds which had been established by public subscription. A Board consisting of the Colonial Secretary, the Lord Mayor of Sydney, the Public Trustee, and six other members appointed by the Governor was constituted to administer the fund; the moneys, &c., are vested in the Public Trustee, and will be used for the relief of persons injured, or of the dependents of those killed or injured in war or public disasters.

The funds absorbed by the National Relief Fund, and the assets of each at the dates stated, were as follows:—

	Date.	Assets. £
Patriotic Fund	30th June, 1914	25,211
New South Wales Public Disaster Relief Fund	31st Dec., 1913	14,229
Education Department Relief Fund	13th Aug., 1914	2,158
Bulli Colliery Disaster Fund	31st Dec., 1913	13,119
Total		£54,718

The Patriotic Fund was inaugurated in 1899 to relieve distress arising from the South African War; the New South Wales Public Disaster Fund, and the Education Department Relief Fund were initiated for the relief of sufferers by the disaster at Mount Kembla mine in 1902; the Bulli Colliery Disaster Fund was established in 1887 in connection with the mining disaster at Bulli. On the resolution of both Houses of Parliament any other fund may be amalgamated with the National Relief Fund.

Hospital Saturday Fund.

The Hospital Saturday Fund of New South Wales, inaugurated in 1893, is registered under the Companies Act, and is managed by a Board of thirty members and eight honorary officers, all of whom are elected annually. Indoor collections at places of business, household collections by means of boxes, and an annual out-door collection are made; the money is distributed among certain hospitals and auxiliary medical charities in the metropolitan area.

For the year ended 31st May, 1914, £9,214 was collected and £8,450 was distributed, the expenses amounted to £773. Four city and twelve suburban hospitals participated in the 1914 distribution, also ten special hospitals, and six auxiliary medical charities.

United Charities Fund.

The United Charities Fund is administered by a general committee, composed of delegates of the Associated Charities within Sydney and suburbs, except the medical charities aided by the Hospital Saturday Fund; an annual collection is made throughout the metropolis. During the year ended 1st February, 1914, the amount collected was £2,645, and the amount distributed was £2,500, the expenses being £422.

In 1914 twenty-seven charitable institutions, mostly orphanages and children's homes, benefited to the extent of £1,500; thirty-four relief societies, mainly benevolent, received £1,000.

INSANITY.

Under the Lunacy Act, 1898, the Judge in Equity is constituted a court to deal with matters relating to the declaration of any person as of unsound mind or incapable of managing his own affairs, and to the appointment of a committee of his estate; the Master in Equity, as Master in Lunacy, is clothed with all the powers of such a committee, and controls trust funds which at December, 1913, amounted to £240,140. The Act authorises the appointment of an Inspector-General of Insane, who is empowered to visit every hospital, reception-house, ward, cell, or licensed house, and to inquire generally as to the care, treatment, and health, mental and physical, of the patients. Persons deemed to be insane may be examined and detained on the order of a Justice; and in public hospitals, and in gaol establishments, wards are reserved for the reception and observation of insane patients, but special hospitals are maintained by the Government for their treatment and care.

HOSPITALS FOR THE INSANE.

For the treatment of the insane there were during 1913 nine Government hospitals, in addition to a hospital for criminal insane at Parramatta, three licensed houses at Tempe, Ryde, and Picton, and reserved accommodation in the South Australian hospitals for patients from the Barrier District of New South Wales.

Each institution admitting new cases is provided with a mental hospital specially designed and fully equipped for the treatment of curable patients, in separate buildings, so that a classification system can be ensured, and a high standard of nursing and care maintained.

The medical staff of the hospitals and licensed houses numbered 21, while the nursing staff and attendants numbered 601 males and 477 females, and the average daily number of patients resident, excluding patients on leave, was 6,277, comprising 3,765 males and 2,512 females.

At the end of the year 1913 there were in the New South Wales hospitals 6,345 patients—3,792 males and 2,553 females; in the South Australian

hospitals the patients from New South Wales numbered 17 men and 19 women; in addition there were 126 men and 168 women on leave from various institutions, making a total number of 6,674 insane persons under official cognisance—3,935 males and 2,739 females.

In the following table is stated the number of insane persons under official notice at the close of each year, with their proportion per 1,000 of the population at quinquennial intervals since 1876:—

Year.	Number of Insane Persons.			Proportion per 1,000 of Population.		
	Males.	Females.	Total.	Males.	Females.	Total.
1876	1,072	533	1,605	3·21	1·90	2·61
1881	1,354	726	2,080	3·16	2·06	2·66
1886	1,644	1,073	2,717	3·03	2·41	2·75
1891	1,912	1,222	3,134	3·04	2·29	2·70
1896	2,356	1,489	3,845	3·46	2·49	3·01
1901	2,684	1,804	4,488	3·72	2·75	3·26
1906	3,285	2,240	5,525	4·13	3·11	3·65
1911	3,810	2,573	6,383	4·30	3·19	3·77
1912	3,866	2,640	6,506	4·13	3·13	3·66
1913	3,935	2,739	6,674	4·09	3·15	3·64

From these figures it appears that generally the proportion of insane treated in the hospitals for insane increased steadily from period to period up to 1911; the figures for the last two years, however, show an improvement. To ascertain the general insanity rate it would be necessary to consider the extent to which patients are treated in private houses, and the proportion of persons whose mental condition, while not calling for certification, might be relieved by treatment if provision were made for the admission of voluntary patients.

Admissions and Discharges.

The steadily increasing number of admissions resulted in so overtaxing the accommodation available in the large hospitals, that additional accommodation had to be secured, and the opportunity was taken in 1910 of giving to selected patients experience of open-air treatment, housing them in tents with wooden framework and flooring; the resultant benefit to health was regarded as highly satisfactory.

Prior to 1893 there was no law in force to prevent the influx of insane into New South Wales, but in that year legislation rendered the owner, charterer, agent, or master of a vessel liable for the maintenance of any insane person landed in the State. In 1913, under these provisions, 69 insane patients were received, 36 being discharged after a few days' treatment at the Reception House, while 33 were admitted to Hospitals for the Insane.

The numbers of admissions and re-admissions to hospitals for the insane since 1891 are shown below in five-year periods:—

Period.	Admissions.			Re-admissions.		
	Males.	Females.	Total.	Males.	Females.	Total.
1891-1895	1,843	1,116	2,959	217	201	418
1896-1900	1,980	1,278	3,258	300	259	559
1901-1905	2,488	1,621	4,109	415	365	780
1906-1910	2,708	1,724	4,432	518	410	928
1911	674	387	1,061	113	73	186
1912	624	394	1,018	117	78	195
1913	643	415	1,058	125	88	213

Of the admissions in 1913 natives of New South Wales numbered 668, England 236, Ireland 98, Scotland 57, other British countries 146, and foreign countries 66.

The following table shows the "occurring insanity," i.e., the number of admissions in relation to the population:—

Period.	Admissions (including Re-admissions).			Population per Admission.		
	Males.	Females.	Total.	Males.	Females.	Total.
1891-1895	2,060	1,317	3,377	1,566	2,106	1,777
1896-1900	2,280	1,537	3,817	1,526	2,005	1,719
1901-1905	2,903	1,986	4,889	1,267	1,696	1,441
1906-1910	3,226	2,134	5,360	1,247	1,743	1,444
1911	787	460	1,247	1,103	1,731	1,335
1912	741	472	1,213	1,232	1,749	1,433
1913	768	503	1,271	1,239	1,706	1,424

There was a marked increase in the admission rates of both sexes during the quinquennium, 1901-5, since that period the rates have been fairly constant.

The next table shows, in quinquennial periods, the numbers of patients who died or who were discharged from the hospitals, on account of recovery, permanent or temporary:—

Period.	Discharged.						Deaths.		
	Recovered.			Relieved.					
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
1891-1895	815	633	1,448	108	99	207	742	350	1,092
1896-1900	880	737	1,617	125	131	256	887	364	1,251
1901-1905	1,132	891	2,023	149	139	288	1,100	573	1,673
1906-1910	1,134	964	2,098	221	164	385	1,311	651	1,962
1911	268	191	459	61	35	96	338	147	485
1912	287	199	486	62	43	105	335	166	501
1913	300	211	511	51	41	92	340	153	493

PER CENT. OF AVERAGE NUMBER RESIDENT.

1891-1895	7.9	10.0	8.7	1.0	1.6	1.2	7.2	5.5	6.6
1896-1900	7.3	9.3	8.2	1.0	1.7	1.3	7.3	4.8	6.4
1901-1905	8.1	9.8	8.8	1.1	1.5	1.2	7.8	6.3	7.2
1906-1910	6.9	8.8	7.7	1.3	1.5	1.4	7.9	6.0	7.2
1911	7.4	8.1	7.6	1.7	1.5	1.6	9.3	6.2	8.1
1912	7.7	8.2	7.9	1.7	1.8	1.7	9.0	6.9	8.2
1913	8.0	8.4	8.1	1.4	1.6	1.5	9.0	6.1	7.9

Ages of Insane Patients.

During 1913 there were 8,017 patients, 4,770 males and 3,247 females under care in the hospitals and licensed houses for the insane; included in this number are 155 males and 121 females who were transferred from one

hospital to another. The admissions, discharges, and deaths during the year, classified according to ages are shown below:—

Ages.	Admissions and Re-admissions.		Discharges.				Deaths.		Patients under Care during 1913.			
			Recovered.		Relieved, Transferred, &c.							
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.	
Years.												
0-4	4	4	...	...	3	...	...	...	5	6	11	
5-9	12	3	...	...	...	2	5	...	33	11	44	
10-14	4	11	...	...	3	3	1	...	47	40	87	
15-19	34	20	8	10	11	6	3	4	224	131	355	
20-29	135	101	72	49	42	36	21	13	769	543	1,312	
30-39	169	141	68	63	52	32	41	23	1,021	770	1,791	
40-49	154	93	70	42	43	37	61	21	1,047	711	1,758	
50-59	138	72	52	33	30	24	69	25	853	543	1,396	
60-69	69	32	17	13	17	12	58	34	506	313	819	
70-79	39	23	12	1	9	8	56	26	218	144	362	
80-89	10	3	1	...	2	2	24	7	43	34	77	
90 & over	...	...	...	...	...	...	1	...	4	1	5	
Total ...	768	503	300	211	212	162	340	153	4,770	3,247	8,017	

Analysis of the direct causes of deaths as certified, during 1913, shows the predominance of brain diseases generally, and of paralysis. Following are principal causes of death:—

Disease.	Males.	Females.	Total.
Inflammation and other Brain Diseases ...	32	21	53
General Paralysis	69	6	75
Other Cerebral Diseases	45	25	70
General Debility and Old Age	28	9	37
Pulmonary Tuberculosis	22	19	41
Diseases of Heart and Blood-vessels	47	18	65
Inflammation of Lungs, Pleura, and Bronchia...	33	18	51
Abdominal Diseases	50	25	75
Other Diseases	8	7	15
Accident and Suicide	6	5	11
Total	340	153	493

Causes of Insanity.

On the admission or readmission of patients to hospitals or reception houses, the causes of insanity, apparent or assigned, are verified; the records gathered for 1913 show that among the exciting causes of insanity intemper-

ance in drink is most prominent, particularly among men; among predisposing causes the most important are old age, ascertained congenital defects, and hereditary influence.

Cost of Maintenance.

The weekly cost of maintaining insane patients in Government hospitals during the year 1913 was 15s. 5½d. per patient, of which the State paid 12s. 9¼d., the balance being derived from private contributions. The subjoined table shows the average weekly cost per patient from 1904 to 1913:—

Year.	Annual Cost of maintenance of Patients.	Cost of maintenance of Patient per week.		
		To State.	Private Contributions.	Total per Patient without deducting collections.
	£	s. d.	s. d.	s. d.
1904	139,974	9 5¾	1 10½	11 4¼
1905	137,971	8 9¾	2 0½	10 10
1906	143,245	8 8½	2 0½	10 9¼
1907	149,728	8 9	2 1¾	10 10¾
1908	165,428	9 8½	2 2¼	11 10¾
1909	166,528	9 6½	2 2¾	11 8¾
1910	181,482	10 0½	2 2½	12 2¾
1911	185,266	9 9½	2 3¼	12 0¾
1912	231,185	12 3¾	2 5¼	14 8¾
1913	248,105	12 9¼	2 8	15 5¼

The increase in the cost of maintenance is due mainly to benefits conferred on the staff, such as increased remuneration and shorter hours of work.

Duration of Treatment.

The duration of treatment of completed cases shows that, during 1913, of 511 cases recovered, viz., 300 men and 211 women, almost half had been under treatment for periods ranging from one to six months. The following table shows the duration of treatment of those who recovered and those who died during 1913:—

Length of Residence in Institution.	Recovered.			Died.		
	Males.	Females.	Total.	Males.	Females.	Total.
Under 1 month ...	17	7	24	32	17	49
From 1 to 3 months	79	41	120	31	14	45
" 3 6 "	54	30	84	39	24	63
" 6 9 "	29	21	50	25	10	35
" 9 12 "	30	19	49	11	7	18
" 1 2 years	52	55	107	54	16	70
" 2 3 "	15	20	35	41	8	49
" 3 5 "	13	4	17	26	8	34
" 5 7 "	1	4	5	14	8	22
" 7 10 "	6	6	12	20	10	30
" 10 12 "	1	1	2	10	4	14
" 12 15 "	3	3	6	8	10	18
Over 15 years ...	...	...	...	29	17	46
Total ...	300	211	511	340	153	493

Reception Houses for the Insane.

Reception houses have been established at Sydney, Newcastle, and at the local gaols in some country towns where affected persons are placed under observation. At Darlinghurst and Newcastle treatment is provided for attacks of short duration and for alcoholic cases, which have developed mental symptoms. The number of patients admitted during 1913 was 1,738; 842 were transferred to hospitals for the insane, and 836 were discharged as recovered.

Mental Ward.

A small hospital was established in 1908 by the Lunacy Department on a site adjoining the reception-house at Sydney, for the treatment of patients in the earliest and curable stages of mental disease, wherein restraint or the special conditions of a hospital are not required. Accommodation is provided for 20 male patients; and during 1913 the number of cases treated was 107; 86 were discharged, 4 died, and 17 remained at the end of the year.

CARE OF THE FEEBLE-MINDED.

The question of mental deficiency has attracted considerable attention during recent years, and the national importance of providing supervision and treatment for the feeble-minded is widely recognised. The report of a Royal Commission in Great Britain, published in 1908, furnished much valuable information in relation to this subject, and an Amending Lunacy Bill is under consideration in New South Wales, embodying the recommendations of the British Commission. The President of the State Children Relief Board as a Royal Commissioner recently investigated the methods adopted for the treatment of the feeble-minded in England, America, and other countries.

A proper system of classification is essential for the successful treatment of mental defectives, for the permanently incapable, permanent segregation in homes or farm colonies is recommended; and for the temporarily and conditionally incapable, training in special day and residential schools for children, and in homes for adults, with opportunity of working at various trades.

At present the only provision made by the State for the feeble-minded is at two cottage homes established by the State Children Relief Department, where, as previously stated, State children who are feeble-minded are accommodated, and at the Newcastle Hospital for the Insane, which is used for children who are certified as imbeciles or idiots. In connection with the medical inspection of school children, data are being collected by the medical officers as a preliminary to the establishment of special schools for mentally defective children.

DEAF MUTISM.

The number of persons who were deaf and dumb in 1911 was 640, equivalent to one person in every 2,573 of the population.

The rate at ages 10 to 20 is the highest; whereas, since deaf-mutism is an affliction of childhood, it is reasonable to expect that the rates below those ages would be the highest. This probably arises from the unwillingness of parents to make known this infirmity in their children.

Age-group.	Number of Deaf Mutes.			Proportion per 1,000 of Population.		
	Males.	Females.	Total.	Males.	Females.	Total.
Under 10... ..	42	33	75	.22	.18	.20
10 and under 20...	89	86	175	.55	.54	.54
20 " 30...	70	55	125	.43	.35	.39
30 " 40...	59	52	111	.49	.47	.48
40 " 50...	33	35	68	.34	.43	.38
50 " 60...	21	21	42	.31	.41	.35
60 " 70...	13	16	29	.37	.54	.45
70 and over ...	2	7	9	.05	.17	.10
Not stated ...	1	5	6	...	...	...
Total ...	330	310	640	.38	.40	.39

Excluding children under 10, it will be seen that the rate declines more or less regularly as the age advances. At all ages over 30 the female rate is higher than the male.

BLINDNESS.

The number of persons afflicted with blindness at the census of 1911 was 1,011; this is equivalent to one person in every 1,629. The higher proportion which exists among males is probably due to the greater risk of accident to which they are exposed. Blindness comes on with approaching old age, as will be seen below, where the numbers and proportion in various age groups are given:—

Age-group.	Number.			Proportion per 1,000 living.		
	Males.	Females.	Total.	Males.	Females.	Total.
Under 10... ..	16	10	26	.09	.05	.07
10 and under 20...	29	29	58	.18	.18	.18
20 " 30...	31*	32*	63	.19	.20	.20
30 " 40...	47	23	70	.39	.21	.31
40 " 50...	68	41	109	.70	.51	.61
50 " 60...	89	47	136	1.33	.93	1.15
60 " 70...	101	69	170	2.85	2.35	2.63
70 " 80...	136	97	233	7.88	7.02	7.49
80 " 90...	68	53	121	19.48	17.63	18.63
90 and over ...	3	13	16	12.55	45.30	30.42
Not specified ...	3	6	9	...	...	...
Total ...	591	420	1,011	.69	.53	.61

*Includes one blind-deaf-mute.

Among both sexes the rate increases from the lowest to the highest ages, and rapidly after age 60. Practically at all ages the male rate is higher than the female. The majority of young persons afflicted with blindness were probably so at birth.

The care and education of the blind and the deaf and dumb are undertaken at several institutions in New South Wales. The New South Wales Institution for Deaf and Dumb and the Blind is maintained partly by Government subsidy and partly by public subscription; special educational courses are provided, the fees being remitted in cases of financial inability. Denominational institutions for the instruction of male deaf mutes are conducted at Waratah and at Westmead, and one for blind girls at Liverpool.

The Sydney Industrial Blind Institution undertakes the care of the adult blind, and provides industrial training to enable them to earn a livelihood. Homes for blind women and for blind boys, and a free circulating library of embossed books are also conducted in connection with this institution.

FRIENDLY SOCIETIES.

The first Friendly Society in New South Wales was founded in 1834, when the Australian Union Benefit Society was established; this society is still existent.

The first Act of Parliament to regulate Friendly Societies, passed in 1843, conferred certain legal advantages on societies established for the purpose of raising funds for mutual relief of the members.

In 1873 a more comprehensive Act was passed, and a Registrar was appointed to certify as to the accordance of the rules of the societies with the law. To obtain the registration of a society under this Act it was essential that the table of contributions be certified by an actuary; but after registration, the society had power to vary the rates of subscription and the amount of benefits, so stultifying the requirements as to certification.

It was not until 1899 that these defects were remedied. In that year an Act was passed under which the supervision of the State was imposed upon societies in the conduct of their business, and in the safeguarding of their funds, collection of data as to membership, sickness and mortality experience, investigation of accounts; and expert advice was made available in their financial concerns, with actuarial oversight by means of periodic valuations.

In 1906, under further legislation, compulsory registration of all Friendly Societies was required, the only exception being as to dividing societies which annually distribute all their funds amongst their members, and stringent provisions were made to prevent misapplication of benefit funds.

In 1908 a new feature was introduced in the form of Subventions to Societies from the Public Revenue of the State, under the Subventions to Friendly Societies Act, 1908. This system is detailed subsequently.

The whole of the existing legislation was consolidated in the Friendly Societies Act, 1912, but in 1913 an amending Act was passed which provides that after valuation the Registrar may authorise surplus moneys belonging to any one fund or benefit to be used in any manner for the purpose of any other fund or benefit.

Efforts are being made to establish co-operation in Friendly Societies administration between the States of New South Wales and Victoria. In pursuance of this object, conferences have been held between the Registrars of the two States, the chief matter of discussion being the question of arranging uniform clearance values between the societies. A scheme has been adopted; the necessary tables of values have been prepared, and are now receiving final consideration.

Benefits and Actuarial Valuations.

The benefits assured are fairly uniform in all societies, and consist usually of medical attendance and medicine for a member and his family, with sick pay for the member, and funeral allowances for the member and his wife. The average sickness benefit is 21s. per week during the first six months, 10s. 6d. for the next six months' illness, and 5s. per week for rest of illness, this last provision being rendered possible by the system of State Subventions, of which more detailed mention is made below. The funeral benefits usually range from £20 to £40 at death of the member, with a maximum benefit of £200, and a contingent benefit of £10 or £15 is payable on death of the wife. A separate benefit for widows of members, usually £10, may be assured in most of the societies for a stated contribution.

The first quinquennial valuation of Friendly Societies required in compliance with the Act of 1899 was undertaken as at 31st December, 1904. Eighteen affiliated societies and thirteen single societies were valued.

At this valuation 96,422 members were valued for sickness benefit, and 97,511 for funeral benefits, with 51,155 subsidiary funeral benefits.

The valuation showed that there was a net deficiency of £271,620 on a total liability of £3,981,252, equal to 1s. 4d. per £1, or, in other words, a sum of only 18s. 8d. was available to meet each £1 of liability.

In his report, the Registrar made recommendations designed to strengthen the financial position of the societies, and to improve their status.

Their effect was visible in the result disclosed by the second valuation, as at the 31st December, 1909, which showed that the position of the societies as a whole was distinctly sound. The second quinquennial valuation was made on a 3½ per cent. rate on the basis of the experience of the Friendly Societies in this State during the nine years 1900-8. Sickness and Funeral benefits were valued for 116,186 members, funeral benefit only for 5,258, and sickness benefit only for 13,109 members. In addition, there were subsidiary risks on account of 54,391 persons, comprising members, their wives, and children.

The results showed that the eighteen affiliated societies had a surplus of £135,780 in the Funeral Fund, and a deficiency of £70,800 in the Sickness Fund, the net result being a surplus of £64,980 on the total liability of £4,122,197. The single societies showed a surplus of £1,411 over liabilities of £97,570. The assets of all the societies were, therefore, £66,391 in excess of the liabilities, £4,219,767, so that for every £1 of liability they held assets valued at £1 0s. 4d.

Societies.

The societies may be divided into two classes, viz., Friendly Societies proper, and Miscellaneous Societies, whose objects bring them within the scope of Friendly Societies' legislation, but whose benefits differ somewhat from those of ordinary Friendly Societies.

At the end of the year 1913 there were 61 Societies, including 22 Miscellaneous Societies; 17 possessed branches, and 44 were classed as Single Societies, though in 3 cases juvenile branches were attached.

At 31st December, 1914, there were 68 Societies, including 28 Miscellaneous; 17 possessed branches, and 51, including 2 with juvenile branches, were classed as Single Societies.

The following summary shows the societies, branches, membership, and funds as at 31st December, 1913:—

Classification.	Societies.	Branches.	Members.	Funds.
Friendly Societies' Proper—	No.	No.	No.	£
Affiliated	17	1,902	184,058	1,650,648
Single	22	3	4,532	48,071
	39	1,905	188,590	1,698,719
Miscellaneous Societies	22	.....	2,135	21,675
Total	61	1,905	190,725	1,720,394

Friendly Societies Proper.

The societies classified as "Friendly Societies proper" offer such a wide range and appeal so strongly to individual sympathies that the field of operations for new societies is limited, and consequently few are now formed. The number of societies was decreased in 1913 by one closure; one new society was registered in 1914. The existing societies, however, continue to extend their sphere of operations by opening branches in new centres; 127 were opened in 1913, and 59 were closed, the net increase being 68. During period 1904-1913 the number of branches increased from 1,139 to 1,905, or 67 per cent., and the average membership per branch increased from 90 to 96. The number of branches at the end of the year 1914 was 1,874.

Membership.

The following table shows the number of societies, branches, and members, during the ten years ended 31st December, 1913:—

Year.	Societies.	Branches.	Aggregate Membership.	
			Members.	Percentage of Population.
1904	31	1,139	97,952	6·8
1905	30	1,195	101,463	6·9
1906	30	1,299	106,678	7·1
1907	46	1,333	117,130	7·6
1908	46	1,393	123,440	7·9
1909	49	1,492	133,273	8·3
1910	42	1,635	149,579	9·1
1911	45	1,769	164,910	9·7
1912	40	1,837	179,932	10·1
1913	39	1,905	188,590	10·3

The membership of 188,590 at 31st December, 1913, representing 10·3 per cent. of the total population of the State, is the highest yet attained. The number of members entitled to benefits was 168,438, the remainder being ineligible on account of brief membership or arrears of contributions. The benefits of medical attendance and medicine accrue also to the member's family, and, making allowance for such cases, it is estimated that approximately 675,000 persons, or one-third of the population, participate in the benefits provided by the societies.

The membership in 1913 comprised 169,844 men, 12,001 women, and 6,745 juveniles. As compared with the previous year there was an increase of 7,323 men, 506 women, and 829 juveniles, the total net increase being 8,658 members. The rate of increase for men and women was much lower than in the last five years, but the rate for juveniles showed a marked improvement as compared with those in 1911 and 1912.

FINANCES OF FRIENDLY SOCIETIES.

Receipts and Expenditure.

The receipts and expenditure of the societies for the ten years ended 31st December, 1913, are shown in the following statement:—

Year.	Receipts.				Expenditure.					
	Contributions.	Interest.	Other.	Total.	Sick Pay.	Funeral Donations.	Medical Attendance and Medicine	Expenses of Management.	Other.	Total.
	£	£	£	£	£	£	£	£	£	£
1904	279,691	28,300	58,150	366,141	85,330	22,732	94,077	37,006	93,001	333,046
1905	309,087	36,723	44,655	390,465	87,781	24,049	100,568	40,765	61,328	314,491
1906	315,191	38,385	42,451	396,027	86,794	23,871	104,813	42,527	41,194	299,199
1907	336,262	42,706	55,390	434,358	96,240	24,358	110,895	44,390	45,630	321,513
1908	345,313	45,903	44,205	435,421	101,989	29,819	116,888	47,714	50,033	346,443
1909	352,569	50,100	52,552	455,221	105,832	27,151	122,327	49,846	74,472	379,628
1910	372,220	59,312	32,561	464,093	124,789	30,051	128,627	54,184	46,672	384,323
1911	413,027	64,267	38,043	515,331	148,576	38,359	143,040	59,154	45,989	435,118
1912	456,097	69,549	32,433	558,189	166,270	40,828	157,821	66,495	42,634	474,058
1913	489,698	75,033	37,303	602,101	173,451	45,952	170,604	69,226	49,618	508,841

In 1908 rates of contributions were reduced in the majority of societies in consequence of the favourable position disclosed in the first quinquennial valuation, and of the assistance rendered to the societies generally under the Subvention Act.

The total amount disbursed in 1913 on account of benefits amounted to £389,997; the figures afford convincing evidence of the importance of the societies and of their immense value to the community.

Investment of Funds.

The total funds of the Friendly Societies at the end of 1913 amounted to £1,698,719, disposed as under:—

Mode of Disposal.	Sickness Fund.	Funeral Fund.	Medical and Management Fund.	Other Funds.	Total Funds.	
					Amount.	Per Cent.
	£	£	£	£	£	
Mortgage	667,708	533,540	13,443	29,541	1,244,232	73·24
Public Funds	3,971	7,485	733	.....	12,189	·72
Savings Banks	54,248	51,988	31,932	11,146	149,314	8·79
Other Banks	9,304	3,696	1,254	192	14,446	·85
Buildings and Freehold Property.	78,674	86,869	26,302	2,873	194,718	11·46
Other Investments ...	4,635	922	4,747	828	11,132	·66
Uninvested	26,232	20,696	22,754	7,751	77,433	4·56
In use by other Funds...	7,381	17,288	2,051	3,165	29,885	1·76
Total	852,153	722,484	103,216	55,496	1,733,349	102·04
Overdraft	12,464	3,071	15,770	3,325	34,630	2·04
Total Funds ...	839,689	719,413	87,446	52,171	1,698,719	100·0

Stating these figures as a total of all funds it is found that long-dated or permanent investments, comprising mortgages, buildings, freeholds, &c., form 85·4 per cent. of the total—short call investments, i.e., money in savings banks, other banks, and public funds, form 10·4 per cent., while cash represents 4·6 per cent. Overdrafts in the year under review represented 2 per cent., but the greater portion of these were financed by other funds, in most cases illegally, and the actual overdraft obtained from outside sources represented only ·3 per cent. of the total funds.

To state the case more concisely, ready money equal to 5 per cent. of the assets is more than sufficient to carry on business, with an additional 10 per cent. available for easy realisation, and for the remainder more permanent investment is sought.

The adoption of consolidation of funds by vesting the control in central executive bodies has reduced the amount necessary to be kept at hand by branches, as the executive bodies make advances to meet any special contingencies that may arise, thus the amount at short call has fallen from 35.5 per cent. in 1907 to 10.4 per cent. in 1913; and conversely the investments on mortgage have risen from 42.8 per cent. to 73.2 per cent. in the same period.

For the quinquennium 1905-9 the average interest earned by all societies in all funds was 3.8 per cent., but for 1913 it rose to 4.7 per cent., the rates for the sickness and funeral funds being almost identical.

The following comparative table shows the accumulated assets of all funds at the close of each of the last ten years:—

Year.	Sickness Fund.	Funeral Fund.	Medical and Management Fund.	Other Funds.	Total.
	£	£	£	£	£
1904	504,363	296,411	61,251	22,669	884,694
1905	549,949	329,582	56,508	24,629	960,668
1906	602,314	365,003	64,170	27,337	1,058,824
1907	651,812	425,946	70,894	20,782	1,169,434
1908	693,751	454,310	75,174	35,177	1,258,412
1909	731,315	488,759	71,711	44,045	1,335,830
1910	757,548	539,469	75,048	48,080	1,420,145
1911	783,434	595,288	78,264	49,852	1,506,838
1912	808,046	655,456	82,538	51,715	1,597,755
1913	839,689	719,413	87,446	52,171	1,698,719

MISCELLANEOUS SOCIETIES.

In addition to the Friendly Societies proper there were at the end of 1913 twenty-two Miscellaneous Societies registered under the Friendly Societies Act. Sixteen were medical institutes or dispensaries which have no members in the ordinary sense of the term, but are supported by subscriptions from branches of Friendly Societies within their immediate districts, at a fixed rate per head of membership. The dispensaries supply medicine to all members whose names have been placed on their list by contributing branches, and in some cases arrange also for medical attendance; the rates charged by the dispensaries are shown below in connection with medical benefits of the Friendly Societies.

The receipts of the dispensaries in 1913 were £28,348, and the expenditure was £26,779, so that there was an excess of receipts amounting to £1,569. These bodies have received liberal grants from the Government, and with this assistance have been able to purchase land and to erect build-

ings, the shares of the subscribing branches being covered by the issue of interest-bearing debentures; but in addition to making the necessary interest payments, most of the dispensaries have been enabled to make substantial reductions in the principal.

The remaining six societies consist of Accident Societies—in most cases established by particular sections of workers.

The following particulars of the Miscellaneous Societies relate to the year 1913:—

Classification.		Dispensaries.	Other Miscellaneous Societies.	Total.
Societies	No.	16	6	22
Membership	No.	.....	2,135	2,135
Receipts	£	28,348	3,263	31,611
Expenditure	£	26,779	3,018	29,797
Funds	£	17,669	4,006	21,675

During the year 1914 eight Miscellaneous Societies were registered, and two were closed, the number in existence at the end of the year being twenty-eight.

STATE SUBVENTION OF FRIENDLY SOCIETIES.

To enlarge the sphere of usefulness of the Friendly Societies the Subvention to Friendly Societies Act, 1908, now consolidated with the Friendly Societies Acts, assured to the societies which might elect to be bound by its provisions, the following monetary benefits payable from the Consolidated Revenue of the State:—

1. Sick pay—

- (a) One half of the cost in each year in respect of continuous sickness after twelve months from the commencement of such sickness, for male members less than 65, and for females less than 60 years of age—provided that the maximum cost to the State shall not exceed 5s. per week for each case.
- (b) The whole cost of sick pay in respect of male members aged 65 years and over, and of female members aged 60 years and over—subject to the same proviso as above.

2. Amount equal to contributions payable—

- (a) On account of all male members 65 years and over, and of female members 60 years and over, for medicine and medical attendance, provided that such contributions shall not be more than those payable by members of the same society under the ages stated.
- (b) Under the rules of a society in respect of the aged members above mentioned, to assure payment of funeral allowance at their death.

With one exception all affiliated societies have become applicants under the Act.

The refunds of the societies on account of sick pay in 1913 to 2,288 members amounted to £13,629, and the payments on account of contributions to £7,222; of the latter amount £4,902 went to provide medical attendance and medicine to 4,300 aged members and widows, and £2,320 to pay the contributions to the Funeral Fund of 4,521 aged members and widows.

The following is a summary of the claims paid on account of the five years during which the system has been in operation:—

Year.	Applicant Societies.	Sick Pay.				Contributions.				Total Amount of Claims.
		Continuous Sickness.		Sickness of Aged Members.		Medical.		Funeral.		
		Claimant Members.	Amount.	Claimant Members.	Amount.	Claimants.	Amount.	Claimants.	Amount.	
1909	18	285	925	701	2,763	2,569	1,348	2,486	822	5,858
1910	28	457	2,442	1,188	7,072	3,608	3,402	3,481	1,871	14,787
1911	30	576	2,837	1,417	8,423	3,194	4,028	3,400	2,055	17,343
1912	29	617	3,296	1,519	9,742	3,940	4,549	4,179	2,222	19,809
1913	29	681	3,482	1,607	10,147	4,300	4,902	4,521	2,320	20,851

The claims of the whole period amounted to over £78,600. The amount paid in 1909 was comparatively small, as the majority of applicant societies did not register as such until the middle of the year; during 1910 there were 10 more applicant societies, and the claims practically covered the whole of the year, consequently there was a large increase in the amount paid. During the last three years the increase has been more gradual, and the increase in the amount of claims for 1913 probably represents the normal increase which may be expected in the annual cost.

The system has been of benefit to all the societies, but more particularly to those in which the proportion of aged members is large.

THE FRIENDLY SOCIETIES' EXPERIENCE OF SICKNESS.

The returns of the Friendly Societies of New South Wales furnish valuable information relating to the sickness and mortality of the members, and a standard of purely local experience is provided as a basis of the quinquennial valuations of the societies, by their experience recorded for the nine years 1900-08.

During this period the sickness of the male members aggregated 859,412 weeks, the annual rate per member being 1.30 weeks. The Victorian male experience for the years 1908-1912 was 1.56 weeks; the experience of the women was too small to be of any practical value.

The membership below the age of 18 years was insufficient to provide reliable quotations, and owing to sparseness of data at the higher ages, the rates were not extended beyond age 65 as the upper limit. The following table shows the average annual weeks of sickness per member in New South Wales at every fifth year of age during the years 1900-08 in comparison with the experience of the Manchester Unity Friendly Society of England, 1893-7, the South Australian Friendly Societies, 1895-1904, and the Victorian Friendly Societies, 1903-7.

Central Age.	New South Wales Friendly Societies, 1900-1908.	Manchester Unity, England, 1893-1897.	South Australian Friendly Societies, 1895-1904.	Victorian Friendly Societies, 1903-1907.
Years.				
18	.84	.95	.74	.91
23	.76	.90	.77	.86
28	.74	.97	.75	.85
33	.75	1.10	.79	.89
38	.84	1.33	.89	.99
43	1.02	1.65	1.04	1.20
48	1.32	2.11	1.32	1.46
53	1.85	2.98	1.80	2.10
58	2.94	4.41	2.84	3.32
63	4.63	7.15	4.44	6.56

The New South Wales experience approximates closely to that of South Australia, but is considerably below the experience of England and of Victoria.

The male rates decrease down to age 29, and then increase regularly to the end of the observed period of life. The phenomenon of high rates at the early ages is not explained on the ground of paucity of data, as the same result was exhibited in the experience of individual societies whether their membership was large or small. The sickness rates of the Friendly Societies of other States of the Commonwealth disclose a similar feature, and it must be concluded that such high rates are peculiar to this class of experience, and probably induced by the liberal benefits available.

The total cases of sickness of men in 1913 were 34,356, at an aggregate cost of £167,907; the average duration of illness was 6·2 weeks per sick member, and the average amount of sick pay £4 17s. 9d. Relating the sickness experience to all the men in the societies, the sickness amounted to 8·2 days per capita, and the cost was approximately £1 1s. 6d. per member.

The records of the sickness of women and juveniles are small relatively in comparison with those of the men, and conclusions of practical value are not deducible from them.

The following statement shows the extent to which each section of membership participated in sickness benefits:—

Members.			Sick Members.	Period of Sickness.	Sick Pay.
Men ...	...	...	34,356	212,331	£ 167,907
Women ...	...	...	1,912	12,112	5,274
Juveniles ...	...	...	224	775	270
Total ...			36,492	225,221	173,451

The sickness experience of the male members of all ages during the last six years is shown below:—

Year.	Male Members exposed to risk of Sickness.	Sick Members.		Period of Sickness.	
		Number.	Proportion to total exposed to risk.	Total.	Per member exposed to risk.
			per cent.	weeks.	weeks.
1908	95,050	21,150	22·2	124,084	1·30
1909	99,080	19,976	20·2	131,306	1·32
1910	110,813	25,319	22·8	155,702	1·41
1911	128,516	30,509	23·7	181,374	1·41
1912	145,158	33,613	23·2	200,360	1·38
1913	156,176	34,356	22 0	212,334	1·42

Hazardous Occupations—Extra Sickness Risk.

The only well-defined class of occupations carrying a heavy risk, the experience of which was deducible from the available records of the societies, was that of the mining section. An experience of all persons engaged in the work of mining could not be secured, but an investigation was made of the branches of which the members were nearly all miners, and the experience obtained may be assumed to fairly represent this particular class.

The following table shows a comparison of the rates of sickness of the mining and non-mining branches as disclosed by the valuation of 1909:—

Branches.	Weeks of Sickness.	
	Total.	Annual Rate per Member.
Mining	154,251	1·613
Non-mining	705,161	1·249
Total	859,412	1·301

The effect of the added sickness of the mining population was to raise the general rate by 4·2 per cent., the mining being 29·2 per cent. above the non-mining rate. It is unfortunate, in view of the results disclosed by this section of persons engaged in hazardous occupations, that other such dangerous occupations could not be traced, but the data were too scanty for exhaustive investigation.

In the valuation of 1914, now in progress, the necessary information is being obtained, however, to enable an inquiry to be made into occupational sickness.

Medical Benefits.

A total amount of £170,594 was paid by the Friendly Societies during 1913 to provide medical attendance and medicine to members. This amount represents an average cost of £1 1s. 6d. per head of mean adult membership entitled to benefits in 1913, as compared with £1 1s. 4d. in the previous year; but the quotation of an average cost on this basis is not of great value, as only sick and funeral benefit members are included in the mean membership referred to, and in nearly all the societies there are considerable numbers of members who subscribe for medical benefits only.

The cost of medical attendance and medicine varies according to locality, and in 1913 it ranged from 18s. per member per annum to £2 12s. for men and from 12s. to £1 19s. for women. Returns obtained from 1,284 branches show that 721 branches, or 56 per cent., were paying not more than £1 6s. per man for these benefits in 1913. The following is a summary of the information received:—

Annual Charge per Member for Medical Attendance and Medicine.	Number of Branches.	Per Cent. of Total Branches.
s. s.		
18 to 25	225	17·5
26	496	38·6
27 to 30	320	24·9
Over 30	243	19·0
Total ...	1,284	100·0

The low rates are paid by branches affiliated with suburban dispensaries, of which particulars are given above in connection with Miscellaneous Societies. Of the sixteen dispensaries in operation, eight supply medicine at an annual charge of 8s. per member, one at 6s., and two at 7s., and five charge rates ranging from 18s. to 26s. per member for medical attendance and medicine.

MORTALITY.

Experience of Friendly Societies.

The following figures show the mortality experience per 1,000 men of the principal societies over the valuation period 1905-1908, and the variation from the expected rates derived from the aggregate experience of the societies in the years 1900-8:—

Society.	Age-group.										All Ages.	Percentage of expected.	
	Under 20.	21 to 25.	26 to 30.	31 to 35.	36 to 40.	41 to 45.	46 to 50.	51 to 55.	56 to 60.	61 to 65.			66 and over.
A.O.F. (Sydney)	3.11	2.46	4.10	0.39	4.04	2.73	7.02	14.50	27.67	47.27	86.96	7.36	90
G.U.O.O.F.	3.30	3.11	2.58	3.33	4.13	5.22	7.14	10.62	22.01	30.43	52.73	6.34	83
H.A.C.B.S.	4.08	2.68	3.39	5.28	4.82	6.57	14.49	7.08	23.69	45.92	64.52	6.03	103
I.O.O.F.	1.64	2.92	1.73	2.39	4.63	7.01	9.71	15.49	24.12	40.86	50.80	6.07	93
M.U.	3.02	2.17	2.85	5.15	4.99	5.69	8.51	11.64	20.02	23.73	67.48	7.91	92
P.A.F.S.	1.80	2.78	1.96	2.76	4.45	5.27	6.44	14.13	12.31	25.34	59.36	6.90	78
S.D.T.	2.99	4.90	1.28	5.14	6.12	3.48	7.18	11.99	13.73	45.07	67.89	16.00	85
U.A.O.D.	2.23	2.39	3.14	3.87	3.91	10.36	10.74	14.95	22.19	39.92	79.01	7.66	105
All Societies..	2.80	2.63	2.80	3.91	4.52	6.14	8.66	12.39	20.25	31.98	66.07	7.27	91

In conjunction with the low sickness experience of the members, there was also a low mortality rate. During the nine years 1900-8 the male adult experience comprised 791,856 exposures to risk for one year each, and there were 5,952 deaths, the rate being 7.52 per thousand.

The general death rate per 1,000 men, irrespective of age incidence, during each of the past nine years has been as follows:—

Year.	Death Rate per 1,000 men.	Year.	Death Rate per 1,000 men.
1905	7.4	1910	6.9
1906	7.1	1911	7.2
1907	6.6	1912	7.2
1908	7.7	1913	7.4
1909	6.9		

EXPECTATION OF LIFE.

Friendly Societies' Experience.

The following table shows the average duration of life in years as deduced from the experience of the Friendly Societies in New South Wales in comparison with that of other experiences:—

Age.	N.S.W. Friendly Societies, 1900-8.	Victorian Friendly Societies, 1902-7.	South Australian Friendly Societies, 1895-1904.	Manchester Unity Friendly Society, England, 1893-97.	Australian Mutual Provident Society, 1849-1903.
18	48.68	48.45	47.89	47.11	49.12
23	44.37	44.15	43.84	42.73	44.81
28	40.02	39.85	39.71	38.57	40.56
33	35.70	35.57	35.69	34.49	36.36
38	31.48	31.27	31.65	30.44	32.26
43	27.34	27.03	27.65	26.54	28.25
48	23.30	22.96	23.75	22.74	24.32
53	19.43	19.09	19.98	19.11	20.55
58	15.92	15.50	16.48	15.72	16.92
63	12.76	12.43	13.30	12.60	13.63
68	9.87	9.70	10.36	9.91	10.78
73	7.43	7.51	7.75	7.55	8.37
78	5.49	5.71	5.38	5.72	6.11
83	3.97	4.37	3.73	4.45	4.24
88	2.81	3.30	2.72	3.62	2.82
93	1.95	2.37	1.46	2.69	1.53
98	1.39	1.27	...	1.34	...

Experience of Australian States—General Population.

The expectation of life for males and females in each State of Australia, and for the Commonwealth as a whole, calculated since the Census of 1911, on the basis of the mortality experience of the decennium 1901-10 is shown below; the Northern Territory is included with South Australia and the Federal Capital Territory with New South Wales:—

Age.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Commonwealth.
MALES.							
0	55-896	55-060	54-203	56-755	51-440	57-761	55-200
3	60-277	59-270	57-892	60-357	57-348	61-810	59-449
8	56-153	55-129	53-782	56-144	53-484	57-584	55-325
13	51-625	50-631	49-266	51-633	49-050	53-112	50-815
18	47-205	46-237	44-939	47-227	44-641	48-823	46-427
23	42-074	41-985	40-960	43-036	40-655	44-724	42-245
28	38-767	37-852	37-064	38-879	36-848	40-610	38-147
33	34-592	33-779	33-204	34-734	32-962	36-447	34-092
38	30-510	29-800	29-420	30-722	29-092	32-457	30-112
43	26-612	25-988	25-755	26-807	25-386	28-564	26-288
48	22-877	22-337	22-229	23-038	21-911	24-606	22-594
53	19-262	18-801	18-897	19-516	18-580	20-600	19-052
58	15-807	15-386	15-695	16-176	15-387	16-740	15-646
63	12-639	12-184	12-666	13-056	12-396	13-206	12-485
68	9-806	9-323	10-050	10-251	9-650	9-928	9-663
73	7-528	6-974	7-819	7-792	7-179	7-015	7-347
78	5-775	5-264	5-926	5-775	5-289	5-045	5-566
83	4-308	4-019	4-440	4-280	3-970	3-715	4-137
88	3-260	3-058	3-234	3-210	3-010	2-763	3-014
93	2-465	2-294	2-308	2-361	2-286	2-080	2-167
98	1-716	1-619	1-558	1-639	1-657	1-493	1-409
FEMALES.							
0	58-974	58-460	59-294	60-389	56-455	59-863	58-837
3	62-656	61-856	62-522	63-023	61-416	63-013	62-341
8	58-504	57-693	58-422	58-664	57-539	58-861	58-191
13	53-934	53-184	53-872	54-101	53-161	54-399	53-658
18	49-461	48-795	49-371	49-696	48-772	50-185	49-231
23	45-217	44-587	45-074	45-549	44-621	46-156	45-007
28	41-114	40-506	40-960	41-546	40-685	42-089	40-927
33	37-042	36-534	36-953	37-574	36-846	38-029	36-944
38	33-076	32-650	33-044	33-616	33-062	34-092	33-028
43	29-167	28-800	29-184	29-681	29-243	30-170	29-145
48	25-261	24-973	25-337	25-756	25-403	26-145	25-247
53	21-395	21-154	21-492	21-866	21-554	22-063	21-369
58	17-615	17-404	17-789	18-076	17-800	18-148	17-623
63	14-113	13-957	14-412	14-531	14-333	14-583	14-160
68	11-037	10-808	11-509	11-425	11-316	11-468	11-073
73	8-429	8-218	8-895	8-727	8-788	8-816	8-456
78	6-409	6-272	6-616	6-509	6-656	6-586	6-430
83	4-796	4-615	4-851	4-863	5-041	4-721	4-772
88	3-413	3-295	3-478	3-612	3-833	3-366	3-423
93	2-345	2-351	2-439	2-668	2-796	2-365	2-426
98	1-503	1-566	1-648	1-830	1-852	1-565	1-616

Comparing the rates of the individual States it is found that as regards the males the average expectation of life is greatest in Tasmania at ages up to 64 years, but lowest in the same State at ages 74 and over. Up to 64 years the South Australian figures hold second place; the averages in New South Wales are slightly lower than the South Australian, but are in excess

of those relating to the Commonwealth as a whole. Comparing the figures based on the experience of the total male population of New South Wales, 1901-10, with those deduced from the New South Wales Friendly Societies 1900-8, it will be seen that for ages 18-68, the latter show the greater expectation; the difference is greatest at the earliest age, 18 years, and gradually decreases up to age 68.

There is less variation in the figures for females of the individual States than in the case of males. The New South Wales figures closely approximate the mean for the whole of Australia. The average duration is highest in Tasmania at ages 4-65, and lowest, up to 21 years, in Western Australia, and for ages 22 and over, in Victoria.

The constant improvement in the mortality experience of both males and females in New South Wales is reflected in the average expectation of life, based on the experience during each decennial period since 1881, as shown below:—

Age.	Males.			Females.		
	1881-90.	1891-1900.	1901-10.	1881-90.	1891-1900.	1901-10.
0	48-321	51-771	55-896	51-379	55-071	58-974
3	55-210	57-933	60-277	57-759	60-576	62-656
8	51-747	54-100	56-153	54-190	56-792	58-504
13	47-415	49-670	51-625	49-787	52-308	53-934
18	43-104	45-291	47-205	45-428	47-851	49-461
23	39-129	41-134	42-974	41-423	43-683	45-217
28	35-430	37-096	38-767	37-724	39-703	41-114
33	31-738	33-144	34-592	34-080	35-831	37-042
38	28-086	29-329	30-510	30-475	32-052	33-076
43	24-547	25-617	26-612	26-943	28-286	29-167
48	21-169	22-017	22-877	23-432	24-530	25-261
53	17-970	18-566	19-262	19-973	20-800	21-395
58	14-899	15-351	15-807	16-617	17-234	17-615
63	12-015	12-470	12-639	13-413	13-975	14-113
68	9-493	9-908	9-806	10-573	10-961	11-037
73	7-337	7-534	7-528	8-045	8-238	8-429
78	5-579	5-571	5-775	5-856	6-099	6-409
83	4-236	4-201	4-308	4-257	4-577	4-796
88	3-237	3-208	3-260	3-182	3-431	3-413
93	2-443	2-414	2-465	2-417	2-503	2-345
98	1-636	1-680	1-716	1-758	1-644	1-450

The expected duration of life, as based on the experience 1881-90, at the earliest age—under 1 year—has increased by $7\frac{1}{2}$ years, by reason of the more favourable experience during 1901-10. The added expectation is greatest at the earliest ages, and gradually diminishes up to the highest ages, where little improvement can be expected.

PENSIONS.

New South Wales Government Pensions.

No general pension system, other than the old-age and invalid pensions noted subsequently, is in operation in New South Wales, but three pension funds have been established in connection with sections of the Public Services, and are maintained partly by deductions from officers salaries and partly by public revenue, viz., the Public Service Superannuation Fund, the Police Superannuation and Reward Fund, and the Government Railways Superannuation Fund.

The Public Service Superannuation Fund was established by the Civil Service Act, 1884; contributions by officers of the service were at the rate of 4 per cent. of salary. Since the Public Service Act of 1895 came into operation no new contributors have been admitted to this fund, and at that date the existing contributors were given the option of withdrawing from the fund. The officers who elected to discontinue their contributions are entitled under prescribed conditions to receive refunds and gratuities on retirement; officers who have continued to contribute are entitled to an annual pension equal to one-sixtieth of the average annual salary for the last three years' service, multiplied by the years of service, the pensions being payable on retirement through incapacity or at age 60, or on abolition of office. An Amending Act in 1903 provided that on the Superannuation Account becoming exhausted all amounts payable to or out of that account shall be paid to or out of the Consolidated Revenue. During the year 1913-14 the expenditure was £154,110, consisting of pensions, £145,694, refunds of contributions, £8,274; and gratuities, £142; contributions by public servants amounted to £12,209, the balance, £141,901, representing the net charge to Consolidated Revenue. In addition to these amounts a sum of £3,500 is appropriated annually in terms of the Constitution Act for the payment of pensions to certain Government officers; the pensions paid during 1913-14 amounted to £2,735, the balance unallotted being £765.

The pension fund for the police force was established in 1899, amending legislation being passed in 1906. Annual contributions by members of the service are at the rate of 4 per cent. of salary; other sources of revenue being penalties imposed on members of the police force, and penalties and damages awarded to the police as prosecutors, also the proceeds of the sale of unclaimed goods in possession of the police. The amount of pension payable to members who entered the police service prior to 1906 is graduated in accordance with length of service, and ranges from half the salary, less 3 per cent. on retirement after fifteen years' service, to the whole of the salary, less 3 per cent., after thirty years' service. For the members who entered the service after 1906 the pension is one-fortieth of the salary on retirement for each year of service less 3 per cent., up to a maximum of three-fourths of the salary on retirement, the retiring age is 60 years, except in cases of incapacitation; but under prescribed conditions the services of any member of the force may be retained until he reaches the age of 65 years. During the year ended 30th June, 1914, the receipts of the Police Superannuation and Reward Fund amounted to £65,063, including deductions from salaries, £35,063, and special appropriation from Consolidated Revenue, £30,000; the disbursements, £61,348, included pensions, £57,785, gratuities, £3,299, and miscellaneous, £264. The annual rate of pension liability calculated on the pensions current on 30th June, 1914, was £54,650.

The Railway Service Superannuation Fund was established in October, 1910; the contributions from employees of the Railway and Tramway services are at the rate of 1½ per cent. of salary, and the State provides all

that is necessary beyond such contributions. The amount of pension payable is one-sixtieth of the average annual salary during term of service, multiplied by the number of years of service, the maximum pension, being two-thirds of the average salary. At 30th June, 1914, there were 26,768 contributors, the number of pensioners was 925, viz., 756 over 60 years of age, and 169 under 60 years of age. The average rate of pension payment was £66 2s. 5d. per annum. Since the inception of the fund 1,038 pensions have been granted; and 113 pensioners have died, 57 being over and 56 under 60 years of age. During the year 1913-14 the receipts of the fund amounted to £61,116; the disbursements representing pensions, gratuities, refunds, &c., amounted to £53,783. The assets of the fund at 30th June, 1914, amounted to £63,674, viz., cash in hand, £53,737, and £9,937 representing premiums paid for life insurance policies transferred by officers to the Board, this amount being recoverable with interest at 3½ per cent. on maturity of policies.

The following statement shows the total pensions and gratuities paid from the sources enumerated during the year ended 30th June, 1914:—

Particulars.	Public Revenue.	Contributions.	Total.
Pensions—	£	£	£
Judges	3,488	.....	3,488
Stipends to Clergy	350	.....	350
Public Service—			
Superannuation Act	133,602	12,209	145,811
Constitution Act	2,735	.....	2,735
Parkes' Family Grant	236	.....	236
Police Superannuation and Reward Fund.	30,000	27,785	57,785
Government Railways Superannuation.	.....	53,155	53,155
Other	1,030	.....	1,030
Total Pensions	171,441	93,149	264,590
Gratuities—			
Railway and Tramway	8,989	.....	8,989
Public Works	621	.....	621
Imperial and State Contingents, South Africa and China.	676	.....	676
Public Service	142	.....	142
Police Superannuation and Reward Fund.	.....	3,396	3,396
Government Railways Superannuation Fund.	.....	3,078	3,078
Other	23,415	.....	23,415
Total Gratuities	33,843	6,474	40,317
Total Pensions and Gratuities	205,284	99,623	304,907

WAR PENSIONS.

An Act was passed by the Commonwealth Parliament in 1914 to provide for the grant of pensions upon the death or incapacity, as the result of warlike operations, of members of the Commonwealth Naval or Military Forces, enlisted for or employed on active service outside Australia, or employed on a ship of war. The Act provided for the constitution of a Pensions Board of three members, one being a medical practitioner.

The rates of pensions payable are based on the following scale:—

Rate of Pay.		Rate of Pension.		Rate of Pay.		Rate of Pension.	
per day.		per annum.		per day.		per annum.	
s.	d.	£	s.	s.	d.	£	s.
6	0	52	0	13	0	77	10
7	0	56	0	17	6	91	0
9	0	64	0	22	6	101	0
10	0	68	0	30	0	116	0
10	6	70	0	37	6	131	0
11	6	73	0	45	0	146	0
12	0	74	10	50s. and over.		156	0

In the case of death the pension will not exceed the following:—To the widow, the rate as specified above; to each child under 16 years of age, £13 per annum; and to other dependents, an aggregate amount not exceeding the rate specified above, plus £52 per annum. In the case of total incapacity the maximum pension will be—to the member, the rate specified above; to his wife, 50 per cent. of that rate, and to each child under 16 years of age £13 per annum. In the case of partial incapacity the rates of pension will be assessed by the Pensions Board.

COMMONWEALTH LITERARY FUND.

The Commonwealth Literary Fund was established by the Federal Government in 1908 to assist Australian authors who by reason of age or infirmity are unable to support themselves, families of literary men who have died poor, and literary men doing good work but unable on account of poverty to continue in that work. A sum of £700 is now voted annually for the purposes of the fund. The maximum amount payable to an adult is £1 per week, and in respect of each child, 10s. per week, but no one family may receive more than £2 per week. An amount of £403 was paid as pensions to persons in New South Wales during the year 1913-14.

INVALID AND OLD-AGE PENSIONS.

Invalid Pensions.

Invalid pensions were first paid in New South Wales under the Invalidity and Accidents Pensions Act, passed by the State Parliament in 1907, which allowed pensions up to £26 a year to persons over 16 years of age permanently incapacitated for any work; the amount of pension was subject to reduction in proportion to the income of the applicant, or to the contribution of relatives. It was essential that applicants should have resided for five years, and have become incapacitated, in the State, but the pensions were not payable to inmates of charitable institutions, nor to persons already in receipt of old-age pensions. The Act was administered in conjunction with the Old-age Pensions Act, 1901, until the Commonwealth Invalid and Old-age Pensions Act, 1908-1909, commenced to operate in July, 1909, when the payment of old-age pensions became a function of the Commonwealth.

The payment of invalidity pensions was undertaken by the Commonwealth as from 15th December, 1910, till which date the State system was maintained; the pensions paid during the currency of the State Act amounted to £235,012.

The conditions attaching to invalid pensions payable by the Commonwealth are similar to those prescribed by the State Act, the amount of pen-

sion is the same as in the case of old-age pensions. An important amendment of the Commonwealth Act in 1912 authorised the payment of invalid pensions to persons permanently blind; persons permanently incapacitated or blind by reason of congenital defect are regarded as having become so in Australia, if brought to Australia before the age of 3 years.

Prior to the commencement of the Commonwealth invalid pension system, New South Wales was the only State in which such a pension scheme was operative; in Victoria pensions were payable to persons permanently disabled whilst engaged in certain hazardous occupations, but the claims taken over by the Commonwealth numbered only 111. The pensions taken over from New South Wales at 15th December, 1910, numbered 3,498; particulars of transactions in New South Wales since that date are shown below:—

Year ended 30th June.	New Claims.	Lapses.			Invalid Pensions current in New South Wales at 30th June.		
		Deaths.	Cancellations and Transfers.	Total.	Males.	Females.	Total.
*1911	1,307	135	84	219	1,975	1,869	3,844
1912	1,784	404	135	539	2,549	2,278	4,827
1913	1,631	450	209	659	2,962	2,837	5,799
1914	1,825	530	186	716	3,537	3,371	6,908

* From 15th December, 1910.

The invalid pensions current in New South Wales on 30th June represented 3·8 per thousand of population compared with 3·5 for the Commonwealth.

Old-age Pensions.

The old-age pension scheme sanctioned by the Old-age Pensions Act, 1900, passed by the Parliament of New South Wales, commenced to operate on 1st August, 1901, and virtually expired on 1st July, 1909, when that portion of the Commonwealth Invalid and Old-age Pensions Act, 1908-1909, which relates to the payment of old-age pensions to men, came into operation. The portion of that Act authorising payment of pensions to women on attaining age 60 commenced to operate on 15th December, 1910..

The total amount paid by the Government of New South Wales for old-age pensions for the period of nine years during which the State system was in operation was £4,009,127, and the cost of administration £165,560 approximately.

On the introduction of the Commonwealth administration, 21,292 State pensions were converted to Commonwealth pensions, and the following statement shows the applications received in New South Wales, and the number of old-age pensions current on 30th June in each year:—

Year.	New Claims.	Lapses.			Old-age Pensions current in New South Wales at 30th June.		
		Deaths.	Cancellations and Transfers.	Total.	Male.	Female.	Total.
1910	7,588	1,680	126	1,806	13,169	12,046	25,215
1911	6,174	2,100	402	2,502	14,572	13,588	28,160
1912	4,763	2,421	566	2,987	13,639	16,029	29,668
1913	4,288	2,459	628	3,087	14,078	16,791	30,869
1914	4,819	2,755	768	3,523	14,217	17,948	32,165

The old-age pensioners in New South Wales represent 17·5 per thousand of population, which is, with the exception of Western Australia, 12·2, the lowest in the Commonwealth, where the rate is 18·0.

The conditions governing the payment of old-age pensions under the Commonwealth have varied but slightly from the conditions prevailing under the State Act; the age qualification remains at 60 years for women and 65 years for men, with a reduction to 60 years in case of men permanently incapacitated; the length of residence qualification is reduced from twenty-five years in New South Wales to twenty years in Australia, but absences amounting in the aggregate to one-tenth of the total period of residence are permitted. Naturalised persons are eligible for pensions, but aliens and aboriginal natives are disqualified.

The maximum pension payable is £26 per annum, with proportionate reduction in respect of any income or property of the claimant, so that the pensioner's income with the pension shall not exceed £52 per annum; in computing income any benefits accruing from friendly societies are not to be reckoned as income, nor any gifts and allowances from children or grandchildren; in assessing the value of property the home in which pensioner permanently resides is not included.

Prior to the introduction of the Commonwealth system, old-age pensions had been payable only in three States—New South Wales, Victoria, and Queensland.

The total expenditure by the Commonwealth on invalid and old-age pensions during the year ended 30th June, 1914, was as follows:—

	£
Paid as pensions	2,579,265
Paid to benevolent asylums for maintenance of pensioners ...	14,236
Cost of administration	46,946
Total	£2,640,447

Negotiations are proceeding between the Commonwealth Government and New Zealand with the object of establishing reciprocity in respect to the payment of old-age pensions.

Old-age and Invalid Pensions current in Australia.

The following statement shows for each State of the Commonwealth the number of old-age and invalid pensioners at 30th June, 1914, and the average fortnightly rate of pension payment, and the approximate liability for one year calculated on the basis of pensions current at 30th June, 1914:—

State.	Old-age.		Invalid.		Total.	
	Pensioners.	Average Fortnightly Pension.	Pensioners.	Average Fortnightly Pension.	Old-age and Invalid Pensioners.	Annual Liability (approximate).
		s. d.		s. d.		£
New South Wales..	32,165	19 5	6,908	19 8	39,073	988,104
Victoria	27,150	19 6	4,844	19 8	31,994	811,538
Queensland	11,758	19 6	2,023	19 7	13,781	349,258
South Australia ...	8,396	19 2	1,179	19 7	9,575	238,836
Western Australia..	3,909	19 3	766	19 6	4,675	117,364
Tasmania	4,402	19 0	1,145	19 6	5,547	137,748
Total	87,780	19 5	16,865	19 8	104,645	2,642,848

HOUSING.

Occupied Dwellings.

The number of occupied dwellings in New South Wales at the Census of 1911 was 332,841; the classification according to the nature of dwellings is shown below:—

Nature of Dwelling.	Dwellings.	Proportion per cent.	Nature of Dwelling.	Dwellings.	Proportion per cent.
Private house	317,462	95·38	Military and Naval Establishment	112	·03
Tenement in Private House ...	2,304	·69	Police Barracks	28	·01
Caretaker's Quarters in Store, Offices, &c.	237	·07	Police Station and Quarters ...	534	·16
Hotel	2,795	·84	Fire Station	65	·02
Boarding-house, Lodging-house, Coffee Palace	5,966	1·79	Unspecified	68	·02
Educational Institution	229	·07	Wagons, Carts, Trains, &c. ...	250	·08
Religious Institution (not educational)	135	·04	Aboriginal Camps in which Whites or Half-castes were living... ..	21	·01
Hospital	479	·14	Other Camps without dwellings	1,865	·56
Charitable Institution (other than Hospital)	159	·05			
Penal Establishment	132	·04	Total	332,841	100·00

Private dwellings, including tenements, numbered 319,766, or 96·07 per cent. of occupied dwellings; boarding and lodging houses, 5,966, or 1·8 per cent.; hotels, 2,795, or ·8 per cent.

The inmates of private dwellings numbered 1,494,504, or 91·2 per cent. of the total population of the State. The next statement shows the number of inmates according to the size of the dwellings; it will be seen that nearly 25 per cent. of the inmates of private dwellings reside in houses containing 5 rooms, while 84 per cent. reside in houses containing from 4 to 9 rooms.

Rooms.	Inmates.			Proportion per cent.		
	Private Dwellings.	Other Dwellings.	Total.	Private Dwellings.	Other Dwellings.	Total.
1	28,656	695	29,351	1·93	·54	1·82
2	38,541	247	38,788	2·59	·19	2·40
3	88,295	506	88,801	5·93	·40	5·49
4	303,967	1,291	305,258	20·42	1·01	18·88
5	366,640	3,909	370,549	24·63	3·06	22·93
6	295,975	9,132	305,107	19·88	7·15	18·88
7-9	289,050	24,216	313,266	19·42	18·95	19·38
10-14	65,062	27,625	92,687	4·37	21·62	5·73
15-19	8,234	14,708	22,942	·55	11·51	1·42
20 and over	4,172	45,442	49,614	·28	35·57	3·07
Unspecified	5,912	11,067	16,979	...	...	...
Wagons, carts, trains, &c. ...	...	1,160	1,160	...	...	...
Camps ... ..	...	4,181	4,181	...	...	...
Total	1,494,504	144,179	1,638,683*	100·00	100·00	100·00

* Exclusive of 8,051 Shipping.

The principal materials used for building are wood and bricks, 49·7 per cent. of the occupied dwellings being built of the former and 36·4 per cent. of the latter; 3 per cent. are built of stone and 2·7 per cent. of iron. A classification of the dwellings and inmates according to materials used is as follows:—

Materials.	Occupied Dwellings.			Inmates.			Proportion per cent.	
	Private.	Other.	Total.	Private Dwellings.	Other Dwellings.	Total.	Dwellings.	In-mates.
Stone	9,020	960	9,980	46,213	18,992	65,205	3·0	4·0
Brick	114,679	6,462	121,141	557,993	80,151	638,144	36·4	38·9
Concrete	865	42	907	4,431	396	4,827	·3	·3
Iron	8,851	152	9,003	37,013	1,768	38,776	2·7	2·4
Wood	162,493	3,022	165,515	783,484	33,586	817,070	49·7	49·9
Sun-dried bricks	1,875	7	1,882	9,360	69	9,429	·6	·6
Pisé	1,741	22	1,763	10,023	263	10,286	·5	·6
Lath and Plaster	791	4	795	3,835	40	3,875	·2	·2
Wattle and Dab	744	3	747	3,391	23	3,414	·2	·2
Bark	1,290	8	1,298	3,317	74	3,391	·4	·2
Bushes, Rushes, Spinifex, &c.	15	...	15	48	...	48	·0	·0
Calico, Canvas, Hessian ...	15,706	156	15,862	28,562	965	29,527	4·8	1·8
Ruberoid and other compositions.	130	2	132	516	28	544	·0	·0
Unspecified	1,566	99	1,665	6,318	2,488	8,806	·5	·5
Wagons, carts, trains, &c....	...	250	250	...	1,160	1,160	·1	·1
Aboriginal Camps, in which Whites or Half-castes were living ... ..	...	21	21	...	151	151	·0	·0
Other camps without dwellings ... ..	...	1,865	1,865	...	4,030	4,030	·6	·3
Total	319,766	13,075	332,841	1,494,504	144,179	1,638,683*	100·0	100·0

* Excludes Shipping, 8,051.

New Buildings.

In regard to population it has been shown that the density of settlement in Sydney and the suburban areas varies considerably. The extent of building operations, as shown by the records of past years, indicates an increase of dwelling-houses in New South Wales, but the major portion of that increase has been in suburban dwellings.

In Sydney improvements and resumptions have been continuous; 206 new buildings were erected during 1914, and 465 were altered or enlarged. Since 1909 many of the old buildings have been demolished, and in the rebuilding on the areas thus made available modern requirements have been kept in view; but apart from them there has been a distinct, though gradual, development of an architectural style adapted to local conditions. In the suburbs the cottage plan of dwelling-house is favoured, quite 85 per cent. of new buildings being in this style. During the past eight years new buildings have been erected in the city and suburbs at a rate averaging 6,600 per annum:—

Year.	New Buildings.			Net Increase of Population, Sydney and Suburbs.
	Sydney.	Suburbs.	Total.	
1907	211	4,042	4,253	17,380
1908	233	4,150	4,383	14,920
1909	356	5,736	6,092	13,800
1910	326	4,910	5,236	16,330
1911	319	6,651	6,970	34,570
1912	290	8,049	8,339	38,000
1913	281	9,061	9,342	30,600
1914	206	8,342	8,548	27,100

In the earlier months of 1910 the output of bricks from various yards was somewhat curtailed on account of a general strike in the coal-mining industry, and during the year the high cost of building materials generally, and dearth of labour in the building trades, combined to restrict operations somewhat below the level of 1909; but since 1910 the number of new buildings in the suburban areas has largely increased. During the last quarter of 1914 there was a considerable decline in building operations on account of the war.

RENTAL VALUES OF DWELLINGS.

The weekly rental values of private dwellings in New South Wales, as ascertained at the Census of 1911, are shown below:—

Weekly Rental Value.	Private Dwellings.	Proportion per cent.	Weekly Rental Value.	Private Dwellings.	Proportion per cent.
Under 5s.	35,978	13·63	£3 and under £4	700	·26
5s. and under 10s.	90,254	34·18	£4 " £5	242	·09
10s. " 15s.	76,689	29·05	£5 " £6	123	·05
15s. " 20s.	28,122	10·65	£6 " £7	68	·03
20s. " 25s.	16,040	6·08	£7 " £8	23	·01
25s. " 30s.	7,372	2·79	£8 " £9	10	·00
30s. " 35s.	4,449	1·69	£9 " £10	5	·00
35s. " 40s.	1,175	·44	£10 and over ...	15	·01
40s. " 45s.	1,823	·69	Unspecified ...	55,741	...
45s. " 50s.	301	·11			
50s. " 55s.	558	·21	Total ...	319,766	100·00
55s. " 60s.	78	·03			

The weekly rental values of 264,025 private dwellings were ascertained. Of this number 87·51 per cent. were under £1, 47·81 per cent. being under 10s.; 11 per cent. ranged from £1 to £2; and only 1·49 per cent. were over £2.

The rents paid for dwellings form a large deduction from the earnings of the industrial class in any community. In New South Wales precise figures are not available, but an estimate would place the cost of rent or house maintenance at an average of 20 to 25 per cent. of total expenditure, though necessarily the proportion decreases as the income increases, and *vice versa*. In the suburbs the rents vary in accordance with the class of people which constitutes the population; in more recently developed localities dwellings are rarely long vacant, and rents up to £1 per week, which seems to be the limit set by an average worker's income, are readily obtainable. In a judgment given in February, 1914, in the Court of Industrial Arbitration, as a result of an inquiry regarding the cost of living in Sydney, 12s. per week was assumed to be a fair average rental for a workman's home of three rooms and a kitchen.

The progress which has marked the operations of building societies during recent years, particularly those which favour the ballot and sale system of advances, indicates that, to a large extent, the industrial classes are endeavouring to become freeholders.

In the matter of high rents, and the difficulty of securing adequate accommodation, a Select Committee of the Legislative Assembly of New South Wales was appointed in 1911 to investigate the question of the alleged recent increase in house rents, and the advisableness of introducing a Fair Rents Bill to restrict rentals within a definite range.

Of the causes to which the Committee ascribed the rise in house rents may be mentioned—the increase of population, the increased cost of labour and material, the demolition of buildings by public authorities, the growing demand resultant upon general prosperity, and the increased popularity of cottages in preference to the less costly terrace houses. The Committee estimated that the increase in cost of labour and material during the period 1906-12 amounted to 45 per cent., of which 16 per cent. occurred in the last two years of the period.

As remedial measures the Committee recommended that the Government Savings Bank Commissioners be empowered to lend, on easy terms, 95 per cent. of the money required by artisans to build small dwellings; that the Crown land about the suburbs be made available for building purposes; that a faster and cheaper railway service be provided to outlying suburbs; that the Government construct dwellings to be let at a reasonable rental to wage-earners; and that local government authorities be empowered to do likewise.

The Committee also favoured the introduction of a Bill to regulate house rents, 10 per cent. gross being considered a satisfactory return on the cost of houses.

GOVERNMENT HOUSING AREAS.

With the object of relieving the urgent demands for small dwellings, the Housing Act was passed in 1912, authorising the construction of dwellings by the Government. The administration of the Act is entrusted to a Housing Board, which will control the Government housing areas. The Board may erect buildings for residential and other purposes on land acquired by the Government, and may dispose of such land and buildings by lease or by sale.

The term of a lease may not exceed seven years, and the rental must be sufficient to cover interest at 4 per cent. on capital value, cost of insurance, rates, repairs, and maintenance, a proportionate part of management expenses, and a sinking fund in respect of the capital outlay. As regards disposal by sale, the selling price will be based on valuation by the Government Savings Bank Commissioners; no person may purchase more than one house and $\frac{1}{4}$ acre of land, and the buyer must satisfy the Board that he is purchasing the land for a home for himself or a member of his family.

The Dacey Garden Suburb, situated in the municipalities of Botany and Mascot, was placed under the Board's control on its appointment, and in May, 1912, the management of the Observatory Hill Resumed Area was transferred from the Harbour Trust Commissioners.

Dacey Garden Suburb.

The Dacey Garden Suburb is about 5 miles from the centre of the City of Sydney.

An area of Crown lands, covering 336 $\frac{1}{2}$ acres, and valued at £21,872, was appropriated, and a sum of £75,000 was made available for the purposes of the suburb; in April, 1914, the expenditure of an additional amount of £150,000 was authorised. Reservations have been made for roads, parks, gardens, and other open public places, also for public buildings, schools, and for religious purposes, the area allotted for various purposes being as follows:—

Roads, 76 acres; park lands, 31 $\frac{3}{4}$ acres; Public Schools and Technical College, 7 $\frac{1}{2}$ acres; churches, 5 $\frac{1}{4}$ acres; police station, administrative buildings, &c., 5 acres; leaving 211 acres on which to erect cottages and shops. Calculated at seven cottages to the acre, this would provide approximately 1,437 cottages and 40 shops for the whole estate. The main roadway is 100 feet wide, with secondary roads 66 feet wide.

Building operations were commenced on 6th June, 1912; 104 cottages had been completed and let by ballot at 30th June, 1914, and 6 were in course of erection. The cottages are built of brick, on stone or rubble foundations, with tile and slate roofs. The accommodation of the smallest dwellings is three rooms, and of the largest four rooms, kitchen, &c. The rentals ranged from 14s. 6d. to 21s., and the average cost from £500 to £640.

The rentals and average cost of building are shown below; the cost of building includes kerbing and guttering, asphaltting footpaths, turfing, sewerage connection, &c.:—

Rental per week.	Average cost of Building.	Number of Cottages.
	£	
14s. 6d.—15s.	505	39
16s.	500	25
16s.	525	12
17s.—18s.	595	22
18s. 6d.—21s.	640	6

In the case of cottages costing an average of £500, and let at a higher rental than those costing £505, it is explained that the latter were of a new design, and a smaller margin was allowed to cover contingencies.

The expenditure to 30th June, 1914, amounted to £75,695, of which £52,749 represents the cost of erection of houses, and the balance the expenditure on drainage, levelling, and roadmaking; in addition a sum of £2,874 was paid as fees of the Board, salaries, wages, and other expenses. During the financial year 1913-14 the rentals contracted for amounted to £3,836, and the rents received to £3,822; at the end of the year the arrears of rent outstanding amounted to £23.

Observatory Hill Resumed Area.

The Observatory Hill Resumed Area is situated on the foreshores of Port Jackson, adjoining the wharves, and contains a number of business premises and residences, including dwellings, erected on the flat system, for waterside workers. The area comprises about 30 acres, and was acquired by the Government in 1900 in connection with the Darling Harbour wharves resumption; being the oldest settled portion of Sydney, practically the whole of the area required improvement. Under the administration of the Sydney Harbour Trust, improvements costing £138,037 have been effected, in addition to the widening of part of a main city thoroughfare. During the year 1913-14 the works constructed by the Housing Board cost £104,209.

Sydney Municipal Housing Area.

An Act was passed in 1912 to enable the Municipal Council of the City of Sydney to erect and let dwelling-houses, and for that purpose to acquire land.

Land was acquired in Chippendale, and a block of flats, covering a ground space of 279 feet by 78 feet, was erected at a cost of £35,000. The buildings are three storeys high, and each end presents four shops to

business thoroughfares. The remainder of the ground surface, and the first and second floors, are divided up into 71 suites of self-contained flats of from two to six rooms.

STATE ADVANCES FOR HOMES.

Under the provisions of an Act passed in 1913 the Commissioners of the Government Savings Bank were authorised to make advances, to an aggregate amount of £300,000 in any financial year, to enable persons to erect or enlarge their homes or to purchase dwellings already constructed.

The Bank may advance up to three-fourths of the value of the property to a maximum of £750, and the repayments in the case of new stone, concrete, or brick buildings to be made within thirty years, and in the case of wooden structures within twenty years. No advance may be made to any person who at the time of the application is the owner of another dwelling in the State.

In the Murrumbidgee Irrigation Area the administrative authority may erect homes for settlers, the cost to be repaid by a deposit of 10 per cent., and the balance in twenty-four half-yearly instalments, with interest at 5 per cent. Settlers who build their own homes may obtain building materials on ten years' terms.

RELIGIONS.

Churches in New South Wales.

New South Wales being originally a Crown colony, the church establishment as existing in England was introduced. Subsequently, there was accorded to the clergy of each of the principal denominations support from the Crown in the form of subventions, which were continued under a statute passed in the New South Wales Parliament (Act 7, Wm. IV, No. 3), after the initiation of responsible government, as an annual payment of £30,000 divisible between the Church of England, Roman Catholic, Presbyterian, and Wesleyan denominations. In 1862 these subventions were restricted to the clergy then actually in receipt of State aid, and in the succeeding year (1863) the subventions paid by the State amounted to £32,372, distributed as follows:—Church of England, £17,967; Roman Catholic, £8,748; Presbyterian, £2,873; Wesleyan Methodist, £2,784.

At the end of 1913 the number of recipients of these subventions was reduced to three, the allowance made to these clergy during 1913-14 amounting to £350.

Church Constitution and Government.

The Church of England was represented in the settlement of New South Wales by a chaplain appointed and paid by the Crown, and episcopal oversight of the settlement vested, under an Order-in-Council in the Bishop of London.

In 1814 the territories under the Government of the East India Company, *i.e.*, all the countries and places situate beyond the Cape of Good Hope and the Straits of Magellan, being not then (1600) occupied by any European power, were erected into the Bishopric of Calcutta. By Letters Patent under the Great Seal, dated 2nd October, 1824, there was constituted an Archdeaconry in and over the British territories within the Colony of New South

Wales (*i.e.*, Australia and New Zealand), subject and subordinate to the jurisdiction, spiritual and ecclesiastical, of the Bishop of Calcutta.

In 1834 the Colonies of New South Wales and Van Diemen's Land were severed from the Diocese of Calcutta, and in 1836 all the territories and lands comprised within or dependent on the Colonies of New South Wales (still including New Zealand), Van Diemen's Land, and West Australia, were erected into the Bishopric of Australia. The important subdivisions subsequently made of this Bishopric date as follows:—

New Zealand and Tasmania (Van Diemen's Land) were formed into suffragan sees in 1842, and Sydney, Newcastle, Adelaide, and Melbourne dioceses were erected in 1847. Further variations and subdivisions have resulted in the existence of twenty-four dioceses of the Church of England in Australia, of which seven are in the province of New South Wales, under a Metropolitan, *viz.*, Sydney, Newcastle, Goulburn, Bathurst, Armidale, Riverina, and Grafton. The clergy attached numbered 538 in January, 1915, of whom 247 were in the Sydney diocese, as the following statement shows:—

Diocese.	Clergy.	Diocese.	Clergy.
Sydney	247	Newcastle	71
Bathurst	58	Riverina	24
Goulburn	55	Grafton	40
Armidale	43		—
		Total	538

By an Act passed in 1881, provision was made for the creation of corporate bodies of Trustees, in which property belonging to the Church of England may be vested, and trusts for various dioceses have been formed under the Act. They are entitled to hold, on behalf of the Church, all real and personal property which may be assigned to them by grant, will, or otherwise. In each diocese a Synod, consisting of clerical and lay representatives from each district, presided over by the Bishop, meets annually to make ordinances for the government of the Church. Each diocesan synod elects from its members representatives to sit at the Provincial Synod of New South Wales, which meets every three years, under the presidency of the Metropolitan of New South Wales, and to the General Synod of Australia and Tasmania, which meets every five years under the presidency of the Primate, the Archbishop of Sydney.

The Roman Catholic Church is under the direction of an Archbishop. The Archdiocese of Sydney originally included the whole Australian continent and its adjacent islands, and was erected in 1834 as the Vicariate Apostolic of New Holland. At intervals, subsequently, separate archdioceses were erected as follows:—Melbourne, Hobart, Adelaide, Brisbane, Wellington, and Perth, with fifteen Bishoprics, an Administration Apostolic in the Northern Territory, Vicariates Apostolic at Cooktown (Q.), Kimberley (W.A.), and New Guinea, and an Abbey at New Norcia (W.A.). Under the Archbishop of Sydney are the Suffragan Bishops of Maitland, Goulburn, Bathurst, Armidale, Wilcannia, and Lismore, the State of New South Wales forming an ecclesiastical province.

An Apostolic Delegation for Australasia was constituted in 1914, with headquarters at Sydney.

The following statement shows the establishment of the Roman Catholic Church in New South Wales in 1914:—

Diocese.	Churches.	Priests.	Religious Brothers.	Nuns.
Sydney	194	229	218	1,496
Bathurst	89	39	7	266
Goulburn	115	63	16	325
Lismore	63	27	3	120
Maitland	82	43	13	268
Wilcannia	29	19	...	157
Armidale	68	31	9	172
Total	640	456	266	2,804

In 1914 there were 3 ecclesiastical seminaries, 11 boys' colleges, 60 boarding schools for girls, 102 superior day schools, 424 primary schools, and 43 charitable institutions belonging to the Roman Catholic Church in New South Wales.

The various branches of the Presbyterian Church in the State are classified into seventeen Presbyteries, consisting of a number of separate charges, to each of which a Minister is appointed. At the end of the year 1914 there were 200 ministers and 431 churches. The management of the affairs of the Presbyterian Church is controlled by a General Assembly, which sits annually, and consists of Ministers and Elders from the charges within the different Presbyteries. It is presided over by a Moderator, who is elected by the Presbyteries. By Act of Parliament, the Assembly has power to grant permission to trustees to mortgage Church property, and trustees are authorised to hold property for the Church generally. In July, 1901, a scheme of federal union was adopted by representatives from the various States, and the United Church is called the Presbyterian Church of Australia, the General Assembly of which meets alternately in the capital city of the various States every second year.

On the 1st January, 1902, the Wesleyan Methodist Church, the Primitive Methodist Church, and the United Methodist Free Church in New South Wales entered into organic union, with a common name, common funds, common laws, and equal rights. The United Church is known as "The Methodist Church of Australasia." In 1914 there were attached to the New South Wales districts 199 ministers, 37 supernumeraries, 64 preachers on trial, and 954 local preachers. The Church members on the roll numbered 26,029, and junior members 3,061. There were 675 churches, 653 other preaching places, and 141 school buildings. The South Sea Mission Districts are under the control of the New South Wales Conference, and embrace Tonga, Samoa, Fiji, New Britain, Papua, and Solomon Islands, with 30 white missionaries and 14 probationers, 63 native ministers, 59 native probationers, and 20 supernumeraries (native), 42,356 church members, and 6,784 on trial, 1,098 churches, and 684 other preaching places.

The Congregational Union of New South Wales was incorporated in 1882 by an Act which gives it legal status, and empowers it to hold property. The Union allows every separate church to maintain independence in the administration of its local affairs. Assemblies for the transaction of denominational business, &c., are held every six months. In 1914 there were 39 self-supporting churches, 87 aided churches and preaching stations, 70 ministers, 7 mission agents, and 71 lay preachers; church members numbered 4,997, and Sunday-school scholars 7,400, and teachers 970.

The churches of the Baptist Denomination, which are independent of each other, numbered 58 in January, 1914. They are united together in a voluntary association called the Baptist Union of New South Wales, which holds

annual and half-yearly meetings. The denomination has a fund controlled by trustees, from which churches are assisted on terms, with easy repayments. At the annual or assembly meetings, officers are chosen by nomination and ballot, and ministers or laymen are eligible for the highest positions. The churches raise considerable sums towards the prosecution of Home Mission work in this State, and maintain a very efficient and prosperous Foreign Mission Establishment in India.

The Salvation Army was established in Australia in 1881. Melbourne was made the chief centre for Australia under the command of a Commissioner; Sydney, Newcastle, Bathurst, and Armidale, are now district headquarters for New South Wales, each district being under direction of a divisional commander, all officers and members bearing military titles and designations; there are also treasurers and secretaries to corps. Persons who are in sympathy with the Salvation Army and attend its meetings, but who have not subscribed to the "articles of war"—which combine a confession of faith and a pledge against the use of intoxicating liquors and baneful drugs—are regarded as adherents.

The Salvation Army in New South Wales in December, 1914, had 117 corps and 283 societies and outposts, worked by 273 officers; there were also 537 handsmen and 559 local officers, being persons holding positions without pay. Seventeen homes and institutions are maintained for neglected boys and girls, inebriates, homeless men and women, and discharged prisoners. Sixty-six officers are in charge of the social work.

The Jewish element in the population of New South Wales dates from its earliest years of settlement, and until recently, when a small current from Russia by way of Siberia has commenced to make itself evident, the Jewish population was derived from England, and in a small degree from South Africa and other British colonies.

The twenty Jews, who comprised the Sydney congregation in 1817, first came into association for the interment of their dead. In 1828 regular prayer meetings were commenced, and shortly afterwards the visit of an officer of the London ecclesiastical court placed Jewish matters on a regularised footing. The first Jewish minister was appointed in 1835, and temporary premises were used for worship until a synagogue was built, and opened in 1844.

The various congregational movements in Sydney were amalgamated when the Great Synagogue was opened in 1878, the Jewish population then being about 3,000, of whom only a few hundred were outside the metropolis. A local ecclesiastical court was opened in 1905, when an ordained Rabbi arrived from England to become chief minister of the community, and president of its court. There have been other Jewish congregations, now defunct through the movements of population, at West Maitland and Newcastle; and there is one in existence at Broken Hill.

At the Census of 1911 of 7,660 Hebrews in New South Wales, 6,355 were resident in the metropolis, where there are one regular and three temporary places of worship, attended by six ministers and assistants, and where seating accommodation is found for 1,680. The lay administration of the community is in the hands of the board of management of the Great Synagogue, which maintains intimate contact with the London Board of Deputies of the British Jews, the Anglo-Jewish Association, and similar bodies.

The New South Wales Board of Jewish Education, presided over by the Chief Rabbi, maintains a staff of professional teachers to exercise the right of entry at public schools under the Act, and to hold Sabbath classes. The number of pupils attending is 567, while 43 attend at other centres.

The Jewish community maintains a number of institutions for the care of its sick and poor.

Census Records of Religion, 1911.

The following statement shows for New South Wales the strength of religious denominations, as disclosed by the Census of 2nd April, 1911:—

Religion.	Males.	Females.	Total.
Christian—			
Church of England	380,324	353,676	734,000
Presbyterian	96,354	86,557	182,911
Methodist	75,512	75,762	151,274
Congregational	10,888	11,767	22,655
Baptist	9,891	10,788	20,679
Church of Christ	2,865	3,547	6,412
Salvation Army	3,475	3,938	7,413
Lutheran	4,824	2,263	7,087
Seventh Day Adventist	806	1,193	1,999
Unitarian	512	332	844
Protestant (undefined)	21,309	15,595	36,904
Roman Catholic	190,122	185,269	375,391
Greek Catholic	885	198	1,083
Catholic (undefined)	18,214	18,408	36,622
Others	4,503	4,552	9,055
Total	820,484	773,845	1,594,329
Non-Christian—			
Hebrew... ..	4,062	3,598	7,660
Mohammedan	776	43	819
Buddhist	437	11	448
Confucian	1,198	6	1,204
Pagan	254	.....	254
Others	2,238	150	2,388
Total	8,965	3,808	12,773
Indefinite—			
No Denomination	328	235	563
Freethinker	873	164	1,037
Agnostic	845	131	976
Others	1,022	613	1,635
Total	3,068	1,143	4,211
No Religion—			
Atheist	184	20	204
No Religion	2,228	446	2,674
Others	58	15	74
Total	2,471	481	2,952
Object to state	14,989	6,997	21,986
Unspecified	7,721	2,762	10,483
Grand Total... ..	857,698	789,036	1,646,734

The above figures are exclusive of 992 males, 722 females, total 1,714 persons, within the Federal capital territory, also 2,010 full-blooded Australian aboriginals living in the State, and 10 within the Federal capital territory.

An interesting comparison of the number of persons belonging to the principal religions at the date of each Census from 1891-1911 is afforded in the subjoined table. In this table "Catholic" (undefined) has been included with "Roman Catholic."

Religious Denominations.	Number of Persons.			Proportion per cent.		
	1891.	1901.	1911.	1891.	1901.	1911.
Protestant—						
Church of England	503,054	623,131	734,667	45·32	46·58	45·46
Methodist	112,448	137,638	151,392	10·13	10·29	9·37
Presbyterian	109,390	132,617	133,099	9·86	9·91	11·33
Congregational	24,090	24,834	22,656	2·17	1·86	1·40
Baptist	13,029	15,441	20,679	1·18	1·15	1·28
Lutheran	7,950	7,387	7,087	·72	·55	·44
Unitarian	1,329	770	844	·12	·06	·05
Salvation Army	10,315	9,585	7,413	·93	·72	·46
Other Protestants	9,741	14,251	54,395	·87	1·06	3·37
Total, Protestants	791,346	965,654	1,182,232	71·30	72·18	73·16
Roman Catholic	286,911	347,286	412,680	25·85	25·96	25·54
Greek Church... ..	253	561	1,083	·02	·04	·07
Others—						
Jew, Hebrew	5,484	6,447	7,660	·49	·48	·47
Buddhist, Confucian, Moham- medan, &c.	11,508	8,035	5,114	1·04	·60	·32
Freethinkers, Agnostics, &c. ...	6,358	3,564	3,929	·57	·27	·23
No Denomination, No Religion ...	8,062	6,265	3,239	·73	·47	·21
Object to state	11,237	13,068	22,008	...	...	...
Unspecified	2,795	3,966	10,503	...	..	...
Total	1,123,954	1,354,846	1,648,448	100	100	100

NOTE.—The figures for 1911, for purposes of comparison with the previous Census returns, include persons within the Federal capital territory.

MINISTERS FOR THE CELEBRATION OF MARRIAGES.

Under the Registration of Births, Deaths, and Marriages Act, 1899, ministers of religion desirous of celebrating marriages in New South Wales must be registered by the Registrar-General of the State. The total number of ministers registered in January, 1915, was 1,703, those for each denomination being:—Church of England, 530; Roman Catholic, 408; Methodist, 280; Presbyterian, 228; Congregational (Independents), 68; Baptist, 60; Church of Christ, 26; Salvation Army, 44; Seventh Day Adventist, 9; Jews, 4; German Evangelical Lutheran Church, 5; Evangelical Lutheran Church, 4; Free Presbyterian Church of Australia, 7; Reorganised Church of Jesus Christ of Latter Day Saints, 5; Australian Aborigines Mission, 4; Catholic Apostolic Church, 2; The Aborigines Inland Mission, 3; and one each for the following:—Lay Methodist Church, Strict Baptist Church, Society of Friends (Quakers), Sydney Society of the New Church, The Free Church (Banksia), Unitarian Church, Church of Christ (Burwood), Greek Orthodox Church, Church of the Brethren, Particular Baptist Church, Sydney Christadelphian Ecclesia, Whitefield's Devonshire-street Congregational Church, Mascot Congregational Church, Full Gospel Mission, Stanmore Spiritualist Temple, Orthodox (Antioch) Church.

PUBLIC FINANCE.

SYSTEM OF REVENUE AND EXPENDITURE ACCOUNTS.

FROM the 1st day of July, 1895, the cash receipts within the financial year have been considered as the actual income, and the cash payments during the same period the actual outlay in the keeping of the public accounts of New South Wales. The balance of the Consolidated Revenue Account current on 1st July, 1902, was fixed by the Audit Act, 1902, which consolidated and amended the law relating to the collection and payment of public moneys, the audit of the Public Accounts, and to purposes concerning the control and management of the Public Finances of the State.

Prior to the adoption of the cash basis system, the expenditure for the services of a year and the actual expenditure during that year could be shown only by two different methods of accounts. When a specific appropriation was made for any service, the expenditure incurred under such authorisation would be charged against the year for which the vote was taken, irrespective of the date when the payments were made; and, therefore, the public accounts for any year could not be closed until all appropriations were expended, or were written off. The consequence was that when the expenditure exceeded the income, there were frequent differences of opinion between the incoming and outgoing Treasurers as to the propriety of charging items, sometimes of large amount, to particular years, with the result that conflicting statements were made, to the confusion of the inexpert and to the detriment of the public credit.

Even under the present circumstances, some trouble may be experienced in comprehending a most carefully prepared statement of the finances of the State, as the term "expenditure" in the official statement does not possess always the same meaning, owing to the inclusion of advances, &c., which cannot be classed as "Expenditure proper."

During the years 1905-1914 the expenditure of the State was £143,714,314, while the actual revenue obtained was £143,110,220, the total excess of expenditure during the ten years being £604,094.. The figures are exclusive of advances made and repaid; but for the last eight years the statements of expenditure include transfers in aid of the Public Works Fund, and during the years 1907-10 transfers in aid of Closer Settlement Fund:—

Year ended 30th June.	Revenue.	Expenditure.	Excess of Revenue over Expenditure.	Excess of Expenditure over Revenue
	£	£	£	£
1905	11,336,918	11,195,075	141,843	.....
1906	12,283,082	11,386,864	896,218	.....
1907	13,392,435	12,799,797	592,638	.....
1908	13,960,763	13,700,072	260,691	.....
1909	13,625,071	14,692,168	.....	1,067,097
1910	14,540,073	14,184,327	355,746	.....
1911	13,839,139	14,443,691	.....	604,552
1912	15,776,816	15,915,730	.....	138,914
1913	16,057,298	17,358,198	.....	1,300,900
1914	18,298,625	18,038,392	260,233	.....

GENERAL ACCOUNT.

The following table indicates each of the main accounts under which the Government conducts its financial business, the subsidiary accounts being included under one or other of the headings enumerated. The Audit Act provides that the Treasurer may agree with any bank for the transaction of the general banking business of the State. The accounts are kept under several headings, viz., Consolidated Revenue Account, General Loan Account, Special Accounts (Colonial Treasurer's Supreme Court Moneys), Special Deposits Account, Closer Settlement Account, Public Works Account, Railways Loan Account, and Suspense Accounts. All moneys paid into any of the accounts mentioned are deemed to be "public moneys," and for interest purposes the several accounts are treated as one account. The Special Accounts, which consist of "Supreme Court Moneys," are not controlled by the Audit Act, as they are operated on directly by the officers in charge of the departments interested. The position of the main divisions of the General Account on 30th June, 1914, will be found in the following statement:—

Head of Account.	Ledger Balances on 30th June, 1914.		
	Invested in Securities.	Credit Cash Balances.	Total.
Special Deposits Account—	£	£	£
Government Savings Bank Deposits Account .. .. .	.....	3,260,292	3,260,292
" " Advances Deposit Account .. .. .	.....	158,000	158,000
State Debt Commissioners' Trust Accounts .. .. .	.....	110,013	110,013
Deposit Account .. .. .	.....	30,599	30,599
Fixed Deposits Account .. .. .	.....	260,483	260,483
Advances by Banks in London .. .. .	.....	250,000	250,000
Other	36,041	930,453	966,494
Total	£ 36,041	4,999,840	5,035,881
Railways Loan Account .. .. .	.....	1,006,007	1,006,007
Closer Settlement Account .. .. .	.....	430,682	430,682
Public Works Account .. .. .	.....	218,787	218,787
Special Accounts—Colonial Treasurer's Supreme Court Moneys .. .. .	.....	305,119	305,119
Total Cr. £	36,041	6,960,435	6,996,476
Less Debit Balance—			
Consolidated Revenue Account 793,978	}	5,890,704	5,890,704
General Loan Account 4,577,589			
Loans Expenditure Suspense Account 228,842			
Railway Store Suspense Account 94,636			
London Remittance Account 195,659			
Total Credit Balance in Sydney £	36,041	1,069,731	1,105,772
Add—London Bank Account .. .. . £	.....	195,659	195,659
Total	£ 36,041	1,265,390	1,301,431

DISTRIBUTION OF CASH BALANCE.

The distribution of the cash balance on 30th June, 1914, is set forth in the following table, the London accounts being shown to the latest date available before the closing of the Public Accounts for the financial year:—

Sydney Balance—30th June, 1914—	£	£	£
Special Deposits Account—Bank of New South Wales ..	2,886,597		
" " " Commercial Banking Company of Sydney (Ltd.)	2,113,243		
		4,999,840	
Closer Settlement Account—Commercial Banking Com- pany of Sydney (Ltd.) .. .. .	.....	430,682	
Public Works Account—Bank of New South Wales .. .. .	.....	218,787	
Special Accounts—Bank of New South Wales .. .. .	.....	305,119	
Railways Loan Account—Bank of New South Wales	538,683		
" " " Commercial Banking Company of Sydney (Ltd.)	467,324		
		1,006,007	
Total Cr.			6,800,435
<i>Less Debit Balances—</i>			
Consolidated Revenue Account—Bank of New South Wales	385,428		
" " " Commercial Banking Company of Sydney (Ltd.)	433,550		
" " " " Cash in hands of Receiver Cr.	25,000		
		753,978	
General Loan Account—Bank of New South Wales	2,604,456		
" " " Commercial Banking Company of Sydney (Ltd.)	1,973,133		
		4,577,589	
Loans Expenditure Suspense Account—Bank of New South Wales	117,535		
" " " " Commercial Bank- ing Company of Sydney (Ltd.)	111,307		
		228,842	
Railway Store Suspense Account—Bank of New South Wales .. .. .	.....	91,636	
London Remittance Account—Bank of New South Wales ..	83,730		
" " " Commercial Banking Com- pany of Sydney (Ltd.)	111,929		
		195,659	
Total Dr.			5,890,704
Total Cash in Sydney .. .. . £	.....		1,069,731
Total Cash in London .. .. . £	.....		195,659
Total Cr. £	.....		1,265,390

Prior to 1906 the Public Accounts included all the invested assets of the Government Savings Bank. Upon the passing of the Government Savings Bank Act, 1906, these assets were vested in the Commissioners appointed under that Act, and are no longer included in the statements relating to the Public Accounts.

CONSOLIDATED REVENUE FUND.

Although the system of keeping accounts on a cash basis is properly in operation, it is still necessary, in estimating the financial position of the State, to consider the Old Deficiency Account and the New Account under the Audit Act Amendment Act, which form the Consolidated Revenue Account, as well as the Loans Account and the various Trust Accounts not forming part of the Consolidated Revenue Account. The Old Deficiency Account proper began in 1885; but it was only in 1897, when the last obligation under the old system of account-keeping was met, that the position of this account for each year could be accurately stated.

The following table shows the Accumulated Deficiency on the Consolidated Revenue Account for each of the years since 1904. The Treasury Bills issued have been included in the statement, as they became part of the Consolidated Revenue Account proper:—

Financial Year.	Deficiency Bills Current at end of Year.	Cash Balance at 30th June.		Actual Accumulated Deficiency.
		Credit.	Overdraft.	
	£	£	£	£
1904	1,977,626	.....	524,064	2,501,690
1905	1,727,626	.....	336,891	2,064,517
1906	1,814,516	896,124	.....	918,392
1907	1,561,632	1,471,344	.....	90,288
1908	1,214,516	1,676,924	.....	*462,408
1909	914,516	637,678	.....	276,838
1910	659,337	989,707	.....	*330,370
1911	414,516	401,505	.....	13,011
1912	114,516	61,363	.....	53,153
1913	.....	.....	1,167,017	1,167,017
1914	.....	.....	793,978	793,978

* Accumulated Surplus.

The "Treasury Bills Deficiency Act, 1905," by which authority was given for the issue of Treasury Bills to liquidate the overdraft on the Consolidated Revenue, provides that, in the event of a surplus on the year's transactions of the Consolidated Revenue, the Treasurer shall pay to the State Debts Commissioners the sum of £50,000, with a view to extinguishing the liability of the Bills. This amount is in addition to that of £250,000 already made a charge on the revenue, for a similar purpose, by prior enactments.

REVENUE AND EXPENDITURE.

The gross and net revenue proper, as well as the net expenditure since 1905, were as follows:—

Year ended 30th June.	Gross Revenue (exclusive of Advances).	Refunds.	Net Revenue proper:		Net Expenditure, exclusive of Advances.	
			Total.	Per Inhabitant.	Total.	Per Inhabitant.
	£	£	£	£ s. d.	£	£ s. d.
1905	11,514,324	177,406	11,336,918	7 16 1	11,195,075	7 14 2
1906	12,471,473	188,391	12,283,082	8 5 6	11,386,864	7 13 5
1907	13,570,330	177,945	13,392,435	8 18 9	12,799,797	8 10 9
1908	14,197,357	234,594	13,960,763	9 2 3	13,700,072	8 18 10
1909	13,844,642	219,571	13,625,071	8 14 8	14,692,168	9 8 4
1910	14,689,973	149,900	14,540,073	9 2 2	14,184,327	8 17 8
1911	13,977,777	138,638	13,839,139	8 8 11	14,443,691	8 16 4
1912	15,920,758	143,942	15,776,816	9 5 9	15,915,730	9 7 5
1913	16,283,732	226,434	16,057,298	9 0 6	17,358,198	9 15 2
1914	18,513,485	214,860	18,298,625	9 19 8	18,038,392	9 16 11

The revenue includes surplus revenue returned to the State by the Commonwealth, from 1901 to 1910, under the Constitution Act, and from 1910 onwards under the Commonwealth Surplus Revenue Act of 1910. Prior to 1910 the Commonwealth was obliged to pay to the States not less than three-fourths of the net Customs and Excise revenue. Since 1910 it has paid twenty-five shillings per head to the States.

The figures relating to revenue, both above and in subsequent tables, are exclusive of "Advances repaid"; and in dealing with expenditure, "Advances made" have been excluded from consideration, as transactions under these heads do not affect the ordinary revenue and the expenditure therefrom. The terms "net revenue" and "net expenditure," used both here and in subsequent pages, are to be taken as meaning revenue and expenditure freed from the transactions just mentioned as well as from refunds.

HEADS OF REVENUE AND EXPENDITURE.

With a view of obtaining a proper conception of the sources from which the revenue is derived, and the objects upon which expenditure is made, the subjoined table has been prepared for the last four financial years. In the table a separation has been effected between receipts and expendi-

ture for purely Governmental purposes and for the business undertakings of the State. The figures are exclusive of advances made and repaid:—

REVENUE.		1911.	1912.	1913.	1914.
<i>Governmental.</i>		£	£	£	£
Revenue returned by Commonwealth		1,942,245	2,046,993	2,178,683	2,248,241
Taxation—					
Stamp Duties		625,841	1,104,490	599,190	890,236
Land Tax		7,438	6,479	5,738	4,692
Income Tax		269,142	644,571	662,625	1,290,370
Licenses		125,098	190,113	187,807	144,707
Total Taxation	£	1,027,519	1,885,653	1,405,360	2,330,005
Land Revenue—					
Alienation		1,028,531	962,198	999,363	982,885
Occupation		633,916	625,143	646,725	641,230
Miscellaneous		176,470	178,118	189,860	204,772
Total Land Revenue.. .. .	£	1,838,917	1,765,459	1,835,948	1,828,887
Services rendered (other than Business Undertakings)		333,039	381,981	412,727	453,016
General Miscellaneous		318,971	553,000	495,331	482,525
Industrial Undertakings.. .. .		.....	20,281	32,885	6,300
Total Governmental	£	5,460,691	6,053,367	6,360,934	7,348,974
<i>Business Undertakings of the State.</i>					
Receipts, Corporate Bodies—					
Railways and Tramways		7,412,127	8,067,597	8,544,376	9,684,377
Sydney Harbour Trust		374,280	412,410	452,244	470,773
Metropolitan Board of Water Supply and Sewerage		537,355	584,654	633,599	713,056
Hunter District Water Supply and Sewerage Board		54,680	58,788	66,145	80,945
Total Business Undertakings	£	8,378,448	9,123,449	9,696,364	10,949,651
Grand Total	£	13,839,139	15,776,816	16,057,298	18,298,625
EXPENDITURE.					
<i>Governmental.</i>					
Interest on Public Debt and on Trust Funds (excluding proportion chargeable to business undertakings)		801,754	888,354	950,895	1,022,732
Old-age and Invalidity and Accident Pensions and Administration		49,570	.....	.....	.....
Other Pensions, Retiring Allowances, and Gratuities		191,623	200,552	199,066	219,844
Elections Act Expenses (Electoral Office included in other services of the State)		35,504	24,207	35,078	53,455
Parliamentary Allowances and Postage		30,102	33,232	43,175	43,150
Local Government—					
Endowments to Municipalities		8,872	6,996	6,591	5,058
Endowments to Shires		286,842	334,269	274,713	255,265
Administration, &c. (excluding salaries)		11,914	1,675	2,038	3,087
Agricultural, Pastoral, and Horticultural Societies		21,889	23,638	19,463	17,684
Hospitals and Charities		373,470	390,908	405,813	499,838
Lunacy (including Master-in-Lunacy)		177,486	187,103	238,156	243,549
Public Instruction (including Reformatories and Grants to Educational and Scientific Institutions)		1,206,942	1,395,114	1,490,205	1,607,324
Industrial Undertakings of the State .. .. .		.....	23,242	30,677	.....
All other Services of the State		2,558,954	2,906,320	3,163,427	3,136,678
Total Governmental	£	5,754,922	6,416,179	6,850,297	7,097,664
<i>Business Undertakings of the State.</i>					
Working Expenses—					
Railways and Tramways		4,808,991	5,428,085	6,390,420	7,123,569
Sydney Harbour Trust		119,531	114,684	124,970	132,017
Metropolitan Board of Water Supply and Sewerage		181,270	194,153	217,964	249,814
Hunter District Water Supply and Sewerage Board		20,951	24,509	26,889	29,687
Total Business Undertakings	£	5,130,743	5,761,431	6,760,243	7,535,087
Interest on Capital—					
Railways and Tramways		1,950,951	2,073,139	2,129,995	2,382,357
Sydney Harbour Trust		187,722	199,459	207,869	234,631
Metropolitan Board of Water Supply and Sewerage		351,513	365,103	372,714	415,944
Hunter District Water Supply and Sewerage Board		22,338	24,769	26,780	30,486
Total Business Undertakings	£	2,512,524	2,662,470	2,737,358	3,063,468
Total Business Undertakings	£	7,643,267	8,423,901	9,497,601	10,598,555
Sinking Funds Instalments—Total		409,349	436,921	450,602	5,632
Public Works Fund—Transfers in Aid		636,153	638,729	559,698	336,541
Grand Total	£	14,443,691	15,915,730	17,358,198	18,938,392

The headings of Revenue and Expenditure shown on the previous page for the years ended 30th June, 1911 to 1914, are repeated here, and against each is given the rate per head of population:—

	Per Inhabitant.			
	1911.	1912.	1913.	1914.
REVENUE.				
<i>Governmental.</i>				
Revenue returned by Commonwealth	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Taxation—	1 3 9	1 4 1	1 4 6	1 4 6
Stamp Duties	0 7 8	0 13 0	0 6 9	0 9 8
Land Tax	0 0 1	0 0 1	0 0 1	0 0 1
Income Tax	0 3 3	0 7 7	0 7 6	0 14 1
Licenses	0 1 6	0 1 6	0 1 6	0 1 7
Total Taxation	0 12 6	1 2 2	0 15 10	1 5 5
Land Revenue—				
Alienation	0 12 6	0 11 4	0 11 3	0 10 9
Occupation	0 7 9	0 7 5	0 7 3	0 7 0
Miscellaneous	0 2 2	0 2 1	0 2 1	0 2 2
Total	1 2 5	1 0 10	1 0 7	0 19 11
Services rendered (other than Business Undertakings)	0 4 1	0 4 6	0 4 8	0 5 0
General Miscellaneous	0 3 11	0 6 6	0 5 7	0 5 3
Industrial Undertakings .. .. .	.....	0 0 3	0 0 4	0 0 1
Total Governmental	3 6 8	3 18 4	3 11 6	4 0 2
<i>Business Undertakings of the State.</i>				
Receipts, Corporate Bodies—				
Railways and Tramways	4 10 6	4 15 0	4 16 1	5 5 8
Sydney Harbour Trust	0 4 7	0 4 10	0 5 1	0 5 2
Metropolitan Board of Water Supply and Sewerage	0 6 6	0 6 11	0 7 1	0 7 9
Hunter District Water Supply and Sewerage Board	0 0 8	0 0 8	0 0 9	0 0 11
Total Business Undertakings)	5 2 3	5 7 5	5 9 0	5 19 6
Grand Total	8 8 11	9 5 9	9 9 6	9 19 8
EXPENDITURE.				
<i>Governmental.</i>				
Interest on Public Debt and on Trust Funds (excluding proportion chargeable to business undertakings)	0 9 10	0 10 6	0 10 8	0 11 2
Old-age and Invalidity and Accident Pensions and Administration	0 0 7	.....	.....	.....
Other Pensions, Retiring Allowances, and Gratuities	0 2 4	0 2 4	0 2 2	0 2 5
Elections Act Expenses (excluding Electoral Office)	0 0 5	0 0 4	0 0 5	0 0 7
Parliamentary Allowances and Postage	0 0 4	0 0 5	0 0 6	0 0 5
Local Government—				
Endowments to Municipalities	0 0 1	0 0 1	0 0 1	0 0 1
Endowments to Shires	0 3 6	0 3 11	0 3 1	0 2 10
Administration, &c.	0 0 2	.....	.....	.....
Agricultural, Pastoral, and Horticultural Societies	0 0 3	0 0 3	0 0 3	0 0 2
Hospitals and Charities	0 4 7	0 4 7	0 4 7	0 5 4
Lucany (including Master-in-Lucany)	0 2 2	0 2 3	0 2 8	0 2 8
Public Instruction (including Reformatories and Grants to Educational and Scientific Institutions)	0 14 9	0 16 5	0 16 9	0 17 7
Industrial Undertakings of the State .. .. .	.....	0 0 3	0 0 4	.....
All other Services of the State	1 11 2	1 14 2	1 15 7	1 14 3
Total Governmental	3 10 2	3 15 6	3 17 1	3 17 6
<i>Business Undertakings of the State.</i>				
Working Expenses—				
Railways and Tramways	2 18 9	3 3 11	3 11 10	3 17 9
Sydney Harbour Trust	0 1 5	0 1 4	0 1 5	0 1 5
Metropolitan Board of Water Supply and Sewerage	0 2 2	0 2 3	0 2 5	0 2 9
Hunter District Water Supply and Sewerage Board	0 0 3	0 0 4	0 0 4	0 0 4
Interest on Capital—	3 2 7	3 7 10	3 16 0	4 2 3
Railways and Tramways	1 3 9	1 4 5	1 3 11	1 6 0
Sydney Harbour Trust	0 2 4	0 2 4	0 2 4	0 2 7
Metropolitan Board of Water Supply and Sewerage	0 4 5	0 4 4	0 4 2	0 4 6
Hunter District Water Supply and Sewerage Board	0 0 3	0 0 4	0 0 4	0 0 4
Total Business Undertakings	4 13 4	4 19 3	5 6 9	5 15 8
Sinking Fund Instalments—Total	0 5 0	0 5 2	0 5 1	0 0 1
Public Works Fund—Transfers in Aid	0 7 10	0 7 6	0 6 3	0 3 8
Grand Total	8 16 4	9 7 5	9 15 2	9 16 11

CLOSER SETTLEMENT FUND.

The Closer Settlement Fund was established under Act No. 9 of 1906. Most of the contributions have been received from the surplus moneys of the Consolidated Revenue Fund, and from Loans, and the balance at credit of the Assurance Fund Real Property Act, which was transferred at the inauguration of the Fund.

The subjoined statement shows the receipts and expenditure for the financial year ended 30th June, 1914:—

Receipts—	£	Expenditure—	£
Balance brought forward from previous year ...	391,488	Under Real Property Act ...	419
Assurance Fees—Real Property Act ...	10,998	Purchase of Estates, including contingent expenses ...	69,181
Receipts under Closer Settlement Acts ...	128,165	Interest on Loans ...	30,369
		Balance, 30th June, 1914 ...	430,682
	<u>£530,651</u>		<u>£530,651</u>

PUBLIC WORKS FUND.

The Public Works Account, which was opened in the year 1906, under the authority of the same statute which provided for the Closer Settlement Fund, is entitled to two-thirds of the net proceeds of sales of Crown lands less 20 per cent. as credited to the Consolidated Revenue Fund, and the proceeds of land sales under the Public Instruction Act. Grants in aid are also obtainable yearly from the revenue, and the transactions for the year ended 30th June, 1914, are shown below:—

Receipts.	Amount.	Disbursements.	Amount.
	£		£
Repayments to credit of Votes (previous years) ...	21,440	Payments on account of the undermentioned Services:—	
Transfers from Consolidated Revenue Fund—Two-thirds net proceeds of Sale of Crown Lands to 25th June, 1914, exclusive of interest—less 20 per cent. (under Act No. 9, 1906) ...	335,541	Premier—Immigration and Tourist Bureau—Improvements to Caves, &c. ...	4,412
Net proceeds of Sale of Land, under section 4, Public Instruction Act of 1880 ...	751	Colonial Secretary—Fire Brigades ..	17
		Hospitals and Benevolent Asylums ..	55,640
		Miscellaneous	4,572
			<u>60,229</u>
		Treasurer—Government Printing Office—Plant	6,702
		Explosives—Public Magazine Establishment, Middle Harbour, &c. ..	3,442
		Sydney Harbour Trust	45,610
		Miscellaneous	2,513
			<u>58,267</u>
		Attorney-General and Justice	17,186
		Secretary for Lands—	
		Resumption of Parks, Foreshores, &c. ..	19,879
		Miscellaneous	1,303
			<u>21,182</u>
		Public Works—Harbours and Rivers—	
		Dredge Service	15,097
		Public Buildings	3,781
		Construction of Works generally ..	4,869
		Metropolitan Board of Water Supply and Sewerage—Water Supply ..	33,396
		Hunter District Water Supply and Sewerage Board—Water Supply ..	230
		Roads and Bridges	125,878
		Grant under section 5 of Public Works Funds Act to Shires and Municipalities	548
		Railways and Tramways	5,233
			<u>189,032</u>
		Public Instruction—Training College ..	5,012
		Technical Education—Buildings, &c. ..	1,954
		Conservatorium of Music	8,384
		Miscellaneous Services	1,992
			<u>17,342</u>
		Agriculture—Promotion of Agriculture, &c.	10,581
		Wentworth Irrigation	798
		Fumigation Chambers	4,777
		Miscellaneous	884
			<u>17,040</u>
		Forestry—Preparing Land for Afforestation, &c.	5,663
		Total Works, Services, &c.	390,358
Balance, 30th June, 1913, brought forward	250,413	Balance, 30th June, 1914	218,787
Grand Total	<u>£ 609,145</u>	Grand Total	<u>£ 609,145</u>

TAXATION.

License Fees, Land and Income Taxes, and Stamp and Probate Duties represent the various forms of taxation in the State. The subjoined statement shows the revenue derived from each source during the year ended 30th June, 1914:—

Head of Revenue.	Gross Revenue.	Refunds.	Net Revenue.		
Collections from Licenses :—	£	£	£		
To Retail Fermented and Spirituous Liquors, including Colonial Wine, Cider, and Perry ...	90,650	532	144,707		
Wholesale Spirit Dealers	5,520				
Billiard and Bagatelle	9,387				
Auctioneers	7,590				
Hawkers, Pedlars, and Pawnbrokers	3,053				
Sale of Tobacco, Cigars, and Cigarettes	3,753				
Explosives Act of 1905	1,354				
Metropolitan Traffic Act	3,817				
Motor Traffic Act	14,671				
Gaming and Betting Act, 1906	1,227				
Theatres and Public Halls Act, 1908	3,141				
All other	1,076				
Total, Licenses	£ 145,239			532	144,707
Land Tax	5,364			672	4,692
Income Tax... ..	1,393,841	103,471	1,290,370		
Stamp Duties :—					
Adhesive Stamps	92,403	2,849	890,236		
Impressed Stamps—	£				
Deeds	183,602				
Debentures, Promissory Notes, and Bills of Exchange	10,139				
Coupons, Cheques, and Receipts	62,161				
Bills of Lading, Transfers of Shares, &c.	18,277				
	274,179				
Less Commissions and Deductions	837				
Bank-note Composition... ..	273,342				
	£ 2,593				
Probate, Settlement, and Companies' Death Duties—					
Probate	494,660	512,529			
Settlement and Companies' Death Duties	17,869				
Miscellaneous Receipts... ..	271	11,947			
Paid direct to Treasury	11,947				
Total, Stamp Duties	£ 893,085	2,849	890,236		
Revenue from Taxation	£ 2,437,529	107,524	2,330,005		

The control of Customs and Excise having passed to the Commonwealth Government on 1st January, 1901, the foregoing statement does not include any figures relating to the taxation thereunder. In a publication of this character, however, it is desirable that the actual amount to which the people of the State are subjected by way of taxation, whether direct or indirect, should be clearly set forth. In the following statement is

shown in detail the net revenue derivable from each source of taxation for the ten years ended 30th June, 1914, after deducting refunds, but not allowing for cost of collection:—

Year ended 30th June.	Indirect Taxation.		Direct Taxation.				Total Taxation.	
	Customs.	Excise.	Licenses.	Income Tax.	Land Tax.			Stamp Duties.
					State.	Commonwealth.		
	£	£	£	£	£	£	£	
1905	2,390,735	642,882	122,606	195,252	323,267	.....	473,283	4,148,025
1906	2,563,552	670,370	121,387	266,233	329,998	.....	580,158	4,531,698
1907	2,845,786	727,527	118,819	283,422	345,497	.....	633,567	4,954,618
1908	3,672,072	842,590	118,120	215,283	178,889	.....	565,242	5,592,196
1909	3,465,950	797,756	117,383	202,369	80,794	.....	506,703	5,170,955
1910	3,789,467	706,035	121,556	219,977	9,066	.....	872,922	5,719,023
1911	*3,895,700	*917,400	125,098	269,142	7,438	*758,000	625,841	6,598,619
1912	*4,488,100	*980,200	130,113	644,571	6,479	*733,900	1,104,490	8,087,853
1913	*4,906,400	*937,500	137,807	662,625	5,738	*707,100	599,190	7,956,360
1914	*4,758,900	*874,400	144,707	1,290,370	4,692	*642,300	890,236	8,605,605

* Estimated.

The Commonwealth Government has not since 1910 recorded the Customs and Excise collections in each State separately. The figures relating thereto in the last four years have been estimated on the assumption that the average collections in the whole Commonwealth also applied in New South Wales.

There was a noticeable decrease in the revenue derived from Income, Land, and Stamp Duty Taxation between the years 1907 and 1909. This was due to amending legislation under Acts Nos. 7 and 8 of 1907, so far as Income Tax and Stamp Duties are concerned, whereby, from the 1st January, 1908, any income won by personal exertion, up to £1,000 a year, was exempt from direct taxation, but owing to new legislation, imposing a tax on incomes exceeding £300 per annum, the income tax shows a large increase in 1912, and in 1914 additional amounts were obtained by the Income Tax Amendment Act of that year, which further increased the taxes and reduced the exemption to £250. Stamp receipts declined from 1907 to 1909 owing to the repeal of duties on bills of exchange, promissory notes, drafts, receipts, &c., but the death duties were not altered. Early in the year 1914 the Stamp Duties Amendment Act, 1914, became law. The Act imposes additional stamp duties, and considerably increases the probate duties, so that larger receipts may be expected under this heading.

The decline in revenue from the State land tax is attributable to the operation of the Taxation Amending Acts of 1905 and 1906, and the Sydney Corporation (Amendment) Act of 1908, which provide for the allotment to Shires and Municipalities of land taxation collected within their area. These taxation Amending Acts are a necessary corollary to the Local Government Extension Act of 1906. As shown in succeeding pages, a land tax was levied by the Commonwealth Government as from 1st July, 1910.

TAXATION PER INHABITANT.

The previous figures would be incomplete without corresponding information respecting the taxation per head of population, which is set forth hereunder, but in this statement the taxation shown under Customs and Excise, after the year 1910, represents the per capita rate for the whole Common-

wealth, it being assumed that the same average prevails in the State of New South Wales. The Commonwealth Government, since the year named, has not recorded the collections from Customs and Excise for individual States:—

Year ended 30th June.	Indirect Taxation.			Direct Taxation.				Total Taxation.
	Customs.	Excise.	Licenses.	Income Tax.	Land Tax.		Stamp Duties.	
					State.	Common- wealth.		
	£ s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	£ s. d.
1905	1 12 11	8 10	1 8	2 8	4 5	.....	6 6	2 17 0
1906	1 14 7	9 0	1 7	3 7	4 5	.....	7 10	3 1 0
1907	1 17 7	9 6	1 7	3 9	4 7	.....	8 6	3 5 6
1908	2 7 4	10 10	1 7	2 10	2 4	.....	7 4	3 12 3
1909	2 3 11	10 1	1 6	2 7	1 0	.....	6 6	3 5 7
1910	2 7 2	8 9	1 6	2 9	0 1	.....	11 0	3 11 3
1911	*2 7 7	*11 2	1 6	3 3	0 1	*9 3	7 8	4 0 6
1912	*2 12 10	*11 7	1 6	7 7	0 1	*8 8	13 0	4 15 3
1913	*2 15 2	*10 6	1 6	7 6	0 1	*8 0	6 9	4 9 6
1914	*2 11 11	*9 7	1 7	14 1	0 1	*7 0	9 8	4 13 11

* Estimated.

LAND AND INCOME TAXATION.

Land Tax.

The land tax of the State is levied on the unimproved value at the rate of 1d. in the £. A sum of £240 is allowed by way of exemption, and where the unimproved value is in excess of that sum a reduction equal to the exemption is made; but where several blocks of land within the State are held by a person or company, only one amount of £240 may be deducted from the aggregate unimproved value. In cases where land is mortgaged, the mortgagor is permitted to deduct from the tax payable a sum equal to the income tax paid by the mortgagee on the interest derived from the mortgage of the whole property, including improvements. The lands exempt from taxation comprise Crown lands not subject to the right of purchase, or held under special or conditional lease, or as homestead selections; other lands vested in the Crown; lands vested in the Railway Commissioners; lands belonging to or vested in local authorities; public roads, reserves, parks, cemeteries, and commons; lands occupied as public pounds, or used exclusively for or in connection with public hospitals, benevolent institutions, and other public charities, churches, and chapels; the University and its affiliated colleges, the Sydney Grammar School, and mechanics' institutes and schools of art; and lands dedicated to and vested in trustees and used for zoological, agricultural, pastoral, or horticultural show purposes, or for other public or scientific purposes.

Under the Local Government Act, 1906, when the Council of a shire or municipality makes and levies a general rate, not less than 1d. in the £ on the unimproved value of land within its area, land tax ceases to be collected by the State therein. A similar provision was extended to the City of Sydney under the operation of the Sydney Corporation (Amendment) Act, 1908.

Land tax is, therefore, now levied only on the unincorporated portion of the Western Division of the State.

Income Tax.

Until the year 1911, when new legislation was passed, an income tax of 6d. in the £ was imposed upon so much of every income as was in excess of £1,000, if the income was derived by personal exertion, otherwise the exemption was only £200. Incomes were altogether exempt which were derived from the ownership or use or cultivation of land upon which land tax was payable. The exemptions included the revenues of local authorities, the income of life assurance societies, and of other societies and companies not carrying on business for purposes of profit or gain, and not being income derived from mortgages; the dividends and profits of the Savings Bank of New South Wales and the Government Savings Bank; the funds and income of registered friendly societies and trades unions; the incomes and revenues of all ecclesiastical, charitable, and educational institutions of a public character; and income accruing to foreign investors from Government Stock. The regulations provided that, in the case of every company, its income should be taken as the income of the company in New South Wales and from investments in the State. Public companies were not allowed the exemption of £200.

The variations in regard to the number and amount of incomes which were liable to taxation are shown in the following table, which relates to the years 1899 to 1911. The results for the period since 1911 are not available, as the Taxation Department has not supplied any particulars of subsequent years:—

Year.	Number of Incomes.	Net Income.	Year.	Number of Incomes.	Net Income.
		£			£
1899	19,775	11,123,343	1906	23,832	14,937,906
1900	20,051	12,140,569	1907	24,091	16,410,484
1901	19,991	12,065,842	1908	5,933	8,851,026
1902	20,299	12,127,129	1909	5,442	7,753,851
1903	22,234	13,415,760	1910	5,810	9,566,920
1904	22,299	12,482,094	1911	5,846	11,095,863
1905	22,814	13,769,828			

The number of incomes taxed in the last four years is very much reduced, for the reason given above, and the figures quoted for these years in the statement are exclusive of incomes from personal exertion under £1,000, which, under an Act passed in 1907, were exempt from taxation.

A distribution of the incomes subject to taxation according to the amounts taxable is set forth in the following statement. The particulars are based on the experience of the nine years ended 30th June, 1907, the subsequent years being excluded, as the source of taxation was restricted considerably. These, however, represent only a portion of the incomes derived from New South Wales, as incomes derived from land, or the use

and occupancy of land, are not taxable. The net earnings are given in the table:—

Categories.	Average of Nine Years.		Proportion in each category.	
	Number of Incomes.	Amount of Incomes.	Of Number of Incomes.	Of Amount of Incomes.
		£	per cent.	per cent.
£200 and under £250...	6,371	1,430,269	29·60	11·00
250 „ 300...	4,074	1,109,310	18·93	8·54
300 „ 400...	4,140	1,416,527	19·23	10·90
400 „ 500...	2,028	904,974	9·42	6·96
500 „ 700...	1,949	1,126,764	9·06	8·67
700 „ 1,000...	1,200	984,712	5·57	7·58
1,000 „ 1,200...	392	426,930	1·82	3·29
1,200 „ 2,000...	708	1,068,940	3·29	8·23
2,000 „ 5,000...	462	1,354,765	2·15	10·43
5,000 „ 10,000...	122	819,303	·57	6·31
10,000 „ 20,000...	47	643,381	·22	4·95
20,000 and upwards ...	31	1,707,889	·14	13·14
Total	21,524	12,993,764	100·00	100·00

A comparison of the incomes assessed for the years 1908 and 1911 is afforded in the subjoined statement, in which the amounts are given in various grades:—

Grade.	1908.		1911.	
	Number.	Net Income.	Number.	Net Income.
		£		£
£1 to £1,000	4,723	1,042,468	4,261	1,118,623
1,001 „ 1,200	139	151,849	173	190,698
1,201 „ 2,000	364	562,069	462	718,943
2,001 „ 5,000	378	1,168,614	542	1,660,591
5,001 „ 10,000	180	1,235,745	213	1,474,850
10,001 „ 20,000	89	1,203,870	114	1,613,656
20,001 and upwards... ..	60	3,486,411	81	4,318,502
Total	5,933	8,851,026	5,846	11,095,863

INCOME TAX ACTS.

The Act relating to income tax was amended in 1911 by the enactment of the Income Tax Act, 1911. Under its provisions a tax was payable by all persons other than companies in receipt of £300 per annum, derived from all sources within New South Wales. In the case of companies the total receipts are taxable.

Under the Income Tax (Amendment) Act, 1914, further increases were imposed, and the exemption was reduced to £250, no deduction being allowed to companies. A taxpayer is allowed a deduction of £50 in respect of each child under 18 years of age wholly maintained by him, and insurance premiums up to £50 are exempt.

The tax payable by any company is 1s. in the £ on the taxable income of the company, and the rates per £ for persons other than companies are as follows:—

So much of income chargeable—

As does not exceed £700	...	...	...	...	...	8d.
As exceeds £700 and does not exceed £1,700	...	...	...	...	...	9d.
" £1,700	"	£2,700	...	...	...	10d.
" £2,700	"	£4,700	...	...	...	11d.
" £4,700	"	£6,700	...	...	...	1s.
" £6,700	"	£9,700	...	...	...	1s. 1d.
" £9,700	...	...	...	...	...	1s. 2d.

In each case an addition of one-third of tax is made on such of the income as is derived from the produce of property.

The following incomes are exempt from income-tax, viz. :—

- (a) The revenues of municipal corporations or other local authorities.
- (b) The incomes of mutual life assurance societies and of other companies or societies not carrying on business for purposes of profit or gain, except income from mortgages.
- (c) The funds and incomes of societies registered under the Friendly Societies Act or under any Act relating to trade unions.
- (d) The incomes and revenues of all ecclesiastical, charitable, and educational institutions of a public character, whether supported wholly or partly by grants from the Consolidated Revenue Fund or not.
- (e) Income arising or accruing to any person from Government debentures, inscribed stock, and Treasury bills.

These exemptions do not extend to the salaries and wages of persons employed by any such corporation, company, society, or institution, although the same be paid wholly or in part out of the income, revenues, or funds thereof.

INCREASE OF INCOME TAX FOR 1914.

Under the Finance (Taxation) Act, 1914, the amount in the pound which constitutes the income tax on any taxable income imposed by the Income Tax Act, 1911, and amendments of 1912 and 1914, has, with respect to the income tax on income received during the year 1914, been increased by the sum of threepence.

REVENUE FROM LAND AND INCOME TAXES.

The revenue from land and income taxes since 1896, the year in which they were first imposed, is shown hereunder. The amounts exclude refunds rendered necessary through correction of errors by the taxpayer or adjustments by the Department, but include refunds brought about through the income of the year of assessment falling short of the amount of income of the preceding year on which the assessment was made; a provision which was repealed by the "Land and Income Tax Amendment Act, 1904" :—

Year.	Land Tax.	Income Tax.	Year.	Land Tax.	Income Tax.
	£	£		£	£
1896	.....	27,658	1906	329,998	266,233
1897	139,079	295,537	1907	345,497	283,422
1898	364,131	166,395	1908	178,889	215,283
1899	253,901	178,032	1909	80,794	202,369
1900	286,227	183,460	1910	9,066	219,977
1901	288,369	215,893	1911	7,433*	269,142
1902	301,981	203,625	1912	6,479*	644,571
1903	314,104	214,686	1913	5,738*	662,625
1904	322,246	193,240	1914	4,692*	1,290,370
1905	323,267	195,252			

*Exclusive of Federal land tax.

The fluctuations shown in the first three years are due to the difficulties inseparable from the introduction of a system of direct taxation; the returns for 1899 and subsequent years, however, are under normal conditions, which have been varied recently, as already shown, by the increased exemption for the majority of taxpayers, in the case of the income tax, and by the transfer to shires and municipalities of the land tax.

FEDERAL LAND TAX.

The Federal Government has levied a graduated tax on the unimproved value of the lands of the Commonwealth, as from the 1st July, 1910. In the case of owners who were not absentees, an amount of £5,000 was exempt, and the rate of tax ranged from 1d. for the first £1 of value in excess of that amount, and increased uniformly to 3½d. in the £ on a taxable balance of £75,000 with 6d. in the £ for every £ in excess of that amount. Absentees owners were required to pay 1d. in the £ up to £5,000, with a uniform progression for the next £75,000, reaching 4½d. in the £. On every £ in excess of £80,000, 7d. was payable. By amendments of the Act taking effect from 30th June, 1914, the rates were increased, and interests in certain Crown leases hitherto exempt, have now become taxable. Within the same limits as before regarding taxable balances, the progression now ranges from 1d. to 5d. where land is held by residents, and from 2d. to 6d. where the owners are absentees. After the progression ceases residents pay a flat rate of 9d. in the £, and absentees 10d. in the £. Interest in Crown leases carrying the right of purchase were liable to taxation under the original Act, but since 30th June, 1914, interest in practically all Crown leases with a term exceeding one year are taken into assessments. Lands owned by a State, municipality, or other public authority, by savings banks, friendly societies, trades unions, or used solely for religious, charitable, or educational purposes, &c., are not taxable.

The tax is very comprehensive; all interests, both direct and indirect, are included in a taxpayer's assessment, and his rate fixed accordingly. To avoid double taxation, however, deductions are made in respect of tax paid by any primary taxpayer or precedent secondary taxpayer, but always maintaining the principle of progression. Care has been taken not to penalise owners of land affected by pre-existing contracts, or held under settlements made before the commencement of the Act or under wills of persons who died before 30th June, 1910.

The following statement shows the assessments by the Commonwealth Land Tax Department for the State of New South Wales for the year 1912-13:—

Classification.	Residents.	Absentees.	Total.
Values assessed:—	£	£	£
Town Lands—			
Improved	55,842,528	2,276,386	58,118,914
Unimproved	29,301,850	1,299,357	30,601,207
Tax	266,738	18,654	285,392
Country Lands—			
Improved	115,755,315	1,365,643	117,120,958
Unimproved	54,524,870	690,426	55,215,296
Tax	461,013	11,706	472,719
Total—			
Improved	171,597,843	3,642,029	175,239,872
Unimproved	83,826,720	1,989,783	85,816,503
Tax	727,752	30,360	758,112
Area of Country Land assessed in New South Wales	Acres.	Acres.	Acres.
	32,736,253	363,461	33,099,714

The total figures for New South Wales show that the land tax for residents was £727,752; absentees, £30,360; total £758,112; and for the whole Commonwealth, residents, £1,396,135; absentees, £63,827; grand total, £1,459,962.

The area of land in New South Wales included in taxable returns was 33,069,668 acres, or 51.9 per cent. of the taxable land in the Commonwealth.

The number of taxpayers resident and absentee during the year 1913-14 is shown below, for each State of the Commonwealth; classified according to the taxable values of their properties. The taxpayers who own land in more than one State are shown under the heading "Central" :—

Taxable Value.	Central.		N.S.W.		Victoria.		Q'land.		S. Aust.		W. Aust.		Tas.		Total.
	R	A	R	A	R	A	R	A	R	A	R	A	R	A	
£															
1-1,000	115	56	625	161	905	365	143	92	267	126	50	283	77	137	8,402
1,001-2,000	95	29	448	54	635	84	110	31	312	59	56	32	58	20	2,023
2,001-3,000	95	12	366	26	477	50	86	16	224	26	50	17	53	10	1,508
3,001-4,000	52	15	305	23	322	41	81	8	149	11	41	15	32	5	1,100
4,001-5,000	49	..	256	29	239	27	70	9	99	18	24	2	28	6	856
5,001-6,000	48	6	195	22	205	12	42	9	85	3	24	2	28	4	685
6,001-7,000	52	7	166	10	156	10	34	1	55	1	21	1	18	1	533
7,001-8,000	40	8	132	5	113	8	37	1	44	1	11	1	19	1	421
8,001-9,000	36	8	115	11	94	7	24	2	34	2	20	1	10	..	359
9,001-10,000	24	2	97	6	77	13	19	1	30	2	13	2	11	3	306
10,001-15,000	124	14	427	29	251	17	66	7	74	9	31	4	51	5	1,109
15,001-20,000	87	5	119	10	136	6	40	8	33	2	33	2	18	2	501
20,001-30,000	104	3	219	10	163	12	49	2	37	1	20	2	12	..	634
30,001-40,000	52	3	114	5	68	2	25	2	22	..	11	..	6	..	310
40,001-50,000	46	4	59	2	44	5	6	1	15	..	6	..	2	..	190
50,001-60,000	36	1	53	3	31	2	4	..	6	..	3	..	2	..	141
60,001-70,000	15	1	29	3	22	1	2	..	5	..	2	..	..	..	80
70,001-80,000	7	..	24	2	11	..	2	..	4	..	1	..	3	..	54
80,001-90,000	11	..	18	1	6	1	..	..	2	..	1	..	2	..	37
90,001-100,000	3	..	7	..	4	1	..	..	1	2	..	..	..	..	33
100,001-110,000	10	..	9	..	1	..	..	..	2	..	..	..	..	..	26
110,001-120,000	2	..	3	1	1	..	..	..	1	..	..	..	..	..	14
120,001-130,000	2	..	2	..	3	..	..	..	2	..	1	..	..	..	9
130,001-140,000	3	..	2	..	1	..	..	..	..	..	..	..	..	..	8
140,001-150,000	3	..	4	..	1	1	..	..	2	..	..	..	..	..	11
150,001-160,000	1	..	3	..	1	..	1	..	..	..	..	..	..	..	6
160,001-170,000	2	..	3	..	..	..	..	..	..	..	..	..	..	..	5
170,001-180,000	2	..	2	..	..	..	..	..	1	..	..	..	..	..	5
180,001-190,000	3	2	1	..	..	..	..	..	..	..	..	..	..	..	6
190,001-200,000	2	..	3	..	1	..	1	..	1	..	..	..	..	..	8
200,001-310,000	2	..	2	..	..	..	..	..	..	..	..	..	..	..	4
210,001-220,000	..	..	1	..	1	..	..	..	..	..	..	..	..	..	2
220,001-230,000	..	..	2	..	1	..	..	..	..	..	..	..	..	..	3
230,001-240,000	..	..	2	..	..	..	1	..	..	..	..	..	..	..	3
250,001-260,000	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
260,001-270,000	..	..	1	..	..	..	..	..	..	1	..	..	..	..	2
270,001-280,000	1	..	..	..	..	..	..	..	..	..	..	..	1	..	2
280,001-290,000	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
290,001-300,000	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
320,001-330,000	..	..	1	..	1	..	..	..	..	..	..	..	..	..	2
330,001-340,000	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2
350,001-360,000	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
360,001-370,000	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
370,001-380,000	3	..	..	..	..	..	..	..	..	..	..	..	..	..	3
380,001-390,000	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
410,001-420,000	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
450,001-460,000	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
520,001-530,000	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1
580,001-570,000	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
610,001-620,000	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
630,001-640,000	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
1,110,001-1,120,000	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Total	1,135	171	3,829	413	3,976	665	846	190	1,508	263	421	364	432	104	14,410

NOTE.—"R" indicates Resident, and "A" indicates Absentee.

An absentee is a taxpayer who does not reside in Australia. The term is not applicable to a taxpayer who, for reasons connected with health, business, or recreation, leaves Australia for a time, intending to return thereto.

LAND REVENUE.

The receipts from the sale and occupation of Crown land are treated as public income. While the proceeds from occupation, being rent, can be reasonably regarded as an item of revenue, the inclusion of the

proceeds of auction, conditional purchase, and other classes of sale in the ordinary revenue is open to serious objection. It has been urged in justification of the course that the sums so obtained have enabled the Government either to construct works, which enhance the value of the remaining public lands and facilitate settlement, or to endow municipalities, and thus enable them to carry out local works. Under the Act passed in 1906, instituting the Public Works Fund previously mentioned, two-thirds of the net proceeds of the sale of Crown lands, less 20 per cent., equivalent to a clear 53½ per cent., are paid to that fund.

The revenue derived from lands may be grouped under three main heads—(a) auction sales and other forms of unconditional sale; (b) conditional sales under the system of deferred payments; (c) rents from pastoral, mining, and other classes of occupation. The first two sources have been amalgamated under the head of Alienation; while the last is classed as Occupation.

More than half the annual receipts from land are obtained from alienation, as will be seen from the following table, which gives in detail the revenue from 1910 to 1914:—

Head of Revenue.	1910.	1911.	1912.	1913.	1914.
<i>Alienation—</i>					
Sales, etc. :—	£	£	£	£	£
Auction sales	77,055	83,058	83,764	63,001	43,762
Other	11,263	15,935	15,852	29,854	21,279
Total	88,318	98,993	99,616	92,855	65,041
Conditional Purchases :—					
Deposits and improvements	64,236	135,392	70,930	62,303	42,068
Instalments and interest ...	538,175	537,226	595,805	660,703	721,470
Interest (under Act of 1861)	22,200	21,614	18,894	17,094	17,279
Balances	174,495	186,592	146,593	138,013	101,210
Homestead Selections	71,624	62,917	48,577	40,768	43,409
Total	870,730	943,741	880,799	918,881	925,436
Total, Alienation	959,048	1,042,734	980,415	1,011,736	990,477
<i>Occupation—</i>					
Pastoral :—					
Pastoral leases	756	749	706	720	735
Conditional leases	204,965	199,214	201,450	207,043	211,662
Occupation licenses	31,533	29,871	26,952	25,051	23,060
Homestead leases	1,555	1,688	1,771	1,551	1,114
Annual and Snow, Inferior and Scrub leases.	48,541	44,193	43,400	40,607	37,405
Settlement leases	115,561	106,736	85,331	79,147	72,238
Improvement leases	50,712	49,501	49,644	46,203	40,947
Western Land Division leases	79,517	82,265	83,364	89,613	84,662
Other leases	39,255	33,840	34,107	36,533	40,337
Total	572,395	548,057	526,725	526,468	512,160
Mining :—					
Mineral leases	20,706	17,490	17,739	18,796	19,682
Leases of auriferous lands	2,310	2,544	1,892	1,837	1,755
Miners' rights	3,184	2,913	2,777	3,004	2,780
Royalty on minerals	59,373	77,613	89,423	103,851	110,893
Other	10,689	10,019	8,629	9,945	10,092
Total	96,262	110,579	120,460	137,433	145,202
Total, Occupation	668,657	658,636	647,185	663,901	657,362
<i>Miscellaneous Land Receipts—</i>					
Survey fees	28,883	30,823	24,297	27,428	23,992
Rents, special objects	40,485	43,490	43,064	44,546	47,174
Timber licenses, royalty, &c.	60,508	84,460	94,560	96,929	98,972
Quit rents and other receipts	35,009	35,964	32,213	35,459	45,830
Total	164,885	194,737	194,134	204,362	215,968
Gross Revenue from Lands	1,792,590	1,896,107	1,821,734	1,879,999	1,863,807
Refunds	62,850	57,190	56,275	44,051	34,920
Net Revenue from Lands...	1,729,740	1,838,917	1,765,459	1,835,948	1,828,887

The revenue derived by the alienation and occupation of public lands from 1905 to 1914 was as follows:—

Year ended 30th June.	Alienation.		Occupation.		Gross Revenue from Public Lands.	Refunds.	Net Revenue from Public Lands.
	Auction and Special Sales.	Conditional Purchases and Homestead Selections, including Survey Fees.	Pastoral, including Miscellaneous Receipts, except Survey Fees and Timber Licenses.	Mining, Timber Licenses, etc.			
	£	£	£	£	£	£	£
1905	102,316	1,005,839	636,057	101,255	1,845,467	84,440	1,761,027
1906	95,582	1,049,796	546,904	128,318	1,820,600	87,526	1,733,074
1907	104,780	1,098,716	600,885	154,990	1,959,371	75,315	1,884,056
1908	101,034	965,949	632,652	161,073	1,860,708	76,314	1,784,394
1909	92,653	971,289	635,685	153,364	1,852,991	74,989	1,778,002
1910	88,318	899,613	647,889	156,770	1,792,590	62,850	1,729,740
1911	98,993	974,564	627,511	195,039	1,896,107	57,190	1,838,917
1912	99,616	905,096	602,002	215,020	1,821,734	56,275	1,765,459
1913	92,855	946,309	606,473	234,362	1,879,999	44,051	1,835,948
1914	65,041	949,428	605,164	244,174	1,863,807	34,920	1,828,887

The land policy of the State, though largely connected with public finance, has been fully discussed in the part of this volume dealing with Land Settlement.

The reappraisal of the leases in the Western Division, under the provisions of the Western Lands Act of 1901, caused a considerable shrinkage in revenue. Radical reductions in rent were necessary to prevent the abandonment of enormous tracts of country, which would thereby become worse than non-productive, inasmuch as they would form breeding-grounds for rabbits and other noxious animals. The loss of revenue, however, will be counterbalanced by the benefit resulting from the occupation of this large territory, under conditions which will encourage enterprise and the expenditure of capital in the proper development of the country.

As a result of the reappraisal of conditional purchases and conditional leases the revenue from these lands also has been considerably reduced.

RECEIPTS FOR SERVICES RENDERED.

Information in detail for the year ended 30th June, 1914, as to the amount collected for services rendered by the State, other than for trading concerns, is shown in the following statement:—

Heading.	Gross Revenue.	Refunds.	Net Revenue.
Fees and charges—	£	£	£
Agricultural Colleges and Farms	7,794	160	7,634
Pilotage, Harbour Dues, and Fees—	£		
Pilotage	55,816		
Harbour and Light Rates	53,316		
Harbour Dues	9,315		
Navigation Department—Fees, &c.	5,250		
	123,697	529	123,168
Mint Receipts	10,159	.....	10,159
Fees for Escort and Conveyance of Gold	209	.....	209
Public Instruction Department—			
Training Fees	839		
Registration of Brands	1,416		
Fees of Office —			
Registrar-General	93,868	560	189,278
Courts of Petty Sessions	27,825		
District Courts	1,868		
Supreme Court	27,467		
Shipping Masters	7,548		
Fees for Registration of Dogs	17,079		
Other Fees	11,928		
Rent for Public Watering-places, &c.	7,415		
For the support of Patients in Hospitals for Insaue ...	42,761		
Store Rent and carriage of Explosives	11,264		
For Work performed by Prisoners in Gaol	480		
Collections by Government Printer	9,208	552	122,568
For the support of Children in the Industrial Schools, and Inmates of Benevolent Asylums, Hospitals, &c.	13,215		
Fumigation and Inspection Fees... ..	8,000		
Other Receipts	30,777		
Total Receipts for Services Rendered	£ 454,817	1,801	453,016

As at 30th June, 1906, public school fees amounted annually to about £80,000. In October, 1906, fees in primary and superior public schools were abolished under the Free Education Act; and from January, 1911, the tuition in High Schools also has been free.

GENERAL MISCELLANEOUS RECEIPTS.

All items which cannot be placed rightly under one of the great classes (Taxation, Land Revenue, Business Undertakings, Industrial Undertakings, and Receipts for Services rendered) are grouped under the heading of "General Miscellaneous Receipts." The gross amount received under each head of revenue during the financial year ended 30th June, 1914, and the balance of revenue collected within New South Wales by the

Commonwealth Government and returned, are shown in the subjoined statement:—

Head of Revenue.	Gross Revenue.	Refunds.	Net Revenue.
Rents, &c. (exclusive of Land)—	£	£	£
Wharfage and Tonnage Rates, &c. (Outports)...	7,870	} 372	22,862
Government Buildings and Premises	13,913		
Rent and Way-leave Port Kembla Jetty	1,451	} 43	55,223
Darling Harbour Resumed Area... ..	55,266		
Public Service Superannuation Act, No. 8 of 1903	12,213	4	12,209
Interest on Public Moneys—			
Interest on Advances under Country Towns Water Supply and Sewerage Act	31,775	.....	31,775
Interest on Bank Deposits and other Temporary Investments of Public Moneys	36,566	.....	36,566
Interest on Water and Drainage Works, &c.	10,277	.....	10,277
„ Sale of Wire-netting... ..	2,855	.....	2,855
„ Value of properties Transferred to Commonwealth	144,453	.....	144,453
„ Accrued on Instalments of Loans floated in London	21,133	.....	21,133
„ Other	2,925	.....	2,925
Fines and Forfeitures—			
Sheriff	1,743	} 248	35,938
Courts of Petty Sessions	30,180		
Confiscated and Unclaimed Property	14		
Industrial Arbitration Court	3,582		
Other Fines	667	} 56	33,455
Water Conservation and Irrigation Commission	33,511		
Repayments—			
Repayment to Credit of Votes—Previous years	17,712	} 6,279	72,854
Value of Materials issued by Government Stores Department	1,783		
Seed Wheat—Previous years	426		
Annandale Garbage Destructor	238		
Balances not required	8,800		
Exchange on Cheques	949		
Sale of Government Property	9,438		
Receipts under Fisheries Act	7,608		
Pastures Protection Act—Contributions towards administering	2,193		
Sydney Abattoirs—Surplus Revenue	5,500		
Flemington Sale Yards—Surplus Revenue	10,500		
Costs Recovered in Various Actions	2,842		
Centennial Park Land Sales	5,500		
Wentworth Irrigation Area—Rent, Water Rates, &c.	149		
Unclaimed Moneys	2,957		
Other Unclassified Receipts... ..	2,538		
Total General Miscellaneous Receipts	489,527	7,002	482,525
Balance of Revenue collected within the State by the Commonwealth Government and returned	£ 2,248,241	.....	2,248,241

EXPENSES OF GENERAL GOVERNMENT.

In the figures already given regarding the revenue of New South Wales, the amount received on account of the business undertakings of the State—that is, the earnings of the railways, the tramways, the Boards of water supply and sewerage, and the Sydney Harbour Trust—are included in the general revenue. In consequence of this system the annual cost of maintaining those services is included in the expenditure.

The following statement shows the progress of expenditure as classified under two headings—ordinary expenditure of general government, including interest on capital liability of services connected therewith,

and expenditure on services practically outside the administration of general government, such as railways, tramways, water supply and sewerage, and the Sydney Harbour Trust, and the interest on capital liability of the services enumerated. The figures for the nine years ended 30th June, 1914, and the rates per inhabitant, are as follow:—

Year ended 30th June.	Total Net Expenditure.							
	Governmental.				Business Undertakings.			
	General Services.	Public Instruction.	Interest and Redemptions.*	Total.	Railways and Tramways.	Water Supply and Sewerage.	Sydney Harbour Trust.	Total.
	£	£	£	£	£	£	£	£
1906	4,188,350	938,640	938,398	6,065,388	4,616,305	443,916	261,255	5,321,476
1907	5,272,776	946,044	907,026	7,125,846	4,938,523	471,133	264,295	5,673,951
1908	5,863,535	1,038,620	730,043	7,632,198	5,285,058	504,073	278,743	6,067,874
1909	6,342,400	1,088,328	755,058	8,185,786	5,698,801	524,254	283,327	6,506,382
1910	5,276,825	1,145,038	807,929	7,229,792	6,131,654	536,669	286,212	6,954,535
1911	4,791,728	1,206,942	801,754	6,800,424	6,759,942	576,072	307,253	7,643,267
1912	5,208,361	1,395,114	888,354	7,491,829	7,501,224	608,534	314,143	8,423,901
1913	5,419,497	1,490,205	950,895	7,860,597	8,520,415	644,347	332,839	9,497,601
1914	4,809,781	1,607,324	1,022,732	7,439,837	9,505,926	725,931	366,698	10,598,555

Net Expenditure per Inhabitant.

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1906	2 16 5	0 12 8	0 12 8	4 1 9	3 2 3	0 5 11	0 3 6	3 11 8
1907	3 10 4	0 12 8	0 12 1	4 15 1	3 5 11	0 6 3	0 3 6	3 15 8
1908	3 16 7	0 13 7	0 9 6	4 19 8	3 9 0	0 6 7	0 3 7	3 19 2
1909	4 1 3	0 13 11	0 9 9	5 4 11	3 13 1	0 6 9	0 3 7	4 3 5
1910	3 6 2	0 14 4	0 10 1	4 10 7	3 16 10	0 6 8	0 3 7	4 7 1
1911	2 18 5	0 14 9	0 9 10	4 3 0	4 2 6	0 7 1	0 3 9	4 13 4
1912	3 1 3	0 16 5	0 10 6	4 8 2	4 8 4	0 7 3	0 3 8	4 19 3
1913	3 1 0	0 16 9	0 10 8	4 8 5	4 15 9	0 7 3	0 3 9	5 6 9
1914	2 12 6	0 17 7	0 11 2	4 1 3	5 3 9	0 7 11	0 4 0	5 15 8

*Exclusive of proportion chargeable to business undertakings.

Under the heading of the expenses of general government are included civil and legal expenditure, and the cost of education and such public works as are constructed out of the ordinary revenue, also the interest payable where the proceeds of loans have been used to defray the cost of their construction, together with the sinking fund instalments.

TRADING CONCERNS OF THE STATE.

The subjoined table shows the transactions of the State business undertakings and the State industrial undertakings during the year ended 30th June, 1914:—

Service.	Total Capital Expenditure From Loans, Public Works Fund, and Consolidated Revenue.	Revenue.	Expenditure.			Net Revenue.
			Working Expenses.	Interest, Sinking Fund, Depreciation and Reserves.	Total.	
Business Undertakings—	£	£	£	£	£	£
Railways and Tramways	73,328,609	9,684,877	7,123,569	2,382,357	9,505,926	178,951
Sydney Harbour Trust	6,780,586	470,773	132,017	234,680	366,697	104,076
Water Supply & S.—Metropolitan	12,491,728	713,056	249,814	415,944	665,758	47,298
Do Hunter District	899,536	80,945	29,686	30,486	60,172	20,773
	93,500,469	10,949,651	7,535,086	3,063,467	10,598,553	351,098
Industrial Undertakings—						
Observatory Hill, Resumed Area (Rocks), &c.	1,288,697	57,305	12,692	43,439	56,131	1,174
Brickworks—Homebush Bay	78,394	52,726	43,679	6,408	50,087	2,639
Botany	29,286	5,467	7,931	3,529	11,460	(-) 5,993
Metal Quarries (incl. steamer)	51,874	50,564	41,017	3,908	44,925	5,641
Joinery Works—Rozelle	66,111	84,769	89,600	3,166	92,766	(-) 7,997
State Clothing Factory	12,776	31,678	30,389	1,273	31,662	16
Housing Fund—Daceyville	95,000	3,904	584	2,290	2,874	1,030
Lime Works	13,534	6,250	9,101	1,348	10,449	(-) 4,199
Stone Quarry (Maroubra)	9,726	16,745	15,151	1,274	16,425	320
*Building Construction	7,107	269,616	261,833	4,025	265,858	3,758
†Monier Pipe Works, &c.	26,443	10,237	7,336	986	8,322	1,915
†State Bakery	9,137	2,381	2,367	362	2,729	(-) 348
	1,683,090	591,644	521,680	72,008	593,688	(-) 2,044
Total	95,188,549	11,541,295	8,056,766	3,135,475	11,192,241	349,054

* From October, 1913.

† From February, 1914.

(-) Net expenditure.

Many of the above services have been established by the Government recently, and consequently the working expenses have been somewhat heavy.

The following table shows the transactions of all the State trading concerns and industrial undertakings during the years 1907-1914:—

Year ended 30th June.	Capital Expenditure.	Revenue.	Expenditure.			Net Revenue.	Proportion of Net Revenue to Capital Expenditure.
			Working Expenses.	Interest, Sinking Fund, Depreciation, and Reserves.	Total.		
	£	£	£	£	£	£	per cent.
1907	66,529,101	6,479,703	3,460,945	2,268,701	5,729,646	750,057	1.14
1908	68,304,869	6,900,472	3,764,646	2,357,679	6,122,325	778,147	1.15
1909	70,688,419	7,046,585	4,160,641	2,401,566	6,562,207	484,378	.70
1910	73,611,671	7,615,024	4,595,710	2,413,263	7,008,973	606,051	.84
1911	76,638,228	8,428,818	5,153,728	2,551,760	7,705,488	723,330	.96
1912	81,150,817	9,194,758	5,800,117	2,974,066	8,774,183	420,575	.52
1913	87,156,379	9,964,935	6,980,391	3,125,531	10,105,922	(-)140,987	(-) .16
1914	95,188,549	11,541,295	8,056,766	3,135,475	11,192,241	349,054	.37

(-) Net expenditure.

With the exception of 143½ miles of private railways, 4 miles of private tramways, and a number of short lines, in extent 135½ miles, in mining districts, all railways and tramways belong to the State.

MEAT INDUSTRY AND ABATTOIRS BOARD.

Glebe Island (Sydney) Abattoirs.

The following statement shows the receipts and disbursements for the years ended 30th June, 1913 and 1914, of the Glebe Island Abattoirs:—

Receipts.	1913.	1914.	Disbursements.	1913.	1914.
	£	£		£	£
Rents	10,400	10,458	Salaries and wages	8,207	9,137
Fees	8,250	7,504	Repairs and new works	1,840	1,151
Miscellaneous	1,569	1,588	Miscellaneous	3,819	3,605
	20,219	10,550	Consolidated Revenue	13,866	13,893
				7,000	5,500
				20,866	19,393
			Surplus	6,353	5,657

The new Abattoirs at Homebush were opened in April, 1915.

Flemington Sale Yards.

The receipts and disbursements of the Flemington Sale Yards are shown hereunder for the years ended 30th June, 1913 and 1914.

Receipts.	1913.	1914.	Disbursements.	1913.	1914.
	£	£		£	£
Rents	483	803	Salaries and wages	3,038	4,333
Fees	13,515	14,633	Repairs and new work	2,770	789
Miscellaneous	96	59	Miscellaneous	1,372	1,160
New Abattoirs	370	1,077	Compensation—Land Resump- tion.	116	.....
	14,464	16,572	Consolidated Revenue	7,296	6,282
				6,000	10,500
				13,296	16,782
			Surplus	7,169	10,290

TRUST FUNDS AND SPECIAL DEPOSITS.

The Trust Funds and Special Deposits form a very important division of the public finances, not only from the nature of the transactions and the volume of accumulated funds, but also by reason of the manner in which the accounts are used in conjunction with the general finances of the State. To show the importance of the Account, the following table has been compiled:—

As at 30th June.	Amount.	As at 30th June.	Amount.	As at 30th June.	Amount.
	£		£		£
*1871	213,340	1901	10,823,128	1908	1,867,442
*1876	854,571	1902	11,720,889	1909	2,575,757
*1881	1,671,183	1903	10,564,026	1910	2,743,156
*1886	2,702,486	1904	10,191,160	1911	4,522,915
*1891	4,997,055	1905	10,562,513	1912	5,547,741
1896	7,657,741	1906	10,007,626	1913	6,134,067
1900	10,103,940	1907	2,359,665	1914	5,341,000

* As at 31st December.

The decreased amounts shown since 1906 are due to the removal of the securities belonging to the Government Savings Bank to the control of the Savings Bank Commissioners. As these securities are not vested in the State Treasurer they are excluded from the Public Accounts.

The Trust Funds under the supervision of the State Treasurer are divided into two classes, viz.:—Special Deposits Account and Special Accounts. The total of all moneys under these headings on 30th June, 1914, was £5,341,000—£5,035,881 as Special Deposits Account and £305,119 as Special Accounts. Of the Special Deposits Account, the largest items were:—Advances by banks in London, £250,000; Government Savings Bank Deposit Account, £3,260,292; Government Savings Bank Advances Account, £158,000; State Debt Commissioners' Deposit Account, £30,599; State Debt Commissioners' Trust Accounts, £110,012; Government Dockyards and Newcastle Workshops, Store Advance Account, £32,668; Railway Store Account, £24,349; Public Works and Railway Construction, Store Advance Account, £161,327; Public Works Department, Security Deposit Trust Account, £8,245; Fixed Deposits Account, £260,483; Industrial Undertakings, £51,271; Sundry Deposits Account, £304,981; Municipal Council of Sydney Sinking Funds, £144,905; Government Railways Superannuation Account, £51,674; Housing Fund, £22,808; Treasury Guarantee Fund, £21,418; Treasury Fire Insurance Fund, £39,377; Sobraon Fund, £10,000; Water and Drainage Loan Redemption Fund, £21,873. The balance of £71,599 consists of items which are each under £10,000 in amount. The Special Accounts were Supreme Court moneys, which amounted to £305,119.

The existence of a large account upon which the Treasurer is free to operate is of great assistance to the Consolidated Revenue, the Trust Funds and Special Deposits forming a strong reserve on which the Government may draw in time of need. The great bulk of the funds bear interest, whether invested or not; but the power to use the funds enables the Government to effect a large saving of the interest, which might otherwise be charged for accommodation from the banks.

Of the total sum of £5,341,000 at the credit of the Trust Funds on 30th June, 1914, £36,041 was invested in securities; £4,552,770 was uninvested, but used in Advances and on Public Account at interest; while the remainder, £752,189, was similarly used, but without interest charge.

The rate of interest paid on 30th June, 1914, was 3 per cent., with the following exceptions:—Crown Leases Security Deposit Account, $3\frac{1}{2}$ to $3\frac{3}{4}$ per cent.; Government Savings Bank Deposit Account, $3\frac{1}{2}$ to 4 per cent.; Government Savings Bank Advances Account, $3\frac{1}{2}$ to $3\frac{3}{4}$ per cent.; Fixed Deposits Account, 1 to $3\frac{3}{4}$ per cent.; the Sinking Funds of the Municipal Council of Sydney (50 Vic., No. 13), 4 per cent.; the State Debt Commissioners' Deposit Account, 1 per cent.; the Master in Equity and Master in Lunacy Accounts, 1 per cent.

On 30th June, 1914, the Trust Funds in the custody of the State Treasurer were held thus:—

In Banks—	£
Special Deposits Account	4,999,840
Special Accounts	305,119
In New South Wales Funded Stock	16,500
Fixed Deposit (Metropolitan Board of Water and Sewerage Trust Account)	1,250
In Miscellaneous Securities	18,291
Total	£5,341,000

The total amount of interest received by the Treasury during the year ended June, 1914, on bank deposits and other temporary investments of public moneys was £36,566.

State Debt Commissioners.

Under the provisions of the State Debt and Sinking Fund Act, 1904, a Board called the "State Debt Commissioners," was constituted, consisting of the State Treasurer, the Chief Justice, the Speaker of the Legislative Assembly, and the Under Secretary for Finance and Trade, to

administer, from 1st July, 1905, various Trust Accounts and balances at credit of certain Special Accounts. The Sinking Funds created by the Loan Acts of 1894 (No. 2), 1895, 1896, 1897, 1898, and 1899 also are administered by the Commissioners.

TRUSTEES AUDIT ACT.

The Trustees Audit Act, 1912, empowers the Auditor-General, at the request of the Treasurer or of any Minister of the Crown, to examine and audit any books and documents relating to accounts of persons working shale or coal mines, or obtaining from land gold or other minerals in respect of which royalty is payable to the Crown; also the accounts of Pastures Protection Boards, Trusts under Water and Drainage Act, Schools of Art, Hospitals, and other institutions or persons in receipt of subsidy or assistance from the public funds. If it appears from such audit that any money has been improperly applied, or the provisions of Acts contravened, he may surcharge and disallow such transactions, and the money misapplied may be deducted from future subsidies or may be recovered as provided in the Acts.

LOAN APPROPRIATIONS.

All items of expenditure to be met by loan are authorised under an Appropriation Act, in the same manner as the ordinary expenditure chargeable to the general revenue, and under the Inscribed Stock Act of 1883 (46 Vic. No. 12), the passing of the Loan Appropriation Act confers the power of raising the money required. There is a restriction to the expenditure of money, whether from loans or revenue, in the operation of the Public Works Act of 1888. Under the provisions of this Act, the question of the propriety of constructing all works estimated to cost more than £20,000, except those connected with the maintenance of Railways, is referred by resolution of the Legislative Assembly to the Parliamentary Standing Committee appointed during the first Session of each Parliament. The Committee investigates and reports to Parliament, and the Assembly declares whether it is expedient to carry out the proposed work. If the declaration be favourable, a Bill based thereon must be passed before the authorisation is absolute.

Under the Loan Acts of 1894 to 1899 the principle of redemption from revenue is applied to expenditure on works whose value will disappear by the time the loan, out of the proceeds of which they were constructed, falls due.

The Loan Appropriations, in quinquennial periods since 1875, are given in the subjoined table, the amounts proposed to be expended on Public Works being distinguished from those required for redemption of previous loans:—

Year.	Amount authorised—		
	For Public Works and Services.	For Redemption of Loans.	Total.
	£	£	£
1875-9	10,708,768	.....	10,708,768
1880-4	26,457,803	.....	26,457,803
1885-9	11,123,394	2,113,800	13,237,194
1890-4	15,927,993	2,910,800	18,838,793
1895-9	13,661,046	2,275,200	15,936,246
1900-4	17,690,893	2,841,612	20,532,505
1905-9	10,599,590	7,480,054	17,989,644
1910	4,883,000	.....	4,883,000
1911	3,868,970	.....	3,868,970
1912	6,375,170	2,549,350	8,924,520
1913	.....	.....	*
1914	7,522,100	.....	7,522,000

* No Loan Appropriation Act passed.

RAILWAYS LOAN ACCOUNT.

The Railways Loan Account was opened under the authority of Act No. 4, 1910, and a subsequent Act, No. 20, 1913, was passed, which increased to £5,000,000 the maximum amount which could be borrowed. This account is applied to meet the cost of duplicating portions of the main trunk lines of railways and other works in that connection.

The proceeds of the Funded Stock credited to the Railways Loan Account during 1913-14 amounted to £2,872,391, of which £80,478 was obtained in Sydney. The following are the transactions for the year 1913-14:—

Receipts—	£	Net Expenditure—	£
Balance brought forward from		Duplications—	
1912-13	2,079	Main Suburban Line	11,487
Proceeds of Sales—		Southern Line	656,627
Funded Stock, Sydney	80,478	Western Line	89,615
London	2,791,913	Northern Line	270,688
		South Coast Line	330,322
			1,358,739
		Rolling Stock	434,724
		Repayment of Balance of Advance from Consolidated Revenue Account	75,000
		Credit Balance carried forward to 1914-15	1,006,007
	<u>£2,874,470</u>		<u>£2,874,470</u>

LOAN ACCOUNTS.

The following figures show the amount of loans raised from the commencement of the Loan Account, in 1853, to 30th June, 1914, and the proceeds available for expenditure, including the moneys credited to the Railways Loan Account:—

Treasury Bills, Debentures, Inscribed and Funded Stock sold to 30th June, 1914	£165,746,770
Discount, interest, bonus, and charges	7,335,205
Net amount raised	£158,411,565
Add net amount transferred from Consolidated Revenue to make good amount short-raised	176,767
	<u>£158,588,332</u>
Less Treasury Bills in aid of Revenue not placed to Loan Account	4,769,653
Less proceeds of old loans not included in Loan Accounts	724,733
Less amounts over-raised and not placed to Loan Account	48,760
	<u>£5,543,146</u>
Net amount available for works, &c.	£153,045,186

As the above statement shows, a sum of £165,746,770 has been raised by loan to 30th June, 1914, in connection with which the discount, interest, bonus, and other charges amounted to £7,335,205, leaving £158,411,565 available for expenditure. The effective value of this latter amount was reduced by the sum of £5,543,146 (utilised as shown above); so that taking into account £176,767 transferred from Consolidated Revenue, the net amount available for works, &c., was £153,045,186.

At 30th June, 1914, £49,051,739 had been redeemed, £9,519,705 being a charge on the Consolidated Revenue, leaving £116,695,031 outstanding at the

close of the last financial year. The aggregate amount of interest paid by the State on its loans to 30th June, 1914, was £85,591,587, of which the charge during the last financial year was £3,881,011.

The uses to which the available sum of £153,045,186 was applied are shown in the following table. The sum of £39,532,034 for redemption of loans is included in the total; this amount was not, of course, an item of expenditure, but its inclusion is necessary to fully account for the total of £156,875,285, in which the original loans, as well as the redemption loans, were included:—

Expended on—	£	£
Reproductive Works:—		
Railways... ..	64,211,861	
Tramways	8,126,685	
Water Supply	8,764,978	
Sewerage... ..	6,749,266	
Sydney Harbour Trust	6,633,204	
Darling Harbour Wharves Resumptions	1,277,985	
Industrial Undertakings	529,370	
	96,293,349	
Partly Productive Works:—		
Conservation of Water, Artesian Boring, &c.	3,920,360	
Harbours and Rivers—Navigation	4,622,311	
Roads and Bridges	1,862,629	
Housing Fund	95,000	
	10,500,300	
Public Buildings and Sites	5,969,903	
Immigration	*569,930	
Public Works in Queensland prior to separation	49,856	
	6,589,689	
Commonwealth Services—		
Construction of Telegraph and Telephone Lines	1,297,583	
Post and Telegraph Offices	464,262	
Fortifications and Defence Works	1,457,536	
Lighthouses	144,288	
Customs Buildings	48,879	
Quarantine Buildings	18,099	
Government Dockyard—Cockatoo Island	502,816	
Naval Victualling Stores—Darling Harbour	28,450	
	3,959,913	
	£117,343,251	
Redemptions:—		
Loans repaid under various Acts, &c.	20,139,134	
Treasury Bills for Loan Services repaid	19,392,900	
	39,532,034	
	£156,875,285	
Add Credit Balance of Railways Loan Account	1,006,007	
Less Debit Balance, General Loan Account	4,577,589	
" " " Loans Expenditure Suspense Account	228,842	
" " " Other Accounts (details not available)	29,675	
	3,830,099	
Total	£153,045,186	

* Exclusive of £724,733 expended prior to the inauguration of Loans Account, which, with the amount already stated (£569,930), gives a total expenditure on Immigration to 30th June, 1914, of £1,294,663.

The sum actually expended from loans on public services was, therefore, £117,343,251, the balance to make up the total of £156,875,285 being represented by redemptions. Analysing the above amounts, the following shows the allocation of the items of expenditure:—

Reproductive Works	82 per cent.
Partly productive Works	9 „
Other	6 „
Commonwealth Services	3 „
	100

The loan expenditure on account of the various services during the last four years has been as follows:—

Head of Service.	1911.	1912.	1913.	1914.
	£	£	£	£
Railways	2,127,412	2,850,791	3,614,306	4,903,328
Tramways	420,260	597,335	1,004,661	811,636
Water Supply and Sewerage—				
Water Supply	232,285	371,824	517,146	606,521
Sewerage... ..	225,621	403,919	445,774	428,133
Water Conservation and Irrigation	272,913	568,492	632,173	907,843
Harbours and Rivers, Navigation and Docks	235,275	415,579	682,502	862,927
Roads and Bridges ... ..	.....	.....	1,451	23,703
Educational ... ..	.....	.....	.....	10,830
Public Instruction, School Buildings, &c. ....	.....	.....	235,005	228,397
Administration of Justice ... ..	.....	.....	.....	3,964
Public Abattoirs, Homebush	65,825	120,284	58,205	82,480
Other Public Buildings and Works	21	28,119	116,881	13,111
Closer Settlement	350,000	.....	300,000	.....
Loans to Pastures Protection Boards for wire netting ... ..	.....	210	3,012	2,318
State Brickworks ... ..	.....	43,808	37,565	24,379
„ Metal Quarries, including steamer ... ..	.....	23,904	13,972	8,967
„ Lime Quarry ... ..	.....	4,982	6,472	949
„ Joinery Works, Rozelle ... ..	.....	.....	10,000	55,017
„ Cement Works ... ..	.....	.....	23	44
„ Quarry, Maroubra ... ..	.....	.....	3,060	2,916
„ Bakery ... ..	.....	.....	.....	9,085
„ Workshops and Timber Depot ... ..	.....	.....	.....	72,714
„ Monier Pipe and Reinforced Concrete Works ... ..	.....	.....	.....	16,000
Meat Distributing Depot, Pyrmont ... ..	.....	.....	.....	21,344
New Store Depot at Leichhardt ... ..	.....	.....	.....	6,987
Superintendent of Public Works ... ..	.....	.....	28,019	3,251
Housing Act, 1912 ... ..	.....	75,000	.....	20,000
Total Expenditure on Public Works, &c. £	3,929,612	5,504,247	7,710,227	9,126,844
Less Excess Repayments to Credit of Votes over Expenditure	7,854	13,144	6,633	.....
	£ 3,921,758	5,491,103	7,703,594	9,126,844
Loans repaid by New Loans (including Treasury Bills)	3,088,462	35,925	3,940,778	757,772
Total	£ 7,010,220	5,527,028	11,644,372	9,884,616

It will be seen that the bulk of the proceeds of loans has been well utilised; since, apart from the certainty that the works constructed will be self-supporting, they have already materially assisted in developing the country's resources, and have largely enhanced the value of the public estate.

The loan expenditure, exclusive of payments on account of redemptions, conversions, and renewals, since 1842, is shown below:—

Year.	During each period.		At the end of each period.	
	Amount.	Per Inhabitant.	Amount.	Per Inhabitant.
1842-1890	£	£ s. d.	£ 43,955,551	£ s. d. 39 3 7
1891-1895	11,683,598	9 18 10	55,639,149	44 9 8
1896-1900	8,832,106	6 15 0	64,471,255	47 12 1
1901-1905	16,297,655	11 12 11	80,768,910	55 10 9
1906	1,367,022	0 18 7	82,135,932	55 6 8
1907	1,094,238	0 14 7	83,230,170	54 16 6
1908	1,965,329	1 5 8	85,195,499	55 4 0
1909	2,906,507	1 17 3	88,102,006	55 18 7
1910	3,246,640	2 0 8	91,347,723	56 11 11
1911	3,921,758	2 7 10	95,269,537	57 6 8
1912	5,491,103	3 4 8	100,482,821	57 15 8
1913	7,703,594	4 6 9	108,216,408	59 16 4
1914	9,126,844	4 19 7	117,343,251	63 3 9

THE PUBLIC DEBT.

The public debt outstanding at each quinquennial period is given in the subjoined table:—

Year.	Amount.	Year.	Amount.	Year.	Amount.
	£		£		£
1842	49,500	1875	11,470,637	1910	92,525,095
1845	97,900	1880	14,903,919	1911	95,523,926
1850	132,500	1885	35,564,259	1912	100,052,635
1855	1,000,800	1890	48,383,333	1913	106,170,747
1860	3,830,230	1895	58,220,933	1914	116,695,031
1865	5,749,630	1900	65,332,993		
1870	9,681,130	1905	82,321,998		

Although the public debt of the State on 30th June, 1914, was £116,695,031, there has been actually an expenditure of £117,343,251 on public services, the balance, £648,220, being the difference between the face value of the stock and the net amount received, together with the amount of Treasury Deficiency Bills outstanding.

The following table, which contains the more important particulars of the Public Loan Accounts, shows the growth of the Public Debt during the last ten years. The amount of bonds or stock sold has been placed against the year in which the sales were effected, and not against the year in which they were brought to account:—

Year ended 30th June.	Authorised.	Sold.	Redeemed.			Public Debt on 30th June.	
			From Consolidated Revenue and Sinking Fund.	From General Loan Account, including Renewals.	Total.	Total.	Per Inhabitant.
	£	£	£	£	£	£	£ s. d.
1905	125,615,192	105,455,015	6,000,987	17,132,030	23,133,017	82,321,998	56 12 1
1906	128,660,513	110,860,251	6,250,987	18,967,530	25,218,517	85,641,734	57 13 10
1907	130,341,313	113,686,633	6,728,771	21,350,030	28,078,801	85,607,832	56 7 10
1908	139,512,294	120,029,343	7,425,887	24,967,630	32,393,517	87,635,826	56 15 7
1909	140,192,315	126,241,736	7,725,887	28,208,430	35,934,317	90,307,419	57 6 8
1910	146,305,227	132,465,258	8,231,066	31,709,097	39,940,163	92,525,095	57 6 6
1911	153,188,227	138,797,372	8,475,887	34,797,559	43,273,446	95,523,926	57 9 9
1912	159,512,197	143,662,006	8,775,887	34,833,484	43,609,371	100,052,635	57 10 9
1913	169,186,717	154,464,714	9,519,705	38,774,262	48,293,967	106,170,747	58 13 9
1914	183,018,817	165,746,770	9,519,705	39,532,034	49,051,739	116,695,031	62 16 9

In former years the State Government depended largely upon the London market for its loans, but recently the requirements have been met to a much greater extent locally, as will be seen from the following table, which shows the Public Debt on each register:—

Year ended 30th June.	Registered in London.		Registered in Sydney.		Total Public Debt.
	Amount.	Proportion to Total Debt.	Amount.	Proportion to Total Debt.	
	£	per cent.	£	per cent.	£
1905	64,007,550	77·75	18,314,448	22·25	82,321,998
1906	65,914,850	76·97	19,726,884	23·03	85,641,734
1907	63,914,150	74·66	21,693,682	25·34	85,607,832
1908	64,600,860	73·71	23,034,966	26·29	87,635,826
1909	67,073,905	74·27	23,233,514	25·73	90,307,419
1910	67,154,805	72·58	25,370,290	27·42	92,525,095
1911	65,555,605	68·63	29,968,321	31·37	95,523,926
1912	67,525,305	67·49	32,527,330	32·51	100,052,635
1913	73,740,413	69·45	32,430,334	30·55	106,170,747
1914	83,499,113	71·55	33,195,918	28·45	116,695,031

From the above figures it will be noted that the amount of liabilities held locally at the close of the financial year 1913-14 amounts to more than one-fourth of the total indebtedness.

The next table shows the annual payments under each head for interest and expenses of the Public Debt since 1905:—

Year ended 30th June.	Interest.	Redemptions.	Expenses connected with management of Inscribed Stock.	Commission paid to Financial Agents in England and New South Wales.	Annual Interest and Charges.	
					Total.	Per Inhabitant.
	£	£	£	£	£	£ s. d.
1905	2,856,872	319,413	20,640	1,766	3,198,691	2 4 1
1906	2,941,059	360,016	20,643	3,137	3,324,855	2 4 10
1907	3,047,618	405,090	21,143	1,645	3,475,496	2 5 10
1908	2,986,844	406,145	21,143	5,641	3,419,773	2 4 0
1909	3,039,539	478,791	20,501	3,046	3,541,877	2 4 10
1910	3,117,472	421,034	18,894	4,621	3,562,021	2 4 4
1911	3,227,315	409,349	19,095	4,159	3,659,918	2 4 8
1912	3,430,096	436,921	19,088	2,918	3,889,023	2 5 11
1913	3,516,233	450,602	19,990	1,511	3,988,336	2 4 10
1914	3,881,011	5,632	21,171	1,039	3,908,653	2 2 8

The average rate of interest on the whole debt at the end of the financial year 1914 was 3·66 per cent.

The Public Debt is partly funded and partly unfunded, the funded debt comprising debentures, inscribed and funded stocks, and Treasury bills constituting the unfunded portion. The two classes are defined by the difference in currency, the funded debt being long-dated loans, and the unfunded are short-dated loans. Originally the term "funded" was applied only to interminable stocks, the amount of which, £530,189, is unimportant as compared with the total debt; but it is now the practice to apply this

term also to redeemable debts. The amounts outstanding and annual interest payable on 30th June, 1914, were as follows:—

Description of Stock.	Amount outstanding, 30th June, 1914.	Annual Interest payable.
Funded Debt—		
Debentures—		
	£	£
Matured, which have ceased to bear interest	2,650	.....
Still bearing interest	6,633,800	265,379
N. S. Wales 4 per cents. (Interminable) ...	530,189	21,208
„ Matured, which have ceased to bear interest	1,498	.....
„ 1924 Stock... ..	198,065	5,942
„ 1925 „	222,255	6,668
Inscribed and Funded Stock	105,856,574	3,778,928
Total, Funded Debt... ..	£113,445,031	£4,078,125
Unfunded Debt—		
Treasury Bills—		
For Public Works	{ 750,000† } { 2,500,000‡ }	*.....
Total, Unfunded Debt	£3,250,000	.....
Total, Public Debt	£116,695,031	£4,078,125
* Discounted for twelve months. † £3 13s. 9d. per cent. ‡ At 4 per cent.		

The following table shows the total amount of stock and the annual interest payable; there were overdue debentures to the amount of £2,650, and inscribed and funded stock to the amount of £1,498, outstanding on 30th June, 1914:—

Interest—Per cent.	Amount of Stock.	Annual Interest payable.
	£	£
5	*4,050	135
4	†34,323,509	1,272,828
3½	‡14,264,098	506,779
3¼	51,056,302	1,786,971
3	17,047,072	511,412
Total	£116,695,031	£4,078,125

* Includes £1,350 matured debentures. † Includes £1,300 matured debentures, £1,498 matured inscribed and funded stock, and £2,500,000 Treasury Bills, currency one year, which were discounted at 4 per cent. ‡ Includes £750,000 Treasury Bills at £3 13s. 9d. per cent. discounted for 12 months.

The total amount of discount on the Treasury Bills was £127,656, so that the actual interest liability was £4,205,781.

DATES OF MATURITY.

The dates of repayment extend from 1914 to 1962; the sums repayable in the different years vary considerably in amount. There is a large amount maturing in 1915, but it should be noted that most of it has been raised in the local market, and the conditions as to redemption are not so rigid as those attached to the London issues; in 1918, however, nearly £12,800,000 of stock will be due in London.

The following table shows the due dates and the amount repayable in each year:—

Class of Security.	Interest Rate.	Amount raised in—		Total Outstanding.	Year when Due.
		London.	Sydney.		
Debentures	5	£ 1,250	£ 100	£ 1,350	Overdue.
“	4	500	....	500	Overdue.
“	4	800	....	800	Overdue.
Inscribed and Funded Stock	4	....	1,498	1,498	Overdue.
“	3½	....	1,500,000	7,275,158	1912.*
“	3½	....	1,768,456		
“	3	....	4,006,702		
“	4	....	1,000,000		
“	3½	....	499,981	3,881,081	1915.
Debentures	4	....	131,100		
Inscribed and Funded Stock	4	2,000,000	....	1,270,350	1917.
“	3½	....	250,000		
Inscribed Stock	4	....	1,270,350	1,270,350	1917.
“	3½	12,826,200	....	12,826,200	1918.
“	3½	....	11,083,945	11,203,995	1919.
“	3	....	120,050		
“	3	....	4,872,843	4,872,843	1921.
“	3½	....	4,872,843	4,872,843	1921.
Debentures	4	4,500,000	....	4,500,000	1922.
Inscribed Stock	3½	....	1,874,015	5,221,747	1923.
“	3½	....	1,161,035		
“	4	....	2,186,697	16,693,065	1924.
“	3½	16,500,000	....	
N.S.W. 1924 Stock	3	....	198,065	198,065	1924.
“ 1925 “	3	....	222,255	222,255	1925.
Inscribed Stock	4	9,686,300	....	9,686,300	1933.
“	3	12,500,000	....	12,500,000	1935.
“	3½	12,250,000	....	12,250,000	1950.
“	4	10,500,000	....	10,500,000	1962.
Funded Stock	4	....	530,189	530,189	Interminable.
Permanent Debentures	5	....	2,700	2,700	Permanent.
Funded Debt	£	80,765,050	32,679,981	113,445,031	
Treasury Bills—					
Public Works	4	2,500,000	....	2,500,000	1914.†
“	4	750,000	....	750,000	1915.†
Unfunded Debt	£	3,250,000	....	3,250,000	
Total Public Debt on 30th June, 1914..	£	84,015,050	32,679,981	116,695,031	

* Redeemable at option of Government.

† Discounted for one year.

COST OF RAISING LOANS.

The charges incidental to the issue of loans in London are heavy. Operations are conducted by the Bank of England and by the London and Westminster Bank. The former charges $\frac{1}{4}$ per cent. per £100 Stock on all loan issues, and £350 per million annually for the inscription and management of Stock, including the payment of the half-yearly dividends, while the latter charges $\frac{1}{4}$ per cent. and £150 per million respectively for similar services. In Sydney the Bank of New South Wales and the Commercial Banking Company of Sydney (Limited), transact all Government banking business. The former acts as Financial Agent for the State in Victoria, and also undertakes the payment of the half-yearly dividends on Local Debentures and Funded Stock. The Treasury, however, in local loan issues, directly conducts the operations connected with the issue of New South Wales Funded Stock and Treasury Bills, and no local loan has been underwritten.

The subjoined statement gives the charges for negotiation of the last three debenture loans, and of the inscribed and funded stock loans floated during the period from 1895 to 1913-14:—

Year when Floated.	Amount of Principal.	Gross Proceeds.	Charges, etc.				Expenses per £100 of Gross Proceeds.	
			Stamp Duty.	Bank Commission.	Paid to Investors—Interest Bonus and Discount Bonus.	Brokerage, Underwriting, Postage, and Petty Expenses.		Total.
	£	£	£	£	£	£	£ s. d.	
Issued (in London) as Debentures.								
1904-5	1,000,000	1,990,000	2,500	5,000	737	30,272	38,509	1 18 8
1904-5	1,000,000							
1912-3	4,500,000	4,425,000	5,625	11,250	4,360	68,743	89,978	2 0 8
Issued (in Sydney) as Debentures.								
1904-5	131,100	131,100	nil.	nil.	nil.	nil.	nil.	nil.
Issued (in Sydney) as Funded Stock.								
1905-6	1,328,346	1,328,346	.....	.....	.....	2,735	2,735	0 4 1
1906-7	2,326,382	2,326,382	.....	.....	.....	5,283	5,283	0 3 9
1907-8	3,342,710	3,342,710	.....	.....	.....	7,372	7,372	0 4 5
1908-9	462,393	462,393	.....	.....	.....	666	666	0 2 10
1909-10	3,473,523	3,473,523	.....	.....	.....	4,927	4,927	0 2 10
1910-11	6,332,113	6,332,113	.....	.....	.....	6,811	6,811	0 2 2
1911-12	2,864,634	2,864,634	.....	.....	.....	2,327	2,327	0 1 8
1912-13	2,552,709	2,552,709	.....	.....	.....	4,622	4,622	0 3 7
1913-14	532,056	532,056	.....	.....	.....	1,300	1,300	0 5 4
Issued (in London) as Inscribed Stock.								
1895	4,000,000	3,876,605	25,000	20,000	16,311	10,720	72,031	1 17 2
1898	1,500,000	1,506,289	9,375	7,500	5,207	4,441	26,523	1 15 4
1901	4,000,000	3,760,000	25,000	20,000	9,735	60,347	115,082	3 1 2
1902	3,000,000	2,835,000	18,750	15,000	28,451	45,608	107,809	3 16 1
1905-6	2,000,000	1,990,000	12,500	5,000	19,102	30,491	67,093	3 7 5
1907-8	3,000,000	3,000,000	18,750	7,500	40,143	45,858	112,251	3 14 10
1908-9	1,500,000	1,462,500	9,375	3,750	12,230	23,302	48,667	3 6 7
	3,000,000	2,955,000	18,750	7,500	29,691	45,398	101,339	3 8 7
1909-10	2,750,000	2,667,500	17,187	6,875	22,154	42,131	88,347	3 6 3
1912-13	3,000,000	2,985,000	18,750	7,500	9,334	46,220	81,804	2 14 10
1913-14	4,500,000	4,342,500	28,125	11,250	27,740	69,385	136,500	3 2 10
	3,000,000	2,970,000	*	*	*	*	*	*

* Not available—£500,000 only brought to account on 30th June, 1914.

A comparison of the Sydney and London market shows that the interest rates in Sydney are lower than those in London.

The sales at Sydney take place at the Treasury on the basis of £100 cash for every £100 of stock sold, and brokerage of $\frac{1}{2}$ per cent. is allowed only when a broker is engaged. The cost of negotiation averaged for all issues since 1892 not more than 3s. 1d. per cent., whilst the negotiation charges for London loans, with the $1\frac{1}{4}$ per cent. underwriting charges, have reached £3 16s. 1d. per cent.

STOCK QUOTATIONS, 1913-14.

The average market prices of stock in London and in Sydney are shown in the subjoined table for each month of the year 1913-14:—

Date.	London—Average Market Price.			Sydney—Average Market Price.			
	4 per cent. Stock.	3½ per cent. Stock.	3 per cent. Stock.	4 per cent. Stock.	3½ per cent. Stock.	3 per cent. Stock.	3 per cent. Stock.
	£	£	£	£	£	£	£
1913.							
July	101	93½	82	100	97	93½	80¾
August	100	93½	82	100½	97	91½	80¾
September	100	93	80½	100	97½	93	80
October	99½	93½	81	99¾	96¾	93½	79¾
November	99½	93	81	99¾	96¾	93½	80¼
December	97½	92½	81	98½	96¾	93½	80½
1914.							
January	96¾	93	82	99¾	97½	90½	80¼
February	101½	96½	88	98	97¾	92½	78½
March	101½	96½	86	98½	97¾	89¾	80¾
April	102	96½	86	98	97¾	91½	80
May	102	96½	86	99	97	91½	81¾
June	99½	94½	84	99	97	89½	80¾

REDEMPTIONS AND SINKING FUNDS.

The State Debt and Sinking Fund Act was brought into operation on 1st July, 1905. Under the provisions of this Act a general sinking fund was created, and an annual appropriation of £350,000 is paid to the credit of the fund, together with such further amount as Parliament may provide; under the Treasury Bills Deficiency Act, 1905, an additional £50,000 must be transferred to the fund whenever the operations of a financial year leave a sufficiently large surplus to enable this to be done. The State Debt Commissioners apply the amount at credit of the fund in purchasing, redeeming, or paying-off Government stock, debentures, or Treasury bills; and they are empowered to invest the moneys under the Act. The State Debt and Sinking Fund (Amendment) Act, 1914, provides that where at the close of a year there is a deficiency on the Consolidated Revenue Account the Commissioners shall repay any amount, not being greater than such deficiency, which has been issued from the fund to the Commissioners during the year.

The whole amount of £400,000, however, is not available for general purposes, inasmuch as a sum of £300,000 is required yearly to retire matured Revenue Deficiency Bills in accordance with the terms of the Acts under which they were issued. The residue (£100,000), together with credits, interest on stocks, fixed deposits in banks of issue, and any balance brought forward from the previous period constitutes the amount available for application to redemptions in any one year. The transactions

under the Act for the financial year ended 30th June, 1914, were as follow:—

RECEIPTS.		£
Annual Contribution from Consolidated Revenue Fund		350,000
Repayments—		
Country Towns Water Supplies		2,962
Country Towns Sewerage		531
Promote settlement under Crown Lands Act of 1895		5,631
Interest on Funded Stock		11,406
Interest on Deposit with Colonial Treasurer		994
		371,574
Total Receipts... ..		371,574
Balance brought forward from 1912-13		381,893
		£753,467

EXPENDITURE.		£
Repayments—		
Annual contribution from Consolidated Revenue Fund (in terms of section 2 of State Debt and Sinking Fund Amendment Act, 1914)	350,000	
Excess payments under Act 59 Vic. No. 6	12,119	
		362,119
Total Expenditure		
Balance carried forward—		
Invested in N.S.W. Funded Stock, to face value of £369,317	360,686	
On Deposit with Colonial Treasurer	30,598	
On Account Current	64	
		391,348
Total		£753,467

Under the provisions of the "State Debt and Sinking Fund Act, 1904," various balances at credit of Special Accounts established by the Treasury Bills Deficiency Act, 1889, were transferred to and administered by the State Debt Commissioners from 1st July, 1905. The Special Accounts were as follows:—The Treasury Bills Deficiency Act of 1895; the Treasury Bills Deficiency Act, 1900; the Treasury Bills Deficiency (Amendment) Act, 1901; the Railway Loan Redemption Act of 1889; and the Sinking Funds constituted by the Loan Acts of 1894 (No. 2), 1895, 1896, 1897, 1898, and 1899.

CHARACTER OF STOCK ISSUED.

As previously stated, loans have been raised by Treasury bills, debentures, and stock.

The Treasury bills are of a temporary character, and will in the course of a few years disappear from the statement of the Public Debt, either by substitution of ordinary stock when the temporary purpose for which they were issued has been served, or by redemption on maturity. The practice of issuing Treasury bills, either in anticipation of, or to make good, deficiencies in revenue, is of long standing; but, as will be seen later on, they have been made to serve another purpose, and money has been raised by their sale to meet certain obligations for public works and

redemptions when the money market has been disturbed. The amount of Treasury bills current on 30th June, 1914, was £3,250,000 for Public Works, of which £2,500,000 was discounted for one year at 4 per cent., and £750,000 at £3 13s. 9d. per cent.

The issue of funded stock, which may be more appropriately termed registered stock, is regulated by four Acts passed in the years 1873, 1892, 1894, and 1895. Stock issued under the Act of 1873 is interminable, but that issued under the more recent Acts may be redeemed at the option of the Government, at the expiration of twenty years from the dates on which the Acts were passed, on the Treasurer giving twelve months' notice of his intention to redeem.

SECURITY FOR THE PUBLIC DEBT.

In the foregoing pages much has been said of the indebtedness of the State. It is, therefore, appropriate to say something of the resources on which the State's creditors may rely as security for repayment; but before examining the nature of these resources it may be well to recapitulate the liabilities outstanding. On 30th June, 1914, these were as follow:—

Public Debt—Debentures	£6,636,450
Inscribed Stock	106,808,581
Treasury Bills (Public Works)	3,250,000
Total Public Debt	£116,695,031

The total amount of Public Debt might reasonably be lessened by the sum of £1,395,635 shown below, representing the amount spent on services, which is to be repaid in annual instalments of principal and interest by the parties benefited by the expenditure:—

Country Towns Water Supply	£900,455
Country Towns Sewerage	169,393
Water Trusts	182,389
Drainage Trusts	82,941
Other Advances	60,457
Total	£1,395,635

There is also the property transferred to the Commonwealth, on which interest is paid by the Commonwealth at 3½ per cent. per annum. The value of this property is £3,959,913, and in 1913-14 £144,453 was received by the State as interest on such. The total amount by which the Public Debt might be reduced is, therefore, about £5,350,000.

The principal assets of the State are its trading concerns (railways, water supply, &c.), and the public lands, of which 121,837,047 acres are leased for pastoral or mining purposes, and 17,837,702 acres sold on deferred payments. The revenue derived from the public lands of the State in the year ended 30th June, 1914, was £1,863,807, distributed under the following headings:—Alienation, £65,041; Conditional Purchases, £925,436; Pastoral Leases, £512,160; Mining Leases, &c., including royalty on minerals, £145,202; Miscellaneous Land Receipts, £215,968. The balance of purchase money outstanding on 31st December, 1913, in regard to conditional purchases, amounted to £9,910,180.

The following statement shows that the Public Debt has been incurred principally on works of a reproductive character—82 per cent. being on

reproductive works, 9 per cent. on partly productive works, 6 per cent. on public buildings, &c., and 3 per cent. on Commonwealth services.

Public Debt.

Reproductive Works		Unproductive Works	
	£		£
Railways	64,211,861	Public Buildings and Other Works	5,941,469
Tramways	8,126,685	Services taken over by Commonwealth	3,959,913
Water and Sewerage	15,514,244		
Sydney Harbour Trust	6,633,204		£9,901,382
Darling Harbour Resumptions	1,277,985		
Industrial Undertakings	529,370	Total Debt	£116,695,031
	£96,293,349		
Partly Productive Works—			
Conservation of Water, &c.	3,920,360		
Roads and Bridges	1,862,629		
Harbours and Rivers	4,622,311		
Housing Fund	95,000		
	£10,500,300		

EXPENDITURE BY STATE ON IMMIGRATION—1832 TO 1914.

In view of the interest taken in the matter of expenditure towards promoting immigration and advertising the State, the following return has been prepared to show the amounts spent during the years 1832 to 1914:—

Year.	Amount.	Year.	Amount.	Year.	Amount.
	£		£		£
1832 to 1850	1,192,193	1872	8,066	Dec., 1894	2,109
1851	95,816	1873	3,759	June, 1895	695
1852	149,107	1874	18,190	(half-year)	547
1853	146,574	1875	14,962	June, 1896	486
1854	242,656	1876	27,010	1897	186
1855	165,783	1877	75,008	1898	147
1856	120,649	1878	95,585	1899	27
1857	139,604	1879	103,766	1900	.....
1858	90,460	1880	45,602	1901	.....
1859	81,605	1881	45,966	1902	245
1860	29,001	1882	46,301	1903	.....
1861	20,034	1883	112,319	1904	.....
1862	63,357	1884	132,176	1905	.....
1863	83,487	1885	107,596	1906	1,226
1864	25,987	1886	35,397	1907	8,079
1865	34,150	1887	32,251	1908	13,184
1866	23,225	1888	7,854	1909	22,436
1867	14,037	1889	8,073	1910	26,815
1868	11,203	1890	5,916	1911	32,786
1869	2,396	1891	4,564	1912	59,186
1870	1,104	1892	2,333	1913	69,656
1871	3,648	1893	3,106	1914	33,158

It should be noted that the amounts expended from revenue and loans cannot be stated separately, as in the earlier years the proceeds of loans were credited to Consolidated Revenue, and part of the immigration expenses were defrayed from "Territorial Revenue," which was a distinct account.

In regard to Immigration, the Commonwealth Government spends sums of money in advertising the attractions of Australia generally.

During the year 1914 the total amount thus expended was £40,546.

Further particulars relating to the Encouragement of Immigration may be found in the part of this Year Book dealing with Employment and Industrial Arbitration.

FINANCIAL RELATIONS BETWEEN STATES AND COMMONWEALTH.

One of the most difficult problems to be solved in formulating a constitution for the Commonwealth of Australia was met in the determination of the relative shares of the Commonwealth and States respectively in the proceeds of taxation from Customs and Excise. Each of the two governing powers was invested with authority to levy direct taxation, consequently no difficulty arose in this respect, but the power to impose tariffs through Customs and Excise duties was vested in the Commonwealth Parliament. Hence it became necessary to decide some proportion of the revenue derivable from these sources of indirect taxation which should constitute by legal right the share of the States *quo* States in these imposts. In the previous issue of this Year Book the financial relations between the States and the Commonwealth were fully discussed and a statement presented showing the degree to which the Customs and Excise taxation serve to fulfil Commonwealth requirements. Information was given also regarding the relative magnitude of functions of State and Commonwealth Government.

POSTS AND TELEGRAPHS.

THE postal, telegraphic, and telephonic services of New South Wales became vested in the Commonwealth, under the provisions of the Commonwealth of Australia Constitution Act, and by proclamation these services were taken over on 1st March, 1901, and the Commonwealth Post and Telegraph Act was assented to on 16th November of the same year.

On 1st November, 1902, the Commonwealth Post and Telegraph Rates Act secured uniformity in all the States of the rates charged for the conveyance of newspapers and transmission of telegrams.

The postage rates on letters, letter-cards, printed papers, books, and magazines within each State were still continued until 1st May, 1911, when, by the Postal Rates Act, 1910, complete uniformity of postage rates was established, and the postage for letters within the Commonwealth or to any part of the British Empire was reduced to 1d. per $\frac{1}{2}$ oz.

New South Wales entered the Universal Postal Union as from 1st October, 1891.

Taking into consideration its large area, New South Wales possesses an excellent system of postal and telegraphic communication. The interstate system is good, and New South Wales is in direct communication with Europe and the rest of the world by means of the cables connecting with the various European, Asiatic, and the Canadian and South African telegraph lines, and the State is connected also with New Zealand. Wireless telegraphy is available for the transmission of messages to and from vessels at sea, and for the interchange of telegrams with Papua, New Zealand, Fiji, and other islands of the Pacific.

EARLY RECORDS.

No means of postal communication existed until 1809, when the first post office was established in Sydney. This establishment appears to have been merely a distributing office for letters and parcels arriving in Sydney; the conveyance of inland mails depended on constables and on private individuals, no arrangements having been made for the despatch of ship letters. The postmaster was empowered to charge on delivery to the addressee 8d. for every English or foreign letter of whatever weight, and for every parcel weighing not more than 20 lb., 1s. 6d., and exceeding that weight, 3s. The charge on colonial letters was 4d., irrespective of weight; and soldiers' letters were charged 1d.

Measures towards additional postal communication were not taken till 1825, when an Act was passed and a proclamation issued fixing the postage rates and salaries and allowances of postmasters, and inviting tenders for the conveyance of mails. The provisions of the Act, however, were not fully observed until 1828. In that year there were in the Sydney establishment one principal postmaster, one clerk, and one letter-carrier, in addition to eight country postmasters and a carrier at Parramatta. In 1837 a fortnightly mail was established between Sydney and Melbourne. Stamps were introduced in the same year in the form of stamped covers or envelopes, New South Wales being the first country in the world to adopt prepayment of postage by stamps.

In the year 1838 there were fifteen officers in the Sydney establishment. Within the borders of New South Wales, which at that time included Victoria and Queensland, there were forty post offices, the revenue of the

Department for the year being £8,390, and the expenditure £10,357. The New South Wales Government also made payments to the post office in New Zealand, which was not created a separate colony until 1841. Mail communication by land between Sydney and Adelaide was established in 1847, and the rate of postage on a single letter was fixed at 1s. 6d. An amendment of the Postal Act was made in 1849, when the postage on town letters was fixed at 1d., and on inland letters at 2d., while the postage on ship letters was 3d., in addition to the inland rate, and authority was given for the use of postage stamps in their present form.

The first annual report of the Postal Department in New South Wales was laid before Parliament in the year 1855, and at that time there were 155 post offices. The head office was in George-street, Sydney, occupying the same site as the present edifice. There were no electric telegraphs, and the Observatory, by means of flags and semaphores, signalled the arrival of vessels at the Sydney Heads. Prior to the opening of the first railway, in September, 1855, the Southern and Western mails were despatched from the General Post Office in mail-coaches every evening. During that year the total distance travelled by the postal contractors, by coach and on horse-back, was 1,023,255 miles. The number of letters passing through the post office was 2,114,179, of which 617,041 were addressed to places beyond New South Wales. The number of newspapers was 2,100,989, of which 1,281,613 were inland, and 819,376 were "foreign." Book parcels and packets were not reckoned separately, but were counted as letters. The revenue of the Department for the year was £24,902, and the expenditure was £60,221. The staff numbered 223 officers, of whom fifty-six were connected with the office in Sydney. The annual report also indicates that communication with Victoria was effected three times a week.

POSTAL BUILDINGS.

In 1863 the construction of the present General Post Office at Sydney was commenced, the first part being opened in 1874. The headquarters of the Electric Telegraph Department and the Telephone Exchange are in the same building.

A commodious building, for use primarily as a parcel post office, has been constructed on a site adjacent to the Central Railway Station, Sydney.

During 1913, nine new post offices were erected in New South Wales at a total cost of £16,139, and additions and alterations were made to 28 offices. At the end of the year there were 2,596 post offices and receiving offices.

POSTAL FACILITIES.

Postcards were introduced in 1875, and letter-cards in 1894.

In the year 1856 the first iron letter-receivers were erected in Sydney; they are now available in all important centres of population.

A parcel post between New South Wales and oversea countries was established in 1886, and the inland and interstate parcel post was inaugurated on 1st October 1893. In the international parcels post service parcels may be sent practically to all parts of the world.

Postal parcels addressed to many oversea countries may be insured against loss or damage, and Customs duty may be paid by the sender of a parcel.

It has been proposed that the Postal Department, in conjunction with the Railway Department, should undertake the carriage and delivery of small parcels of agricultural produce. A trial service has been instituted in Victoria, where facilities are provided for cheap transmission from the country for delivery in Melbourne and within a radius of 6 miles of the General Post Office.

Value-payable Parcel Post.

Under the system of value-payable parcel post, the Department accepts for transmission within the Commonwealth parcels or letters sent in execution of orders, and collects from the addressees on behalf of the senders the charges due thereon. During 1913, the number of parcels posted in New South Wales was 12,175 and the value collected was £14,881, the revenue, including postage, commission on value, registration, and money-order commission being £1,343.

Customs Duty Parcels.

The number of parcels on which Customs duty was charged, and the amounts collected in New South Wales, during the years 1912 and 1913, were as follows:—

Year.	Parcels.	Amount Collected.
	No.	£
1912	39,495	75,994
1913	43,828	72,289

Registration of Postal Articles.

In order to ensure safe delivery, any letter, package, or newspaper may be registered on the payment of an additional fee of 3d., and registration is required of all articles of value. The number of registered articles posted and received in New South Wales during 1913 was 1,932,490.

NUMBER OF POST OFFICES, &c.

The following table shows for New South Wales the number of post offices, employees, income and expenditure in five-year periods from 1855 to 1913. For 1885 and succeeding years the number of persons employed and the income and expenditure relate to the Department as a whole; prior to that year the figures are for Post Office only. The number of persons employed is exclusive of mail contractors, who numbered 2,376 in 1913; temporary employees are included during the last four years. Also, from 1885, the income is exclusive of interest on Savings Bank balances; and the expenditure is exclusive of interest allowed to Savings Bank depositors:—

Year.	Post Offices in New South Wales.	Receiving Offices.	Persons employed in the Postmaster-General's Department.	Revenue.	Expenditure.
				£	£
1855	155	8	223	24,902	60,221
1860	289	*	289	45,613	71,391
1865	435	*	513	70,985	83,659
1870	562	*	690	84,441	86,722
1875	762	7	967	107,761	196,368
1880	927	119	1,536	194,084	268,128
1885	1,115	202	3,205	485,489	573,617
1890	1,338	325	3,821	637,975	677,216
1895	1,470	502	5,063	648,852	763,259
1900	1,668	521	5,516	831,340	764,227
1905	1,744	522	5,890	1,022,830	970,808
1910	1,911	526	8,622	1,437,748	1,339,891
1911	1,948	542	9,255	1,478,091	1,567,801
1912	2,000	559	10,332	1,486,956	1,727,577
1913	2,025	571	10,823	1,628,177	2,325,946

* Not recorded.

POSTAL MATTER CARRIED.

The following return, showing the letters, &c., posted and received, will give an idea of the magnitude of the work done by the Post Office in New South Wales :—

Year.	Letters, Post-cards and Registered Articles.	Newspapers.	Packets and Book Parcels.	Parcels.
1855	2,114,179	2,100,989	*...	...
1860	4,230,761	3,668,783	83,736	...
1865	6,328,353	4,689,858	249,904	...
1870	7,083,500	3,814,700	157,700	...
1875	13,846,686	6,262,600	357,000	...
1880	21,885,860	13,791,000	711,600	...
1885	39,692,200	25,567,400	3,446,500	...
1890	63,695,100	40,597,200	8,939,600	21,300
1895	69,373,708	44,902,900	11,259,200	422,800
1900	79,602,694	51,500,920	13,846,700	711,700
1905	111,958,588	44,599,104	22,083,000	994,100
1910	163,754,056	66,963,559	39,008,610	1,600,426
1911	189,656,401	71,619,194	36,283,500	1,748,822
1912	192,996,376	68,696,648	32,687,904	2,067,652
1913	212,639,659	64,874,811	38,583,889	2,318,453

* Included with letters.

In 1855 the number of letters and newspapers, inland and foreign, was slightly over 2 millions each, whereas in 1913 the number of letters and post-cards had grown to over 212½ millions, and newspapers to nearly 65 millions, without reckoning nearly 41 millions of packets and parcels.

Further particulars of the postal matter carried during 1913 are shown below :—

Postal Matter.	Inland (Counted Once).	To and from other Australian States.	To and from Countries outside Australia.	Total.	Per Head of Population.
Letters and post-cards	140,760,613	40,089,623	29,856,933	210,707,169	116
Registered articles ...	1,262,677	349,174	320,639	1,932,490	1
Newspapers ...	31,448,119	21,574,456	11,852,236	64,874,811	36
Packets and parcels ...	23,105,179	12,766,389	5,030,774	40,902,342	23

During 1913 the postal matter posted and received per head of population was—Letters, post-cards, and registered articles, 117 ; newspapers, 36 ; and packets and parcels, 23. A large percentage of circulars classified previously as packets have been sent as letters since the reduction of letter rates.

DEAD LETTERS, &C.

The number of dead letters and other postal articles dealt with by the Post Office in New South Wales during 1913 was as follows :—

How dealt with.	Letters.	Post-cards.	Packets.
Returned direct to senders, or delivered ...	466,119	7,550	524,503
Destroyed in accordance with Act ...	134,470	18,609	49,636
Returned as unclaimed to other States or Countries ...	136,892	7,402	4,689
Total ...	737,481	33,561	578,828

In addition to the above, over 600,000 unclaimed newspapers were handled.

The letters, &c., which passed through the Dead Letter Office are very numerous, but from official reports it appears that much carelessness is displayed by some people in connection with their correspondence, and numbers of letters, including many containing articles of large value, are wrongly or insufficiently addressed, or not addressed in any way. During 1913 the dead letters included 7,022 originating in New South Wales, which, on being opened, were found to contain bank notes, coin, &c., to the value of £37,077.

RATES OF POSTAGE.

Letters.

The charge on letters between New South Wales and the United Kingdom, which had for a long period been at the rate of 6d. per $\frac{1}{2}$ oz. *via* Italy, and 4d. by the long sea route, was reduced in 1891 to 2 $\frac{1}{2}$ d., the reduced rates being extended, when New South Wales entered the Postal Union, to all foreign countries embraced in the Union. A further reduction, made in 1905, to 2d. for a letter sent to the United Kingdom, was afterwards extended to all other parts of the British Empire.

Although the Commonwealth did not participate in the Imperial Penny Postage scheme at its inception, it was decided in 1902 to accept in Australia, with the concurrence of the despatching countries, letters from other parts of the Empire bearing postage at the rate of 1d. per $\frac{1}{2}$ oz., and arrangements were concluded with New Zealand, Canada, and the United Kingdom. The United Kingdom adopted 1 oz. as the initial weight, and approval was given in 1907 for the acceptance in Australia of letters from any other part of the Empire bearing postage at the rate of 1d. per oz.

On 1st May, 1911, the penny postage rates were introduced; the rate for letters throughout the Commonwealth and to any part of the British Empire, New Hebrides, Banks and Torres Islands, is 1d. per $\frac{1}{2}$ oz., and to all other places 2 $\frac{1}{2}$ d. per $\frac{1}{2}$ oz.

Post Cards and Letter Cards.

The charges for post cards are—Within the British Empire and to the United States of America, 1d. each; to other places, 1 $\frac{1}{2}$ d. each; and for letter cards, within the Commonwealth, 1d. each; to other places, ordinary letter rates are charged.

Newspapers.

To secure transmission at newspaper rates, it is required that newspapers be registered at the General Post Office, and both newspapers and supplements must be printed and published within the Commonwealth. At the end of the year 1913 there were 845 publications registered for transmission by post as newspapers in New South Wales.

Newspapers are transmitted to any place within the Commonwealth, Papua, New Zealand, and Fiji, at the rate of $\frac{1}{2}$ d. for every 10 oz. or fraction thereof; to the United Kingdom, for each newspaper not exceeding 8 oz., 1d.; exceeding 8 oz., but under 10 oz., 2 $\frac{1}{2}$ d.; every additional 2 oz., $\frac{1}{2}$ d.; and to all other places at the rate of 1d. for each newspaper not exceeding 4 oz. in weight, with $\frac{1}{2}$ d. for every additional 2 oz. or fraction thereof. Newspapers transmitted wholly by sea to the United Kingdom are charged at the rate of 1d. for every 16 oz.

Parcels.

No parcel exceeding 11 lb. in weight will be accepted for transmission by post. The inland rate for a parcel weighing 1 lb. is 6d., increasing at the rate of 3d. per lb. to 3s. for 11 lb. The charge for interstate parcels is 8d. for 1 lb., increasing at the rate of 6d. per lb. to 5s. 8d. for 11 lb.

Books.

Books up to 5 lb., for delivery within the Commonwealth, and to Papua; if printed in Australia, are charged $\frac{1}{2}$ d. per 8 oz., or part thereof; for books printed outside Australia the postage is $\frac{1}{2}$ d. per 4 oz., or part thereof. Books to New Zealand, Fiji, New Hebrides, and British Solomon Islands are charged at the rate of 1d. per 4 oz.; and to other places 1d. per 2 oz.

Commercial Papers, &c.

Special low rates have been fixed for the carriage by post of commercial papers, merchandise, patterns, and samples.

The rate for commercial papers within the Commonwealth and to Papua, New Zealand, and Fiji is 1d. per 2 oz.; the rates to other places are for 2 oz., 3d.; for every additional 2 oz. up to 10 oz., $\frac{1}{2}$ d.; and for every additional 2 oz. from 10 oz. to 5 lb., 1d.

For *bonâ fide* trade patterns and samples the rate to all places is 1d. for every 2 oz. Merchandise may be transmitted to any place within the Commonwealth to Papua, New Zealand, and Fiji at the rate of 1d. for every 2 oz. up to 1 lb.; to other places, parcel rates are payable.

Printed papers up to 5 lb. weight, for delivery within the Commonwealth, New Zealand, Fiji, New Hebrides, and British Solomon Islands are charged $\frac{1}{2}$ d. per 2 oz. or part thereof; to other places the charge is 1d. per 2 oz. or part thereof.

POSTAGE STAMPS.

While the book-keeping clauses of the Constitution Act of the Commonwealth remained in operation, postage stamps were valid for use only within the States in which they were issued; but on 13th October, 1910, the stamps issued in each State were made available for use throughout the Commonwealth, pending the issue of stamps of uniform design.

The uniform stamps were issued in January, 1913, but during that year the design for the penny stamp was altered, the new issue commencing on 8th December, 1913.

Cancelled sets of Commonwealth postage stamps may be sold to the public at 10s. per set; those of values from $\frac{1}{2}$ d. to 5s. are lightly date-stamped, and those of higher values are printed with the word "Specimen."

Licensed vendors of postage stamps may be allowed 2 $\frac{1}{2}$ per cent. commission, up to a maximum of 30s. per week. During the year ended 30th June, 1914, an amount of £5,519 was paid as commission to licensed vendors in New South Wales, the total so paid for all States of the Commonwealth being £20,258.

MAIL ROUTES AND SERVICES.

The mail routes in New South Wales in the year 1866 were 8,231 miles in length, whilst in 1913 the routes totalled 50,668 miles represented by railway, 3,948 miles; water, 2,820 miles; and other, 43,900 miles.

The distances travelled by mail conveyances were railway, 5,609,018 miles; water, 1,737,476 miles; other, 9,878,011 miles; total, 17,224,505 miles. The number of inland mail services in 1913 was 2,003 and the cost of conveyance, £288,888; the road services cost £167,077 and the railway services £121,811.

The Postmaster-General establishes new mail services in the country districts of the State when the persons interested provide half the difference between cost and revenue.

The number of mails despatched and received at the post offices of New South Wales during 1913 is shown below:—

	Despatched: No.	Received. No.
General Post Office, Sydney—		
Inland	541,176	462,773
Inter-State	26,479	17,577
Foreign	7,666	5,755
Total	575,321	486,105
Other Offices	3,093,679	3,009,410
Total all Offices ...	3,669,000	3,495,515

The weight of New South Wales mail matter conveyed by non-contract vessels at poundage rates was—letter, 180,637 lb.; other articles, 20,923 cwt. The rates paid amounted to £17,011.

OCEAN MAIL SERVICES.

Regular steam communication with England was established in 1852, but the service was suspended two years later on the outbreak of the Crimean war, and was not resumed until 1856. As this service proved unsatisfactory, a line was started in 1866 to carry mails from Sydney, *via* Panama, but it was terminated two years later.

San Francisco Route.

On the completion of the railway across America in 1869, a monthly service, *via* San Francisco, was inaugurated, under contract with the New Zealand Government, in which New South Wales participated under certain conditions until the expiration of the contract in 1871. The route was re-established in 1873 by the Governments of New South Wales and New Zealand, in consequence of an alteration in the arrangements regarding the Suez service as shown below. Although the San Francisco route declined in importance as regards this State, by reason of the subsequent development of the weekly service *via* Suez, New South Wales contributed towards the maintenance of the service under various conditions, until the expiration of a contract between New Zealand and the Union Steamship Company in 1900. After that date Australian mails were despatched every three weeks at Postal Union rates, *via* San Francisco, by the American vessels of the Oceanic Steamship Company, which had a contract with the United States Government, but this service was suspended in April, 1907. After an interval of some months another service was for a short time carried on by a British firm. The Oceanic Company resumed the San Francisco to Sydney service in 1912, making monthly trips.

In January, 1909, New Zealand entered into a contract for a mail service between New Zealand and Papeete, connecting with the United States service between Papeete and San Francisco. This contract was determined in October, 1910, and a new service from New Zealand, *via* Raratonga and Papeete to San Francisco, was in 1911 extended to Sydney; by alternation with the Vancouver line fortnightly communication with America is provided, the mails from Australia being carried at poundage rates.

Vancouver Service.

In 1893, direct communication with Canada was established by the inauguration of a regular monthly service between Sydney and Vancouver, *via* Wellington, subsidised by New South Wales and New Zealand. In 1899, the route was altered and Brisbane was substituted as a port of call instead of Wellington. Since the expiration of a contract in July, 1911, the call at Brisbane has been discontinued, and the Commonwealth has ceased to be a party to the contract for this service, though mails are despatched at Postal Union rates by the vessels sailing under a new contract, subsidised by Canada and New Zealand, and calling at Auckland, Suva, and Honolulu.

Suez Route.

After the establishment of a mail route across America, there was a considerable improvement in the service *via* Suez. The Peninsular and Oriental Company continued to carry mails under contracts negotiated by the Imperial Government—the Australian Governments contributing a share of the cost, in accordance with the weight of postal matter transmitted. For some years prior to 1874, the mails between England and Australia were conveyed under two contracts—one between England and Point de Galle, Ceylon, and one between Point de Galle and Sydney. In 1873, the Imperial Government decided to discontinue the latter contract, but offered to convey Australian mails between England and Galle, or Singapore, or San Francisco. Subsequently Victoria entered into a contract with the Peninsular and Oriental Company for a service between Galle and Melbourne, the Queensland Government conveyed mails to Singapore, *via* Torres Straits—a service which was established in 1864—and the Governments of New South Wales and New Zealand completed arrangements for a subsidised service to San Francisco. By mutual agreement, the contracting States for each mail service arranged to carry mails for the other States at poundage rates.

In 1878, the Orient Company commenced to carry mails *via* Suez, at non-contract rates until 1883, when the first contract was made with New South Wales, payment being based on the weight of letters carried.

Facilities for the transmission of mails to Europe were afforded also by the inauguration of the Messageries Maritimes line in 1882, and of the Nord-deutscher Lloyd in 1886.

Until 1888, however, mail communication between Australia and the United Kingdom, *via* Sydney, was dependent mainly upon the two contract services, *viz.*, the Orient Company, fortnightly between Sydney and Suez, by arrangement with the New South Wales Government, and the Victorian contract with the Peninsular and Oriental Company, fortnightly between Melbourne and Colombo. These services provided weekly connection with the mail lines from England to China and India, maintained by the Imperial Government.

In 1887 arrangements were made by which all the States of Australia agreed to take joint action with regard to subsidising the services *via* Suez, and at the expiration of contracts in 1888 the Imperial Government negotiated with the Peninsular and Oriental and the Orient Companies for two fortnightly services, alternating to secure weekly communication. Each company was subsidised at the rate of £85,000 per annum—£95,000 being paid by the Imperial authorities and £75,000 contributed by the Australian Governments, apportioned amongst the States on a population basis.

After being renewed for various periods on somewhat similar conditions, these contracts terminated on 31st January, 1905.

In consequence of the determination of the Federal Parliament, as expressed in the Post and Telegraph Act of 1901, to provide for the exclusive employment of white labour on contract mail steamers, the Imperial authorities arranged to take separate action to secure a fortnightly service to Australia, and entered into a contract with the Peninsular and Oriental Company, paying one subsidy for the conveyance of mails to Australia, East India and China. On the expiration of this contract on 31st January, 1908, it was renewed for a further period of seven years. Mails from Australia are still carried by the P. and O. Company, with payment at postal union rates.

The Commonwealth decided to provide another fortnightly service to alternate with the Imperial contract, and in April, 1905, completed an agreement with the Orient Company for the carriage of mails fortnightly between Naples and Adelaide, *via* Suez, at an annual subsidy of £120,000, the period of transit being fixed at 696 hours. It was subsequently arranged that the steamers of this line should continue the voyage from Sydney to Brisbane upon the payment of an additional subsidy. The agreement lasted until 31st January, 1910, when a tender submitted by the Orient Company for a ten years' service, dating from 1st February, 1910, was accepted.

The contract provides that upon each mail ship a certain amount of insulated space for the carriage of perishable produce shall be provided, that white labour only shall be employed, that the vessels must call at Brisbane each trip, and that the periods of transit must be the same as are provided in the Imperial contract with the Peninsular and Oriental Company, *viz.*, Taranto to Adelaide 638 hours, and Adelaide to Taranto 650 hours, the amount of subsidy being £170,000 per annum.

In addition to the weekly service thus provided by the British lines, the Messageries Maritimes and the Norddeutscher Lloyd steamships carried mails for the Commonwealth at poundage rates.

Oversea Mails.

The postal matter carried to and from New South Wales by each of the services during 1913, is shown below :—

Postal Articles.	Orient Royal Mail.	P. & O. Co.	Canadian-Australian, via Vancouver.	Norddeutscher Lloyd.	Messageries Maritimes.	Oceanic S.S. Co.
Interstate—						
Letters and Postcards...	436,697	411,444	.....	4,034	380	.....
Newspapers ...	471,071	377,229	.....	2,847	.....	.....
Packets and Parcels ...	78,285	79,947	.....	1,205	.....	.....
Oversea—						
Letters and Postcards...	9,191,313	8,419,718	888,624	44,742	34,874	663,463
Newspapers ...	2,264,300	2,171,643	401,254	10,545	8,085	323,035
Packets and Parcels ...	649,973	626,246	142,148	7,111	3,473	98,175

The European mails, *via* Suez, are landed at Adelaide, from which city the journey by train to Sydney occupies forty-two hours, including a stay of seven hours at Melbourne.

The following table shows, as far as possible, the average time and quickest time occupied in the transmission of letters by various routes between London and Sydney during 1913:—

Service.	London to Sydney.		Sydney to London.	
	Average Time.	Quickest Time.	Average Time.	Quickest Time.
<i>Viâ Suez—</i>	d. h.	d. h.	d. h.	d. h.
Per Orient Royal Mail Line	31 0	30 0	31 10	31 0
„ Peninsular and Oriental S. N. Co.	31 0	31 0	31 6	31 0
„ Norddeutscher Lloyd ... ..	.....	.....	36 6	35 0
„ Messageries Maritimes ... ..	.....	.....	36 2	34 0
<i>Viâ Vancouver—</i>				
Per Canadian-Australian	38 1	35 0	38 4	37 0
<i>Viâ San Francisco—</i>				
Per Oceanic S.S. Co.	33 1	33 0	31 1	30 0

Pacific Islands Mail Service.

Between the years 1888 and 1891 the Government of New South Wales contributed towards the cost of steam communication between Sydney, New Caledonia, New Hebrides, and other islands of the Pacific. The system was revived after a lapse of several years, and in 1900 a contract for a period of ten years was made for a monthly steam service, including conveyance of mails, between Sydney, New Hebrides, Santa Crux, and Solomon Islands, for an annual subsidy of £3,600, which was increased to £4,000 on the condition of employing white labour only when the Commonwealth Government took over the contract in 1901. The subsidy was increased at various dates to provide extensions to Gilbert and Ellice Islands and to British New Guinea. Under the existing agreement which commenced in September 1910, for five years, a mail service to Papua, Solomon Islands, New Hebrides, and the Marshall, Gilbert, and Ellice Islands is provided at an annual subsidy of £19,850.

TELEGRAPHS.

The electric telegraph was first used by the public of New South Wales on 26th January, 1858, when the line from Sydney to Liverpool, 22 miles in length, was brought into operation. The network of telegraph lines now embraces all the important centres of population throughout the State. In 1913 there were 1,602 stations, exclusive of 233 railway offices, and 16,024 miles of lines open, with 34,913 miles of wire in actual use. The following table gives a view of the telegraph business transacted in New South Wales at intervals since 1900:—

Year.	Telegraph Stations.	Telegrams.			Revenue received.
		Transmitted, and delivered (Inland counted once).	In Transit.	Total.	
1900	961	3,058,720	161,187	3,219,907	£ 174,895
1905	1,069	3,576,045	261,917	3,837,962	156,956
1906	1,122	4,142,881	309,625	4,452,506	191,665
1907	1,278	4,548,256	346,027	4,894,283	207,525
1908	1,290	4,784,338	365,425	5,149,763	222,802
1909	1,329	4,810,302	367,660	5,177,962	215,446
1910	1,399	5,220,962	386,216	5,607,178	245,245
1911	1,406	5,505,935	357,625	5,863,560	253,398
1912	1,384*	5,917,219	447,771	6,364,990	278,665
1913	1,602*	6,116,945	456,722	6,573,667	297,965

* Excluding railway offices, 87 in 1912 and 233 in 1913.

Although the telephone system has been developed extensively during recent years, there has been no decline in the number of telegraph messages.

The telegrams received and despatched during 1913 were classified as follows :—

Inland (counted once)	3,765,203
Interstate	2,048,420
To and from other countries (cablegrams)	303,322
In transit	456,722
Total	6,573,667

Excluding the telegrams in transit, the messages represented 3 3 per head of population.

CABLE SERVICES.

Eastern Extension Cables.

Cable communication between Australia and Europe was opened in 1871 by means of a submarine cable from Java to Port Darwin, and in 1872 messages were transmitted by the overland telegraph line from Darwin to Adelaide, distance 1,971 miles. Under an agreement made with New South Wales and Victoria, the Cable Company undertook to duplicate the line, the second cable being brought into use in November, 1879, and up to October, 1899, the company received from the Australian States (excepting Queensland) a subsidy of £32,400 per annum. These lines are controlled by the Eastern Extension Company. This company, under agreement with South Australia, Western Australia, and Tasmania, which New South Wales subsequently joined, provided for a reduction in the charges for cablegrams, and for the construction of a cable between Durban and Australia *via* Cocos. The line was opened for business in 1901, the Australian landing station being at Perth. By agreement with the Western Australian Government, dated January, 1899, the Eastern Extension Company was also empowered to lay a cable from Java to Roebuck Bay in Western Australia.

A cable, also constructed by the Eastern Extension Company, connecting New Zealand with New South Wales, was opened for communication on 20th February, 1878, and was subsidised for ten years. The landing places of this cable are at La Perouse, near Sydney, and at Nelson, New Zealand. In 1890 the Company laid a second cable to New Zealand without guarantee.

New Caledonia Cable.

In 1893 a cable from Gomen, New Caledonia to Bundaberg, Queensland, was opened by a French company, to whom New South Wales and Queensland each agreed to pay an annual subsidy of £2,000 for thirty years. The total amount, £4,000 per annum, is now paid by the Commonwealth.

Pacific Cable.

In 1899 it was decided by the Governments of the United Kingdom, Canada, Australia, and New Zealand to construct a cable across the Pacific Ocean, touching only British territory on its way from Australia to Canada. This line, which was completed on 31st October, 1902, connects Southport, in Queensland, with Vancouver *via* Norfolk Island, Fiji, and Fanning Island. There is also a branch from Norfolk Island to Doubtless Bay, New Zealand. The cable cost about £2,000,000, and its total length is 7,838 nautical miles. It is managed by the Pacific Cable Board, consisting of representatives from the various Governments. In 1910 the Pacific Cable

Board leased a telegraph line between Bamfield, British Columbia, and Montreal, which is worked by their staff, and thus extended the Pacific cable system from Australia across Canada to Montreal. Traffic is carried across the Atlantic by the cables of the Anglo-American Company and the Commercial Cable Company.

With a view to reducing the cable charges between Australia and the United Kingdom, a proposal to nationalise the Atlantic Cable, was made at the Imperial Conference in London in 1911. This proposal failed to receive approval, but arrangements have been made for the transmission of deferred telegrams at half rates and for week-end cable letters, as described below.

In 1911, authority was given to the Pacific Cable Board to lay a second direct cable between Australia and New Zealand. The landing places adopted for this line are Bondi Bay, near Sydney, and Muriwai Creek, on the West Coast of the North Island, New Zealand, the distance being about 1,200 miles. From the landing points connections were made with Sydney and Auckland respectively, and a new length of submarine line was laid to provide direct communication between Auckland and Doubtless Bay. This cable which was brought into operation in November, 1912, by duplicating the two southern sections of the Pacific Cable, provides accelerated service between Australia and New Zealand by avoiding the land line between Southport and Sydney.

In connection with the working of the Pacific Cable for the year ended 31st March, 1914, the amount to be made good by the Commonwealth was £6,650, as compared with £10,757 in the previous year, and £29,250 in the year following the inauguration of the cable.

The payment provides for the Commonwealth share of the working expenses and maintenance of the cable, for the liquidation of the original cost and interest, and for a renewal fund towards which a sum of £30,000 is set aside each year.

Tasmanian Cable.

The cable of 180 miles, connecting Tasmania with the mainland of Australia was constructed and opened for traffic in 1869, under an agreement dated January, 1868, which gave the constructing company the exclusive right of submarine telegraphic communication between Victoria and Tasmania for twenty years. The cable was subsequently acquired by the Eastern Extension Company, and the period extended for another twenty years. At the expiration of this agreement in April, 1909, two new cables laid by the Commonwealth Government between Flinders, Victoria, and Low Head, Tasmania, were opened for traffic.

Cable Lines.

The following statement shows the particulars of the cable lines giving communication from Sydney :—

To Europe—

- via Darwin and Banjoewangie, Java (duplicate).
- via Perth, Cocos, and Durban.
- via Roebuck Bay and Banjoewangie.
- via Southport, Norfolk Island, Fiji, Fanning Island, and Canada.

To New Zealand—

- via La Perouse and Nelson (duplicate).
- via Southport, Norfolk Island, and Auckland.
- via Bondi and Muriwai Creek.

To New Caledonia—

- via Bundaberg and Gomen.

To Tasmania—

- via Flinders and Low Head (duplicate).

Cable Messages.

The following table gives a comparison of the cable business transacted in New South Wales during the last ten years, excluding messages to and from Tasmania. Messages in transit are excluded also, but the receipts from such business are included in the amount of revenue shown. It will be seen that the cable messages despatched and received have increased steadily since 1904.

Year.	Cable Messages.		Amount Collected.	
	Sent from New South Wales.	Received in New South Wales.	Total.	Portion due to Commonwealth Government.
			£	£
1904	76,713	68,223	142,316	7,484
1905	82,519	81,548	160,298	8,167
1906	96,478	93,256	181,587	9,097
1907	106,830	103,047	192,625	9,681
1908	108,634	103,870	190,266	9,748
1909	108,031	102,785	187,606	9,484
1910	119,657	115,619	219,492	11,515
1911	129,809	123,910	239,655	12,895
1912	146,049	146,586	271,037	15,259
1913	149,318	154,004	293,769	16,435

TELEGRAPH AND CABLE RATES.

The rates for the transmission of telegrams within New South Wales and to the other States of the Commonwealth were determined by the Post and Telegraph Rates Act, 1902, and came into force on 1st November, 1902. For ordinary telegrams not exceeding sixteen words, including the address and signature, the charges are 6d. in town and suburban districts within prescribed limits, or within 15 miles of the sending station; 9d. to other places within the State; and 1s. for messages sent to any other State of the Commonwealth; in each case an extra charge of 1d. is made for each additional word. Double rates are imposed for the transmission of telegrams on Sunday, Christmas Day, and Good Friday, and between the hours of 8 p.m. and 9 a.m., and for urgent telegrams.

Telegrams may be sent to any telegraph office in the Commonwealth, to be forwarded thence by post to any foreign destination, on payment of postage in addition to the charge for the telegraph transmission.

The rates per word for cables sent from New South Wales are:—To Norfolk Island, 3d.; New Zealand, 4½d.; New Caledonia, 9d.; Suva, Fiji, 8d.; Fanning Island, 2s.; United Kingdom, 3s.; Cape Colony, Orange River Colony, and Transvaal, 2s. 3d.; Durban, Natal, 2s. 2d.; Vancouver, via Pacific, 2s. 4d. The rate per word for press telegrams to the United Kingdom is 7½d., and to Vancouver 3½d. per word.

LETTER TELEGRAMS.

Letter telegrams were introduced in February, 1914; messages may be telegraphed during the night to certain offices and thence forwarded as ordinary letters—that is, delivered by first letter delivery, or despatched to address by mail. The messages must be written in plain language. The charges throughout the Commonwealth are—up to 40 words including address and signature, 1s., each additional word ½d.; double rates are charged on Sundays. Letter telegrams may be exchanged between any

offices which are open for the receipt of ordinary business between 7 p.m. and midnight, or for ordinary or press business after 7 p.m.; there are 59 offices in the Commonwealth which take part in this service.

DEFERRED TELEGRAMS.

A system of deferred telegrams came into operation on 1st January, 1912, by which telegrams, written in plain language, and subject to a delay not exceeding twenty-four hours, may be sent at half ordinary rates to those countries which have adopted the service, including the United Kingdom and all British Possessions to which the rate per word is not less than 10d. Besides British territories the Commonwealth exchanges deferred telegrams with a number of foreign countries.

Deferred press telegrams, via Pacific, subject to a delay of eighteen hours, may be exchanged between Australia and the United Kingdom at the rate of 4½d. per word; and between Australia and Vancouver, 1½d. per word.

WEEK-END CABLE LETTERS.

An important system came into operation on 4th January, 1913, by which week-end cable letters may be exchanged between the Commonwealth and the countries indicated in the following statement. The cable letters reaching a cable station before midnight on Saturday are forwarded for delivery on the following Tuesday morning, or if practicable, on Monday; the messages must be written in plain language. Cable letters may be transmitted also to Great Britain or Canada for onward transmission by registered post from the telegraph office of destination to other countries; for this service a fee of 5d. is charged in addition to the rates shown below:—

Country.	Rate per Word.	Minimum Charge per Telegram.
	d.	s. d.
United Kingdom	9	15 0
Union of South Africa	7	11 8
India, Ceylon and Burmah	7½	12 6
Canada	7d. to 10d.	11s. 8d. to 16s. 8d.
Newfoundland	8½	13 9
Portugal	9	15 0

SUBSIDISED PRESS CABLE SERVICE.

As a result of an inquiry in 1909 into the press cable service, the Federal Government arranged to pay a subsidy of £6,000, extending over a period of three years from 1st October, 1910, for the transmission of press cables by the Independent Press Cable Association of Australasia, to which any newspaper in the Commonwealth may subscribe at approved rates.

WIRELESS TELEGRAPHY.

The Postmaster-General holds the exclusive right to establish wireless stations in Australia, and to transmit messages, but may issue licenses to ship and private stations under prescribed conditions. General licences are issued in respect to ship stations on Australian ships only and experimental licences in respect to land stations only. Unless by special permission of the Postmaster-General, wireless telegraphy appliances on ships, other than war vessels, may not be used while the ship is moored in an Australian port or harbour.

The scheme for connecting Australia and the Pacific Islands by wireless telegraphy formulated by representatives of Australia and New Zealand

and approved by the Commonwealth Government, comprised the erection of stations at Sydney, at Doubtless Bay (New Zealand), and at Suva (Fiji), Ocean Island, also at Tulagi (Solomon Islands), and Vila (New Hebrides).

The majority of stations recommended have been erected by the several Governments.

The Commonwealth scheme of wireless telegraphy includes three high power stations for long distance communication forming the Australian unit of the Imperial scheme, and seventeen low-power stations, located at such intervals around the coast as to allow intercommunication, and directly intended for ship to shore communication.

The high-power stations at Sydney and Perth are open for traffic, and are worked under the Telefunken system. Preliminary arrangements have been made for the erection of the third high-power station at Darwin, capable of communication with Singapore.

The low-power stations are as follows; they are worked under the Balslie system devised by the Commonwealth Engineer for Radio-telegraphy, the hours of attendance being so arranged as to give continuous service around the coast:—

Victoria—Melbourne	Western Australia—Geraldton
Queensland—Brisbane	Roebourne
Rockhampton	Broome
Cooktown	Wyndham
Thursday Island	Esperance
Townsville	Tasmania—Hobart
South Australia—Adelaide	Flinder's Island
Mt. Gambier.	Northern Territory—Darwin
	Papua—Port Moresby.

The capital cost of the stations to 30th June, 1914, amounted to £158,384. A station was erected on Macquarie Island, south of Tasmania, to maintain communication between Australia and Dr. Mawson's Antarctic Expedition.

A large number of vessels trading with Australia have been fitted with wireless installation. In accordance with the conditions of the Commonwealth license, intercommunication between ships is compulsory, and the vessels are required to carry emergency apparatus capable of operating for six hours independently of the power supplied by the ship.

The following rates are charged for radio telegrams, in addition to a land line of 1d. per word:—To or from ships registered in Australia and New Zealand, coast station 3d. per word and ship station 2d. per word; to and from other ships, coast station 6d. per word and ship station not exceeding 4d. per word. Special rates apply to press messages and to official messages to or from ships of the British or Australian navies.

Wireless telegrams may be exchanged between the Commonwealth and Papua through the media of the Thursday Island and Port Moresby stations, the charges for ordinary telegrams being 2d. per word in addition to the Commonwealth land line charges. Radio-telegraph stations have been established at Rabaul and Wilhelmshaven, New Guinea, and at Nauru, Marshall Islands, for the transaction of public correspondence; the charges are 3d. per word in addition to land-line charges.

Radio-telegrams may be sent for transmission to vessels approaching or departing from Suva, at the rate of 10d. per word in addition to ordinary charges to Suva, and to the wireless stations at Taviuni and Labasa, Fiji, at the rate of 3d. in addition to cable rate to Suva.

The Commonwealth charges for relaying radio telegrams, irrespective of the number of Coast stations concerned in the relaying, are as follows:—When both the ships of origin and of destination are licensed in Australia or New Zealand, 4d. per word; when only one or neither of the ships is licensed in Australia or New Zealand, 7d. per word.

The Sydney Radio-telegraph station at Pennant Hills, which has a range of 1,250 nautical miles, was opened for traffic on 19th August, 1912; the hours of attendance are from 7 a.m. to 2 a.m. Pending the completion of the Pennant Hills station, a private station of the Australasian Wireless Company, at the Hotel Australia, Sydney, was made available for public business on 27th August, 1910. From the time of its establishment until it was closed, the number of messages received and despatched at this station was 1,789 and 676 respectively.

The business transacted at the Sydney station during the year ended 30th June, 1914, was as follows:—

	Messages Transmitted.	Messages Received.	Total.
Number	2,581	3,239	5,820
Words	50,259	32,317	82,576
Coast Station Charges ...	£442	£662	£1,104

The conditions in Australia are especially favourable for the use of radiotelegraphy for land communication; moreover, the cost of installation and maintenance of wireless is lower than that of ordinary telegraphy. It has been decided, therefore, to install wireless stations inland, to supply means of telegraphic communication where economic conditions do not warrant the construction of a land line, or where it is expedient to augment an existing land line service.

TELEPHONES.

The telephone system was established in Sydney in 1880, and exchanges have since been provided in many other important centres, the number in 1913 being 451. The first long-distance service in New South Wales was inaugurated in 1898, the connection being between Sydney and Newcastle, a distance of 102 miles. There are now several long-distance lines in operation. A telephone trunk line between Sydney and Melbourne was brought into use in 1907; Melbourne and Adelaide were connected by telephone in 1914.

The following table shows the growth of the telephone service during the last ten years:—

Year.	Exchanges	Connections (Subscribers' Lines).			Public Telephone.	Total miles of wire at end of year.
		Sydney and Suburbs.	Country.	Total.		
1904	61	11,046	2,092	13,138	98*	39,535
1905	64	11,909	2,315	14,224	114*	40,793
1906	76	12,670	2,783	15,453	137*	42,085
1907	96	14,634	4,355	18,989	167*	48,972
1908	113	15,392	6,022	21,414	313	59,694
1909	132	18,239	7,443	25,682	347	69,332
1910	268	20,203	9,914	30,117	446	83,018
1911	353	22,476	12,075	34,551	722	101,240
1912	385	24,787	14,113	38,900	818	108,870
1913	451	27,676	16,169	43,845	916	114,825

* Exclusive of public telephones in country districts.

A noticeable feature of the comparison is the extension of the telephone facilities in the country districts, where the subscribers' lines increased from 2,783 in 1906 to 16,169 in 1914. In order to reduce the cost of installation in the country districts, the telegraph lines have been utilised for telephonic purposes by means of superimposed apparatus, and in 1912, the height of poles, as prescribed by statute, was reduced. The regulations provide for the erection of telephone lines under guarantee; but the Department erects lines where the estimated cost does not exceed £100, and in other cases is prepared to bear 50 per cent. of the deficiency.

Until recently single lines were used for all the telephones in New South Wales, but metallic circuits have been introduced in the principal exchanges.

Public Telephones.

Telephone bureaux for the use of the public are placed in prominent positions in or near public buildings, post offices, railway stations, &c. In the year 1910 there were 446 of these bureaux, and in 1913 the number had been increased to 916.

A charge of 1d. is made for a conversation, not exceeding 3 minutes duration, with any subscriber within the network of the exchange to which the public telephone is connected.

Telephone Calls.

Interesting information regarding the average number of calls made in each division during 1913 is supplied in the following statement; for the purpose of comparison the particulars of the other States are included:—

State.	Lines connected.			Average outward calls daily, per line.		
	Metro-politan.	Suburban.	Country.	Metro-politan.	Suburban.	Country.
New South Wales	8,069	20,009	16,684	9·2	4·6	2·9
Victoria	9,047	12,247	8,798	9·6	5·2	1·7
Queensland	4,059	1,423	8,614	9·7	4·4	4·1
South Australia	4,987	1,275	1,700	8·8	7·8	1·9
Western Australia	2,875	1,631	3,056	7·8	7·2	3·3
Tasmania	1,507	136	1,812	6·7	3·1	3·0

Automatic Telephones.

The first Australian exchange to be fitted with an automatic switchboard was Geelong, in Victoria, where satisfactory results were obtained. In the Sydney area the automatic system has been installed at three suburban exchanges, and the work is proceeding at others; it has been estimated, when the system has been extended to cover 40,000 lines, a saving of at least £1 per instrument per annum should be effected.

TELEPHONE CHARGES.

Subscribers' Rates.

Prior to 31st January, 1907, the telephone subscribers were charged, under the flat-rate system, a fixed annual rental, irrespective of the number of calls made by them; but on that date a toll system was introduced throughout the Commonwealth, under which extra payment was required for all calls in excess of 1,000 in each half-year.

The financial results under this system were not satisfactory, and in 1909 it was decided that the rates should be revised; the revised scale of charges was brought into effect on 1st September, 1910:—

In telephone networks having a population of—	Radius of network with main Exchange as centre.	Minimum annual charge within two miles radius—		
		For an exclusive service.	For each subscriber or instrument on a two-party service.	For each subscriber or instrument on a three or more party service.
	Miles.	£ s. d.	£ s. d.	£ s. d.
From 1 to 10,000 ...	5	3 0 0	2 10 0	2 0 0
„ 10,001 to 100,000 ...	10	3 10 0	2 15 0	2 5 0
„ 100,001 upwards ...	10	4 0 0	3 0 0	2 10 0

In addition, all effective calls originated by each subscriber are charged as follows:—

Not exceeding 2,000 half-yearly, 2 calls for 1d.

All calls over 2,000 half-yearly, 3 calls for 1d.

The necessary equipment is provided and maintained by the Department.

Telephone Trunk Line Charges.

The charges for the use of trunk lines are based on the actual length of trunk line used; the rates for each conversation are as follows:—

Length of Trunk Line.	Between 8 a. m. and 7 p. m.		Between 7 p. m. and 8 a. m.	
	First three minutes.	Every additional three minutes.	First three minutes.	Every additional three minutes.
Miles.	s. d.	s. d.	s. d.	s. d.
Not exceeding 15 ...	0 2	0 2	0 2	0 2
15—20 ...	0 3	0 3	0 3	0 3
20—25 ...	0 4	0 3	0 4	0 3
25—35 ...	0 6	0 5	0 4	0 3
35—50 ...	0 8	0 6	0 4	0 3
50—75 ...	1 0	0 9	0 6	0 5
75—100 ...	1 4	1 0	0 8	0 6
100—150 ...	1 10	1 4	0 10	0 8
150—200 ...	2 4	1 9	1 2	0 11
200—250 ...	2 10	2 1	1 5	1 1
250—300 ...	3 4	2 6	1 8	1 3
300—350 ...	3 10	2 10	1 11	1 5
350—400 ...	4 4	3 3	2 2	1 8
Sydney-Melbourne ...	5 0	5 0	2 6	2 6
Melbourne-Adelaide...	4 8	3 6	2 4	1 9

Double the prescribed rates are charged on Sundays.

FINANCIAL RESULTS OF POSTAL SERVICES.

Viewing the postal services as important factors in the development of the country, it has not been the practice in Australia to regard the Post Office as an institution which should be self supporting; on the contrary, any financial loss incurred in the working of the services has been deemed to be counterbalanced by the national advantages gained. The accounts system of the Department for the year ended 30th June, 1913, was placed on a commercial basis, and for the whole Commonwealth a total deficit of

£407,102 was disclosed. During the year ended 30th June, 1914, the deficit amounted to £501,457; the results during the last two years are compared in the following statement:—

Particulars.	1912-13.	1913-14.
	£	£
Total earnings	4,243,292	4,523,368
Total working expenses	4,263,373	4,576,915
Deficit	20,081	53,547
Interest on capital	376,409	435,223
Pensions and retiring allowances	10,612	12,687
	387,021	447,910
Total deficit for Commonwealth	407,102	501,457

Particulars regarding the various branches in the State of New South Wales, during 1913-14, were as follows:—

Branch.	Earnings.	Working Expenses.	Net Earnings.	Interest on Capital.	Net Profit.	Net Loss.
	£	£	£	£	£	£
Postal	1,066,288	1,023,788	42,500	35,755	6,745	.....
Telegraph	297,083	314,919	(—) 17,836	30,375	.....	48,211
Telephone	389,018	481,117	(—) 92,099	79,470	.....	171,569
Wireless Telegraph	1,316	2,597	(—) 1,281	690	.....	1,971
Pensions and Interest on General Assets ... ..	.....	3,732	(—) 3,732	10,212	.....	13,944
Total, all branches	1,753,705	1,826,153	(—) 72,448	156,502	.....	228,950

The result in New South Wales for the year 1912-13 was a loss of £190,332. In connection with the telephone branch there was a loss of £124,549, the major portion being incurred in the working of the Sydney network, where the cost of operating as compared with other metropolitan areas is very high.

During 1913-14 the loss amounted to £228,950; the telephone branch showed a deficit of £171,569.

The results of the various divisions of the telephone branch during the last two years were as follows:—

Telephone Branch.	1912-13.		1913-14.	
	Profit.	Loss.	Profit.	Loss.
	£	£	£	£
Exchanges ... ..	.....	106,870	.....	152,200
Trunk lines ... ..	.....	18,790	.....	20,779
Non-exchange lines ... ..	.....	86	.....	495
Sydney-Melbourne trunk line	1,025	.....	915	.....
Total Net Loss ... ..	.....	124,549	.....	171,569

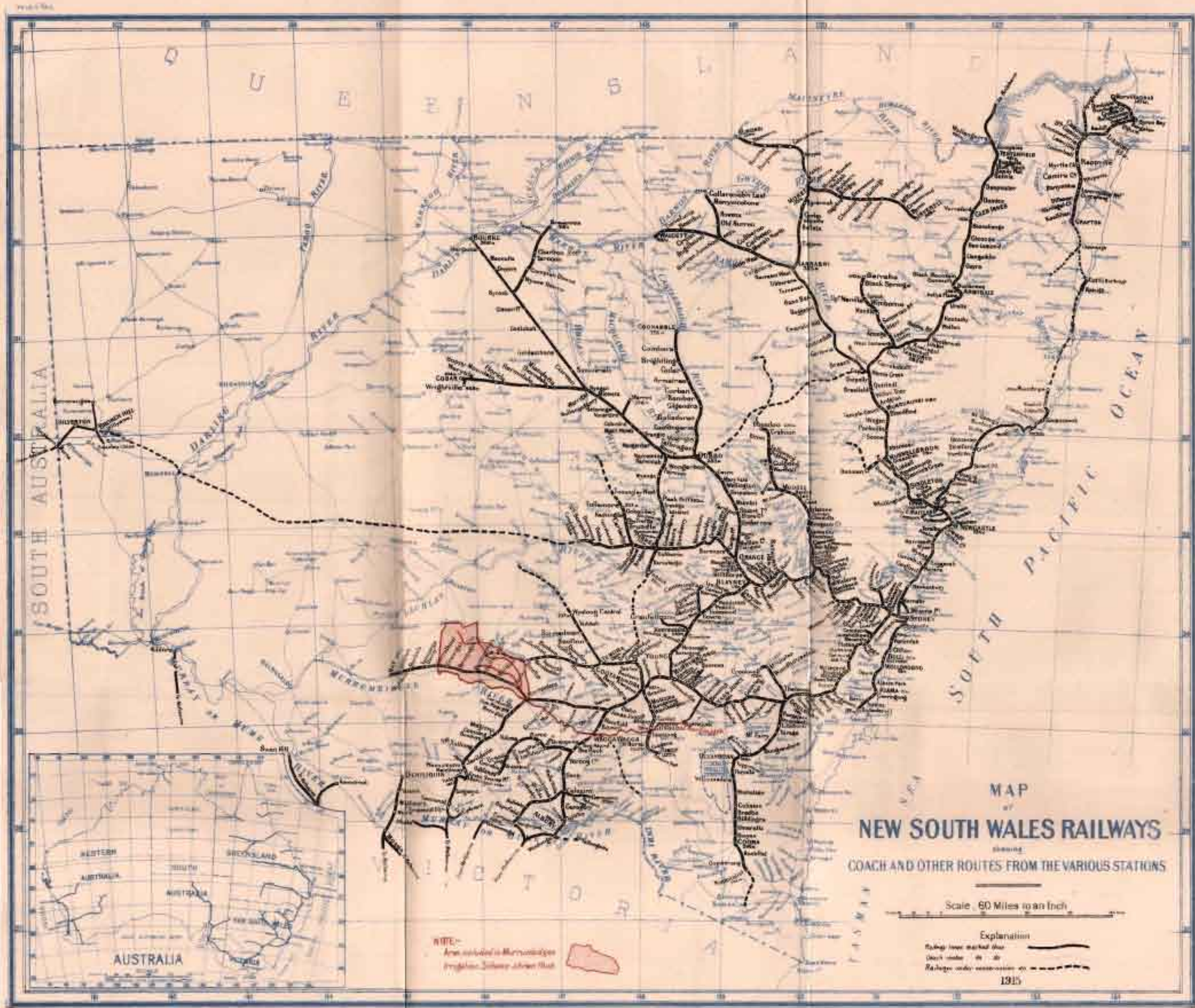
In the Sydney network there are 29 exchanges, and at each a day and night service is maintained. At 30th June, 1914, there were 29,823 subscribers, and the capital value, excluding sites and buildings, was £1,300,828. The direct working expenses for the year—including operating and general expenses, £121,646, and repairs and renewals, £126,907—amounted to £248,553, and the revenue was £247,452. Thus the direct working costs exceeded the revenue by £1,101, and if administration charges, depreciation, and interest were added the gross loss on the Sydney network alone would amount to £137,000 approximately. The high cost of operation is ascribed mainly to the peculiar configuration of the city and to the large number of exchanges necessary to the network.

Details regarding the results of the working of each branch of the postal services in each State of the Commonwealth are shown below—except where marked the figures represent net loss. Interest on capital has been charged at the rate of 3½ per cent.; the items, interest on general assets (stores, &c.), and pensions and retiring allowances, have not been taken into consideration in arriving at the Branch results, and such items as subsidies to ocean mail and cable services have been distributed amongst the States on a population basis—

Branch.	New South Wales.	Victoria.	Queensland.	South Australia and Northern Territory.	Western Australia.	Tasmania.	Total Commonwealth.
Branch—	£	£	£	£	£	£	£
Postal	(+) 6,745	(+) 104,085	31,213	(+) 28	51,539	3,951	(+)24,155
Telegraph	48,211	13,731	39,306	(+) 10,257	49,784	10,671	151,446
Telephone	171,569	60,384	21,729	3,129	29,812	9,801	296,424
Wireless Telegraph	1,971	1,449	12,720	5,097	11,919	2,500	35,656
Pensions and Retiring Allowances and Interest on General Assets..	13,944	14,838	5,253	1,732	5,190	1,129	42,086
Net Loss	228,950	(+) 13,683	110,221	(+) 327	148,244	28,052	501,457

(+) Denotes profit.

The Postal is the only branch which shows a profit, and the result may be considered satisfactory in view of the large area of the continent, and the relatively small and sparsely distributed population; moreover the introduction of the penny postage and the reduction of other postal rates has caused a diminution in revenue, and at the same time an increase in the volume of business. The operations of the telegraph branch involved a loss of £151,446; the only State showing a surplus was South Australia, which receives a large proportion of the revenue from cable traffic. It must be pointed out that no revenue has been credited in respect of meteorological and shipping telegrams transmitted free of charge.



MAP
of
NEW SOUTH WALES RAILWAYS
showing
COACH AND OTHER ROUTES FROM THE VARIOUS STATIONS

Scale 60 Miles to an Inch

Explanation
 Coaching routes marked thus ———
 Other routes ———
 Railways under construction ———
 1915

NOTE:
 Area enclosed in Murrumbidgee
 indicates Sydney Harbour Basin



RAILWAYS AND TRAMWAYS.

CONTROL OF STATE RAILWAYS AND TRAMWAYS.

THE control of the railways was vested in the Minister for Works, the direct management being undertaken by an officer under the title of Commissioner, until October, 1888, when the "Government Railways Act of 1888" was passed, afterwards consolidated as the "Government Railways Act, 1901," with the object of removing the management of the railways from political control, and vesting it in three Railway Commissioners, who pay net earnings into the Public Revenue, and report annually to Parliament. Under the "Railway Commissioners Appointment Act, 1906," the management of the railways and tramways was placed under the control of a Chief Commissioner, and two assistant Commissioners were appointed, one to assist in the management of the railways, and the other in that of the tramways.

The construction of the railway lines is, generally, undertaken by the Department of Public Works, the lines being transferred on completion to the control of the Railway Commissioners.

While the primary object of State railway construction has been to promote settlement, apart from consideration of the profitable working of the lines, the principle has nevertheless been kept in view that the railways should be self-supporting.

A statement of the capital cost of the State Railways and Tramways, and the result of working during the year ended 30th June, 1914, is shown below:—

	Railways.	Tramways.	Railways and Tramways.
	£	£	£
Cost of Construction and Equipment at 30th June, 1914	61,264,869	7,628,653	68,893,522
Year ended 30th June, 1914—			
Earnings	7,742,241	1,934,164	9,676,405
Working Expenses	5,409,820	1,669,033	7,078,853
Balance after Working Expenses	2,332,421	265,131	2,597,552
Interest on Capital	2,123,054	263,451	2,386,505
Surplus	209,367	1,680	211,047

RAILWAY CONSTRUCTION.

On 26th September, 1855, the first railway-line from Sydney to Parramatta, 14 miles in length, was opened for traffic, and communication was established between Newcastle and East Maitland on 11th April, 1857.

During the twenty years which followed the opening of the first line, railway construction progressed at a very slow rate, for in 1875 the lines in operation had reached a length of only 435 miles, an average of $21\frac{3}{4}$ miles per year; and during four years of the period, 1859, 1865, 1866, and 1874, no fresh extensions were opened. From 1876 to 1889 greater activity was manifested, 1,748 miles being constructed during the period, a yearly average of 125 miles. This rate of increase was not sustained, only 14 miles being

opened in the next three years. During the year ended June, 1893, 154 miles were opened; 150 miles in the succeeding year; and 30 miles in the year ended June, 1895. In the following year no new lines were opened; but during the year ended June, 1897, 108 miles were added, and in the course of the next twelve months, 52 miles. During the twelve years ended June, 1910, a further length of 937 miles was brought into use. In the years 1911 to 1914 the new lines opened amounted to 324 miles, the total length of line on 30th June, 1914, being 3,967 miles.

The progress in construction of the State railways of New South Wales may be traced in the table given below, the figures covering the period ending on 30th June in each year. Included in the mileage are the Campbelltown-Camden, and Yass tramways, which are worked with the railways:—

Period.	Opened during the period.	Total opened at end of period.	Period.	Opened during the period.	Total opened at end of period.
	miles.	miles.		miles.	miles.
1855-9	55	55	1895-9	205	2,706
1860-4	88	143	1900-4	575	3,281
1865-9	175	318	1905-9	342	3,623
1870-4	85	403	1910	20	3,643
1875-9	331	734	1911	118	3,761
1880-4	984	1,618	1912	71	3,832
1885-9	553	2,171	1913	98	3,930
1890-4	330	2,501	1914	37	3,967

In addition to the mileage shown above there were at 30th June, 1914, 746½ miles of sidings and crossovers, extensions of a total length of 881 miles were under construction, and 516 miles of line had been authorised for construction.

EXTENSION OF RAILWAY FACILITIES.

The progress of the State railways can be fairly gauged by comparing the population and area of territory to each mile of line open for traffic at different periods. Thus, in 1860 there were 4,979 persons to each mile of line, but by the end of the year 1880 the work of construction had proceeded at a rate so much faster than the increase in population that the average number of persons per mile had fallen to 881, the facilities afforded by the railway being more than five times as great as in the earlier year. In 1914 the average population per mile of line was 468. The decrease in the area of territory to each mile of line open has been very rapid, ranging from 4,434 square miles in 1860 to 78 square miles in 1914. The following statement shows the extension of railway facilities since 1860:—

Year.	Population to each Mile of Line open.	Area to each Mile of Line open.	Year.	Population to each Mile of Line open.	Area to each Mile of Line open.
	No.	sq. miles.		No.	sq. miles.
1860	4,979	4,433·9	1900	482	110·4
1865	2,861	2,170·4	1905	443	94·6
1870	1,471	915·6	1910	443	85·2
1875	1,360	710·2	1911	442	82·5
1880	881	365·6	1912	454	80·8
1885	548	179·2	1913	460	78·7
1890	523	142·2	1914	468	78·2
1895	501	122·6			

Duplication of Main Lines.

In addition to increasing the facilities by the construction of new lines, provision for the rapidly extending traffic is made by the duplication of existing main lines.

Works now in progress will duplicate the northern line to Werris Creek, 255 miles from Sydney; the western to Orange, 196 miles; the southern to Harden, 230 miles; and the South Coast line to Wollongong, 48 miles.

The following statement shows the length of line laid with one or more tracks at intervals since 30th June, 1900:—

At 30th June.	Single.	Double.	Triple.	Quadruple.	Total.
	miles.	miles.	miles.	miles.	miles.
1900	2,644	158½	...	8½	2,811½
1905	3,079½	193	...	8½	3,280½
1910	3,393	241½	...	8½	3,643
1911	3,476	276	...	8½	3,760½
1912	3,525½	290½	6½	8½	3,831½
1913	3,589½	316½	5½	18	3,930
1914	3,594½	338	7	27½*	3,967½

* Includes 1 mile 9 chains with five tracks.

RAILWAY SYSTEMS.

The railways of the State are divided into three branches, each constituting a separate system.

Southern Lines.

The southern system has several offshoots serving the most thickly-populated districts, and places Sydney, Melbourne, and Adelaide in direct communication.

Numerous branches traverse the fertile Riverina district. From Culcairn there are two branch lines, one connecting with Corowa on the Murray River, and the other with Germanton; from The Rock a line extends to Oaklands (Clear Hills); and from Wagga Wagga a branch to Tumbarumba is under construction. From Junee a branch runs to Narrandera, where it bifurcates, one branch extending westerly to the town of Hay and the other in a southerly direction to Finley. A line is under construction from Finley to connect with the Victorian railways at Tocumwal, a distance of 11½ miles. From Cootamundra a southerly branch carries the line to Tumut, and another, in a north-westerly direction, through Temora to Wyalong; an extension from Wyalong to Cudgellico has been authorised. The extension from Temora to Arah Park has been carried to Barellan, and will be continued to Griffith (Mirrool) in the Murrumbidgee Irrigation Area. From Stockinbingal, between Cootamundra and Temora, a cross-country line is under construction to connect with the western system at Forbes.

From Murrumburrah a branch has been constructed to Blayney, on the western line, thus connecting the southern and western systems of the State, and from Koorawatha, on this connecting line, a branch has been laid down to join Grenfell with the railway system, and there is a branch line from Cowra to Canowindra. From Galong a branch to Burrowa is in course of construction.

Nearer the metropolis, a branch from Goulburn to Nimmitabel brings the rich pastoral district of Monaro into direct communication with the metropolis. An extension from Nimmitabel to Bombala, a distance of 40 miles, is under construction. From Goulburn also a branch line has been opened to Crookwell.

A small offshoot from the main southern line joins Campbelltown with Camden, and on the main suburban section of the southern system there are branch lines from Clyde to Carlingford, and from Lidcombe to Regent's Park.

The South Coast, or Illawarra line, which forms part of the southern system, has been constructed to Nowra, connecting the metropolis with the coastal district of Illawarra, which is rich in coal and in the produce of agriculture. From the Illawarra line a branch extends between Sydenham and Bankstown, with Liverpool as the objective.

Western Lines.

The western system of railways extends from Sydney over the Blue Mountains, and has its terminus at Bourke, a distance of 508 miles. Leaving the mountains, the western line, after throwing out a branch from Wallerawang to Mudgee and Dunedoo which will be extended to join the north-western branch of the northern system at Burren Junction, enters the Bathurst Plains, and connects with the metropolis the rich agricultural lands of the Bathurst, Orange, and Wellington districts.

At Blayney, as before stated, the western line is joined with the southern system by a branch line to Murrumburrah; at Orange a branch runs through Parkes to Condobolin; an extension from Condobolin to Broken Hill, a distance of 373 miles, has been authorised. From Parkes a branch extends to Forbes on the Lachlan River. At Bogan Gate a branch line has been opened to Tullamore, and its extension to Tottenham is under construction. Further west, branch lines extend from Dubbo to Coonamble, from Narromine to Peak Hill, from Nevertire to Warren, and from Nyngan to the important mining district of Cobar. A connecting line between Peak Hill and Parkes is in course of construction. From Byrock a line branches off to Brewarrina. A connecting line from Dubbo to Werris Creek on the main northern line is under construction.

The western system includes also a short line from Blacktown to Windsor and Richmond.

Northern Lines.

The northern system originally commenced at Newcastle, but a connecting line crosses the Hawkesbury River by means of the far-famed Hawkesbury Bridge, thus making Sydney the centre of the whole of the railway systems of the State, and affording direct communication between the four State capital cities of Adelaide, Melbourne, Sydney, and Brisbane, a distance of 1,791 miles.

The northern system has a branch from Tamworth to Barraba, and there is a north-westerly branch from Werris Creek, *via* Narrabri and Moree, to Inverell, placing the Namoi and Gwydir districts in direct communication with the ports of Newcastle and Sydney. A branch from Moree to Mungindi, on the border of the State of Queensland, is under construction,

a section as far as Garah being open for traffic. There is also a branch line from Narrabri to Walgett, with a further branch at Burren Junction to Collarenebri East.

From Muswellbrook a branch is being constructed to Merriwa, a distance of 51 miles. There is a short line connecting Newcastle with the tourist district of Lake Macquarie, and another line runs from East Maitland to Morpeth.

At West Maitland the North Coast railway branches from the main northern line; the portion from West Maitland to Taree has been opened for traffic, and the construction is now proceeding in sections to meet a line which connects Murwillumbah on the Tweed River, with Grafton, on the Clarence River, a distance of 149 miles. On the Murwillumbah-Grafton line there is a branch from Casino to Kyogle. To provide an outlet for the produce of the fertile Dorriggo district, a branch of the North Coast line, from Dorriggo to Glenreagh, has been authorised. A short line, 13 miles in length, branches off the main northern line at Hornsby, and connects with the north shore of Port Jackson at Milson's Point, whence passengers are conveyed to the city by commodious ferry steamers.

Goods Lines.

A short line from the Central Station at Sydney connects with the wharves at Darling Harbour, and a line has been constructed from the stock saleyards at Flemington on the main suburban line to the Abattoirs at Homebush Bay; these lines are used for goods and live-stock only.

On account of the rapid growth of the traffic it has been found necessary to provide a means of access to the wharves, independent of the Central Station. This is being done by the construction of a line from Flemington to join the Sydenham-Bankstown branch of the South Coast line at Belmore, and a line from Wardell-road, also on this branch, to Darling Island, with a new shipping depôt at Glebe Island. On the completion of this work the Central station will be entirely free of goods traffic.

An extension from Sydenham to serve the important manufacturing district of Botany has been authorised.

Burrinjuck Railway Line.

In addition to the lines under the control of the Railway Commissioners a 2 feet gauge railway has been constructed at a cost of £76,200 from the main southern line at Goondah to the site of the Burrinjuck Storage Reservoir, a distance of 26 miles. This line is controlled by the Department of Public Works, and is used mainly for the conveyance of material to the site of the works.

Commonwealth Railways in New South Wales.

A short railway, $5\frac{1}{2}$ miles in length, is under construction from Queanbeyan, on the Cooma-Nimmitabel branch, to connect Canberra, the Federal Capital, with the State railway system. The work of construction has been undertaken on behalf of the Commonwealth Government by the Public Works Department of New South Wales, at a charge of 5 per cent. in addition to capital outlay.

Under the "Seat of Government Acceptance Act" the Commonwealth Government has the right to construct a line from Canberra to Jervis Bay; a preliminary survey of the route has been made.

DECENTRALISATION IN RAILWAY TRANSIT.

As previously stated, Sydney is the centre of all the railway systems of New South Wales. In consequence of the enormous increase in traffic during recent years the railway facilities have been overtaxed, and the Government has determined that decentralisation in railway transit is necessary to meet the growing requirements of the State. A Royal Commission was appointed in June, 1910, to inquire and report as to the terminal points inland and on the sea coast which should be connected by rail, and generally to advise as to the best means of giving effect to the Government's policy.

The Commissioners dealt with a large number of proposals regarding railway communication with the coast; the establishment of seaports, and the construction of cross-country lines to link up the southern, western, north-western, and northern railway systems. Their report was furnished to Parliament in May, 1911.

The Commissioners emphasised the necessity of speedy measures to relieve existing congestion. With the progress of closer settlement, the agricultural areas of the State must be furnished with improved railway communication, and the consequent increase in traffic will intensify the congestion on the main trunk lines and at the port of Sydney, unless some comprehensive scheme of decentralisation is established.

As regards exports, wool, wheat, and live-stock represent the greatest volume of traffic to be considered. The wool traffic centres in Sydney, where the sales are held, and while this system continues direct shipment from any other port cannot, in the opinion of the Commissioners, be expected to any extent.

The live-stock business is largely controlled by the centre of population, which is Sydney. The stock traffic can be decentralised only in so far as it can be influenced by the frozen meat trade. At present this trade is centralised in Sydney, but there is no doubt that the opening of new ports with provision for freezing and shipment would not only decentralise but would stimulate this industry.

The Decentralisation Commissioners were instructed also to give consideration to the question of linking the railway systems of New South Wales with those of Victoria for the purpose of providing direct access from the Riverina district to Melbourne, which is claimed to be the natural port of the district. The evidence obtained locally by the Commissioners showed that the wheat produced in the Riverina is generally sent to Sydney on account of the special grain rates allowed on the New South Wales railways. Practically all the wool and fat stock go to Melbourne, whence stores and general merchandise required in the district are obtained.

As a result of their inquiries the Commissioners submitted the following recommendations:—

1. That a port for oversea shipment be established at Salamander Bay, Port Stephens.
2. That in order to make the proposed port fully effective as a decentralising factor the following railway lines, which are arranged in the order of their importance, be constructed:—
 - (a) Mary Vale, *via* Gulgong, Wollar, and Denman, to Muswellbrook.
 - (b) Morpeth to Salamander Bay, Port Stephens.

- (c) Walcha Road, *viâ* Walcha, Nowendec, Woodside, and the North Coast railway, to Salamander Bay, Port Stephens.
 - (d) Inverell to Guyra.
 - (e) Warialda to Boggabilla.
3. That an arrangement be made with the Federal Government for the establishment of a port for oversea shipment at Jervis Bay, with railway connection from Yass, *viâ* Canberra and Queanbeyan.
 4. That the following railways be constructed for the purpose of linking up the New South Wales and Victoria railway systems at the border:—
 - (a) Finley to Tocumwal.
 - (b) Clear Hills to Mulwala.
 5. That railways be constructed for cross-country purposes, as follows:—
 - (a) Stockinbingal to Forbes.
 - (b) Parkes to Mary Vale.
 - (c) Gilgandra to Curlewis.
 - (d) Condobolin, *viâ* Mount Hope, to Broken Hill.

Of these proposed railway connections the lines from Stockinbingal to Forbes and from Finley to Tocumwal are under construction, also a section from Muswellbrook to Denman, and from Canberra to Queanbeyan; authority has been granted by Parliament for the line from Condobolin to Broken Hill.

STATE BORDER RAILWAYS.

At a conference of representatives of the Government of New South Wales and Victoria an agreement was drawn up with a view to extending the Victorian railways across the border to serve large areas in the Riverina district, which are situated beyond the scope of the existing New South Wales system, and which cannot be advantageously cultivated without railway facilities. The agreement provided for the construction of railways on the Victorian gauge, 5 feet 3 inches, extending from the Victorian border into Riverina territory; the lines are to be built by New South Wales, the Victorian Government will pay interest on the cost of construction, and work the lines as portion of the railway system of that State; the bridges across the Murray River required for connection with the Victorian railways are to be built by Victoria, one-third of the cost being paid by New South Wales. An agreement has been drafted for the appointment of a joint commission consisting of the New South Wales Public Works Committee and the Victorian Railway Standing Committee to report as to the best routes for the proposed lines.

SYDNEY AND SUBURBAN PASSENGER SERVICE.

A portion of the passenger traffic between Sydney and suburbs is conducted by suburban railways and ferry services, but the tramways form the most important means of communication.

The railway suburban traffic is conducted principally on the main trunk line, which runs in a westerly direction from Sydney to Granville, where the main southern and western railway systems separate; the main northern system begins at Homebush (8 miles from Sydney). The South Coast railway, which has a branch from Sydenham (3 miles) to Bankstown

(11 miles), brings passengers from the suburbs situated south of Sydney on the western shore of Botany Bay. The passengers travelling by these lines, however, are conveyed to and from the Central Station by trams running through the city streets to the Circular Quay.

The populous suburbs of the north-western, central, and eastern divisions of the metropolitan area are served entirely by the tramways. On the north shore of Port Jackson there is a railway to connect the ferry service at Milson's Point with Hornsby on the main northern line, with this exception all the passengers from the northern suburbs connect by tramway at various points with the ferry services to the Circular Quay.

On account of the expansion of the commercial interests of New South Wales, and the consequent growth of population in and around Sydney, where the trade of the State is centralised, the tramway system has been extended steadily, but the requirements of suburban traffic are gradually outgrowing the capacity of the main city thoroughfares, which were not originally designed for this class of traffic. Thus the extension of the tramway system, combined with the increase in the mercantile vehicular traffic, has resulted in a state of congestion in some of the city streets that demands remedy. The urgent necessity is now recognised of supplying a more effective method of dealing with the rapidly increasing traffic than is possible under any system of surface tramways.

Proposed Improvements.

In connection with this matter a Royal Commission for the Improvement of the City of Sydney and its Suburbs, in 1909 recommended the immediate introduction of a system of underground electric railways to deal comprehensively with the whole suburban area.

The scheme recommended by the Commission embraced a city railway, the connection of Sydney and North Sydney, an eastern suburbs railway, with branches to serve the sports grounds, and a western suburbs railway.

More recently, in 1912, a special branch of the Department of Public Works was created to deal exclusively with proposals for the improvement of the methods of handling the passenger traffic in the city and the question of connection between the northern and southern shores of Sydney Harbour. The report of an expert, engaged by the Government to make an inquiry into these matters, was submitted to Parliament in October, 1912. A bridge over the harbour was recommended as the best means of connecting Sydney with North Sydney for both railway and roadway purposes. Further particulars regarding the proposed harbour bridge are given in the part, "Local Government," of this volume.

As regards city transit, underground electric railways were advised as follows:—

A double-line loop railway to continue the existing main lines into the city and to Circular Quay, with a branch running over the Harbour bridge.

A western suburbs line in the form of a circle, commencing at the Sydney Town Hall, passing under Darling Harbour to Balmain and Leichhardt, and returning past the University to the city.

An eastern suburbs line, commencing at Wynyard Square and terminating at Bondi Junction.

It was recommended also that the King-street tramway be placed underground.

The following estimate of costs of these works is exclusive of alterations or additions to Central Station, electrical equipment, thermit welding, wiring, bonding rails, signals, and lighting:—

	£
Main-line Railways	1,175,273
Western Suburbs Line—	
Essex-street to City-road Junction	486,350
Completion of circle from Essex-street to City-road Junction, <i>viâ</i> Balmain	1,648,160
Eastern Suburbs Line—	
Wynyard-square to Darlinghurst	400,129
Royal Arcade subway	5,500
Darlinghurst to Bondi Junction	589,429
King-street Tramway	112,420
Total	£4,417,261

Two underground lines for goods traffic only were proposed—one from Circular Quay to Woolloomooloo Bay, as a branch of the city railway, and the other from the existing goods lines at Darling Harbour to Woolloomooloo Bay. The cost of these lines on the basis of single line tunnels, exclusive of electrical equipment, thermit welding, wiring, bonding rails, signals, and lighting, was estimated as shown below:—

	£
Circular Quay to Woolloomooloo	69,933
Darling Harbour to Woolloomooloo	98,809

In October, 1913, a Bill to authorise the construction of a city railway was submitted to Parliament, but was rejected by the Legislative Council. The design included an underground loop railway around the city, joining the existing railway system near Redfern Station, and comprising three up and three down tracks of a total length of 17 miles 22 chains, with six underground stations. To connect the eastern and western suburban tram services with the city railway, double lines of tramway were designed to leave the existing tram lines and pass underground at points beyond the area of traffic congestion, the total length of the connection for the eastern suburbs being 1 mile 18½ chains, and for the western suburbs 1 mile 15½ chains.

The cost of the work was estimated at £4,800,000.

GRADIENTS OF RAILWAYS.

In many cases the railways of New South Wales pass through mountainous country, and have been constructed with a large proportion of steep gradients, some of the heaviest being situated on the trunk lines.

In the southern system, the line at Roslyn, near Crookwell, reaches an altitude of 3,225 feet above sea level; in the western, at Newnes Junction, on the Blue Mountains, a height of 3,503 feet is attained; and on the northern line the highest point, 4,473 feet, is reached at Ben Lomond.

Numerous deviations have been made during recent years in order to secure easier grades and curves, with the result that considerable economy in working and expedition in traffic have been effected. Two of the most important deviations have been made on the Blue Mountains section of the main western line—one, on the western side of the range, to avoid the Zig Zag, was completed in October, 1910; and the other, on the eastern side, in connection with the duplication of the line, was opened in May, 1913.

The following statement shows the number of miles on different gradients in June, 1914:—

Gradients.	Southern System.	Western System.	Northern System.	Total.
1 in	miles.	miles.	miles.	miles.
18 to 30	3½	...	...	3½
31 ,, 40	57	62½	33	152½
41 ,, 50	67½	50½	76	194
51 ,, 60	51½	66¼	56¾	174½
61 ,, 70	52¾	53½	35¾	142
71 ,, 80	98½	79½	126	304
81 ,, 90	38¼	38½	40½	117¼
91 ,, 100	82½	103	72¾	258¼
101 ,, 150	125¾	131¾	121¼	378¾
151 ,, 200	81½	71½	76	229
201 ,, 250	45¼	30¼	31¾	107¼
251 ,, 300	60¼	56½	53¾	170½
301 ,, level	565¼	556¼	573½	1,695
Total ..	1,329¼	1,300	1,297	3,926½

The above table is exclusive of the Government line from Broken Hill to Tarrawingee, measuring 40 miles 7 chains, and that at Wollongong of 1 mile 8 chains, the total length of these lines being 41 miles 15 chains.

COST OF RAILWAY CONSTRUCTION.

The average cost per mile open for traffic of the Government Railway lines, excluding expenditure for rolling-stock, machinery, furniture, and workshops and stores, has been £11,800—an amount which is by no means high, considering the character of some parts of the country through which the lines have been carried, and the cost of labour. In considering in detail the figures given, it is interesting to note the comparatively low cost per mile of some of the extensions through pastoral country. These are known as the "pioneer" class, and are of a light and cheap kind, on which the produce of the settlers may be conveyed to the trunk lines at a reasonable speed, and at a cheaper rate than carriage by road. The average cost of the line from Parkes to Condobolin was £2,107 per mile; Burren Junction to Collarenebri East, £2,487 per mile; from Byrock to Brewarrina, £2,720 per mile; and

from Dubbo to Coonamble, £2,739 per mile. The cost of construction of the various branches of the railway systems to 30th June, 1914, is set forth in the following table:—

Lines opened for Traffic.	Length.	Total Cost	Average cost per Mile.
GOODS LINES.			
	m. ch.	£	£
Darling Harbour Branch, Sydney	1 49 $\frac{1}{2}$	963,098	594,064
Flemington to Homebush Bay	3 28 $\frac{1}{2}$	68,598	20,420
Flemington to Belmore and Wardell road to Glebe Island.	...	1,136,378	...
MAIN SOUTHERN LINE.			
Sydney to Granville	15 38 $\frac{1}{2}$	3,054,859	197,328
Granville to Goulburn	122 72 $\frac{1}{2}$	2,873,431	23,378
Goulburn to Wagga	178 10 $\frac{1}{2}$	2,488,629	13,971
Wagga to River Murray	79 15 $\frac{1}{2}$	946,563	11,952
<i>Branch Lines.</i>			
Lidcombe to Regent's Park	1 75 $\frac{1}{2}$	26,186	13,450
Clyde to Carlingford	4 39 $\frac{1}{2}$	33,592	7,481
Campbelltown to Camden	7 66 $\frac{1}{2}$	46,286	5,911
Yass Tramway	2 78	29,230	9,825
Goulburn to Crookwell	35 78 $\frac{1}{2}$	160,228	4,453
Joppa Junction to Nimmitabel	151 54 $\frac{1}{2}$	1,532,453	10,103
Murrumburrah to Blayney, on Western Line	110 50	1,115,158	10,081
Koorawatha to Grenfell	32 24	117,376	3,634
Cowra to Canowindra	23 51	136,133	5,759
Cootamundra to Tumut	65 22 $\frac{1}{2}$	537,772	8,238
Cootamundra to Temora	38 72	211,296	5,432
Temora to Wyalong	41 26	126,551	3,062
Temora to Barellan	61 41 $\frac{1}{2}$	210,192	3,417
Junee to Hay	168 43 $\frac{1}{2}$	1,021,219	6,059
Narrandera to Finley	100 70 $\frac{1}{2}$	498,620	4,943
The Rock to Oaklands	77 44 $\frac{1}{2}$	278,895	3,596
Culcairn to Germanton	16 61	60,709	3,622
Culcairn to Corowa	48 3	233,061	4,852
MAIN WESTERN LINE.			
Granville to Penrith	20 72 $\frac{1}{2}$	621,382	29,727
Penrith to Bathurst	111 65	3,733,808	33,695
Bathurst to Dubbo	137 67 $\frac{1}{2}$	1,398,503	10,145
Dubbo to Bourke	225 51 $\frac{1}{2}$	1,370,171	6,072
<i>Branch Lines.</i>			
Blacktown to Richmond	16 19 $\frac{1}{2}$	182,801	11,254
Wailarawang to Dunedoo	134 79 $\frac{1}{2}$	1,207,006	8,941
Blayney to Murrumburrah (see Southern Line)	...	...	...
Orange to Forbes	96 51 $\frac{1}{2}$	669,865	6,932
Parkes to Condobolin	62 60 $\frac{1}{2}$	132,204	2,107
Bogan Gate to Tullamore	37 66 $\frac{1}{2}$	127,576	3,373
Dubbo to Coonamble	95 79 $\frac{1}{2}$	262,898	2,739
Narromine to Peak Hill	36 62 $\frac{1}{2}$	120,089	3,265
Newerine to Warren	12 29 $\frac{1}{2}$	41,318	3,341
Nyngan to Cobar and The Peak	85 26 $\frac{1}{2}$	324,443	3,802
Byrock to Brewarrina	58 42	159,181	2,720

* In course of construction.

Lines opened for Traffic.	Length.	Total Cost.	Average Cost per Mile.
MAIN NORTHERN LINE.			
	m. ch.	£	£
Homebush to Waratah	95 51	3,500,656	36,603
Newcastle to Wallangarra	393 59½	5,770,647	14,656
<i>Branch Lines.</i>			
Hornsby to Milson's Point	13 36½	749,260	55,668
Fassifern to Toronto	2 55	19,531	7,267
Bullock Island	4 70½	617,233	126,531
Morpeth	3 37½	61,482	17,741
Werris Creek to Narrabri West	96 58	628,742	6,500
Narrabri Junction to Inverell	158 78½	510,846	3,213
Narrabri West to Walgett	106 9	325,627	3,069
Burren Junction to Collarenebri East	42 44½	103,696	2,437
Tamworth West to Barraba	61 50½	255,728	4,150
Moree to Garah	36 30½	181,197	4,981
NORTH COAST LINE.			
West Maitland to Taree... ..	115 36½	1,627,627	14,097
Murwillumbah to Grafton	149 9	1,379,052	9,248
Casino to Kyogle	17 71½	90,032	5,032
SOUTH COAST (ILLAWARRA) LINE.			
Sydney to Nowra... ..	95 46½	3,574,981	37,015
<i>Branch Line.</i>			
Sydenham to Bankstown	8 33½	264,760	31,449
BROKEN HILL LINE.			
Broken Hill to Tarrawingee	40 7	32,575	813
Total, All Lines	*3,967 35	47,951,430	*11,800

* Exclusive of Flemington-Glebe Island goods line.

The amount expended on rolling-stock, &c., to 30th June, 1914, was £13,313,439:—Rolling-stock, £10,996,384; machinery, £690,508; workshops, £756,511; furniture, £10,036; stores advance account, £860,000. Thus the total capital expenditure amounted to £61,264,869, or, excluding £1,136,378 expended on the Flemington-Glebe Island goods line, an average of £15,155 per mile. The growth of the capital expenditure may be seen in the following table:—

Period.	Capital expended during period.	Total capital expended to end of period.	Period.	Capital expended during period.	Total capital expended to end of period.
	£	£		£	£
1855-9	1,278,416	1,278,416	1895-9	2,137,005	37,992,276
1860-4	1,353,374	2,631,790	1900-4	4,296,241	42,288,517
1865-9	2,049,539	4,681,329	1905-9	5,324,149	47,612,666
1870-4	2,163,217	6,844,546	1910	1,312,682	48,925,348
1875-9	3,561,949	10,406,495	1911	2,046,546	50,971,894
1880-4	9,673,643	20,080,138	1912	2,543,009	53,514,903
1885-9	9,759,029	29,839,167	1913	4,138,875	57,653,778
1890-4	6,016,104	35,855,271	1914	3,611,091	61,264,869

Of the £61,264,869 expended to 30th June, 1914, an amount of £651,939 has been provided from the Consolidated Revenue of the State, leaving a balance of £60,612,930, which has been raised by the issue of debentures and other stock. The net revenue for the year ended 30th June, 1914, after paying working expenses, was £2,332,421, which gave a return of 3·80 per cent. upon the total capital expenditure, and 3·85 per cent. upon the gross loan capital involved.

WORKING EXPENSES AND EARNINGS.

A statement of the working expenses and earnings of the railways during the year ended 30th June, 1914, is shown below:—

Working Expenses.		Earnings.	
	£		£
Maintenance of Way, Works, and Buildings	1,109,749	Passengers	2,832,450
Locomotive Power	2,155,862	Mails, Parcels, Horses, &c. ...	404,062
Greasing and Oiling Carriages and Waggon	5,554	Total Coaching... ..	3,236,512
Carriage and Waggon Repairs and Renewals, &c.	525,662	Goods—	
Traffic Expenses	1,491,424	Merchandise	2,567,287
Compensation	20,243	Live Stock	746,508
General Charges	90,531	Wool	359,461
Gratuities, &c.	7,861	Minerals	724,741
Fire Insurance Fund	2,934	Total Goods	4,397,997
	5,409,820	Rents	87,401
Balance, Net Earnings	2,332,421	Miscellaneous	20,331
Total	7,742,241	Total	7,742,241

The expenditure on locomotive power amounted to 39·9 per cent. of the total; traffic expenses to 27·6 per cent.; and maintenance of ways, works, and buildings to 20·5 per cent. Of the earnings 36·6 per cent. was derived from the carriage of passengers, 5·2 per cent. from mails, parcels, &c., and 56·8 per cent. from the conveyance of goods.

As the carriage of goods and live stock constitutes the principal source of railway revenue, the earnings fluctuate in each year in accordance with the type of seasons experienced in the agricultural and pastoral districts. In unfavourable seasons the carriage of fodder and the transfer of live stock at reduced rates cause a diminution in the earnings, and at the same time an increase in the working expenses. The extension of the lines into sparsely settled districts also causes an increase in the proportion of working expenses to total earnings, as several of these lines return little more than cost of maintenance.

The following table shows the gross earnings, working expenses, and the proportion of the expenditure to receipts, in stated years from 1855 up to 30th June, 1914. Since the year 1887 the railway accounts have been made up to 30th June in each year:—

Year.	Gross Earnings.	Working Expenses.	Proportion of working expenses to gross earnings.	Year.	Gross Earnings.	Working Expenses.	Proportion of working expenses to gross earnings.
	£	£	per cent.		£	£	per cent.
1855	9,249	5,959	64·4	1895	2,878,204	1,642,589	57·1
1860	62,269	50,427	81·0	1900	3,163,572	1,844,520	58·3
1865	166,032	108,926	65·6	1905	3,684,016	2,216,442	60·2
1870	307,142	206,003	67·1	1910	5,485,715	3,276,409	59·7
1875	614,648	296,174	48·2	1911	6,042,205	3,691,061	61·1
1880	1,161,017	647,719	55·8	1912	6,491,473	4,169,591	64·2
1885	2,174,368	1,458,153	67·1	1913	6,748,985	4,644,881	68·8
1890	2,633,086	1,665,835	63·3	1914	7,742,241	5,409,820	69·9

The working expenses during the year ended 30th June, 1914, represented 69·9 per cent. of the gross earnings. In 1907 the proportion was 53·0 per cent., the lowest since the control of the railways was vested in Commissioners, but the percentage has risen steadily during the last seven years, the increase being due mainly to liberal advances in the salaries and wages of the staff.

NET EARNINGS AND INTEREST ON CAPITAL.

The net revenue from railways for the year ended 30th June, 1914, was £2,332,421; while the capital expended on lines open for traffic to that date was £61,264,869. The amount thus available, to meet the interest charges on the capital expended, represents a return of 3·80 per cent. The following table shows the net earnings and the interest returned on the total capital expended on railways, including the cost of construction and equipment for the year 1855 and subsequent periods:—

Year.	Net Earnings.	Interest on Capital	Year.	Net Earnings.	Interest on Capital.
	£	per cent.		£	per cent.
1855	3,290	0·63	1905	1,491,869	3·46
1860	11,842	0·82	1906	1,926,407	4·42
1865	57,106	2·07	1907	2,209,665	4·96
1870	101,139	1·81	1908	2,229,295	4·88
1875	318,474	4·39	1909	2,075,626	4·36
1880	513,298	4·35	1910	2,209,306	4·52
1885	716,215	3·37	1911	2,351,144	4·61
1890	967,251	3·17	1912	2,321,682	4·34
1895	1,310,615	3·60	1913	2,104,104	3·65
1900	1,394,062	3·63	1914	2,332,421	3·80

During the period from 1870 to 1875, when the length of new lines yearly constructed was very small, the railway profits steadily increased. During 1877 and 1878, 180 miles of railway were constructed, and the profits immediately declined. From 1880 to 1884 the railways were extended, chiefly through fertile districts, viz., Riverina and New England, and the central districts of Wellington and Dubbo; and as these were years of remarkable prosperity, the railway profits suffered little diminution from the considerable extension, which included the construction of the expensive connecting link joining the New South Wales railways with those of the State of Victoria, at the River Murray. Since 1885 the extensions on the main lines have been mainly through pastoral country, such as the continuation of the Western line to Bourke, the Northern line to Wallangarra, and the further extensions of the lines on the Goulburn district to the rich pastoral lands of Monaro and, more recently, sections of the North Coast railway. Also branch lines have been constructed tapping important agricultural, dairy-farming, pastoral, and mining districts. Owing to the general prosperity ruling throughout the State the profits since 1905 have been highly satisfactory; a decrease occurred in the last two years, due, as previously stated, to increased cost of working.

In the discussion of the financial results of the working of the lines, it is the practice of railway authorities to compare the net returns with the nominal rate of interest payable on the railway loans or on the public debt of the State. An accurate comparison, however, can be made only by taking the average rate of interest payable on the actual sum obtained by the State for its outstanding loans, inasmuch as many loans were floated below par.

The table below shows the rate of interest returned on the capital expenditure for each of the years since 1905, with the sum by which such return falls short of or exceeds the actual rate of interest payable on the cost of construction. The rate of return on capital represents the interest on the gross cost of the lines. The nominal amount of outstanding debentures and funded stock is less than the actual expenditure on construction and equipment, owing to the fact that some loans have been redeemed; but as the redemption has been effected by means of fresh loans charged to general services, or by payments from the general revenue, and not out of railway earnings, no allowance on this account can reasonably be claimed:—

Year.	Interest returned on Capital.	Actual rate of Interest payable on Outstanding Loans.	Gain (+ or Loss (-).
	per cent.	per cent.	per cent.
1905	3·46	3·69	-0·23
1906	4·42	3·68	+0·74
1907	4·96	3·63	+1·33
1908	4·88	3·65	+1·23
1909	4·36	3·65	+0·71
1910	4·52	3·53	+0·99
1911	4·61	3·59	+1·02
1912	4·34	3·60	+0·74
1913	3·65	3·49	+0·16
1914	3·80	3·67	+0·13

The railways being owned by the State, public opinion at once demands a reduction in freights and rates, when the net earnings are much in excess of the interest requirements; substantial reductions were made in 1911 and 1912, but season ticket fares and certain goods rates were increased, as from 1st July, 1913, in anticipation of an increase in working expenses, and further increases were made on 1st March, 1914.

COACHING AND GOODS TRAFFIC.

For the first ten years after the opening of the first railway in New South Wales the larger part of the earnings was obtained from the passenger traffic, no doubt owing to the fact that the first lines were entirely suburban. It was not until the line crossed the mountains and opened up the interior that the proportions changed, and the goods traffic became the principal source of revenue. This change began in 1867.

The following table gives the proportion of earnings from the coaching and goods traffic at intervals since 1860. The percentages shown below include earnings from miscellaneous sources and rents, and therefore differ slightly from those stated on a previous page:—

Year.	Proportion of Total Earnings.		Year.	Proportion of Total Earnings.	
	Coaching, &c.	Goods and Live Stock.		Coaching, &c.	Goods and Live Stock.
	per cent.	per cent.		per cent.	per cent.
1860	73·0	27·0	1900	38·8	61·2
1865	56·0	44·0	1905	39·9	60·1
1870	38·4	61·6	1910	39·9	60·1
1875	33·5	66·5	1911	40·6	59·4
1880	33·6	66·4	1912	42·7	57·3
1885	38·2	61·8	1913	45·0	55·0
1890	40·2	59·8	1914	43·1	56·9
1895	35·5	64·5			

It will be observed that in the year 1860 the earnings from passenger traffic largely exceeded those from goods, but after that year the proportion derived from coaching traffic declined, reaching the minimum in 1875. This falling-off was due almost entirely to the considerable extension of the main lines through pastoral country, thinly populated, but well stocked with sheep and cattle, and consequently furnishing the railways with large quantities of produce for carriage to the sea-board. From 1880 to 1889, however, the percentage of receipts from coaching traffic advanced steadily, the proportion in the year last named being as high as 40·4 per cent. of the total revenue. A decline of the coaching traffic is noticeable in 1895, followed by increases for the years 1900 and 1905, with only slight variations of the figures in subsequent years until 1910; during the three years 1911-13 the percentage of earnings from coaching traffic increased steadily, and for the year 1913 the high percentage of 45·0 is shown. In 1914, percentage was 43·1.

Coaching Traffic.

The following table shows the number of passenger journeys and the receipts from coaching traffic since 1855:—

Year.	Passenger Journeys.	Gross Earnings from Coaching Traffic.	Per head of population.	
			Passenger Journeys.	Gross Earnings from Coaching Traffic.
	No.	£	No.	s. d.
1855	98,846	9,093	0·4	0 8
1860	551,044	45,428	1·6	2 8
1865	751,587	92,984	1·9	4 8
1870	776,707	117,854	1·6	4 10
1875	1,288,225	205,941	2·3	7 1
1880	5,440,138	390,149	7·5	10 8
1885	13,506,346	830,904	14·6	17 11
1890	17,071,945	1,041,607	15·8	19 3
1895	19,725,418	1,001,107	15·9	16 2
1900	26,486,873	1,195,496	19·7	17 6
1905	35,158,150	1,428,190	24·4	19 10
1910	53,644,271	2,124,292	33·6	26 7
1911	60,919,628	2,385,725	37·2	29 2
1912	70,706,728	2,691,741	41·6	31 8
1913	79,490,012	2,940,230	44·7	33 1
1914	86,328,421	3,236,512	47·1	35 4

The increase in the number of journeys per head of population has been exceedingly rapid, the average being 47·1 per head in 1914, as compared with 19·7 in 1900 and 7·5 in 1880.

The receipts from coaching traffic per head of population advanced very rapidly until 1890, when the amount stood at 19s. 3d., against 10s. 8d. in 1880. This was due not so much to the increased distance travelled by passengers as to the fact that the railway mileage increased at a greater rate than the population, enabling the public to indulge in a larger measure of railway travelling. Subsequently to 1891 the average lessened for a period, but in recent years a further rise is evident, and the amount per capita is now 35s. 4d. as compared with 19s. 10d. in 1905.

Particulars regarding the passenger traffic on suburban and country lines during the year ended 30th June, 1914, are shown below; suburban lines include distances within 34 miles of Sydney and Newcastle:—

Description.	First Class.	Second Class.	Total.
SUBURBAN LINES.			
Ordinary Passengers No.	5,585,986	26,075,075	31,661,061
Season Ticket Holders' Journeys	7,834,320	14,654,100	22,488,420
Workmen's Journeys ... ..	.....	23,282,328	23,282,328
Total Number of Passenger Journeys ...	13,420,306	64,011,503	77,431,809
Miles Travelled Miles.	94,730,458	464,022,551	558,753,009
Average Mileage per Passenger	7·06	7·25	7·22
Amount Received from Passengers £	224,922	710,965	935,887
Average Receipts per Passenger per Mile d.	·57	·37	·40
COUNTRY LINES.			
Passengers No.	2,321,858	6,574,754	8,896,612
Miles Travelled Miles.	282,295,639	393,975,888	676,271,527
Average Mileage per Passenger	121·58	59·92	76·01
Amount Received from Passengers £	841,839	1,054,724	1,896,563
Average Receipt per Passenger per Mile d.	·71	·64	·67

Passenger Fares.

For suburban lines, that is, within 34 miles of Sydney and Newcastle, where the volume of traffic is greatest, the rates of passenger fares are lower than for equal distances outside that radius.

The issue of return tickets to passengers was practically abolished in May, 1911, except in those cases where the volume of return traffic would cause inconvenience to travellers, such as on suburban lines and for holiday excursions. The single fares were reduced, so that two single tickets were available at about the same cost as a return ticket under former systems.

The following table affords information regarding the rates on suburban and country lines, as from 1st March, 1914, when the fares outside suburban areas and the rates for workmen's weekly tickets were increased:—

Distance.	Single Fares.		Periodical Tickets.					
	1st Class.	2nd Class.	Workmen's Weekly.	Monthly.		Half-yearly.		
				2nd Class.	1st Class.	2nd Class.	1st Class.	2nd Class.
<i>Suburban Lines.</i>								
miles.	s. d.	s. d.	s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1	0 2	0 1	0 9	0 9 0	0 6 0	1 19 0	1 6 0	
5	0 5	0 4	1 9	0 19 3	0 13 0	4 3 0	2 15 9	
10	0 9	0 6	2 6	1 7 3	0 18 0	5 17 6	3 17 6	
15	1 1	0 9	2 11	1 12 0	1 1 3	6 19 3	4 12 9	
20	1 6	0 11	3 4	1 16 3	1 4 3	7 16 6	5 5 6	
25	1 10	1 3	3 9	1 19 3	1 6 6	8 9 6	5 14 3	
30	2 2	1 5	4 2	2 1 0	1 7 3	8 18 3	5 18 6	
34	2 6	1 7	4 6	2 3 0	1 8 3	9 5 0	6 1 9	
<i>Country Lines.*</i>								
50	4 7	3 0	.....	2 9 3	1 11 6	10 12 9	6 16 0	
100	11 2	7 4	.....	3 9 3	2 1 6	14 19 0	8 19 0	
200	24 3	15 5	.....	4 19 6	2 18 9	21 0 0	12 7 9	
300	37 5	23 1	.....	6 0 6	3 13 9	24 9 0	14 18 9	
400	50 6	30 0	.....	7 1 6	4 8 9	27 18 0	17 19 9	
500	60 9	35 1	.....	8 2 6	5 3 9	31 7 0	20 0 9	

* Including suburban rates for 34 miles.

The above rates represent the maximum charges, but liberal concessions, amounting in some instances to half the ordinary charges, are made in respect to periodical tickets to school pupils, youths and females travelling to their places of business, to female members of a ticket-holder's family, &c. In respect of single journeys, special rates are quoted for parties travelling in connection with shows, conferences, athletic sports, &c., and for assisted immigrants and others. Cheaper fares are available for journeys to tourist districts and holiday resorts, excursion tickets for return journeys being issued at rates as low as 2d. per mile first-class and 1d. second-class.

Aboriginal natives may travel free of charge on Government railways and tramways.

Goods Traffic.

The following figures, extending as far back as the opening of the railway lines, show how greatly the goods traffic has expanded, especially in recent years:—

Year.	Goods and Live Stock Traffic.		Per head of Population.	
	Tonnage.	Gross Earnings.	Tonnage.	Gross Earnings.
		£		£ s d.
1855	140	156	...	0 0 1
1860	55,394	16,841	0·2	0 1 0
1865	416,707	73,048	1·2	0 3 8
1870	766,523	189,288	1·6	0 7 9
1875	1,171,354	408,707	2·2	0 14 0
1880	1,712,971	770,868	2·4	1 1 2
1885	3,273,004	1,343,464	3·5	1 9 0
1890	3,788,950	1,569,356	3·5	1 9 0
1895	4,075,093	1,855,187	3·3	1 9 11
1900	5,531,511	1,936,217	4·1	1 8 5
1905	6,724,215	2,213,105	4·7	1 10 9
1910	8,393,038	3,290,640	5·3	2 1 3
1911	10,355,565	3,585,424	6·1	2 3 9
1912	10,910,553	3,715,707	6·4	2 3 9
1913	11,666,250	3,705,375	6·6	2 1 8
1914	13,245,842	4,397,997	7·3	2 8 0

The weight of goods and live-stock carried per head of population in New South Wales compares favourably with that of many countries where railways have long been established.

The revenue from goods and live-stock traffic per head of population rose rapidly from the opening of the lines until the year 1883, when it stood at 30s. 4d. Bad seasons in subsequent years caused a falling-off, so that by 1888 the average was only 27s. per inhabitant. For a number of years afterwards there was a steady increase, and in 1892 the average stood at 33s. Subsequently the amount per head decreased; an improvement was, however, presented in 1899, 1901, 1902, and in each year from 1905 to 1911 the average rose steadily. During the two years 1912 and 1913 the earnings were affected by a reduction in the freights, but in 1914 there was a very satisfactory increase.

A statement showing the class of goods carried on the railways since 1900 is shown below:—

Year ended 30th June.	General Merchandise.			Live Stock.	Minerals.		Total Goods.
	Grain, Flour, &c. (Up Journey).	Other.	Wool.		Coal, Coke, and Shale.	Other.	
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1900	361,052	1,151,564	84,678	188,595	3,406,769	338,853	5,531,511
1901	504,880	1,267,742	99,104	200,339	3,956,033	370,129	6,398,227
1902	387,720	1,538,580	105,252	238,668	3,823,602	373,730	6,467,552
1905	83,105	1,586,411	76,179	282,058	4,182,979	385,509	6,596,241
1904	424,786	1,405,578	74,096	154,525	4,195,711	402,063	6,656,759
1905	522,755	1,398,443	90,572	174,424	4,169,076	368,945	6,724,215
1906	502,206	1,582,174	117,469	228,834	4,858,959	339,850	7,629,492
1907	569,302	1,754,199	131,293	250,981	5,670,463	417,594	8,793,832
1908	300,384	1,958,190	126,384	455,549	6,860,969	473,913	10,175,389
1909	447,755	1,931,912	132,092	436,656	5,875,788	474,726	9,298,929
1910	608,405	2,100,203	138,779	463,669	4,553,968	528,017	8,393,038
1911	787,632	2,298,078	137,599	485,021	6,059,645	587,587	10,355,565
1912	782,051	2,487,741	136,995	535,481	6,300,214	668,071	10,910,553
1913	736,909	2,491,389	113,103	547,036	7,114,502	663,311	11,666,250
1914	1,078,322	2,775,858	133,298	621,619	7,753,886	882,859	13,245,842

Freight Charges.

The accompanying statement shows the receipts per ton for carrying goods one mile along the lines of the State. The information relates back to 1872, when the charge was 3-6d., and after an interval of forty years it had fallen to 0-9d. The decrease, however, is to some degree only apparent, inasmuch as it represents a more extensive development of the mineral trade than of the carriage of general merchandise; but when due allowance has been made, it will be found that the benefit to the general producer and consumer has been very substantial, especially in regard to agricultural produce and live-stock:—

1872 ... 3-6d.	1895 ... 1-6d.	1912 ... 0-9d.
1875 ... 3-1d.	1900 ... 1-5d.	1913 ... 0-9d.
1880 ... 2-3d.	1905 ... 1-2d.	1914 ... 0-9d.
1885 ... 1-9d.	1910 ... 1-0d.	
1891 ... 1-9d.	1911 ... 0-9d.	

The rates for various classes of freight were increased as from 18th March, 1914; the charges for the principal classes are shown below. The highest class freight includes expensive, bulky, or fragile articles, such as boots, drapery, drugs, groceries, furniture, liquors, crockery, glassware, cutlery, ironmongery, confectionery, and carpets; the lowest class includes agricultural produce, ore, manures, coal, coke, shale, firewood, limestone, stone, slates, bricks, rabbit-proof netting, timber in logs, and posts and rails:—

Class of Freight.	Charge per ton for haulage of—					
	50 miles.	100 miles.	200 miles.	300 miles.	400 miles.	500 miles.
Ordinary Goods—	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Highest class freight ...	25 4	49 5	86 1	109 0	118 2	127 4
Lowest „ ...	5 3	8 11	14 2	17 4	19 5	21 6
Agricultural Produce (Up journey)	5 0	7 6	9 6	10 6	11 4	12 0
Butter	11 0	20 9	36 9	48 3	55 1	62 0
Beef, Mutton, Veal, Pork, &c. ...	4 7	9 2	18 4	27 6	36 8	45 10
Wool—Greasy	12 6	25 0	45 10	58 4	64 7	68 9
Scoured	14 7	29 2	52 1	64 7	70 10	75 0
Minerals—Crude ore not exceeding £20 per ton in value ...	2 1	4 2	8 4	11 6	13 7	15 8
Live Stock, per truck	36 8	69 8	108 8	139 2	163 8	191 2

EXPANSION OF TRAFFIC.

The remarkable expansion which has taken place in the volume of traffic on the railways of New South Wales will be seen from the following comparison; the earnings during the quinquennium 1910-14, show an increase of £9,909,822, or 44 per cent., as compared with the earnings during the previous five years. The number of passengers has increased by 64 per cent., and the tonnage of goods and live-stock, &c., by 28 per cent.:—

	Five years ended 30th June, 1909.	Five years ended 30th June, 1914.	Increase.	Percentage increase.
Earnings—				
Coaching Traffic	£ 8,812,044	13,791,671	4,979,627	57
Goods and Live Stock	£ 11,845,686	16,237,558	4,391,872	37
Coal and Coke	£ 1,943,067	2,481,390	538,323	28
Total earnings	£ 22,600,797	32,510,619	9,909,822	44
Passengers	No. 213,610,351	351,089,060	137,478,709	64
Goods and Live Stock	Tons 15,186,602	22,930,033	7,743,431	51
Coal and Coke	Tons 27,435,255	31,782,215	4,346,960	16
Total Tonnage	42,621,857	54,712,248	12,090,391	28

ROLLING-STOCK.

Information regarding the rolling-stock of New South Wales Railways on 30th June, 1914, appears in the following table. The figures for the previous year have been inserted for the purpose of comparison:—

Classification.	1913.	1914.	Classification.	1913.	1914.
Locomotives—			Merchandise—		
Engines	998	1,065	Goods, open	13,869	14,784
Tenders	805	863	Goods, covered	953	980
Coaching—			Meat trucks	347	344
Special & sleeping cars	86	92	Live-stock trucks	2,322	2,504
First-class	356	391	Brake-vans	488	491
Composite	180	190	Total	17,979	19,103
Second-class	716	805			
Brake-vans	156	163	Departmental Stock—		
Horse-boxes, carriages, trucks, &c.	281	281	Loco. coal, ballast, &c., waggons	1,174	1,507
Total	1,775	1,922			

MAINTENANCE OF PERMANENT WAY.

During the year ended 30th June, 1914, the total length of line wholly or partially renewed by relaying, re-sleepering, or re-railing was 297 miles 15 chains, and 330 miles 65 chains were re-ballasted, thus making a total of 628 miles of line either partially or completely renewed. In this work 462,458 sleepers and 128,104 cubic yards of ballast were used.

The total weight of rails used in relaying and repairing work during the year amounted to 16,181 tons.

SIGNALLING AND SAFETY APPLIANCES.

Great progress has been made in providing safety appliances at various places, and during recent years much new work has been installed in connection with the deviations, duplications, and new railway lines. At many of the principal stations the points and signals are interlocked, and at the Central Station, Sydney, an electro-pneumatic system of signalling is in operation. During 1913, track block and automatic signalling—the first in Australia—was installed between Redfern Tunnel Signal-box and Sydenham Junction; this system is being extended as opportunity offers.

Particulars regarding the various systems employed for the safe working of the lines are shown below:—

	Single Line.	Mls.	Chs.
By electric tablet	389	28
electric train staff	739	18
train staff and ticket with line clear reports	1,692	44
train staff and ticket without line clear reports...	764	51
train staff and one engine only	6	14
		<u>3,591</u>	<u>75</u>
	Double Line.	Mls.	Chs.
By absolute block system	376	53
permissive block system	3	40
telephone	0	33
automatic signalling with track block working	20	35
		<u>401</u>	<u>1</u>

The Westinghouse brake is used on all the rolling stock of the Government railways.

RAILWAY ACCIDENTS.

The persons meeting with accidents on railway lines may be grouped under three heads—passengers, employees, and trespassers; and the accidents themselves may be classified into those arising from causes beyond the control of the persons injured, and those due to misconduct or want of caution.

The accidents may be further subdivided into those connected with the movement of railway vehicles and those apart from such movement.

Adopting such classifications, the accidents during the quinquennial period terminated on 30th June, 1913, are shown below.

The return is compiled in a similar way to that adopted by the Board of Trade in England, and all accidents are reported which occur in the working of the railways, or on railway premises, to persons other than servants of the Department, however slight the injuries may be. In the case of employees of the Department all accidents must be reported which cause the employee to be absent for at least one whole day from his ordinary work.

Classification.	Accidents connected with the Movement of Railway Vehicles.					Accidents not connected with the Movement of Railway Vehicles.				
	1910.	1911.	1912.	1913.	1914.	1910.	1911.	1912.	1913.	1914.
Passengers—										
Causes beyond their own control—										
Killed ... ..	...	...	...	...	14	...	...	...	...	...
Injured	8	9	21	23	46	...	3	...	2	...
Their own misconduct, or want of caution—										
Killed	5	2	7	11	9	...	...	...	...	1
Injured	88	83	113	168	137	21	32	40	49	83
Servants of the Department—										
Causes beyond their own control—										
Killed	1	...	...	1	1	...	...	9	1	...
Injured	11	36	58	53	44	39	69	189	130	83
Their own misconduct, or want of caution—										
Killed	17	19	26	30	41	2	5	4	6	4
Injured	190	188	255	252	257	1,559	1,653	2,272	2,920	3,120
Trespassers and others—										
Killed	27	25	35	42	47	6	1	8	4	3
Injured	41	52	66	86	86	53	84	119	113	131
Total { Killed	50	46	68	84	112	8	6	21	11	8
Injured	338	368	513	582	570	1,672	1,841	2,620	3,214	3,417

The rates per million passengers carried during the quinquennium were as follows:—

	Killed.	Injured.
Accidents connected with movement of railway vehicles—		
Causes beyond their own control	·04	·30
Their own misconduct or want of caution... ..	·10	1·68
Accidents not connected with movement of railway vehicles—		
Causes beyond their own control ... ..	...	·01
Their own misconduct or want of caution... ..	·00	·65
Total	·14	2·64

Compensation Paid—Railways.

The amount of compensation paid during the twelve months ended 30th June, 1914, in connection with accidents on railways, was £20,243, of which £6,270 was paid in respect of passengers, and £13,973 with regard to goods.

Railway Accidents in other Countries.

As regards accidents of a serious character the railways of New South Wales compare favourably with the lines of most other countries. It is difficult to obtain a common basis of comparison; but the available figures are shown in the following table, which shows the number of passengers killed and injured per million persons carried. The figures are calculated over a period of five years and brought down to the latest available dates:—

Country.	Accidents per million passengers carried.		Country.	Accidents per million passengers carried.	
	Killed.	Injured.		Killed.	Injured.
<i>New South Wales</i> ...	0·14	2·64	Norway ...	0·11	0·19
Victoria ...	0·18	3·74	Netherlands ...	0·10	0·59
South Australia ...	0·09	3·67	Switzerland ...	0·11	0·70
Germany ...	0·06	0·39	Russia in Europe ...	1·36	6·94
Austria ...	0·08	1·86	" Asia ...	5·39	26·09
Hungary ...	0·22	1·10	United Kingdom ...	0·09	2·24
Belgium ...	0·09	2·93	United States ...	0·51	13·39
Sweden ...	0·18	0·29	Canada ...	1·08	10·23

The above comparison is by no means conclusive, as the question of the distance travelled by each passenger is an important element of the risk run, and is omitted from consideration. If this were made a factor, it would probably be found that the risk of each traveller by rail would show less variation in the different countries than appears to be the case from the figures quoted. In Asiatic Russia the average distance travelled by each passenger was 485 miles during one year of the quinquennium, and during the remaining years it was over 220 miles; in European Russia the average was about 68 miles. In Canada the average length of journey was about 65 miles, and in the United States 33 miles; in Switzerland, Germany, Belgium, Norway, Sweden, and Netherlands it varied from 12 to 18 miles. The average journey in New South Wales was about 15 miles, and in South Australia about 12 miles.

PRIVATE RAILWAY LINES.

In New South Wales the established policy has been to keep the railways under State management and control, and at the present time there are only 143½ miles of private lines in operation, with the exception of short lines to connect coal and other mines with the main railways, on a few of which provision has been made for the carriage of passengers and goods.

In 1874 Parliament granted permission to a company to construct a line from Deniliquin, in the centre of the Riverina district, to Moama, on the River Murray, where it meets the railway system of Victoria. The line, which was opened in the year 1876, is of 5 ft. 3 in. gauge and 45 miles in length; a considerable proportion of the wool and other produce of the Riverina reaches the Melbourne market by this route. During the year 1888 a line of 3 ft. 6 in. gauge, and 35 miles 54 chains in length, was laid down from Silverton and Broken Hill to the South Australian border. A short line connects the Government railway at Liverpool with the Warwick Farm Racecourse. The Seaham Coal Company's line connects the West

Wallsend and Seaham Collieries with Cockle Creek; and the line of the Commonwealth Oil Corporation extends from Newnes Junction, on the Western line, to the Wolgan Valley. The following table shows the operations of all private railway lines open to the public for general traffic during the year 1913:—

Name of Private Railway.	Line.			Total Capital Expended.	Reserve Fund.	Debentures Outstanding.	Passengers Carried.	Goods Carried.	Live Stock Carried.	Train Miles Run.
	Length.	Gauge.								
	m.	ch.	ft. in.	£	£	£	No.	tons.	No.	No.
Deniliquin and Moama.	45	0 5	3	162,672	14,010	20,000	14,702	21,625	519,231	42,699
Silverton ...	35	54 3	6	461,242	140,224	...	67,658	1,165,205	64,096	172,346
Warwick Farm ...	0	66 4	8½	5,700	...	...	33,358	...	739	53
Seaham Colliery ...	6	0 4	8½	16,000	...	...	10,800	6,744	164	5,915
East Greta ...	8	0 4	8½	171,317	...	...	843,740	53,138	...	384,446
Hexham-Minmi ...	6	0 4	8½	†	...	...	12,184	1,531	...	4,600
Commonwealth Oil Corporation.	33	0 4	8½	194,590	...	475,000	248	1,316	...	9,566
†New Red Head...	9	0 4	8½	90,000	...	...	†	†	...	†

* Includes 767,546 tons local shunting.

† Year 1911.

‡ Not available.

The Deniliquin and Moama Company possesses 4 locomotives, 6 passenger carriages, and 63 goods carriages and vans. The Silverton Company has 18 locomotives, 692 goods vehicles, and 1 passenger carriage; and passenger carriages are hired also from the South Australian Government railways as required. On the Warwick Farm line Government rolling-stock is used. The Seaham Colliery has 2 locomotives, but otherwise Government rolling-stock is used, 4 passenger carriages and 892 goods vehicles being hired during 1913. On the East Greta railway there are 16 locomotives, 32 passenger carriages, and 33 goods carriages. The Hexham-Minmi Company has 1 locomotive and 5 passenger carriages; and the Commonwealth Oil Corporation has 5 locomotives, 2 passenger carriages, 1 motor car, and 59 goods carriages and vans.

In addition to the private railway lines shown in the above table, there are several branches, connected principally with coal and other mines; a summary of them is given below:—

	District.	Length.	Gauge.
		m. ch.	ft. in.
Connected with	Northern Line ...	95 54	4 8½
„	Western „ ...	6 39	4 8½
„	South Coast „ ...	3 40	3 6
		29 76	4 8½

RAILWAYS OF NEW SOUTH WALES AND OTHER COUNTRIES.

The position of all railways of New South Wales in relation to other important countries of the world is shown in the following table; but it is necessary to remember that there are vital differences which really invalidate any effective comparison, as, for instance, differences in population, in class of goods carried, and in the competition or assistance which railways

encounter from river or sea carriage. These are factors in development quite apart from questions of control, of gauge, or of construction.

Country.	Length of Railways.	Per Mile of Line Open.		
		Population.	Area.	Cost.
	miles.	No.	sq. miles.	£
<i>New South Wales</i> ...	4,137	438	75·0	15,338
Victoria ...	3,840	370	22·9	12,842
Queensland ...	4,994	132	134·3	6,786
South Australia ...	2,356	186	161·3	8,400*
Western Australia ...	3,919	82	249·0	4,597
Tasmania ...	684	287	33·3	8,268
New Zealand ...	2,863	379	36·6	11,301
United Kingdom ...	23,718	1,941	5·1	56,661
Germany ...	37,585	1,760	5·6	24,053
France ...	25,234	1,569	8·2	30,789
Switzerland ...	3,053	1,253	5·2	22,554
Austria ...	14,077	2,043	8·2	24,690
Hungary ...	13,324	1,594	9·4	14,628
Canada ...	29,303	265	127·3	10,746
United States ...	248,888	383	11·9	12,369
Argentina ...	20,402	360	56·5	10,982
Japan ...	5,607	9,330	26·3	12,000

* Excluding Port Augusta to Oodnadatta line.

UNIFICATION OF THE RAILWAY GAUGES OF AUSTRALIA.

It was originally intended that there should be only one gauge for all the railways of Australia, but, unfortunately for interstate communication, this intention was not carried into effect, and railway construction has proceeded without uniformity of gauge. In 1850, when the first railway was commenced, the Sydney Railroad and Tramway Company decided to adopt the 5 ft. 3 in. gauge, and an Act passed in 1852 provided that all the lines in New South Wales should be laid down to this standard. Three years later the Company altered its decision, the Act was repealed, and another passed substituting the 4 ft. 8½ in. gauge for the 5 ft. 3 in.

This change was made without consulting the other Australian colonies, and in Victoria the railway companies had already placed large orders for rolling-stock for the wider gauge. The result is that the railways of New South Wales have been constructed to the 4 ft. 8½ in. gauge, and the Victorian to 5 ft. 3 in. In South Australia the 5 ft. 3 in. gauge was adopted at first, but on account of the lower cost of construction the more recent lines in that State, as well as all the lines in the Northern Territory, Queensland, and Western Australia, have been built to a gauge of 3 ft. 6 in.

The classification of the Government Railways in each State according to gauge as at 30th June, 1914, may be seen below:—

State.	Mileage with Gauge.					Total Miles.
	2 ft.	2 ft. 6 in.	3 ft. 6 in.	4 ft. 8½ in.	5 ft. 3 in.	
New South Wales ...	26	.....	40	3,927	.....	3,993*
Victoria ...	.....	122	.....	.....	3,713	3,835
Queensland ...	.....	.....	4,713	.....	.....	4,713
South Australia ...	.....	.....	1,530	.....	793	2,323
Western Australia ...	.....	.....	2,967	.....	.....	2,967
Tasmania ...	24	.....	495	.....	.....	519
Northern Territory ...	.....	.....	145	.....	.....	145
Total Commonwealth ...	50	122	9,890	3,927	4,506	18,495

* Includes Burrinjuck line, 26 miles.

In consequence of the diversity of gauge interstate railway communication is seriously hampered; in a journey from Queensland to South Australia, breaks of gauge occur at Wallangarra, where the systems of Queensland and New South Wales meet, and at Albury, on the border of New South Wales and Victoria, while there is another change of gauge between Adelaide and Port Augusta or Oodnadatta, whence it is proposed to extend the lines across the continent of Australia.

The desirability of dealing with this matter has been urged repeatedly by railway authorities and engineers, as the longer the work of conversion is delayed the greater the ultimate cost will be; moreover, the requirements of defence demand the immediate removal of the disabilities of military transport caused by want of uniformity. The necessity of fixing a standard has been intensified by the determination of the Commonwealth Government to construct transcontinental lines.

The question of fixing the standard gauge has been the subject of many diverse professional opinions. The New South Wales gauge of 4 ft. 8½ in. has been recommended by the chief railway engineers of the Commonwealth and of the five States and by the Railway War Council, and has been adopted for the Port Augusta-Kalgoorlie railway.

In December, 1912, and April, 1913, a conference of the chief engineers of the Commonwealth and State Railways met to investigate the question of the selection of a uniform gauge between the capital cities of Australia. The representatives eliminated from selection all gauges wider than 5ft. 3 in. and narrower than 4 ft. 8½ in., and finally resolved to recommend the adoption of the latter gauge as the standard for Australia. Their decision was influenced mainly by the consideration of cost. The following statement shows that the cost of converting all the lines on the mainland of Australia would be £37,164,000 for a uniform gauge of 4 ft. 8½ in. as compared with £51,659,000 for the 5 ft. 3 in. gauge:—

	Conversion to 4ft. 8½in. gauge.		Conversion to 5ft. 3in. gauge.	
	Track Mileage.	Estimated Cost.	Track Mileage.	Estimated Cost.
New South Wales'...	100	£ 120,000	6,099	£ 19,319,000
Victoria ...	5,145	6,117,000	...	...
Queensland ...	5,350	12,578,000	5,350	14,025,000
South Australia ...	2,021	6,228,000	1,111	5,170,000
Western Australia...	4,225	10,840,000	4,225	11,658,000
Commonwealth ...	645	1,281,000	645	1,487,000
Total ...	17,486	37,164,000	17,430	51,659,000

Regarding the conversion of the 5 ft. 3 in. and 4 ft. 8½ in. lines in New South Wales, Victoria, and South Australia only, the following estimates were submitted:—

State.	Estimated cost of conversion to—	
	5 ft. 3 in. gauge.	4 ft 8½ in. gauge.
	£	£
New South Wales ...	19,319,000	120,000
Victoria ...	.....	6,117,000
South Australia ...	.....	1,058,000
Total ...	19,319,000	7,295,000

As it is apparent that a scheme to convert to a uniform gauge the lines between the capitals only would not be practicable owing to the difficulties of working the branch services, the conference submitted an alternative scheme designed to meet immediate requirements. A standard gauge line to connect Brisbane with the New South Wales system at Kyogle or Murwillumbah, the conversion of the 5 ft. 3 in. lines in Victoria and South Australia, a new direct standard gauge line between Adelaide and Port Augusta, and a new line from Kalgoorlie to Fremantle, which the Western Australian Government has already agreed to construct. The cost of this scheme was estimated as follows:—

Western Australia—New line, Fremantle to Kalgoorlie	... ..	£2,777,000
South Australia—New direct line, Adelaide to Port Augusta	... ..	1,170,000
Conversion of 5 ft. 3in. gauge	... ..	1,058,000
Victoria—Conversion of 5 ft. 3 in. gauge	... ..	6,117,000
New South Wales—Moama to Deniliquin Line	... ..	120,000
Queensland and New South Wales connections, 100 miles, rough estimate	... ..	900,000
without survey	... ..
Total...	... ..	£12,142,000

As regards the method to be adopted for the conversion without interruption of the traffic the third rail system producing what is called the mixed gauge, has been effectively used in Great Britain.

TRANSCONTINENTAL RAILWAYS.

It is the intention of the Federal Government to construct transcontinental railway lines to bring the States of the continent of Australia into direct communication. The construction of a line from Port Augusta in South Australia to Kalgoorlie in Western Australia is now in progress, the gauge of 4 ft. 8½ in. having been adopted. The length will be 1,100 miles, which will make the distance by rail from Sydney to Fremantle (Western Australia), 2,809 miles, divided up as follows:—Sydney to Melbourne, 582½ miles; Melbourne to Adelaide, 482½; Adelaide to Port Augusta, 259; Port Augusta to Kalgoorlie, 1,100; Kalgoorlie to Fremantle, 385; total, 2,809 miles. The cost of construction and equipment is estimated at £4,045,000, or if internal combustion engines are used, £3,839,000. This line is required to facilitate the transport of troops, &c., in time of war, and will considerably accelerate the transit of European mails. At the present time mail matter is forwarded to Adelaide from Sydney by rail, and thence sent by steamer to Fremantle, taking six days, whereas the through railway journey should occupy only four days.

Under the provisions of the Northern Territory Acceptance Act the South Australian Government transferred to the Commonwealth on 1st January, 1911, the line from Port Augusta to Oodnadatta, as well as the Northern Territory railway, from Palmerston to Pine Creek. The Commonwealth has agreed to construct a line across the continent to connect these systems. These lines are now controlled by the South Australian Railway Commissioner on behalf of the Federal Government.

TRAMWAYS.

With the exception of 2½ miles privately owned, the tramways of New South Wales are the property of the State Government. The standard gauge of 4 ft. 8½ in. has been adopted for all lines. The electric system was introduced into Sydney at the close of 1899, and the steam tramways in the metropolitan district have been converted. Of the 212 miles of line

open at 30th June, 1914, there were 145 $\frac{3}{4}$ miles under the electric system and 66 $\frac{1}{4}$ miles worked by steam:—

Line.	Length of Line.		Length of Single Track.	
	mls.	ch.	mls.	ch.
Electric—				
City and Suburban	105	36	192	79
North Sydney	19	30	33	32
Ashfield to Mortlake and Cabarita	8	38	10	74
Rockdale to Brighton-le-Sands	1	20	1	20
Manly to Spit and Narrabeen	11	16	13	63
	145	60	252	28
Steam—				
Arncliffe to Bexley	2	50	2	50
Kogarah to Sans Souci	5	45	5	45
Parramatta to Castle Hill	6	55	6	55
Sutherland to Cronulla	7	32	7	32
Newcastle City and Suburban	29	41	37	71
East to West Maitland	4	47	4	47
Broken Hill	10	4	11	35
	66	34	76	15
Total	212	14	328	43
Sidings, loops, and Crossovers ... ..	.....		48	43

During the year ended 30th June, 1914, the length of line opened for traffic was 4 miles 37 chains; and 8 miles 15 chains were under construction at the end of the year.

Fares.

The average fare charged on the tramways for all lines is about 0.59d. per mile; for the Metropolitan area the average is 0.53d. The lines are divided into penny sections, with the exception of the second section in the City of Sydney, in which the fare is 1 $\frac{1}{2}$ d. The fares charged for adults on Sunday, Christmas Day, and Good Friday are slightly higher, being as follows:—

One section	2d.	Four sections	5d.
Two sections	3d.	Five sections	6d.
Three sections	4d.	Six sections	6d.

The average length of the sections is about 1 $\frac{1}{4}$ miles.

Rolling-stock.

The tramway rolling-stock, on 30th June, 1914, consisted of 22 steam motors, 73 steam cars, 1,375 motor cars, and 21 trail cars for electric lines, and 100 service vehicles, making a total of 1,591.

Cost of Construction.

The capital cost of the State tramways to 30th June, 1914, amounted to £7,628,653 or £35,955 per mile open; the cost of construction was £3,730,523 or £17,583 per mile, and the expenditure on rolling stock, workshops, machinery, &c., amounted to £3,898,130.

Working of Tramways.

The following statement shows the working of the various tramways in sections for the year ended 30th June, 1914. Only two sections returned a profit during the period; the total profit on all lines, after allowing for interest on capital, amounted to £1,680.

Line.	Cost of Construction and Equipment.	Passengers carried.	Gross Revenue.	Working Expenses.	Net Earnings.	Interest on Capital.	Profit + Loss —
	£	No.	£	£	£	£	£
Electric—							
City and Suburban .. .	5,066,961	260,696,726	1,603,532	1,349,428	254,104	205,385	+48,719
North Sydney .. .	635,618	21,956,070	126,591	113,355	13,236	22,018	-8,782
Ashfield to Mortlake & Cabarita	165,647	4,802,199	23,092	31,881	-8,789	5,666	-14,455
Manly to The Spit and Narrabeen.	278,799	3,056,906	27,682	25,356	2,326	9,443	-7,117
Rockdale to Brighton-le-Sands							
Steam—							
Arncliffe to Bexley .. .	7,808	35,652	166	165	1	182	-181
Kogarah to Sans Souci .. .	19,953	491,987	2,650	3,925	-1,275	728	-2,003
Parramatta to Castle Hill .. .	21,762	889,204	7,344	9,534	-2,190	780	-2,970
Sutherland to Cronulla .. .	37,624	887,130	7,196	8,016	-820	1,380	-2,200
Newcastle City and Suburban	49,653	667,829	12,096	8,996	3,100	1,812	+1,288
East to West Maitland .. .	320,056	12,986,284	94,855	84,877	9,978	11,483	-1,505
Broken Hill .. .	38,650	869,633	5,606	6,270	-664	1,417	-2,081
	86,122	3,253,078	23,354	27,230	-3,876	3,157	-7,033
Total, All Lines .. .	7,628,653	310,592,698	1,934,164	1,669,033	265,131	263,451	+1,680

Revenue and Expenditure.

In the following table are given details of revenue and expenditure, and capital invested for all State tramways, since their inception in 1879. The net earnings of the tramways for the year ended 30th June, 1914, amounted to 3·48 per cent. on cost of construction and equipment, as compared with 3·67 per cent., the actual interest on the public debt, taking into consideration the actual sum obtained by the State for its loans, many of which were floated below par:—

Year.	Total Length of Lines.	Capital Expended on Lines open for Traffic.	Gross Revenue.	Working Expenses.	Net Earnings.	Interest Returned on Capital.
	Miles.	£	£	£	£	per cent.
1879	1½	22,061	4,416	2,278	2,138	9·69
1880	4½	60,218	18,980	13,444	5,536	9·19
1885	35	748,506	227,144	207,898	19,246	2·57
1890	39½	933,614	268,962	224,073	44,889	4·81
1895	61	1,428,518	282,316	230,993	51,323	3·59
1900	71½	1,924,720	409,724	341,127	68,597	3·56
1905	125½	3,637,922	813,569	685,682	127,887	3·51
1906	126	3,669,096	851,483	665,083	186,400	5·08
1907	128½	3,669,524	908,701	727,947	180,754	4·93
1908	132½	3,732,991	1,011,934	809,065	202,929	5·44
1909	151½	4,252,731	1,097,565	875,560	222,005	5·22
1910	165½	4,668,797	1,185,568	983,587	201,981	4·33
1911	189½	5,121,586	1,365,631	1,143,949	221,682	4·33
1912	195½	5,664,324	1,581,393	1,331,413	249,980	4·41
1913	207½	6,699,305	1,754,566	1,572,190	182,376	2·72
1914	212	7,623,653	1,934,164	1,669,033	265,131	3·48

During the year ended 30th June, 1914, the percentage of working expenses to the total receipts was 86·3 as compared with 89·6 in the previous year; the net earnings amounted to £265,131, which is equal to a net return per average mile open of £1,262, as compared with £897 per mile open in 1913.

Comparison of Tramway Traffic.

The following statement contains a comparison of the passenger traffic and the tram mileage in the State tramways since 1900. The length of line has increased from 71½ miles to 212 miles; the number of passengers from

66,244,334 to 310,592,698; and the tram mileage from 4,355,024 miles to 28,415,476 miles. With the extension of the tramway system the earnings per tram mile decreased from 2s. 3d. in 1900 to 11½d. in 1904, but have since risen to 1s. 4½d.; the working cost per tram mile dropped from 1s. 10d. in 1900 to 9d. in 1906, but increased steadily to 1s. 2d. in 1914:—

Year ended 30th June.	Length of line open.	Passengers carried.	Tram mileage.	Earnings per tram mile.	Working cost per tram mile.
	miles.	No.	miles.	s. d.	s. d.
1900	71½	66,244,334	4,355,024	2 3	1 10
1901	79½	93,703,685	6,835,926	1 7½	1 4½
1902	104	108,135,111	9,344,154	1 4½	1 2
1903	124½	130,405,402	13,695,630	1 1½	0 11½
1904	125½	137,843,513	16,387,019	0 11½	0 9½
1905	125½	139,669,459	16,413,762	1 0	0 10
1906	126	145,262,779	16,309,907	1 0½	0 9
1907	128½	155,017,982	16,620,434	1 1	0 10½
1908	132½	172,020,932	17,521,410	1 1½	0 11
1909	151½	186,318,738	18,853,621	1 2	0 11½
1910	165½	201,151,021	20,579,386	1 1½	0 11½
1911	189½	230,275,938	22,541,429	1 2½	1 0½
1912	195½	266,789,546	24,362,219	1 3½	1 1
1913	207½	294,455,452	26,954,767	1 3½	1 2
1914	212	310,592,698	28,415,476	1 4½	1 2

The extension of the City and North Sydney tramways since 1905 may be seen in the following statement, also the enormous increase in the passenger traffic. All lines which communicate directly with the city of Sydney are included in the category "City and Suburban"; the Ashfield, Kogarah, Arncliffe, and Rockdale lines, which act as feeders to the railways, and the Manly lines, have not been included:—

Year ended 30th June.	City and Suburban.			North Sydney.		
	Length of line.	Passengers carried.	Tram mileage.	Length of line.	Passengers carried.	Tram mileage.
	miles.	No.	miles.	miles.	No.	miles.
1905	73½	120,973,934	14,413,273	11½	9,128,575	1,074,743
1906	73½	125,756,680	14,246,845	11½	9,641,474	1,118,633
1907	75½	134,088,696	14,516,536	11½	10,082,128	1,139,417
1908	78	148,729,916	15,329,695	11½	10,992,974	1,187,857
1909	88½	161,289,058	16,411,533	15	12,444,075	1,401,861
1910	94½	173,897,034	17,743,868	16½	13,677,491	1,651,153
1911	97½	197,871,083	19,107,419	16½	15,896,835	1,929,450
1912	98	227,668,638	20,293,800	18½	18,740,463	2,231,498
1913	104½	248,720,735	22,338,080	18½	20,905,010	2,414,919
1914	105½	260,696,726	23,685,660	19½	21,956,070	2,463,983

CARRIAGE OF GOODS BY TRAMWAYS.

An Act was passed in 1911 to authorise the carriage of goods on the Government tramways, except the lines in the very busy sections of the streets of Sydney, viz., in George, Pitt, and Castlereagh streets between the Central Railway Station and the Circular Quay.

Although the tram lines are fully capable of carrying heavy goods, and the track is ballasted equal to the railways, up to the present time only passengers are carried, and such material as occasionally may be needed for tramway requirements.

TRAMWAY ACCIDENTS.

The accidents which occurred on tramways during the last five years are classified in the subjoined table, in a similar way to those relating to the railways:—

Classification.	Accidents connected with the movement of tramway vehicles.					Accidents not connected with the movement of tramway vehicles.				
	1910.	1911.	1912.	1913.	1914.	1910.	1911.	1912.	1913.	1914.
Passengers—										
Causes beyond their own control—										
Killed... ..	...	...	...	...	2	...	...	...	...	...
Injured... ..	133	149	163	229	120	...	2	2	4	3
Their own misconduct, or want of caution—										
Killed... ..	6	11	11	9	11	...	...	...	...	...
Injured... ..	214	276	382	406	487	6	7	9	16	16
Servants of the Department—										
Causes beyond their own control—										
Killed... ..	...	1	...	...	...	...	...	...	...	...
Injured... ..	25	48	55	66	74	7	23	36	48	45
Their own misconduct, or want of caution—										
Killed... ..	...	1	1	1	...	1	...	...	1	1
Injured... ..	158	164	202	199	212	331	382	496	608	549
Others—										
Killed... ..	18	18	16	28	16	1	1	1	...	...
Injured... ..	214	324	336	373	368	2	9	5	8	8
Total { Killed... ..	24	31	28	38	29	2	1	1	1	1
Injured... ..	744	961	1138	1273	1261	346	423	548	684	621

As the tramways usually traverse crowded streets, the number of accidents must be considered very small.

The number of passengers carried on the tramways during the year ended 30th June, 1914, was 310,592,698, which would give the rate of fatal accidents to passengers as .04 per million. With two exceptions the fatal accidents in the last five years were ascribed entirely to misconduct or want of caution on the part of passengers.

Compensation Paid—Tramways.

The amount of compensation paid during the twelve months ended 30th June, 1914, in respect of accidents on the tramways was £23,330, as compared with £25,720 for the preceding year.

PRIVATE TRAMWAYS.

There is one tramway under private control within the State—a steam tramway, which passes through the township of Parramatta, commencing at the Park and continuing as far as the Newington Wharf at Duck River, a distance of 2 miles 66 chains, where it connects with the Parramatta River steamers conveying passengers and goods to and from Sydney. The line has been constructed to the standard gauge of 4 feet 8½ inches, and was opened in 1883.

A private tramway running from Rockdale Railway Station to Brighton-le-Sands was acquired by the Government, and has been worked as a State line since 7th June, 1914.

RAILWAYS AND TRAMWAYS—EMPLOYMENT AND WAGES.

The account of wages paid, together with the staff employed on the Government railways and tramways in June, 1914, is shown in the following statement, in comparison with the previous year:—

Particulars.	Year ended 30th June, 1913.			Year ended 30th June, 1914.		
	Railways.	Tramways.	Total.	Railways.	Tramways.	Total.
	No.	No.	No.	No.	No.	No.
Persons employed—						
Salaried staff ...	3,180	551	3,731	3,422	567	3,989
Wages ,, ...	28,566	9,025	37,591	31,810	8,628	40,438
Total ...	31,746	9,576	41,322	35,232	9,195	44,427
Wages paid—	£	£	£	£	£	£
Maintenance Branch	1,659,601	229,200	1,888,801	1,701,079	201,184	1,902,263
Locomotive ,,	1,511,283	.....	1,511,283	1,887,494	.....	1,887,494
Electric ,,	.....	383,848	383,848	.....	411,417	411,417
Traffic ,,	726,662	630,877	1,357,539	843,628	663,516	1,507,144
Total ...	3,897,546	1,243,925	5,141,471	4,432,201	1,276,117	5,708,318

The average number of men employed during the year ended 30th June, 1914, was 42,721, and exceeded that of the previous year by 2,890; the amount of wages paid increased by £566,847.

A scheme to provide superannuation allowances for the officers of the railway and tramway service was introduced in 1910; particulars are shown in the chapter, "Social Condition," of this Year Book.

First-aid and Ambulance.

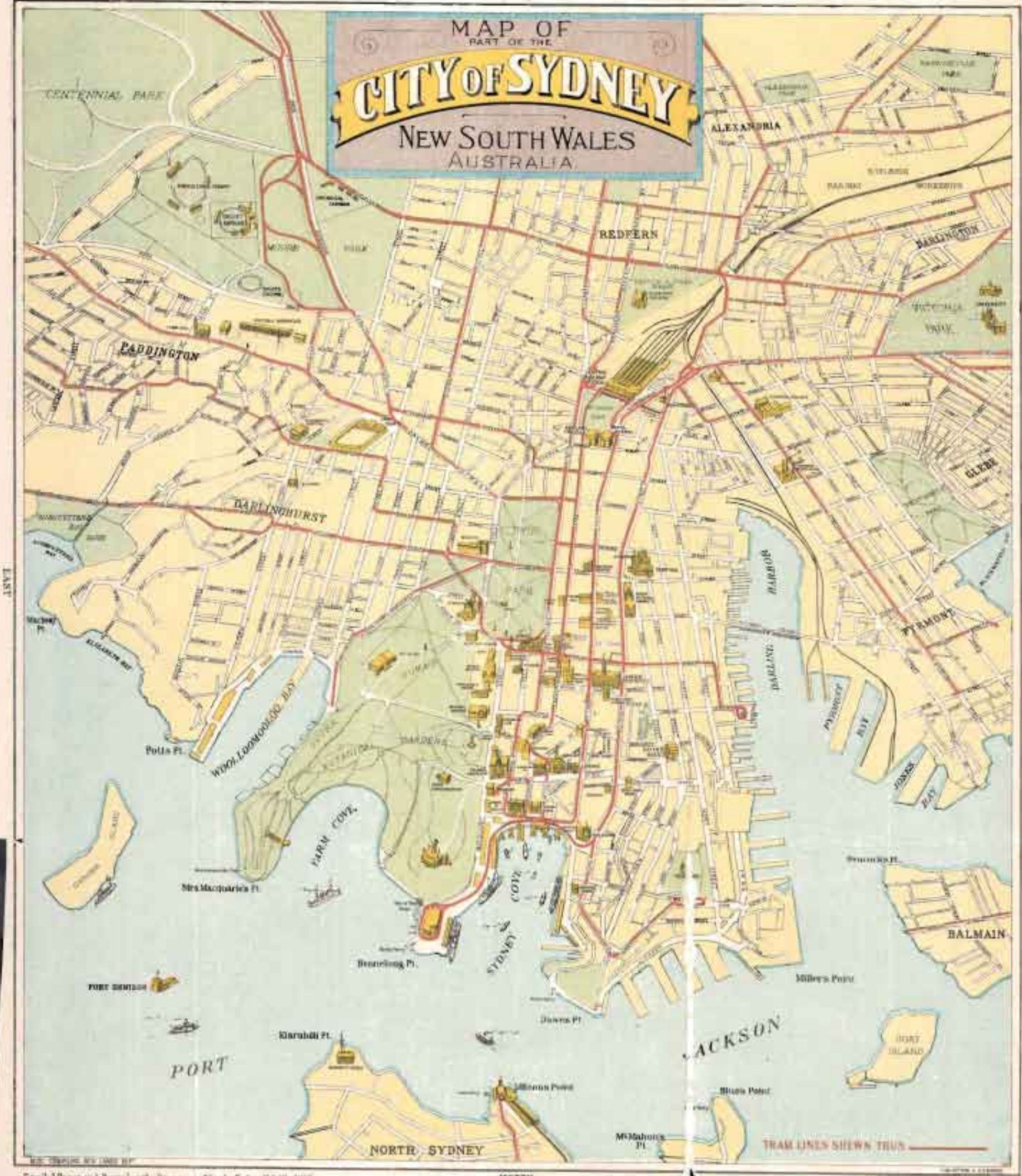
Appliances for rendering first-aid have been installed at the depôts and important stations and are carried in the brake-vans of main line and through trains; first-aid equipment is provided also at Sydney and Newcastle and at several country stations. Ambulance and first-aid classes have been established at numerous stations and depôts for the instruction of members of the Railway and Tramway staff. The total strength of the Railway and Tramway Ambulance Corps at 30th June, 1914, was 7,846 members.

The Railway and Tramway Institute.

The Railway Institute was established in 1891 for the purpose of encouraging mutual intercourse and improvement among the Railway and Tramway staff. The building, which was erected by the Government, occupies a site near the Central Railway Station, Sydney; it contains a fine library, the books being circulated amongst members throughout the State; accommodation is provided for classes for instructing members, particularly in subjects relating to railway and tramway methods. The trade classes of the Institute are affiliated with those of the Technical College. A monthly newspaper is published in connection with the Institute.

SOUTH

MAP OF
PART OF THE
CITY OF SYDNEY
NEW SOUTH WALES
AUSTRALIA



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No. 211 of 1915

NORTH

LOCAL GOVERNMENT.

Legislation passed in the years 1905 and 1906 gave the State of New South Wales full local government.

The Act of 1842, by which the City of Sydney was incorporated, contained no provision for conferring municipal privileges on other localities; but in 1843 the first step was taken in respect of the country districts by the incorporation of Campbelltown, Appin, Camden, Narellan, and Picton as one district council, which was subdivided into three, during the same year, by the formation of Campbelltown and Appin into separate councils.

In 1844 the number of country district councils had increased to eight, and these, in conjunction with the Municipal Council of Sydney and the Road Trusts, subsequently established, constituted the whole of the local government system prior to 1858.

The first important measure relating to general municipal Government was enacted in 1858, when an Act was passed dissolving the district councils, and placing under municipal bodies the area controlled by them. Under its authority thirty-five districts were incorporated, and with the exception of Cook, joined in 1870 to Camperdown (which became a ward of the City of Sydney in 1911), and East St. Leonards and Victoria (united to St. Leonards to form North Sydney), these still exist, although many of the boundaries have been altered.

Under the Act of 1858, the municipal council was elected by the ratepayers, and its most important functions were to make by-laws for the general government of the municipality, to control roads, bridges, and ferries, and to remove nuisances. The general rate was limited to one shilling in the £ on the annual value of ratable property, but a special rate for water supply, sewerage, and street lighting was permissible. Endowment by the Government was provided during a term of fifteen years, based on the amount of general rates actually collected. No district, however populous, was obliged to become incorporated; and it was only on the presentation of a petition, signed by at least fifty of the prospective ratepayers, and containing a larger number of signatures than those attached to any counter petition, that a municipality could be formed.

MUNICIPALITIES ACT OF 1867.

The Act of 1858 was repealed by the Municipalities Act of 1867. Under this Act the existing municipalities were continued as boroughs, and all areas incorporated in the future were to be classified either as boroughs or municipal districts. Boroughs might include any city, town, or suburb of the metropolis, or any country district with a population exceeding 1,000 persons and an area not less than 9 square miles. Municipal districts might include any area not containing a borough, with a population not less than 500 and an area not more than 50 square miles.

The powers of the councils were extended slightly, and the rating power remained as before. It was left optional for any district to become incorporated, and consequently local government was not generally adopted.

The Municipalities Act of 1897 consolidated the Acts and Amending Acts which had been passed from time to time, but did not alter their principles. The voluntary principle of incorporation which was retained was not conducive to the adoption of a general system of local government, as it was natural that, so long as the central Government continued

to construct local works, the persons benefited would submit to the absence of local management of their affairs.

LOCAL GOVERNMENT (SHIRES) ACT.

The Local Government (Shires) Act, 1905, provided for the compulsory division of the State into local government areas, called shires. The city of Sydney and existing municipalities, the whole of the Western Division, the Quarantine Station, Lord Howe Island, and the islands in Port Jackson were excepted from its operation. The Act provided for the payment of a sum not less than £150,000 annually, as endowment from the Consolidated Revenue Fund, in the following proportions, viz.:—First-class shires, from nil up to 10s. per £; second-class, 15s. per £; third-class, 20s.; fourth-class, 25s.; fifth-class, 30s.; and sixth-class, 40s. or more. These endowments were made payable on the amount of general rates received during the preceding year, the amount of endowment being fixed triennially, according to the area, revenue, and expenditure of the shires.

The councils were authorised to exercise the following powers:—The care, control, construction, fencing, and maintenance of all public places, except those vested in the Railway Commissioners, or other public bodies or trustees, and except national works; regulation of traffic; street and road lighting; prevention of bush fires; flood relief and prevention; construction and maintenance of streets, jetties, wharfs, and buildings for the transaction of business; and the administration of the Impounding and Public Watering Places Acts. The right was given to acquire other powers, such as the prevention of nuisances; water supply; regulation and licensing of public vehicles and hawkers; management of parks and commons; and the administration of the Public Gates Act and the Native Dog Destruction and Poisoned Baits Act.

The Act also provided for the division of the shires into ridings, each riding having equal representation on the council, and triennial elections were prescribed. All owners and occupiers of ratable property of annual value not less than £5, over 21 years of age, male and female, unless not naturalised, were entitled to be entered on the electors' roll, any male person enrolled being qualified for nomination as a councillor. The usual conditions as to disqualification were provided, also the penalties for acting while not properly qualified.

Under an important provision in the Act rates are charged on the unimproved value of the land, and not on the annual rental. The rate levied must be not less than 1d., nor more than 2d. in the £, unless the minimum rate is more than sufficient to meet the requirements of the shire, in which case a rate of less than 1d. may be levied by permission of the Governor. The ratable value of coal-mines is fixed at 50 per cent. of the gross value of the average annual output for the preceding three years, and of other mining properties at 40 per cent. for the same period. Another important feature of the Act is the provision for suspending the operation of the State land tax when the Council has imposed a rate of 1d. in the £ on the unimproved capital value. Commons, public reserves and parks, cemeteries, public hospitals, benevolent institutions, churches and other buildings used exclusively for public worship, free public libraries, and unoccupied Crown lands are exempted from taxation.

In 1906 a very comprehensive measure, the Local Government Extension Act, was passed by Parliament. The first important provision of this Act is for the establishment of cities; the Governor is authorised to proclaim as a city, any municipality which has had during a period of five years a population exceeding 20,000 persons and a revenue of £20,000, and which is an

independent centre of population. During the year 1907 Broken Hill was proclaimed a city, and is the only municipality which has taken advantage of the Act in this respect.

It was also enacted that all municipalities not receiving statutory endowment under the existing Act, if found on investigation to be in necessitous circumstances, should be entitled to a sum not exceeding 3s. 4d. in the £ on the general rate collected; but if the revenues were sufficient to meet the reasonable requirements under proper management of the corporations, endowment would not be paid. When, however, the estimated responsibility for expenditure (transferred with the land tax) exceeds the amount of the suspended tax, the amount of 3s. 4d. in the £ may be increased, provided that the endowment were not greater than the excess of that expenditure.

The rates are levied on the unimproved value, at a minimum amount of 1d. in the £, but if this rate proves more than sufficient to meet the requirements of the municipality, it may be reduced. Having levied the general rate of 1d. on the unimproved value, a council is empowered to impose, either on the improved or on the unimproved value, such additional rate as may be required. Special, local, and loan rates are to be imposed on the improved or unimproved value, at the option of the council. The conditions as to ratable value and the franchise of electors are similar to those of the Local Government (Shires) Act.

Other important provisions are the power to borrow up to 10 per cent. of the unimproved value, such loans to be guaranteed by the Government; redistribution and reconstruction of existing areas, so that the municipalities might form portions of shires; acquisition of land and works; control of cattle-slaughtering and public health; dealing with noxious animals and plants; safety of the public; regulation of hoardings and other structures; the appointment of auditors, and the inspection of accounts by Government examiners. The Governor is authorised to proclaim any park, road, bridge, or other public work as a national work to be maintained by the State, but which may be handed over to the council at any time.

LOCAL GOVERNMENT ACT, 1906.

The Local Government Act, 1906, deals fully with both shires and municipalities, and came into operation on 1st January, 1907, as regards shires, and on 1st January, 1908, as regards municipalities. It repeals the Local Government (Shires) Act, 1905, and the Local Government Extension Act, 1906, and consolidates their provisions. Under an amending Act passed at the end of 1908, councils must cause a valuation of all ratable land to be made at least once in every three years, provided that they may adopt for any period the whole or any part of the valuations in force at the close of the preceding period.

Prior to the inception of the Local Government Act, 1906, a very small portion of the State had been incorporated; as will be seen in the statement below, which gives the area incorporated and unincorporated in 1906 in the three great land divisions of the State:—

Division.	Incorporated.	Unincorporated.	Total.
	sq. miles.	sq. miles.	sq. miles.
Eastern	1,977	93,742	95,719
Central	571	88,579	89,150
Western	282	125,216	125,498
Total	2,830	307,537	310,367

On 31st December, 1913, the area incorporated, excluding Lord Howe Island and the federal territory of Canberra and Jervis Bay, was as follows, the only part of the State unincorporated being that portion of the Western Division not included in municipalities. The population in the different groups is also given:—

	Area (sq. miles).	Population.
In Metropolitan Municipalities... ..	149	713,260
In Country Municipalities	2,764	456,050
In Shires	180,656	645,140
Total (incorporated)... ..	183,569	1,814,450
Western Division (portion unincorporated)	125,893	18,006
Total	309,462	1,832,455

CITY OF SYDNEY.

The City of Sydney was incorporated on 20th July, 1842, under the Sydney Municipal Council, the election of aldermen taking place on the 9th November. The city was originally divided into six wards, but at a subsequent adjustment the number was increased to eight.

Great dissatisfaction soon arose in the minds of the citizens as to the manner in which the affairs of the Corporation were conducted. A Select Committee of the Legislative Council was appointed in 1849 to inquire into the matter, and reported in favour of the abolition of the Municipal Council, with a recommendation that its powers should be vested in three Commissioners. This was not carried into effect until 1853, when the Corporation was dissolved, and its authority was transferred to a Commission of three persons, who administered the affairs of the city from the beginning of 1854 to the end of 1857, when a new Council, consisting of sixteen aldermen—two for each ward, came into existence. By the Sydney Corporation Act of 1879 the number of aldermen was increased to twenty-four, being three representatives for each ward.

Towards the close of 1900 an Amending Act was passed, dividing the city into twelve wards, each returning two aldermen. The innovation of retiring—the whole of the aldermen simultaneously was introduced, with a provision for the election of a new Council on the 1st December in every second year, re-election of qualified persons being permitted.

Important changes were effected under this Act as to the franchise, sub-tenants and lodgers being placed on the rolls, also extended powers were conferred on the Council as to resumption of lands for city improvements.

The Sydney Corporation Act of 1902 consolidated the statutes previously passed relating to the City of Sydney.

In 1905 a further amending Act was passed to provide for the better government of the city, especially with regard to the control of hoardings, the proper cleansing of footways, the prevention or regulation of the smoke nuisance from furnaces and chimneys, the regulation and control of refreshment stalls and stands, the control of juvenile hawkers and shoeblacks, and the prevention of betting in public places, and the tenure of office of the aldermen was altered to three years. The Municipality of Camperdown was amalgamated with the City of Sydney as from 1st January, 1909, and the Council now consists of twenty-six aldermen elected every third year by thirteen wards. The Lord Mayor is elected by the aldermen from their own number.

The Act of 1905 also regulates the election of the city members of the Metropolitan Board of Water Supply and Sewerage, and of the Fire Brigades Board, and extends the power of the Council as regards resumptions, in order to provide workmen's dwellings, and further provision is made for the extension of the city boundaries.

In 1908 an Amending Act was passed, containing several important provisions. Commencing with the year 1909, the Council must levy a rate, not less than one penny in the £, upon the unimproved capital value, which rate is to be in addition to any rate under the Act of 1902. Under the former Act the rate levied in 1913 was 1½d. in the £, and under the latter 21d. in the £ on the assessed annual value. It is provided, however, that the total amount leviable shall not exceed the amount which would be yielded by a rate of 3d. in the £ on the unimproved capital value, and 2s. in the £ on the average annual value, taken together, of all ratable property. On the Council imposing such rate on the unimproved capital value, the land tax is suspended automatically. The valuation of the unimproved capital value is to be made at least once in every five years. The Council was empowered also to establish public libraries and milk depôts, to control certain parks, and to widen certain streets. The Lending Branch of the Public Library, and various parks and public ways were vested in the Council by the Government under certain conditions.

The Sydney Corporation (Dwelling-houses) Act, 1912, enables the City Council to erect and let dwelling-houses, and for that purpose to acquire land.

GREATER SYDNEY.

The amalgamation of the metropolitan municipalities is a question which has attracted considerable attention, and various schemes have been suggested.

In 1902 a Parliamentary Select Committee collected evidence regarding a system of local government for Greater Sydney, but the matter was not brought to a definite conclusion. In 1912 the subject was revived, and a Bill was introduced into Parliament for the constitution of a convention to formulate a scheme for the amalgamation of the local government areas of Sydney and neighbouring municipalities. This Bill was not passed by Parliament, but in 1913 a Royal Commission was appointed to inquire regarding the establishment of a Greater Sydney Municipal Council, by consolidating into one central government the various local areas in the metropolitan district.

The Report of the Commissioners was submitted to the State Governor on the 20th November, 1913, and the results of the investigations are as follows:—

In the first place it was recommended that Greater Sydney should embrace the whole metropolitan area, and be divided into two zones, an inner and outer. The inner zone as proposed, included sixteen municipalities, viz.:—City of Sydney, Alexandria, Botany, Darlington, Erskineville, Glebe, Mascot, Newtown, Paddington, Randwick, Redfern, St. Peter's, Vaucluse, Waterloo, Waverley, Woollahra. The islands in the harbour were also to be included. After a period of five years, the municipalities of North Sydney, Mosman, Balmain, Leichhardt, Annandale, Petersham, and Marrickville were to be added. The outer zone is to consist of the remaining municipalities, and portions of shires within the boundaries prescribed by the Commission.

The Council is to consist of thirty-five members, twenty-eight of whom will represent the inner zone, and seven the outer zone, elected by four

wards in the former, and one ward in the latter, and the aldermen are to retire simultaneously. The function of the proposed Council will include the control of gasworks, electric lighting, hydraulic power, ferries, parks, cemeteries, public health, town planning, main roads, and other services already undertaken, under arrangement with the local councils. It has also been suggested that the operations of the Tramways, Board of Health, Water Supply and Sewerage Boards, Harbour Trust, and Fire Brigade Boards, should be transferred to the council.

The powers of rating are defined to be:—Metropolitan rate on unimproved capital value, to defray cost of public health, town planning, and main roads, which might be fixed at 1d. in the £; city rate (or general rate) for ordinary municipal services, which would be based on existing values in city and suburbs, either on unimproved capital value, or improved capital value, and on which there is no limit; and other special or local rates as required. With regard to existing debts, the Commission favoured a "pooling" system, as book-keeping is made more simple, and it is only necessary to levy one general loan rate for the whole area. New loans should be obtained only after approval by the Governor-in-Council, conditionally on provision being made for repayment in fifty years.

The construction of the North Shore bridge was also discussed, and it was decided that provision should be made, in the proposed constitution, for co-operation between the Council and the State Government for the construction of the bridge. It was suggested that special powers should be conferred on the Council for raising a loan for this purpose, and for imposing tolls on users, as well as a bridge rate on the metropolitan area, and also to receive contributions from the Railway Commissioners for upkeep of permanent-way, &c.

Other imposts were mentioned, such as wheel-tax, payment for services, &c., and the exemptions from taxation provided for in existing Acts, were also recommended.

RATINGS.

The Sydney Corporation Act of 1902 directs that improved property within the city shall be assessed at a fair average annual value, with an allowance for outgoings not exceeding 10 per cent., and the unimproved property at a maximum of 6 per cent. on its capital value; and on the value of such assessment a city rate not exceeding 2s. in the £ may be levied, exclusive of lighting. The rate stood at 16d. from 1891 to 1899, but was increased to 18d. for 1900, and 24d. for 1901. In 1902, it was reduced to 22d., and still further reduced to 21d. in 1903, which was also levied from 1904 to 1913. The Act provides for a special local rate not exceeding 6d. in the £ of annual value, for any work which may be for the particular benefit of one locality, but then only if two-thirds of the ratepayers of such locality petition for the same. Occasional advantage of this power has been taken for street-watering, though not of late years, and the amount now levied covers the expenses of street-lighting and street-watering.

The other councils were formerly empowered to raise revenue by rates not exceeding 1s. in the £ for ordinary purposes and the same amount for special purposes, with 6d. in addition for street-watering. The amount of each rate was calculated upon nine-tenths of the fair average annual rental of all buildings and cultivated lands, or lands let for pastoral, mining, or other purposes, and upon 5 per cent. of the capital value of the fee-simple of all unimproved lands.

Municipalities which avail themselves of the provisions of the Country Towns Water and Sewerage Act of 1880 are empowered to levy a rate for each service not exceeding a maximum of 10 per cent. on the assessed annual value of land and tenements, in addition to the ordinary municipal rates. Under the Local Government Act, however, a water rate equivalent to this maximum of 10 per cent. on the assessed annual value must be levied either on the unimproved or the improved capital value of lands within the reticulated area.

In order to aid municipalities in providing for the expenditure in their formative stages, the 1867 Act provided for endowment by the State during a period of fifteen years. In each of the first five years after incorporation, every municipality is entitled to a sum equal to the whole amount actually raised by rates or assessments; in each of the next succeeding five years, a sum equal to one-half; and in each of the next five years, a sum equal to one-fourth of the amount so received. After the expiry of these fifteen years, such assistance ceases, and any further aid from the State is in the nature of a special grant.

VALUATIONS.

It has already been explained that under the Local Government Act, 1906, the basis of rating was changed. The valuations for 1909 to 1913 inclusive, therefore, cannot be compared with those of previous years.

Property in the City of Sydney was in 1913 still rated on the basis of the annual rental value, and the following is a comparison of the capital and annual values in the city during the three years 1911-1913:—

	1911.	1912.	1913.
	£	£	£
Unimproved capital value	23,940,030	23,988,480	23,837,157
Improved capital value	55,520,640	57,395,288	64,080,440
Assessed annual value... ..	2,498,429	2,582,788	2,753,408

VALUATIONS AND RATING UNDER 1906 ACT.

Since 1st January, 1908, under the Local Government Act of 1906, municipalities have been obliged to levy a general rate on the unimproved capital value of all ratable land, and may levy additional general, special, local, or loan rates on either the unimproved or the improved capital value. Municipal rates are no longer charged on the annual value; the only rates based on that value are those charged by the Metropolitan and the Hunter District Water Supply and Sewerage Boards.

The unimproved capital value of land is the amount for which the fee-simple estate in such land could be sold under such reasonable conditions as a *bonâ-fide* seller would require, assuming that the actual improvements had not been made.

The improved capital value is the amount for which the fee-simple estate of the land, with all improvements and buildings thereon, could be sold.

The general rate must be not less than 1d. in the £ on the unimproved capital value of all ratable land, and the total amount to be derived from the general rate and additional rates taken together must not exceed the amount yielded by a rate of 2d. in the £ on the unimproved value and 2s. in the £ on the assessed annual value of all ratable land. In 1913 very few municipalities levied additional general rates, nearly all confining themselves to one general rate. The variation in the rates is rather

remarkable. In the suburbs of Sydney in 1912 they ranged from 2d. to 5d., and in 1913 from 2½d. to 5½d. In the country in each of the years the range was from 1d. to 12d. The following rates were struck for the years 1912 and 1913:—

General Rate Levied.	Year 1912.		Year 1913.	
	Suburbs of Sydney.	Country.	Suburbs of Sydney.	Country.
1d. and under 2d....	.....	21	.. ...	17
2d. ,, 3d....	4	22	3	22
3d. ,, 4d....	13	49	12	41
4d. ,, 5d....	19	31	20	41
5d. ,, 6d....	4	16	5	15
6d. and over ...	.....	10	.....	11
Total ...	40	149	40	147

The majority of suburban councils levied rates between 4d. and 5d., the next in number being between 3d. and 4d. In the country municipalities the proportions were different, as the number charging 3d. and 4d. per £ and 4d. and 5d. were equal with those from 2d. to 3d. in third place. The municipalities which levied 6d. and over in the £ during 1913 were Aberdeen, Queanbeyan, Wallsend, Warialda, and Wyalong, each 6d.; Scone, 6½d.; Lambton, 7d.; Hillgrove, 8d.; Broken Hill, 8½d.; Bourke, 9½d.; and Wrightville, 12d. These rates are exclusive of the amounts levied on mines. None of the suburban councils levied 1d. in the £; but this rate was imposed in four country municipalities.

Ninety-four municipalities levied special and local rates on the unimproved capital value, ranging from $\frac{1}{30}$ d. to 12d. in the £, and thirty-eight on the improved capital value, ranging from $\frac{1}{5}$ d. to 3d. in the £.

The rates levied amounted to £1,282,500, of which £1,162,896 were general and additional general rates.

In the following table the unimproved values, representing the values generally as reduced after appeal, and improved values for 1912 and 1913 are compared:—

Division	Unimproved Value.		Improved Value.		
	1912.	1913.	1912.	1913.	Increase, 1913.
	£	£	£	£	per cent.
Sydney—City ...	23,988,480	23,837,157	57,395,288	64,080,440	11·6
Suburbs ...	27,935,494	28,240,971	67,480,676	73,714,823	9·2
Metropolis...	51,923,974	52,078,128	124,875,964	137,795,263	10·3
Country ...	20,352,473	20,807,126	48,814,203	50,451,471	3·4
Total ...	72,276,447	72,885,254	173,690,167	188,246,734	8·4

The difference between the unimproved and improved capital values is, of course, the value of improvements, and the following statement shows that in both the suburbs and country the value of improvements has increased:—

Division.	Value of Improvements.		
	1912.	1913.	Increase.
	£	£	per cent.
Sydney—City	33,406,808	40,243,283	20·5
Suburbs	39,545,182	45,473,852	15·0
Metropolis	72,951,990	85,717,135	17·5
Country	28,461,730	29,644,345	4·2
Total	101,413,720	115,361,480	13·8

The increase in the value of improvements may be taken as indicative of municipal prosperity, taken together with existing industrial conditions. Of late years, particularly in the city and suburbs, there has been an increasingly marked activity in the building trade; old buildings have been demolished and have been replaced by more extensive structures, made still more valuable by reason of the increased cost of labour and materials.

The unimproved capital value of ratable land in municipalities is £72,885,000, and in shires £99,452,000, the total being £172,337,000. If to this be added £10,000,000, the estimated unimproved value of unincorporated land in the Western Division, the unimproved value of the land of the State, excluding a small area exempt from taxation, is £182,337,000. The value placed upon land in the Western Division is 2s. 6d. per acre, which is over 25 per cent. lower than in the shire in the west of the Eastern Division, with the lowest value per acre, and cannot be considered high.

The value of improvements in municipalities was £115,361,000, or 158 per cent. of the unimproved value. The value of improvements is not available for all the shires, but it has been assumed that it is the same proportion of the unimproved value as the average in those which are known, namely, about equal to the unimproved value. In the Western Division it may be placed at £10,000,000, so that for the whole of the State the following values are obtained:—

Division.	Unimproved Value of Land.			Value of Improvements.		
	Total.	Per Head.	Per Acre.	Total.	Per Head.	Per Acre.
	£	£	£ s. d.	£	£	£ s. d.
Sydney—City	23,837,000	206	7,165 14 3	40,243,000	347	12,095 17 8
Suburbs	28,241,000	47	307 3 11	45,474,000	76	494 13 0
Metropolis	52,078,000	73	564 14 0	85,717,000	120	899 16 8
Country Municipalities	20,807,000	46	11 15 3	29,644,000	64	16 15 1
Shires	99,452,000	154	0 15 1	99,452,000	154	0 15 1
Western Division (part unincorporated).	10,000,000	555	0 2 6	10,000,000	555	0 2 6
State	182,337,000	99	0 18 5	224,813,000	123	1 2 9

FINANCES.

The Local Government Act, 1906, prescribes that there must be a general fund in each local governing area (municipality or shire), to which must be paid the proceeds of all general and additional general rates, any moneys received by way of grant, endowment, &c., from the Government, and other income not required by law to be carried to other funds. The expenditure from the general fund must be on administration, health, roads, and other public services.

In addition, in each local area there must be a special fund for each special rate levied, and for each work or service carried on by the council in respect of which the special rate has been made, and the fund may be applied only for the purposes of such work or service. A special rate is levied for a special purpose, and applies to the whole area. Likewise a local fund must be kept for each local rate levied, with similar restrictions to those in the case of special funds. A local rate is levied for a local purpose, and applies only to that portion of the area which is benefited. The expenditure of the local fund is restricted to work within or for the sole benefit of that portion of the area.

Where any borrowed money is owing by a council a separate loan fund must be kept in respect of each work or service on which the loan has been spent. Except where a Loan Fund has its own revenue from rates, the attendant obligations, such as provision for the repayment of principal and interest, may be met by transfers from the General Fund or other appropriate fund. The object of the loan, as a rule, determines the source from which the Loan Fund shall obtain its necessary revenue. When the loans have been raised for general purposes, transfers are made from the General Fund, and the profits of trading concerns provide for the disbursements of their corresponding loan funds.

The revenue of special and local funds may be used in a similar manner; for example—Street Lighting Special Fund must provide the money to meet not only the ordinary cost of maintaining the street lighting for the year, but also the obligations of the Street Lighting Loan Fund; and similarly with Sewerage, Water Supply, and other Special and Loan Funds.

The above has reference more particularly to those Loan Funds which must be kept in respect of loans, which were raised before the present Act came into operation, that is to say,—loans raised when the law did not require (as it does now) a loan-rate to be levied to pay interest and provide for the extinction within a fixed period of each loan raised. It is apparent, therefore, that all new loans will be self-supporting, quite apart from the question whether the loan undertakings are profitable or not. In these latter cases the councils may either use profits to swell the amount which is being provided to repay, or retain them in the working accounts of the undertakings (that is, in the Special, Local, or Trading Funds, as the case may be).

The Regulations under the Act prescribe the system of accounts to be kept. The accounts must be "Income and Expenditure Accounts," kept by double entry, and each "Fund" must have a separate banking account. Thus there is shown for each General, Special, Local, Loan or Trading Fund of each area concerned, a "Revenue Account" (or Profit and Loss Account), giving the total expenditure chargeable for the period (whether paid or

unpaid), and the total income for the same period (whether received or outstanding). A balance-sheet is also shown for each Fund with appropriate liabilities and assets. Only "realisable" assets may be shown, so that the whole of the roads, bridges, drains, and much other constructive work, which are taken to account elsewhere as assets, are here excluded.

The Council of the City of Sydney conducts its affairs under the City Corporation Act, and therefore is not bound by the provisions of the Local Government Acts. The various accounts of the city were formerly kept on a "cash" basis, except those relating to the Electricity Fund, but from the year 1913 the system has been altered, and the Revenue and Capital transactions shown separately in the same manner as those of all other Local Bodies. As details cannot in many instances be allocated to the headings of expenditure and income as set out in the system of accounts prescribed under the Local Government regulations, it is obvious, when discussing the financial transactions of the whole municipal area of the State, that an endeavour to collate similar information from two different sources would serve no useful purpose, and the figures for statistical comparison would be of doubtful value. For the reasons stated above, the following particulars relating to municipal accounts are divided into two parts, one dealing with the City of Sydney and the other with the suburbs of Sydney and country municipalities.

CITY OF SYDNEY—RECEIPTS.

The receipts from the various funds, exclusive of the Electric Lighting Fund, in 1913, amounted to £503,133, the City Fund contributing £454,893, and the Public Markets Fund £48,240.

The total receipts exceeded the disbursements by £36,530. Although abstracts of receipts and disbursements in respect of the Public Markets Fund are shown in the city accounts, this fund is really subsidiary to the City Fund, its balance at the end of the year being transferred and shown as an adjustment in that fund.

The following is a statement of the receipts of the City Fund under appropriate headings:—

	£
General Purposes	395,130
Works	12,516
Health Administration	17,083
Public Services... ..	13,621
Municipal Property	9,841
Miscellaneous	6,702
Total	£454,893

Rates, £242,303, together with land tax, £151,212, form by far the greater part of the receipts under the heading "General Purposes." As provided by the amending Act of 1908, rating on the unimproved value of land was first brought into force in 1909, and that such a large amount should be realised with the minimum rating of 1d. in the £ shows the importance to be attached to the acquisition of the transferred Land Tax as an addition to the city finances.

CITY OF SYDNEY—DISBURSEMENTS.

The disbursements of the City Fund in 1913 amounted to £401,373, and of the Public Markets Fund £65,230. Shown under the same headings as the receipts, the following were the disbursements of the City Fund:—

	£
General Purposes	39,983
Works	88,841
Health Administration	116,733
Public Services... ..	62,522
Municipal Property	9,710
Miscellaneous (Interest, Sinking Fund, &c.)	83,584
Total	£401,373

Salaries, which amounted to £29,029, absorbed a very large share of the expenses for General Purposes. Of the sum spent on Public Works, street maintenance accounted for £43,894, footpaths for £16,971, and wood-paving for £10,869. On city cleansing £84,819 was expended, and this was the main item in Health Administration. The large amount shown under "Miscellaneous" includes the Annual Debenture indebtedness, which in 1913 was £44,387 for interest, commission, &c., and £14,435 from Sinking Fund contributions.

The receipts and disbursements of the Public Markets Fund, as stated, were £48,240 and £65,230 respectively, showing a deficit of £16,990 on the year's transactions. Of this the Queen Victoria Markets brought in revenue to the extent of £18,784, or about 39 per cent. of the total.

The next item to be considered is the Revenue Account of the Electricity Works Fund for the year 1913:—

Expenditure.		Income.	
	£		£
Generation of Electricity	55,358	Private Lighting	160,408
Distribution	44,452	Public Lighting	21,361
Management	22,804	Power Supply	90,957
Special Charges	15,894	Rentals—Meters, Motors, Lamps, &c.	12,598
Bad debts written off	119	Net Revenue—Company Pur- chases	15,894
Total	£138,627	Miscellaneous	419
Balance carried to Net Revenue Account	163,010		
Total	£301,637	Total	£301,637

Generation forms the largest item of expenditure, accounting for 39·9 per cent. of the whole. Distribution cost 32·1 per cent., and Management 16·4 per cent. The special charges were monthly payments on account of transferred customers to companies whose works were purchased by the City Council. They represent, however, the gross expenditure only, as after expenses of management, &c., have been deducted the municipality is credited with the balance, amounting to £15,894, as shown on the income side of the account.

The sales of current to the public for light and power amounted to £250,908, and the sales to the Council realised £21,818.

The principal charges, out of a total of £105,664 against the gross profit of £163,010 carried to the Net Reserve Account, were:—Interest on Debentures and Overdraft, £50,567; Interest on Balances—Company purchases, £2,363; Sinking Fund contribution, £11,368; Depreciation Reserve Account, £41,366; and flotation expenses, &c., £4,047. It will be seen from the foregoing that the net gain for the year was £53,299, which, added to the net profit from 1912, viz., £1,944, gives a total of £55,243 credited to profit and loss at the end of 1913.

Below is a summary of the balance-sheet of the Electricity Works Fund on 31st December, 1913:—

Liabilities.	Assets.
£	£
Debenture Loans... .. 1,251,600	Capital Expenditure — Land, Buildings, Machinery, Plant, &c. 1,578,584
Sinking Fund 59,631	Goodwills—Company Purchases 74,503
Reserve and Suspense Accounts 213,681	New South Wales Treasury— Sinking Fund Investments ... 59,631
Sundry Creditors... .. 34,266	Stores and Materials 118,672
Deposits (Consumers) 4,658	Consumers' Balances 53,854
Balance—Net Revenue Account 55,243	Other 13,309
Bank of New South Wales debit balance 279,474	
£1,898,553	£1,898,553

The Loan Capital, which forms about 66 per cent. of the liabilities, returned 4·3 per cent. profit for the year; but consideration of the fact that the interest payments and Sinking Fund contribution for the year amounted to £64,298, that £41,366 was allowed for depreciation, and that the Sinking Fund is represented by an investment of £59,631 in Government Stock, will show that the finances of the Sydney Electricity Works Fund are in a healthy condition.

The following is a Summary of Liabilities and Assets of all funds of the City of Sydney as at 31st December, 1913:—

Liabilities.	Assets.
£	£
Debentures current 5,627,300	Bank Balances, Cr. 307,893
Bank Balances, Dr. 409,393	Landed Properties, Baths, and Sundries 4,799,762
Sundry Creditors 614,578	Machinery, Plant, Furniture, Stores, &c. 1,432,479
Sinking Funds Debenture In- terest Account... .. 402,448	Sundry Debtors 214,998
Improvement Account and Sun- dries 141,938	Sinking Funds (State Treasury) Investments 135,000
	Flotation Expenses and Sundries 164,020
£7,195,657	£7,456,609
Excess of Assets £260,943	

Notwithstanding the large Loan indebtedness the assets exceed the liabilities by £260,943. It should be noted that the Debentures include £1,251,600 borrowed in connection with Electric Lighting, and £975,500 for Public Markets, and that as the proceeds of such loans have been spent on reproductive municipal works, such works should provide the annual interest charges and sinking fund contributions. It follows that "rate" revenue is relieved to the extent that annual liabilities of this nature are so liquidated. It is true that the Electricity Works Fund is quite self-supporting; but, then again, the deficiency in the Public Markets Fund becomes a charge on the city rates. Landed properties, baths, &c., which comprise about 64·4 per cent. of the assets, include such large items as Public Markets, £1,205,936; Town Hall, &c., £762,668; Resumptions, £2,116,075; Electric Light Buildings, Works, &c., £311,255. The accumulated Sinking Fund, £402,448, as against a Debenture Debt of £5,627,300, must be regarded as a satisfactory cover.

PROGRESS OF SYDNEY.

The following table shows the progress of the City of Sydney during the last four years:—

Particulars.	1910.	1911.	1912.	1913.
Area Acres	3,327	3,327	3,327	3,327
Population No.	119,800	118,800	116,400	115,900
	£	£	£	£
Unimproved Capital Value	19,952,793	23,940,030	23,988,480	23,837,157
Improved Capital Value	52,142,200	55,520,640	57,395,288	64,080,440
Assessed Annual Value	2,346,399	2,498,429	2,582,788	2,753,408
City Fund—				
Income—Rates	206,461	221,450	226,688	242,303
Land Tax	83,569	98,183	100,267	151,212
All other sources	69,664	92,085	102,755	61,378
Total	359,694	411,718	429,710	454,893
Expenditure	385,947	407,055	444,997	401,373
Public Markets Fund—				
Income	33,807	38,899	44,639	48,240
Expenditure	43,557	46,666	60,226	65,230
Cattle Saleyards Fund—				
Income	18,563	17,315	9,434	•
Expenditure	8,146	8,381	3,780	•
Electricity Works Fund—				
Income	166,047	190,289	234,325	301,637
Expenditure	141,335	161,898	197,253	244,291
Total Receipts—All Funds	578,116	658,221	718,108	917,149
Total Disbursements—All Funds... ..	578,985	624,000	706,256	865,842
Liabilities—All Funds	3,794,063	4,310,441	5,654,811	7,195,657
Assets—All Funds	4,318,028	4,845,111	6,030,411	7,456,600
Loans outstanding 31st Dec.	3,231,900	3,870,600	4,977,500	5,627,300
Sinking Fund, 31st Dec.	259,061	303,553	355,524	402,448

* Taken over by State Government.

The tendency of a city population as compared with a suburban population is to decrease rather than increase. Three important factors have combined to make this particularly applicable to Sydney—private enterprise shown by the building of extensive premises designed almost entirely for business purposes, improved facilities for reaching suburban areas by quicker and cheaper means of transport, and perhaps the most important, the council's policy of city improvement by demolishing delapidated buildings, and opening up new streets, which must force the population outwards.

The steady progression in the city finances indicated in the above statement is marred by the figures relating to the Public Markets Fund, which show a loss on each year's transactions, attributable almost wholly to the Queen Victoria Markets.

Each year's returns emphasise the rapid and at the same time profitable expansion of the electric lighting undertaking. The lights were used for the first time on 8th July, 1904, when parts of the city were illuminated, and since that date great progress has been made, and the public parks as well as the remainder of the streets under the control of the council are now included.

The cattle saleyards, formerly a productive asset, were in 1913 taken over by the New South Wales Government.

EXPENDITURE.

Suburbs of Sydney and Country Municipalities.

The expenditure during 1913 by the various municipalities under the Local Government Act amounted to £1,409,221, which was £117,740 less than the income. The following statement shows the expenditure allocated to the various funds in 1912 and 1913:—

Funds.	1912.			1913.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
	£	£	£	£	£	£
General Fund	535,953	384,803	920,756	585,339	400,175	985,514
Trading Accounts	8,078	106,035	114,113	2,542	118,017	120,559
Special and Local Funds	46,434	229,278	275,712	53,714	245,413	299,127
Loan Funds	34,581	29,709	64,290	38,164	28,577	66,741
Reserves and Renewals Account ... ..	...	1,859	1,859	325	2,450	2,775
Gross Expenditure	625,046	751,684	1,376,730	680,084	794,632	1,474,716
Deduct Transfers... ..	37,258	28,309	65,567	33,730	26,765	65,495
Net expenditure	587,788	723,375	1,311,163	641,354	767,867	1,409,221

The greatest expenditure was naturally from the General Fund, which accounted for 66·8 per cent. of the whole, as against 66·9 per cent. in 1912.

The trading concerns of the municipalities are gas and electricity; the special and local funds relate to water supply, sewerage, street-watering, street-lighting, old loans interest, and a few other miscellaneous matters.

A review of the figures in the preceding table shows a substantial increase in the expenditure of each fund in 1913, indicating an increased activity in the management of municipal affairs.

Details of the expenditure from the General Fund are shown below:—

Source of Expenditure.	1912.			1913.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
	£	£	£	£	£	£
General Purposes—						
Rates and interest abandoned	1,377	2,271	3,648	2,307	1,629	3,936
Administrative expenses	45,475	53,459	98,934	53,243	59,909	113,242
Public Works	314,819	189,796	504,615	343,127	206,622	549,749
Health Administration	60,612	38,629	99,241	65,164	38,651	103,815
Public Services	78,017	44,692	122,709	84,625	48,240	132,865
Municipal Property	20,895	27,860	48,755	22,744	27,983	50,727
Transfers	10,017	17,348	27,365	11,334	14,131	25,465
Other	4,741	10,748	15,489	2,795	2,920	5,715
Total expenditure	535,953	384,803	920,756	585,339	400,175	985,514

An amendment of the Local Government Act in 1908 provided that, except when exemption had been granted by the Governor, the cost of night-soil and garbage removal must be paid out of a Special Fund, and not out of the General Fund; and the cost of lighting streets and roads must also be defrayed from a Special Fund. When, however, the whole area of a municipality is within 20 miles of the General Post Office, Sydney, or when the whole area of a municipality is benefited by the expenditure on street lighting, the council, in its discretion, may pay such costs out of the General Fund.

The effect of this enactment is reflected clearly in the above figures, which show an increased expenditure on Health Administration and Public Services. The cost of street lighting in the suburbs is met out of the General Fund.

The proportion of expenditure under each head to the total expenditure was as follows:—

Source of Expenditure.	1912.			1913.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
General Purposes—	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
Rates and interest abandoned	0·3	0·6	0·4	0·4	0·4	0·4
Administrative Expenses	8·5	13·9	10·7	9·1	15·0	11·5
Public Works	58·7	49·3	54·8	58·6	51·6	55·8
Health Administration	11·3	10·0	10·8	11·1	9·7	10·5
Public Services	14·6	11·6	13·3	14·5	12·1	13·5
Municipal Property	3·9	7·3	5·3	3·9	7·0	5·1
Transfers to Loan Funds	1·8	4·5	3·0	1·9	3·5	2·6
Other	0·9	2·8	1·7	0·5	0·7	0·6
Total	100·0	100·0	100·0	100·0	100·0	100·0

In 1913, of the expenditure by municipalities, 11·5 per cent. was on administrative expenses, and 55·8 per cent. on public works. Of the administrative expenses, salaries were the largest. The relative cost of administration in the country is high, being 15·0 per cent. of the total expenditure; the suburban municipalities spend only 9·1 per cent. under the same heading. The high relative cost of administration in the country is due, no doubt, to the sparse population and small revenue of many of the country municipalities. In such cases, the expenses on account of salaries, &c., would naturally be larger proportionately than in the more closely-settled localities in the suburbs. Public Services for 1913 include—Pounds, £1,956; street-watering, £11,710; street-lighting, £68,670; and all other services, £50,529. The greatest part of the expenditure on Public Works was on roads, streets, &c., as will be seen below:—

Services.	1912.			1913.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
	£	£	£	£	£	£
Supervision	9,715	5,907	15,622	11,098	6,892	17,990
Roads, streets, culverts, &c.	285,850	170,033	455,883	309,502	185,060	494,562
Bridges	343	3,794	4,137	1,025	3,361	4,386
Drains, sewers, &c.	9,902	3,691	13,593	11,821	3,788	15,609
Ferries, wharfs, and jetties	3,461	1,710	5,171	3,663	2,320	5,983
Sundries	5,548	4,661	10,209	6,018	5,171	11,189
Total	314,819	189,796	504,615	343,127	206,622	549,749

Of the expenditure on roads, streets, &c., in 1913, the amount spent on maintenance, renewals, and repairs was £239,329; £84,094 was expended on construction, £41,618 on street and gutter cleaning, £40,937 on kerbing and guttering, £48,455 on footpaths and gutter bridges, and £8,017 on sundries, a large part of which was absorbed by tree-planting.

The Trading Accounts, which relate to the supply of gas or electricity, will be treated later under those headings, and the special Water and Sewerage Funds will also be discussed.

INCOME.

The income in 1913 of all the municipalities brought under the provision of the Local Government Act was £1,526,961, including £24,202 received as endowments or grants from the Government. Under the same funds as in the expenditure the income for 1912 and 1913 is shown below:—

Funds.	1912.			1913.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
	£	£	£	£	£	£
General Fund	537,244	383,994	921,238	578,862	398,707	977,569
Trading Accounts	8,027	94,804	102,831	2,227	160,687	162,914
Special and Local Funds	40,523	250,822	291,345	46,617	271,175	317,792
Loan Funds	42,408	48,057	90,465	65,313	46,495	111,803
Reserves and Renewals Account	3,810	4,191	8,001	5,309	17,064	22,373
Gross Income	632,012	781,868	1,413,880	698,328	894,128	1,592,456
Deduct Transfers... ..	37,258	28,309	65,567	38,730	26,765	65,495
Net Income	594,754	753,559	1,348,313	659,598	867,363	1,526,961

Details of the items of the General Fund for 1912 and 1913 are as follows:—

Source of Income.	1912.			1913.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
	£	£	£	£	£	£
General Purposes—						
Rates levied (including interest)	434,821	285,977	720,798	476,055	302,930	778,985
Government Endowments, &c.	576	6,562	7,138	782	4,903	5,685
Sundries	9,218	7,893	17,111	9,855	7,690	17,545
Public Works*	45,785	16,288	62,073	42,849	17,291	60,140
Health Administration*	20,172	16,765	36,937	22,414	16,553	38,967
Public Services*	7,016	14,631	21,647	7,925	15,601	23,526
Municipal Property	17,692	30,136	47,828	18,180	32,759	50,939
Miscellaneous	1,964	5,742	7,706	802	980	1,782
Total	537,244	383,994	921,238	578,862	398,707	977,569

* Including Government grants.

To the income from public works, the Government contributed £10,600 as grants for roads, streets, &c., and £605 as grants for ferries.

Under Health Administration are included Government grants for Parks, &c., amounting to £5,860. The Government also granted £5,685 for General Purposes.

Stating the income under each head as a percentage of the total income of the General Fund, the following results are obtained:—

Source of Income.	1912.			1913.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
General Purposes—	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
Rates levied (including interest)	80.9	74.5	78.2	82.2	76.0	79.7
Government Endowments, &c.	0.1	1.7	0.8	0.1	1.2	0.6
Sundries	1.7	2.0	1.9	1.7	1.9	1.8
Public Works*	8.5	4.2	6.7	7.4	4.3	6.2
Health Administration*	3.8	4.4	4.0	3.9	4.2	4.0
Public Services*	1.3	3.8	2.4	1.4	3.9	2.4
Municipal Property	3.3	7.9	5.2	3.1	8.2	5.1
Miscellaneous	0.4	1.5	0.8	0.2	0.3	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

* Including Government grants.

The bulk of the general income was received from rates, the average for all municipalities being 79.7 per cent. In the suburbs it was 82.2 per cent., and in the country 76.0 per cent. The next important source of income was from Public Works, but it should be remembered that about 17.6 per cent. of the contribution was provided by the Government by way of grants. By the transfer of the Sanitary and Garbage Services from the General Fund, as provided by the 1908 Amendment of the Act, Health Administration lost its most important factor of revenue, contributing only 4.0 per cent. of the total as against 9.8 per cent. in 1908. The difference is still more marked in the country, where the proportion was 15.5 per cent. in 1908 and 4.2 per cent. in 1913. In the suburbs, the Metropolitan Sewerage Board levies charges in addition to those made by the municipalities.

SPECIAL AND LOCAL FUNDS.

The expenditure and income of the Special and Local funds for the years 1912 and 1913 are shown in the following table:—

Funds.	1912.			1913.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
Expenditure—	£	£	£	£	£	£
Water Supply ... ..	.....	71,508	71,508	.....	78,022	78,022
Sewerage ... ..	.....	9,190	9,190	.....	10,163	10,163
Sanitary and Garbage	19,544	106,902	126,446	24,230	116,329	140,559
Street Lighting ... ..	.....	21,979	21,979	.....	22,015	22,015
Street Watering	1,604	571	2,175	1,712	504	2,216
Old Loans' Interest	3,856	704	4,560	5,398	969	6,367
Miscellaneous	16,955	18,423	35,378	17,991	17,411	35,402
Cemetery	4,475	.....	4,475	4,383	.....	4,383
Total	46,434	229,277	275,711	53,714	245,413	299,127
Income—						
Water Supply ... ..	.....	79,861	79,861	.....	87,828	87,828
Sewerage ... ..	.....	10,010	10,010	.....	11,375	11,375
Sanitary and Garbage	20,199	109,057	129,256	24,916	122,925	147,841
Street Lighting ... ..	.....	22,088	22,088	.....	23,131	23,131
Street Watering	1,685	612	2,297	1,686	581	2,267
Old Loans' Interest	5,689	967	6,656	5,679	571	6,250
Miscellaneous	7,114	28,227	35,341	8,666	24,764	33,430
Cemetery	5,836	.....	5,836	5,670	.....	5,670
Total	40,523	250,822	291,345	46,617	271,175	317,792

BALANCE-SHEET.

The financial position of the municipalities, at 31st December, 1912 and 1913, is shown by the following statement of liabilities and assets of the various funds :—

Funds.	1912.			1913.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
Liabilities—	£	£	£	£	£	£
General Fund	70,474	61,566	132,040	111,963	77,325	189,288
Trading Accounts ...	2,763	35,787	38,550	1,405	47,219	48,624
Special and Local Funds	26,346	1,092,445	1,118,791	40,373	1,168,582	1,208,955
Loan Funds	760,033	634,100	1,394,133	727,319	605,107	1,332,426
Reserves and Renewals Account	4,759	13,081	17,840	5,056	14,620	19,676
Total	864,375	1,836,979	2,701,354	886,116	1,912,853	2,798,969
Assets—						
General Fund	268,902	447,592	716,494	305,354	454,116	759,470
Trading Accounts ...	2,480	76,164	78,644	466	93,333	93,799
Special and Local Funds	35,892	1,182,985	1,218,877	41,636	1,279,958	1,321,594
Loan Funds	158,201	513,883	672,084	142,314	516,202	658,516
Reserves and Renewals Account	4,759	13,081	17,840	5,056	14,620	19,676
Total	470,234	2,233,705	2,703,939	494,826	2,358,229	2,853,055

Every municipality must keep a General Fund, and the liabilities consist mostly of temporary loans and overdrafts; but the assets are more than sufficient to meet them. In only four municipalities in 1912 and four in 1913 was there an excess of liabilities. The liabilities and assets of the General Fund in the various municipalities, as at 31st December, 1912 and 1913, are shown below :—

Classification.	1912.			1913.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
Liabilities—	£	£	£	£	£	£
Temporary loans	29,912	17,062	46,974	40,476	22,254	62,730
Overdrafts ... ..	.....	859	859	.....	831	831
Sundry creditors (including amounts due to other Funds)	40,562	41,005	81,567	71,487	47,401	118,888
Other ... ..	.....	2,640	2,640	.....	6,839	6,839
Total	70,474	61,566	132,040	111,963	77,325	189,288
Assets—						
Outstanding rates (including interest)	34,471	63,018	97,489	37,066	67,621	104,687
Stores and materials ...	5,448	6,914	12,362	5,580	7,770	13,350
Bank balance and cash	33,887	45,677	79,564	28,754	36,653	65,407
Land and buildings ...	151,186	233,517	384,703	172,551	237,745	410,296
Plant and furniture ...	27,408	57,097	84,505	33,466	64,178	97,644
Other	16,502	41,369	57,871	27,937	40,149	68,086
Total	268,902	447,592	716,494	305,354	454,116	759,470

The principal asset of the municipalities consists of land and buildings, which were at the end of 1913 valued at £410,296, or 54·0 per cent. of the total assets. Outstanding rates and interest amounted to £104,687, while bank balances and cash in hand were equal to £85,407.

LOANS.

The total amount of loans raised during 1913 was £1,153,277, including £899,800 borrowed by the City of Sydney, £110,033 by the Suburbs, and £143,444 by Country municipalities, and allowing for additions and reductions of secured overdrafts; while the sinking funds of the City of Sydney were increased by £46,924, and of the Country by £2,092. The sinking funds of the Suburbs were reduced by £6,798, but there is a reduction in the amount of loans outstanding. Most of the new loans in the suburban and country districts were renewals. Apart from the liability of the State under the Country Towns Water and Sewerage Act, the total amount of loans outstanding at the close of the year was £7,125,545, and towards this amount there was at the credit of the sinking funds a sum of £429,336.

Rates of interest ranged from 3½ per cent., which was carried by £174,661, to 7 per cent., which, however, was payable only on £312; and the amount paid and due as interest on loans during the year was £278,591. The total indebtedness was £7,125,545, bearing an average rate of interest of 3·91 per cent., viz., 3·91 per cent. on the loans of the City of Sydney, 3·94 per cent. on those of the suburban municipalities, and 3·86 per cent. on those of the country municipalities.

The average rate of interest payable on all loans is hardly, however, an index of the true value of municipal debentures to the investors, as out of a total debt of £7,125,545 the sum of £3,169,734 pays interest at 4 per cent., £2,184,565 at 3½ per cent., and £497,383 at 3¼ per cent. Of these amounts the metropolitan municipalities are responsible for £3,043,002, £2,184,565, and £491,050 respectively. The country municipalities borrowed £126,732 at 4 per cent., £114,222 at 4½ per cent., and £204,129 at 5 per cent.

The total debt per head of population living in municipalities amounted to £6 1s. 11d., without allowance being made for sinking funds, while the yearly charge for interest is 4s. 9d. per head. These sums, compared with the resources of the municipalities, appear by no means formidable.

The following are the outstanding loans on 31st December, 1913, and the sinking funds set apart to meet them:—

Division.	Municipal Loans Outstanding.			Sinking Funds.	Interest paid and due on Loans, 1913.
	New South Wales.*	London.	Total.		
	£	£	£	£	£
Sydney—City	4,827,300	800,000	5,627,300	402,448	220,145
„ Suburbs	769,962	59,000	828,962	9,707	32,628
Country	640,086	29,197	669,283	17,181	25,818
Total	£ 6,237,348	888,197	7,125,545	429,336	278,591

* Includes £28,064 raised in Victoria.

Temporary loans, amounting altogether to £118,341, which bear interest at current bank rates, and loans payable on demand amounting to £85,835, are included in the above table.

The loans are redeemable at various periods after 1914, and the total amount to be repaid in London was £888,197, or rather less than one-eighth of the total, and the total amount of debentures held locally was £6,237,348.

Under the Local Government Act a municipality may borrow to an amount which, with existing loans, does not exceed 10 per cent. of the unimproved capital value of ratable lands. Where, at the commencement of the Act, any municipality had exceeded this limit, it could not borrow further until the total amount owing had fallen below the limit.

It has been explained previously that, in respect of municipalities operating under the regulations of the Local Government Act, a separate loan fund must be kept relating to each work or service for which loans are raised. There are, therefore, numerous funds relating to such matters as permanent improvements, town hall and other property, garbage service, wharfs, electricity, gas, cattle sale-yards, street-watering, and others.

SHIRES.

Since 1st January, 1907, 135 shires have been working under the Local Government Act, 1906. These shires are all in the Eastern and Central Land Division, 97 being in the former, and 38 in the latter. With the exception of 8 municipalities, the Western Land Division is unincorporated.

The shires vary in area from 36 square miles in Ku-ring-gai, immediately north of the City of Sydney, to 5,730 square miles in Lachlan, the headquarters of which are at Condobolin. The smallest shires are in the most closely settled parts of the State. A general rate, not less than 1d. in the £, and not more than 2d. in the £, may be levied by shires on the unimproved capital value of all ratable land. If, however, the general rate of 1d. is more than sufficient to meet requirements, the Governor may allow the rate to be reduced below 1d. In 1913 eight shires levied a rate less than 1d.

The rates levied in 1913 and the unimproved capital value of the land in each class are as follows:—

No. of Shires.	General Rate levied in £.	Unimproved Capital Value of Land.
	d.	£
2	$\frac{1}{4}$	2,611,503
3	$\frac{1}{2}$	2,868,315
3	$\frac{3}{4}$	3,450,215
25	1	26,495,953
6	$1\frac{1}{4}$	6,114,148
19	$1\frac{1}{2}$	13,281,476
1	$1\frac{3}{4}$	1,109,187
33	$1\frac{1}{2}$	19,028,430
5	$1\frac{3}{4}$	3,213,209
38	2	21,279,755
135	...	£99,452,191

In addition to the general rates shown above, local rates were also levied by several shires, particulars of which are shown in the following table:—

Shire.	District.	Purpose for which Levied.	Amount of Rate.
Apsley ...	Walcha ...	Bridge construction ...	½d. in £ on u. c. v.
Berrigan ...	Berrigan ...	Footpaths and drainage	2d. in £ on u. c. v.
	Tocumwal ...	do do ...	3d. in £ on u. c. v.
	Finley ...	do do ...	3d. in £ on u. c. v.
Bland ...	Barmedman ...	Street improvements...	2d. in £ on u. c. v.
	West Wyalong ...	do do ...	2d. in £ on u. c. v.
Blaxland ...	Portland ...	Roads and streets and water supply.	9d. in £ on u. c. v.
Blue Mountains..	Leura ...	Street lighting ...	1d. in £ on u. c. v.
Bolwarra ...	Lorn ...	Fire Brigade ...	½d. in £ on i. c. v.
	do ...	Street lighting ...	½d. in £ on i. c. v.
	do ...	Parks ...	½d. in £ on i. c. v.
Boree ...	Canowindra ...	Street improvements...	3d. in £ on u. c. v.
Bulli ...	Bulli ...	Street lighting ...	1½d. in £ on u. c. v.
Cessnock ...	Cessnock ...	Fire Brigade ...	½d. in £ on u. c. v.
	Kurri Kurri ...	do ...	½d. in £ on u. c. v.
	Cessnock ...	Street lighting ...	2d. in £ on u. c. v.
Coolamon ...	Coolamon ...	{ Street improvements	1d. in £ on u. c. v.
	Gannain ...	{ and street lighting	1d. in £ on u. c. v.
Crookwell ...	Crookwell ...	Street improvements...	2d. in £ on u. c. v.
Dorrigo ...	Coff's Harbour ...	Fire Brigade ...	½d. in £ on u. c. v.
Erina ...	Gosford ...	Street lighting ...	1d. in £ on u. c. v.
		Reclamations ...	1½d. in £ on u. c. v.
Gilgandra ...	Gilgandra ...	Street improvements ...	3d. in £ on u. c. v.
		Fire Brigade ...	½d. in £ on u. c. v.
Gloucester ...	Gloucester ...	Street lighting and street improvements.	2d. in £ on u. c. v.
Goobang ...	Trundle ...	Water supply ...	3d. in £ on u. c. v.
Hornsby...	Hornsby and Waitara	{ Street lighting	{ ½d. in £ on u. c. v.
	Pennant Hills, Beecroft, and Epping.		
Ku-ring-gai ...	Wahroonga, Warrawee, Turramurra, Pymble, Gordon, Killara, Lindfield, and Roseville.	Street lighting	½d. in £ on u. c. v.
Kyogle ...	Kyogle ...	Street improvements...	3½d. in £ on u. c. v.
Lake Macquarie..	Boolaroo and West Wallsend.	Fire Brigade ...	½d. in £ on u. c. v.
	Boolaroo and Speer's Point.	Street improvements...	2d. in £ on u. c. v.
	West Wallsend ...	do do ...	1½d. in £ on u. c. v.
Lockhart ...	Lockhart ...	Additional general ...	3d. in £ on u. c. v.
	Kingston ...	do do ...	2½d. in £ on u. c. v.
Lyndhurst ...	Millthorpe ...	Street improvements...	2d. in £ on u. c. v.
Sutherland ...	Cronulla ...	Additional general ...	½d. in £ on u. c. v.
Tintenbar ...	Alstonville ...	Roads and streets ...	3d. in £ on u. c. v.
Urana ...	Oaklands ...	Water supply ...	3d. in £ on u. c. v.
Wakool ...	Barham ...	Kerbing and guttering	2d. in £ on u. c. v.
Warringah ...	Freshwater and Queenscliff.	Street lighting	½d. in £ on u. c. v.
Wingadee ...	Quambone ...	Water supply ...	7d. in £ on u. c. v.

The unimproved capital value of the shires in 1913 was £99,452,191, but it is not possible to give the improved capital value, or the assessed annual value, as the shires are not compelled to make those valuations. The total amount of general rates levied was £560,725, and special and local rates £12,167. These figures represent the rates actually levied in respect of the year 1913, and differ from the amount shown later, the difference being due to the inclusion of interest on unpaid rates.

In several cases the general rate was not sufficient to meet the requirements, and the State paid endowments to a large number of shires. Endowments are fixed every third year, and are determined according to the extent of the shire, the probable revenue from a rate of 1d. in the £, the necessary expenditure, the extent of roads and other public works to be constructed and maintained, and other matters. The endowment in any year is paid on the general rates actually collected in the preceding year. There are six classes into which the shires are divided for endowment purposes, the classification for the three years 1913-15 being as follows:—

54 shires in 1st class receive no endowment. ~					
59	„	1st	„	„	up to 10s. in the £ on General Rate.
7	„	2nd	„	„	15s. „ „
5	„	3rd	„	„	20s. „ „
3	„	4th	„	„	25s. „ „
6	„	5th	„	„	30s. „ „
1	„	6th	„	„	not less than 40s. in the £ on General Rate.

The highest endowment allotted in 1913 was 40 shillings in the £ to Bellingen shire, but on the whole the endowments are considerably lower than were paid in the preceding three years. In 1913 the Government paid £134,635 as endowment to the shires, and a further sum of £48,680 was paid as grants for special purposes, making the total subvention from the State £183,315.

LOANS.

The Local Government (Shires Loans) Act, 1914, empowers a Shire Council to borrow money, not exceeding in the aggregate a sum equal to thrice the amount of a year's income of the shire. The loans may be secured and charged upon the income of the general funds of the shire. At the 31st December, 1913, there were not any shires which had loans outstanding, except temporary loans authorised under the original Act.

INCOME.

The principal heads of income of shires in 1913 were as follows; for purposes of comparison the 1912 figures are attached:—

Particulars.	1912.		1913.	
	Income.	Per cent.	Income.	Per cent.
General Fund—	£		£	
General rates	517,025	51·7	562,820	67·3
Government endowment	372,952	37·3	134,635	16·1
Public works	45,152	4·5	62,453	7·5
Health administration	4,886	0·5	4,864	0·6
Public services	9,232	0·9	10,305	1·2
Shire property	8,768	0·9	10,159	1·2
Miscellaneous	5,648	0·6	5,372	0·6
Special and local funds	35,835	3·6	45,903	5·5
Total Income	£ 999,498	100·0	£36,511	100·0

There was a large decrease in the amount of Government endowment paid to the shires in 1913, and consequently the total income of the shires was less than in 1912, as the general rates did not increase sufficiently to meet the loss from endowment. The proportion of General rates to the total income increased, while the proportion from endowment decreased. The income from special and local funds increased over 50 per cent., owing principally to the expansion in the Sanitary, Garbage, and other Local Funds.

Of the total income in 1913, Government assistance, exclusive of grants for public works, provided 16·1 per cent., as against 37·3 per cent. in 1912. The principal items in public works were contributions to roads, bridges, &c., £12,434; Government grants for roads, &c., £39,576; and the receipts from ferries, including Government grants, amounting to £9,104, were £9,388. The principal item in public services was rent, &c., from public watering places, £3,034. The income derived from special and local funds, consisting of the proceeds of special and local rates and sanitary and garbage fees, claimed 5·5 per cent. of the total, as compared with 3·6 per cent. in 1912.

EXPENDITURE.

The following statement shows the expenditure during 1913 in comparison with the previous year:—

Particulars.	1912.		1913.	
	Expenditure.	Per cent.	Expenditure.	Per cent.
General Fund—	£		£	
Rates and interest abandoned ...	5,033	0·5	3,362	0·4
Administrative expenses	83,721	8·9	91,450	10·3
Public works	773,479	82·9	707,923	79·9
Health administration	7,199	0·8	7,699	0·9
Public services	15,809	1·7	14,751	1·7
Shire property	10,419	1·1	11,251	1·3
Miscellaneous	3,397	0·4	6,613	0·7
Special and local funds	34,268	3·7	43,041	4·8
Total Expenditure	£ 933,325	100·0	886,090	100·0

The expenditure on the whole, and taking item for item, differs to such a slight extent in each year that it is apparent that the councils now measure their necessities in conjunction with their estimated revenue.

The administrative expenses were £91,450, or 10·3 per cent. of the total expenditure. Of the administrative expenses, £34,434 were on salaries, £14,085 on advertising, stationery, printing, &c., £9,705 on valuation fees, and £15,176 on presidents' allowances and councillors' travelling expenses. The expenditure on works accounted for 79·9 per cent. of the total. The principal expenditure was £593,608 on roads, streets, culverts, &c., of which £325,793 were on maintenance, repairs, and renewals, £264,818 on construction, and £2,997 on sundries. On other public works—bridges, punts, ferries, wharfs, &c.—£28,903 were spent on maintenance and repairs, and £24,324 on construction.

BALANCE-SHEET.

The financial position of the shires on 31st December, 1913, was strong, as there was an excess of assets of £330,799. The combined balance-sheet of the shires on 31st December, 1913, appears as follows:—

Liabilities.				Assets.			
General Fund—				£			
Temporary Loans	...	...	36,783	Outstanding Rates...	...	...	32,047
Due to Trust Fund	...	...	968	Stores and Materials	...	...	12,838
Sundry Creditors	...	...	44,116	Bank Balance and Cash	...	...	87,519
Due on Contracts	...	...	3,502	Sundry Debtors	...	...	5,919
Other	...	...	5,466	Land and Buildings	...	...	81,173
				Plant and Property	...	...	166,968
Total, General Fund	...	...	£90,835	Furniture, &c.	...	...	15,293
Special or Local Funds	...	...	18,618	Other	...	...	7,204
				Total, General Fund	...	...	£408,961
Total, all Funds...	...	...	109,453	Special or Local Funds	...	...	31,291
Excess of Assets	...	...	330,799	Total	...	...	£440,252
Total	...	...	£440,252				

It will be observed that a large proportion of the assets of the General Fund—£87,519, or over 21 per cent.—consists of cash in bank or in hand. The liabilities of the special or local funds consist for the most part of amounts due to the General Fund and sundry creditors; and the assets, sundry plant, and buildings appropriated to these funds at their inception, outstanding fees and rates, and bank balances.

TAXATION BY LOCAL GOVERNING BODIES.

The total revenue collected by all the local governing bodies from rates and charges amounts to £2,645,000, equal to £1 9s. 2d. per head of the population residing in the taxable districts. This sum includes £1,282,500, rates collected by municipalities; £572,892, rates collected by shires; and £789,608, rates collected by the various Water and Sewerage Boards referred to later. The distribution of the total amount is as follows:—

Local Bodies.	General Rates	Special and Loan Rates.	Total.	Per head.
	£	£	£	£ s. d.
Municipalities	1,162,896	119,604	1,282,500	1 1 11
Shires	560,725	12,167	572,892	0 17 9
Metropolitan water and sewerage charges	708,663	.....	708,663	0 17 1
Hunter District water and sewerage charges.	80,945	.....	80,945	0 16 7
Total	£ 2,513,229	131,771	2,645,000	1 9 2

BOARDS AND TRUSTS.

In addition to the ordinary form of municipal local government, there are various boards and trusts with local jurisdiction. The control of the water supply and sewerage of the Metropolitan and Hunter districts is placed under separate boards. The Metropolitan and the Country Towns Water Supply and Sewerage Acts, the Fire Brigades Act, the Sydney Harbour Trust Act, and the Metropolitan Traffic Act, were all passed

with the object of extending the principle of local government, and boards have been established to carry out the provisions of some of these Acts.

The majority of the Boards dealing with local affairs have jurisdiction within the metropolitan area, and work mainly in connection with the local municipalities, although possessing powers independent of those bodies. In 1900 the Metropolitan Traffic Act was passed, which gives the complete control of street traffic, and the licensing of public vehicles, drivers, and conductors, to the Inspector-General of Police, and the Motor Traffic Act of 1909 places the supervision of motor vehicles under the same authority.

The Metropolitan Board of Water Supply and Sewerage was established in 1887, the Hunter District Board in 1892, and the Sydney Harbour Trust in the year 1900.

BOARD OF FIRE COMMISSIONERS.

At the commencement of the Fire Brigades Act, 1909, which repealed the Act of 1902, the provisions were applied to the City of Sydney, to forty-one suburban municipalities, to eighty-five country municipalities, and to parts of six shires; they may be extended to other districts by proclamation. At the end of 1914 the districts existing numbered 74.

The Act is administered by a Board of Fire Commissioners, consisting of five members. The councils of the metropolitan municipalities, the councils of the country municipalities and shires, the insurance companies, and the volunteer fire brigades each elect one member; and the president is appointed by the Governor. The Board may group together any municipalities or shires, and constitute them a fire district, and must estimate each year the amount to be expended in each district. The three parties—municipalities and shires, the insurance companies, and the Government—each contribute one-third of this amount to the Board. Where a fire district contains more than one municipality or shire, the amount of contribution is apportioned according to the average annual value in the case of the City of Sydney, and to the assessed annual value in any other municipality or shire. Where the Act applies to the whole of a municipality or shire, the contribution must be paid out of the City Fund of Sydney, and out of the general fund of any other municipality or of a shire. Where the Act applies to part only of a municipality or of a shire, the council must raise the required amount by a local rate in such part.

The estimates adopted by the Board for the year 1914 amounted to £87,600 for the Sydney Fire District and £37,086 for other districts—a total of £124,686. This amount, as stated above, was raised by equal contributions of £41,562 from the municipalities and shires, the insurance companies, and the Government.

The calls attended during 1914 numbered 2,080, of which 1,387 were in the Sydney district. Particulars are shown below:—

Calls.	Sydney District.	Country Districts.	Total.
False alarms	185	29	214
Chimney alarms	31	35	66
Fires—Slight	1,117	498	1,615
„ Serious	12	9	21
„ Total destruction... ..	42	122	164
Total	1,387	693	2,080

The following table shows the Revenue Account and Balance-sheet for the year ended 31st December, 1914:—

REVENUE ACCOUNT 1914.

Revenue.		Expenditure.	
		£	
Balance from 1913...	21,957	Administration ...	5,299
Subsidy from Government	41,562	Salaries—Permanent ...	61,769
Subsidy from Municipalities and Shires ...	41,562	Salaries—Volunteer ...	9,732
Subsidy from Fire Insurance Companies ...	41,562	Buildings, repairs and alterations	8,495
Other sources ...	2,639	Clothing ...	5,974
		Electrical work, telephones, fire alarms, &c. ...	2,085
		Horses, fodder, harness, &c. ...	4,729
		Lighting and fuel ...	1,543
		Miscellaneous ...	23,974
		Balance ...	20,682
Total ...	£149,282	Total ...	£149,282

BALANCE-SHEET, 1914.

Liabilities.		Assets.	
		£	
Fund Account ...	52,152	Lands and buildings ...	71,925
Debentures ...	50,629	Plant, stocks on hand, &c. ...	66,887
Revenue Account ...	20,682	Sundry debtors ...	216
Other ...	26,938	Bank balance and cash ...	11,373
Total ...	£150,401	Total ...	£150,401

WATER SUPPLY FOR COUNTRY TOWNS.

The Country Towns Water Supply and Sewerage Act of 1880 was passed with the object of assisting municipalities to construct general systems of water supply and sewerage. To the end of June, 1914, fifty-three municipal councils had availed themselves of the privilege offered as regards the water service, and works were under construction in other municipalities.

The amount required for carrying out the works is advanced by the State. The municipality, however, has the option of supervising and constructing the works, failing which the Government undertakes these duties. Under the original Act, the sum advanced was to be repaid by instalments, with interest at the rate of 4 per cent., on the unpaid balances, each annual instalment to be equal to 6 per cent. of the total cost, and the first payment to be made twelve months after the date of the transfer of the works to the municipality; but as it was found that the municipalities which had contracted liabilities in respect of water supply works were unable to comply with these conditions, the Government, in 1894, passed an amending Act which granted them more favourable terms, the rate of interest being reduced to 3½ per cent., and the number of yearly repayments fixed at a maximum of 100. Under the amending Act of 1905, the rate of interest is fixed at 4 per cent. per annum. This Act also provides for the issue of licenses to workmen, for the recovery of rates, and for making by-laws for the assessment of lands, and for other purposes.

The following is a statement, as at 30th June, 1914, of the waterworks completed and handed over by the Government, with the amounts expended, &c., and the sums payable annually for periods varying from 20 to 100 years:—

Municipality.	Capital Debt (as gazetted).	Annual Repayment Instalment.	Municipality.	Capital Debt (as gazetted).	Annual Repayment Instalment.
	£	£		£	£
Albury	41,000	1,433	Jerilderie	6,518	245
Armidale	40,418	1,462	Junee	42,000	1,519
Ballina	17,852	664	Katoomba	20,730	894
Balranald	6,000	217	Kiama	7,073	256
Bathurst	55,734	2,019	Lismore	18,526	716
Berry	4,323	156	Lithgow	35,732	1,441
Blayney	10,771	389	Mittagong	11,996	524
Bourke	13,436	486	Moama	7,601	275
Bowral	872	61	Moree	12,941	509
Casino	12,246	456	Moes Vale	13,000	470
Cobar	26,911	990	Mudgee	19,947	767
Condobolin	8,059	297	Murwillumbah	518	22
Cooma	17,964	766	Nowra	13,259	433
Coonamble	6,742	244	Nyngan	10,219	370
Cootamundra	22,916	876	Orange	40,322	1,570
Corowa	11,349	506	Parke	22,000	796
Cowra	15,647	699	Picton	17,194	630
Deniliquin	18,668	682	Quirindi	18,967	806
Dubbo	21,081	843	Singleton	22,977	950
Forbes	29,021	1,257	Tumut	10,238	370
Goulburn	56,571	2,056	Wagga Wagga	41,588	1,518
Gundagai	11,278	486	Warren	5,820	256
Gunnedah	14,831	634	Wellington	18,433	767
Hay	17,075	624	Wentworth	4,000	145
Hillgrove	4,000	171	Wilcannia	8,381	303

The combined financial statements—revenue account and balance-sheet—of the municipalities which maintain waterworks are shown below. The revenue account for 1913 was as follows:—

Expenditure.		Income.	
	£		£
Management	13,472	Rates levied... .. .	54,782
Working and maintenance	24,781	Meter rents	592
Repairs and renewals	4,835	Water sales	24,849
Interest payable to Government... .. .	30,919	Garden charges, &c.	7,605
Other... .. .	4,015		
Total... .. .	£78,022	Total... .. .	£87,828

Of the expenditure, management charges accounted for 17·3 per cent., working and maintenance for 31·8 per cent., repairs and renewals 6·2 per cent., interest payable to Government 39·6 per cent., and miscellaneous items 5·1 per cent.

Rates contributed 62·4 per cent. to the income, meter rents 0·7 per cent., water sales 28·3 per cent., and garden charges, &c., 8·6 per cent.

The combined balance-sheet on 31st December, 1913, was as follows:—

Liabilities.		Assets.	
	£		£
Amount for which liable to Government	884,632	Waterworks—plant, buildings, &c.	911,633
Interest due to Government and unpaid	34,962	Outstanding rates... .. .	13,607
Sundry creditors	22,065	Bank balances and cash in hand	17,659
		Stores and materials	3,483
		Sundry debtors	27,236
		Fixed deposits (including interest)	7,905
Total	£941,659	Total	£981,523

The total amount advanced by the Government was £904,010, of which £19,378 has been repaid, and the former sum practically represents the present value of the services; but where the works were not constructed by the Government, the value is included as an asset of the loan fund. A considerable amount of rates was outstanding on the date mentioned, while the bank balances and cash in hand were also large, and, on the whole, the assets exceeded the liabilities by £39,864.

SEWERAGE WORKS.

Only thirteen municipal councils have taken advantage of the Act providing for the construction of sewerage works in country towns, and the capital debt and annual repayments on 30th June, 1914, were as follows:—

Municipality.	Capital Debt as Gazetted.	Annual Repayment. Instalment.	Municipality.	Capital Debt as Gazetted.	Annual Repayment. Instalment.
	£	£		£	£
Ballina	327	20	Lismore	23,368	1,068
Blayney	429	26	Murwillumbah ...	2,264	97
Casino	3,023	129	Narrandera	10,064	463
Coraki	1,214	69	Parkes	250	15
Forbes	1,623	59	Parramatta	66,010	2,357
Hay	22,368	809	Tamworth	1,217	57
Katoomba	34,748	1,393			

Other sewerage systems are in existence in several places, but they have been constructed altogether apart from the Act, and with few exceptions, the operations have been on a minor scale. The Metropolitan Board has assumed control of the sewerage constructed by the City of Sydney and by various suburban municipalities.

In addition to the assistance granted for the works mentioned above, the Government has made advances for water trusts, swamp drainage, bores, garbage destructors, and other services, repayable by annual instalments.

Some of the municipalities named in the above table do not levy special sewerage rates, and therefore do not keep a separate account. The combined financial statements of the other municipalities are shown below. The revenue account for the year 1913 was as follows:—

Expenditure.		Income.	
	£		£
Management	1,506	Rates levied	9,637
Working and maintenance ...	2,789	Other	1,738
Repairs and renewals	350		
Interest payable to Government...	5,218		
Other... ..	300		
Total	£10,163	Total	£11,375

Practically the only source of income is from rates. Of the expenditure, management charges took up 14·8 per cent., working and maintenance 27·4 per cent., repairs and renewals 3·4 per cent., interest payable to

Government 51·4 per cent. and other expenses 3·0 per cent. The combined balance-sheet was as follows:—

Liabilities.		Assets.	
	£		£
Amount of Capital Debt for which liable to Government ...	163,452	Works	162,659
Due to Government as Interest ...	5,462	Outstanding rates	1,434
Sundry creditors	1,193	Bank balance and cash	2,598
Excess of Assets	1,173	Stores and materials	221
		Sundry debtors	4,068
Total	£171,280	Total	£171,280

GAS-WORKS.

The Municipalities Act authorises the construction of works for public lighting, and enables municipalities to provide private consumers with gas. In addition, acetylene gas plants have been established in sixteen municipalities.

The operations of the municipalities with gas-works in 1913 will be seen from the subjoined statements showing the Gasworks Trading Undertaking revenue account and balance-sheet, and the loan fund balance-sheet. The following is the revenue account, and particulars for 1912 are appended for purposes of comparison:—

Expenditure.	1912.	1913.	Income.	1912.	1913.
	£	£		£	£
Manufacture	33,836	33,904	Private lighting	46,523	51,960
Distribution	3,806	4,299	Public lighting	10,177	10,818
Management expenses	6,345	9,664	Sale residual products	6,157	6,941
Public lighting	2,747	2,870	Other	395	362
Other	2,156	885			
Total	£ 48,890	51,622	Total	£ 63,252	70,081

On the total operations for 1913 there was a gross profit of £18,459, none of the municipalities showing a loss. The manufacture of gas accounted for 65·7 per cent. of the expenditure, as compared with 71·2 per cent. in 1912, and private lighting for 74·1 per cent. of the income, as against 73·6 per cent. in 1912.

The gross profit in 1913 was reduced in the Net Revenue Appropriation Account, which is not shown here, by charges amounting to £18,885. Transfers to the loan fund included £5,328 for payment of interest, and £6,325 for other purposes; and the credit balance carried forward amounted to £16,403.

The balance-sheet of the Gasworks Trading Undertaking for 1913 is given below:—

Liabilities.		Assets.	
	£		£
Due to other Funds	24,625	Materials, stock, &c.	41,919
Sundry creditors	3,633	Sundry debtors, including amounts due from other funds	18,371
Reserves	4,222	Fixed deposits	126
		Bank balance and cash	8,907
Total	£32,480	Total	£69,323

The total excess of assets amounted to £36,843, to which each municipality, with two exceptions, contributed.

The following balance-sheet of the loan fund shows the value of the assets of the Gasworks Trading Undertaking for 1913:—

Liabilities.			Assets.		
£			£		
Loans current	141,198		Land and buildings	33,066	
Interest accrued not paid...	2,881		Plant, mains, lamps, &c.	148,331	
			Due from other funds	14,790	
			Investments	4,261	
			Other	165	
Total	£144,019		Total	£200,613	

Against a total loan indebtedness of £144,019, the municipalities had assets valued at £200,613, the excess of assets being substantial. Of the assets, land, buildings, plant, &c., made up 90.4 per cent.; amounts due from other funds, chiefly trading accounts, 7.4 per cent.; and investments, &c., 2.2 per cent.

ELECTRICITY WORKS.

The following municipalities have erected electric lighting plants:—Sydney, Redfern, Broken Hill, Inverell, Moss Vale, Narrandera, Newcastle, Penrith, Tamworth, Temora, and Young. These works were erected under special Acts, as electric lighting may not be undertaken without the authority of a special Act.

The following accounts show the results of the operations of the electricity works in 1913 in respect of municipalities operating under the Local Government Act, Sydney electric lighting undertaking having already been dealt with.

The trading revenue account for 1912 and 1913 shows:—

Expenditure.	1912.	1913.	Income.	1912.	1913.
	£	£		£	£
Generation	18,611	17,524	Private lighting	18,787	21,120
Distribution	3,476	2,826	Public lighting	12,414	9,768
Management,* &c.	3,377	6,204	Power supply	6,580	5,917
Special charges	390	847	Rents of meters, &c.	862	1,469
Reserves (renewals and repairs)	401	.....	Other	936	963
Public lighting	2,276	1,821			
Other	446	289			
Total	£ 28,977	29,511	Total	£ 39,579	39,237

* Including Depreciation.

Generation of electricity is the largest item of expenditure, accounting for 59.4 per cent. of the whole. Distribution of the current cost 9.6 per cent., and management, &c., 21.0 per cent. The gross profit of this concern to the municipalities combined was £9,726.

The balance-sheet of the trading fund for 1913 is as follows:—

Liabilities.				Assets.			
			£				£
Due to other funds...	...	...	13,362	Materials, stock, &c. ...	...	...	8,674
Sundry creditors...	...	...	2,782	Sundry debtors ...	...	...	11,006
				Bank balance and cash...	...	...	4,796
Total ...	...	...	£ 16,144	Total ...	...	...	£ 24,476

The last statement is the balance-sheet of the loan fund for 1913:—

Liabilities.				Assets.			
			£				£
Loans current ...	...	...	105,840	Land and buildings ...	...	...	9,495
Interest accrued not paid	...	...	14,009	Steam plant ...	...	...	23,415
Other ...	...	...	3,895	Dynamos...	...	...	11,576
				Cables, poles, &c. ...	...	...	32,271
				Due from other funds ...	...	...	20,617
				Bank balance and cash	...	...	6,996
				Other ...	...	...	12,954
Total ...	...	...	£ 123,744	Total ...	...	...	£ 117,324

POLLS OF RATEPAYERS.

Municipalities and Shires, 1906 to 1913.

Under the Local Government Act before certain proposals can be brought into effect a poll of ratepayers must be taken in the Municipality or Shire concerned. For example, polls of ratepayers must be held, both in Shires and in Municipalities, on proposals to unite two or more adjoining areas, or to unite part or parts of an area to the whole or part or parts of another area, as to levying special or local rates, and as to whether such rates shall be levied on the unimproved capital value or the improved capital value. On a favourable vote of ratepayers the council of either a Shire or Municipality may be granted the right to exercise special powers on a number of minor subjects, such as the regulation of buildings to be erected; the suppression of public nuisances, and the establishment, maintenance, &c., of bands, gardens, libraries, amusement places, &c.

A municipality may submit to its ratepayers questions as to whether a loan shall be raised, and, if so, whether the resultant loan rate shall be levied on a particular part of the municipality, and whether on the unimproved capital value or improved capital value.

Shire ratepayers are allowed to decide at the poll whether a portion of the Shire shall be proclaimed an "urban area."

The ratepayers' roll contains the names of owners or lessees of ratable property, of managers, &c., of public companies which own ratable property, and of lessees of ratable Crown land.

From the date of the institution of Local Government in 1906 up to the end of June, 1913, twenty-one polls of ratepayers were held by twenty shires, and seventy-one municipalities were responsible for the conduct of 100 such polls.

An analysis of the voting discloses the fact that in the majority of instances the ratepayers evidenced a lack of interest in matters of importance. Of 106,729 persons eligible to vote at municipal polls, only 23,622, or

22.1 per cent., voted. Shire ratepayers displayed more interest in the questions submitted to them, and of 6,714 qualified to vote, 2,210, or 32.9 per cent., voted.

The following statement shows the number of polls held in municipalities and in shires up to June, 1913, distinguished according to the proportion of ratepayers who voted:—

Percentage of Ratepayers who Voted.	Number of cases where Poll fell within specified limits of proportion of Ratepayers voting.		
	Municipalities.	Shires.	Total.
Under 10 per cent....	11	...	11
10 to 25 „	53	2	55
26 to 33½ „	14	6	20
33½ to 50 „	18	10	28
51 to 75 „	2	3	5
Over 75 „	2	...	2
Total	100	21	121

From this it is apparent that in eighty-six (71 per cent.) of the cases not more than one-third of the ratepayers voted, and in 114 (94 per cent.) of the cases not more than one-half of the ratepayers voted.

The statement below shows the municipalities and shires in which polls were held up to 30th June, 1913. In some cases, however, the polls were informal, as the matters under ballot were not within the scope of the Local Government Act:—

Municipalities.

Municipality.	Year.	Reason for holding Poll.	Rate-payers on Roll.	Number who Voted.				Proportion of Rate-payers who Voted.
				For.	Against.	In-formal.	Total.	
Alexandria	1912	Loan	37	16	1	...	17	per cent. 45.9
Ashfield	1913	.....	3,679	234	153	36	423	11.5
Balmain	1910	Abolition of Wards	3,552	108	185	3	296	8.3
Drummoyne	1910	Loan	1,612	204	178	13	395	24.5
Enfield	1910	Sec. 109	1,041	32	130	21	183	17.6
Glebe	1912	Loan	1,450	134	68	...	202	13.9
Hunter's Hill	1912	Local Rate	33	...	13	...	13	39.4
Kogarah	1910	Loan	315	39	51	6	96	30.5
„	1912	.....	350	78	45	...	123	35.1
„	1913	Local Rate	266	20	52	3	75	20.7
Lane Cove	1912	Loan „	501	69	53	4	126	25.5
Manly	1910	Loan	2,000	144	8	3	155	7.1
Marrickville	1913	.....	5,298	880	196	28	1,104	20.7
„	1913	.....	5,298	758	316	30	1,104	20.8
„	1913	.....	5,298	441	629	34	1,104	20.8
Mosman	1908	U.C.V. or I.C.V. Rate...	2,173	388*	84†	7	479	22.0
„	1913	Loan	2,486	78	38	7	123	4.9
Mascot	1911	Changing name	1,362	281	229	28	538	39.5
„	1913	Loan	1,363	159	228	11	398	29.2
Newtown	1913	Town Hall erection	2,464	79	422	11	512	20.8
Randwick	1908	Rating	2,889	248	322	4	574	19.9
„	1910	Abolition of Wards	2,889	181	264	8	453	15.7
Redfern	1910	Loan	1,401	63	187	9	259	18.5
Ryde	1912	.....	1,624	144	123	...	267	16.4
Waterloo	1909	Local Rate	47	2	10	...	12	25.5
Waverley	1908	Rate	2,945	413	333	3	749	25.4
„	1911	Town Hall	3,467	804	343	49	1,196	34.5
Woolahra	1908	U.C.V. or I.C.V. Rate...	1,796	273*	171†	2	446	24.8
„	1912	Loan (Local)	128	35	7	1	43	33.6

* Indicates the number who voted in favour of the Unimproved Capital Value being the basis of rating.
 † Indicates the number in favour of the rate being levied on the Improved Capital Value.

Municipalities—continued.

Municipality.	Year.	Reason for holding Poll.	Rate-payers on Roll.	Number who Voted.				Proportion of Rate-payers who Voted.
				For.	Against.	Informal.	Total.	
Albury.....	1912	Loan	823	154	45	1	200	per cent. 24.3
Arncliffe.....	1908	Salvards Erection	680	70	35	4	109	16.0
Barraba.....	1910	Loan	205	34	11	...	45	21.9
Blayney.....	1908	U.C.V. or I.C.V. Rate...	425	30*	17†	4	51	12.0
Bowral.....	1912	Water	395	45	44	...	89	22.5
Broken Hill.....	1907	Water Trust	4,371	1,123	279	21	1,423	32.5
".....	1908	Subsidy to Bands	4,371	1,049	1,033	128	2,210	50.6
".....	1908	Street-lighting Rate	4,371	345	350	25	720	16.5
* Casino.....	1909	Loan	694	38	82	16	136	19.6
".....	1909	"	694	40	77	19	136	19.6
".....	1909	Gas	694	71	37	28	136	19.6
".....	1912	Local Rate	20	3	0	...	9	45.0
Cooma.....	1910	Sec. 109 (X)	322	77	11	3	91	28.3
".....	1911	Loan	322	45	10	...	55	17.1
Corowa.....	1909	"	405	49	15	...	64	15.8
".....	1912	"	241	41	7	...	48	19.9
Glen Innes.....	1909	"	583	66	7	...	72	12.3
Goulburn.....	1912	"	1,358	204	55	...	259	19.0
Grafton.....	1910	"	614	72	180	11	263	42.8
Greta.....	1912	"	271	11	5	4	20	7.4
".....	1913	"	273	21	...	1	22	8.1
Hay.....	1910	U.C.V. or I.C.V. Rate...	438	66*	27†	4	97	22.1
Inverell.....	1908	Loan	633	189	86	11	286	45.2
".....	1910	"	682	25	24	2	51	7.5
Jamberoo.....	1908	Boundaries	43	15	22	...	37	85.3
Katoomba.....	1909	Loan	1,160	118	81	14	208	17.9
Kempsey.....	1912	Electric Works	580	103	56	2	161	27.8
Lismore.....	1913	"	827	36	60	4	102	12.3
Lithgow.....	1909	Loan	970	47	113	8	168	17.3
".....	1912	"	975	52	20	2	74	7.6
".....	1912	Rate of Loan	975	61	16	...	77	7.9
Maclean.....	1912	Rate	201	25	55	...	80	39.9
Maitland, East.....	1909	U.C.V. or I.C.V. Rate...	632	88*	84†	...	172	27.2
".....	1910	"	632	120*	80†	3	203	32.1
".....	1912	Rate	684	31	101	...	132	19.3
".....	1912	Loan	684	56	58	2	116	16.9
Maitland, West.....	1913	"	1,022	84	209	3	296	28.9
Moss Vale.....	1910	Loan	270	48	19	...	67	24.8
".....	1912	"	273	40	16	...	56	20.5
Mudgee.....	1911	Sec. 109	650	148	113	2	263	40.5
Murrumburrah.....	1913	Loan	336	8	2	1	11	3.3
Murrumbidgee.....	1913	Rating	213	53	25	1	84	39.4
Muswellbrook.....	1911	Water Supply	271	71	59	...	130	47.9
Narrabri.....	1912	Loan	308	25	33	1	59	19.1
" West.....	1912	Amalgamation with Shire.	53	43	3	...	46	86.8
Narrandera.....	1911	Loan	430	6	...	...	6	1.4
Newcastle.....	1908	"	1,140	118	305	26	449	39.4
".....	1912	"	1,227	144	98	...	242	19.8
Adamstown.....	1909	Lighting Streets	494	36	98	6	140	28.3
".....	1911	"	494	87	63	...	150	30.4
Lambton, New.....	1913	Local Street lighting	361	18	56	...	74	20.5
Merewether.....	1911	Band	635	219	111	5	335	52.7
Stockton.....	1911	"	511	7	53	2	62	12.1
Wickham.....	1908	Rating	1,387	89	222	1	262	18.9
Orange.....	1911	Amalgamation	448	90	10	...	100	22.3
" East.....	1911	"	393	113	66	...	179	45.5
Parkes.....	1909	Loan	381	61	27	3	91	23.8
Peak Hill.....	1909	"	258	24	12	1	37	14.3
".....	1910	"	258	9	24	1	34	13.2
Port Macquarie.....	1911	"	210	18	12	...	30	14.8
Richmond.....	1906	To add to Municipality.	179	...	...	...	Nil	Nil
Scone.....	1912	To alter Boundaries	197	65*	7	...	72	36.5
Singlton.....	1909	U.C.V. or I.C.V. Rate...	523	54*	14†	...	68	13.0
".....	1909	"	523	52*	16†	...	68	13.0
Smithfield and Fairfield.....	1911	Local Lighting	176	26	28	...	54	30.7
Tamworth.....	1910	Loan	849	54	38	...	92	10.8
".....	1911	Local Loan	97	11	22	...	33	34.0
Temora.....	1912	Loan	481	87	14	8	109	22.7
Tenterfield.....	1909	Amalgamation	461	69	65	...	134	29.1
Wollongong.....	1909	U.C.V. or I.C.V. Rate...	795	131*	17†	1	149	18.7
Wyalong.....	1912	Town Hall	313	39	13	1	53	16.9
			106,720	...	...	...	23,622	22.1

* Indicates the number who voted in favour of the Unimproved Capital Value being the basis of rating.

† Indicates the number in favour of the rate being levied on the Improved Capital Value.

LOCAL GOVERNMENT.

839

Shires.

Shire.	Year.	Reason for holding Poll.	Rate-payers on Roll.	Number who Voted.				Proportion of Rate-payers who Voted.
				For.	Against.	In-formal.	Total.	
Adjungbilly	1910	Re Urban Area	37	16	9	2	27	72.9
Bannockburn	1913	"	75	6	25	...	81	41.3
Blaxland	1909	Rate, Local	346	68	37	...	105	30.3
"	1912	Municipality at Newnes	108	4	27	4	35	82.4
Bolwarra	1909	Re Urban Area	124	10	40	...	50	40.3
Burrangong	1912	"	84	12	38	1	51	60.7
Byron	1912	Local Rate	143	8	42	...	48	38.6
"	1913	"	77	2	20	...	31	40.2
Crookwell	1910	Powers of Municipality	152	31	37	5	73	48.0
Gadara	1911	Loan	280	45	88	...	133	47.5
Gilgandra	1908	"	117	7	13	...	20	17.1
"	1909	Rate	117	12	35	1	48	41.0
Ku-ring-gai	1911	Increase Number of Councilors.	1,925	267	35	...	302	15.7
Kyogle	1910	Garbage Service	120	7	27	...	34	28.3
Lake Macquarie	1912	Local Rate	340	39	65	1	105	30.9
Lockhart	1908	"	82	21	28	1	50	60.9
Namoi	1912	Amalgamation of West Narrabri.	1,029	61	355	60	476	46.3
Nepean	1911	Amalgamation of Mulgoa.	694	89	123	6	218	31.4
Wakool	1911	Rate	75	24	11	1	36	48.0
Woodburn	1911	Urban Area	50	3	17	...	20	40.0
Woolooma	1912	Amalgamation of Scene	739	216	70	31	317	42.9
			6,714	...	...	...	2,210	32.9

CERTIFICATES OF QUALIFICATION.

The following statement shows the number of Certificates of Qualification granted under the provisions of the Local Government Acts to Clerks, Auditors, Engineers, and Overseers during the years ended 30th June, 1913 and 1914:—

Position.	By Examination.		Without Examination.	
	1913.	1914.	1913.	1914.
Clerk	7	16	2	...
Auditor	4	8	13	16
Engineer (full)	1	...	23	15
Engineer (interim) ... ..	...	1	8	15
Overseer... ..	3	1	1	2

METROPOLITAN BOARD OF WATER SUPPLY AND SEWERAGE.

In March, 1888, the Government passed an Act establishing a Board of Administration, under the title of the Metropolitan Board of Water Supply and Sewerage, to regulate the water supply and sewerage services in the county of Cumberland, including those under the control of the City Council. The management of the former service was transferred to the Board in May, 1888, and of the latter in September, 1889. The total length of water mains taken over was 355 miles, and on 30th June, 1914, this had increased to 1,967 miles, inclusive of trunk mains. There were 70½ miles of sewers in 1889, lengthened to 930 miles of sewers, and 53½ miles of stormwater drains in 1914.

The Board consists of seven members, three of whom are appointed by the Government, two by the City Council, and two by the suburban and

country municipalities within the county of Cumberland supplied with water. The Board is subject to the general control of the Minister for Works—a provision considered necessary, as the Government advances the whole of the money for the construction of the works, the amount so advanced constituting part of the public debt of the State.

METROPOLITAN WATER SUPPLY.

As early as 1850 authority was given by the Legislative Council to the City Corporation for the construction of water and sewerage works, and a system of water supply from the Lachlan, Bunnerong, and Botany Swamps was adopted. By this scheme the waters of the streams draining these swamps were intercepted at a point near the shore of Botany Bay. A pumping plant was erected there, and the water raised to Crown-street reservoir, 141 feet above the level of the sea, thence into Paddington reservoir, at an elevation of 214 feet above sea-level; and to Woollahra, 282 feet above sea-level. The cost of these works was £1,719,565. This system has since been superseded by the Upper Nepean system, the management of which was transferred in 1888 to the Metropolitan Board of Water Supply and Sewerage.

The sources of supply under the existing system are the waters of the Nepean, Cataract, and Cordeaux Rivers, draining an area of 347 square miles, a catchment enjoying a copious and regular rainfall. The off-take works are built at a height of 437 feet above the level of the sea, and the water flows by means of tunnel, open canal, and wrought-iron aqueducts to Prospect Reservoir, a distance of 40 miles from the farthest source of supply. The conduits above Prospect Reservoir have a maximum delivery of 150,000,000 gallons per day, and for 10 miles below this reservoir the capacity of the canals and pipes is 50,000,000 gallons. For the last 11 miles the water is conveyed by two 48-inch mains. In this work there are 63½ miles of tunnels, canals, and pipes.

Notwithstanding the size of Prospect Reservoir, it was found in 1902—a very dry year—that the supply was not sufficient for the growing needs of the metropolis. The Government therefore decided to build the Cataract Dam, which was completed in 1908, the catchment area above the dam being about 50 square miles. The water flows from this dam down the Cataract River to a weir at Broughton's Pass, where it enters a tunnel previously existing, and is conveyed by a system of open canals to the Prospect Reservoir. The total distance from Cataract to Sydney, *via* Prospect, is 66½ miles.

The dimensions of the Prospect and Cataract dams are shown in the following statement:—

Dam.	Height above Sea-level.	Area.	Capacity.	Length.	Width at top.	Height.
	ft.	acres.	gallons.	ft.	ft.	ft.
Prospect	196·7	1,266½	11,029,180,000*	7,300	30	85½
Cataract	950	2,200	20,743,196,475	811	16½	160

* When full, about half this quantity is available by gravitation.

From Prospect the water flows 5 miles by open canal to the Pipe Head Basin, thence 5 miles by 6-foot wrought-iron and steel pipes to the Potts' Hill Balance Reservoir, which has a capacity of 108,185,400 gallons, and

covers 24½ acres. This reservoir was designed to tide over any interruption in the supply from Prospect, as well as to prevent fluctuation at the head of pressure. A by-pass is laid along the floor to enable mains to deliver water to Sydney direct.

At Potts' Hill the water passes through a series of copper-gauze screens, and is then conducted by two 48-inch mains and three smaller mains to the reticulated area south of Port Jackson. At Lewisham a bifurcation takes place in one of the 48-inch mains; one branch supplying the Petersham Reservoir, the other continuing to Crown-street. The Petersham Reservoir is 166 feet above high-water mark, is built of brick, and has a capacity of 2,157,000 gallons. The other 48-inch main, laid in 1893, delivers water direct from Potts' Hill to Crown-street. These two trunk mains are connected at Petersham as an intermediate spot. The Crown-street Reservoir is 21 miles from Prospect. It is of brick, and contains 3,250,000 gallons, the top water-level being 141 feet above high-water mark.

On account of the elevation of parts of the reticulated area, pumping is necessary for the purpose of supplying the upper zones, and no less than 8,612·77 million gallons were raised at the various stations during the twelve months ended June, 1914, representing 64·5 per cent. of the total quantity discharged from Prospect. The pumping expenses, including the cost of second lifts, amounted in the aggregate to £40,304. At Crown-street is situated the main pumping station, where are erected three sets of compound high-duty pumping engines. A covered reservoir, of a capacity of 18,500,000 gallons, has been constructed in the Centennial Park, at a height of 245 feet, for the purpose of ensuring a larger bulk of water within the city limits. At Ashfield there is a 100,000-gallon wrought-iron tank at an elevation of 223 feet above high water. This tank is supplied from the Centennial Park Reservoir by a main, and provides for the higher part of the district. Vacluse Reservoir at a height of 313 feet is connected with Waverley, and supplies a district of about 1,200 acres around Vacluse and South Head. It has a diameter of 107 feet, a depth of 18 feet, and its capacity is 1,000,000 gallons.

North Sydney receives its supply from Potts' Hill, *via* Ryde, where there is a reservoir containing 2,000,000 gallons, from which the water is pumped into a million-gallon tank at Ryde village, 234 feet above sea-level, and, by a continuation of the same main, into a pair of tanks, of a joint capacity of 3,000,000 gallons, at Chatswood, at an elevation of 370 feet above high-water mark. Water can be lifted direct from Ryde to Wahroonga and Pymble, or may be re-pumped from Chatswood, where a small pumping station has been erected. There are two tanks of 1,000,000 and 40,000 gallons capacity at Wahroonga, 7½ miles distant, at elevations of 717 and 706 feet above sea-level respectively, whence the water flows as far as Hornsby, 13 miles to the north-west of Port Jackson. At a height of 567 feet a concrete reservoir of a capacity of 500,000 gallons has been constructed at Pymble. From this reservoir the districts between Pymble and Chatswood are served, thus reducing the abnormal pressure by reason of the supply being from so great a height as Wahroonga.

From the Ryde tank the districts of Ryde, Gladesville, and Hunter's Hill are supplied; while a 9-inch main extends over the Parramatta and Iron Cove bridges to supply Balmain. An elevated tank, at a height of 354 feet, with a capacity of 72,800 gallons, and a reservoir, with a capacity of 1,925,000 gallons, 302 feet above sea-level, have been erected at Mosman.

The districts of Campbelltown and Liverpool are supplied from the main canal by gravitation. At the latter place, a 4,000,000-gallon earthen

reservoir has been constructed, and a tank with a capacity of 250,000 gallons, for the purpose of tiding over any interruption in the flow from the canal. Other districts lying nearer Sydney, viz., Smithfield, Granville, Auburn, and Rookwood, are also supplied *en route*; and at Smithfield there is a 100,000-gallon concrete tank, the top water of which is 175 feet above sea-level. At Penshurst there is a tank 270 feet above sea-level, with a capacity of 1,000,000 gallons, and one 300 feet high, capable of holding 1,500,000 gallons. Works for the supply of water to the towns of Camden and Narellan, from a point on the canal near Kenny Hill, were completed in October, 1899. In 1893, the Board assumed control of the Richmond waterworks, in 1902 of the Manly works, and in 1903 of the Wollongong works. Manly is also connected with the metropolitan system by a main from Mosman, crossing Middle Harbour.

The following statement shows the number of houses and population in the metropolitan area supplied with water during the last ten years:—

Year ended 30th June.	Houses Supplied.	Estimated Population supplied.	Average Daily Supply.	Total Supply for Year.	Average Daily Supply.	
					Per House.	Per Head.
	No.	No.	gallons.	gallons.	gallons.	gallons.
1905	112,343	561,700	21,712,800	7,925,184,000	193	38·7
1906	116,202	581,000	22,393,300	8,173,555,000	193	38·5
1907	120,782	603,900	22,912,600	8,263,104,000	189	37·9
1908	124,083	620,400	24,500,400	8,967,135,000	197	39·5
1909	128,444	642,200	25,911,400	9,457,660,000	201	40·3
1910	133,788	668,900	26,903,200	9,819,652,000	201	40·2
1911	139,237	696,200	29,066,700	10,587,434,000	208	41·7
1912	146,236	731,200	30,522,500	11,141,700,000	208	41·7
1913	155,213	776,100	32,784,100	11,966,193,000	211	42·2
1914	166,112	830,600	36,539,700	13,337,000,000	220	44·0

The rate levied for water is 6d. in the £ in the Metropolitan district, while 11d. is the charge for 1,000 gallons by meter. The revenue from the Water Service Branch during the year ended 30th June, 1914, exclusive of the country towns, was £410,823, and the expenditure, including interest on capital, £369,093. The net revenue showed a return of 4·23 per cent. on the capital debt of £6,257,976.

The following statement gives the financial transactions of the Metropolitan Water Supply for each of the last ten years:—

Year ended 30th June.	Capital cost— interest- bearing.	Revenue.	Working expendi- ture.	Interest.	Net return after paying working expenses.	Net profit after paying working expenses and interest.
	£	£	£	£	per cent.	£
1905	4,434,991	251,503	66,015	153,304	4·18	32,184
1906	4,674,341	270,263	64,487	164,216	4·40	41,560
1907	4,902,463	275,591	67,593	176,170	4·24	31,828
1908	5,009,012	293,410	75,016	183,033	4·16	25,361
1909	5,146,302	267,519	80,281	185,591	3·64	1,647
1910	5,286,917	284,943	93,027	184,486	3·63	7,430
1911	5,420,813	299,442	99,355	192,486	3·60	7,601
1912	5,606,268	329,605	112,958	198,443	3·86	18,204
1913	5,907,125	361,187	126,795	200,918	3·96	33,474
1914	6,257,976	410,823	145,948	223,145	4·23	41,730

The charges were reduced in 1907 and in 1908; but the returns still show a profit after paying working expenses and interest.

In addition to the city and suburbs, various country towns are supplied with water by the Metropolitan Board, and their accounts are kept distinct from those of the metropolis. The works at Richmond and Wollongong were constructed under the Country Towns Water Supply and Sewerage Act, and subsequently handed over to the Board; also the districts of Campbelltown, Camden and Narellan, and Liverpool, receive the water by gravitation from the upper canal at Prospect. The following table shows particulars of the capital, receipts, and expenditure in the country districts during the year ended 30th June, 1914:—

District.	Capital Cost.	Revenue.	Annual Liability.			Total.
			Interest and instalment required to pay off cost of reticulation in 100 years.	Maintenance, including proportion of Head Office expenses.	Charges for water supplied from Canal.	
	£	£	£	£	£	£
Campbelltown	12,009	1,209	434	255	193	882
Liverpool	36,006	1,614	1,302	615	499	2,416
Camden and Narellan	10,845	670	392	221	276	889
Richmond	15,812	890	572	1,001	...	1,573
Wollongong	89,794	5,391	3,247	1,914	...	5,161
Total	164,466	9,777	5,947	4,006	968	10,921

THE HUNTER DISTRICT WATER SUPPLY.

The water supply works of the Lower Hunter were constructed by the Government under the provisions of the Country Towns Water Supply and Sewerage Act of 1880. In 1892, under the authority of a special Act, a Board was established on similar lines to those of the Metropolitan Water and Sewerage Board, the number of members being the same—three being nominated by the Governor, one elected by the Municipal Council of Newcastle, two by the adjacent municipalities, and one by the municipalities of East and West Maitland and Morpeth. The following districts are within the area of the Board's jurisdiction:—

Municipalities—

Adamstown, Carrington, Greta, Hamilton, Lambton and New Lambton, East and West Maitland, Merewether, Morpeth, Newcastle City, Plattsburg, Wallsend, Waratah, Wickham.

Shires—

In Bolwarra Shire: Bolwarra, Lorn.

In Cessnock Shire: Aberdare, Abermain, Abermain Government Township, Cessnock, South Cessnock, Bellbird, Hebburn, Heddon Greta, Homeville, Kurri Kurri, Mayfield, Neath, Oakhampton, Rutherford, Telarah, Weston.

In Lake Macquarie Shire: Argenton, Boolaroo, Spier's Point, West Wallsend.

In Tarro Shire: Hexham and Ash Island, Minmi, Morpeth Road, Pelaw Main, Stanford Merthyr.

The Government Railways and Tramways properties, nine in number, are also served by the Board.

The supply of water for the district is pumped from the Hunter River, about a mile and a half up stream from the Belmore Bridge, West Maitland. The pumping engines are situated above flood-level, on a hill about 44 chains from the river. At the pumping station there is a

settling tank of 1,390,500 gallons; also six filter-beds, 10,000 square feet each and one of 15,000 square feet, a clear-water tank of 589,500 gallons capacity, and a storage reservoir of 172,408,100 gallons available capacity. The filtered water is pumped from the clear-water tank into two summit reservoirs, one at Rutherford and one at Buttai. The former, connected by a 10-inch and 12-inch main, with a capacity of 500,000 gallons, supplies East Maitland, West Maitland, Morpeth, and neighbouring places. Buttai Reservoir is fed by two rising mains, one a riveted steel pipe, 20 $\frac{3}{4}$ inches diameter, the other a 15-inch cast-iron main, 5 $\frac{3}{8}$ miles in length; it has a capacity of 1,051,010 gallons, and supplies Newcastle and environs. Twelve district reservoirs, which are supplied from Buttai, nine by gravitation and three by re-pumping, receive water for distribution.

The length of the mains when the Board was established was 105 miles; at 30th June, 1914, it had been increased to 368 $\frac{1}{2}$ miles.

Particulars relating to the water supply of the Board are given below. A water rate of 10d. in the £ is payable on the assessed annual value of all properties over £12 in value, and the charge by meter is 2s. per 1,000 gallons.

Year ended 30th June.	Properties Supplied.	Estimated Population served.	Supply.		Average Daily Supply.	
			Daily average.	Total.	Per Property.	Per Head.
	No.	No.	gallons.	gallons.	gallons.	gallons.
1905	12,167	60,800	1,266,000	461,936,000	104	20·8
1906	12,968	64,840	1,478,500	539,655,000	114	22·8
1907	13,569	67,845	1,479,400	539,965,000	109	21·8
1908	14,457	72,285	1,654,100	603,755,000	114	22·8
1909	15,679	78,395	1,766,300	644,689,000	113	22·5
1910	16,446	82,230	1,650,700	602,497,000	100	20·1
1911	17,164	85,820	1,849,900	675,214,000	108	21·5
1912	17,907	89,535	2,026,100	739,539,000	114	22·7
1913	18,405	92,025	2,366,300	863,692,000	129	25·7
1914	19,575	97,875	2,791,300	1,018,810,000	143	28·5

The funds necessary for the maintenance and management of the water supply and sewerage services, as well as the sum required to pay interest on the capital debt, are obtained by rates levied on the properties situated in the districts benefited by the systems. The assessments of the Municipal Councils are generally accepted by the Boards as the values on which to strike their special rates. In cases of heavy consumption of water, a charge is made according to the quantity used; but fixed charges are imposed for the use of water in certain trades and callings, for gardens, and for animals.

Year ended 30th June.	Estimated Capital Debt.	Revenue.	Expenditure.*	Return on Estimated Capital Debt.
	£	£	£	per cent.
1905	533,270	34,486	33,714	3·64
1906	544,798	40,801	34,801	4·60
1907	398,618	41,822	38,886	6·25
1908	454,199	43,609	39,664	4·37
1909	474,485	43,395	41,184	3·90
1910	485,967	46,767	43,126	4·17
1911	495,747	45,711	45,420	3·55
1912	510,897	47,788	47,920	3·53
1913	531,969	53,673	49,042	4·42
1914	567,842	66,323	52,994	5·73

* Including Interest and Instalments to Sinking Funds for Renewal of Works.

METROPOLITAN SEWERAGE WORKS.

The first sewerage works at Sydney were begun in 1853; and in 1889, the date of transfer to the Board, there were 70½ miles of old city sewers in existence. The original scheme was designed on the "combined" system, by which street-surface water as well as sewage was removed. The works comprised five main outfalls discharging into the harbour at Blackwattle Bay, Darling Harbour, Sydney Cove, Fort Macquarie, and Woolloomooloo Bay. The pollution of the harbour consequent on these outlets, led to the appointment of a Commission of Inquiry, and the outcome of the labours of the Commission was the adoption of the present system.

This system consists of three main outfalls—the northern, southern, and western; the northern discharges into the Pacific Ocean near Bondi, and the southern and the western discharge into the sewage farm at Webb's Grant, near Botany Bay. The northern system receives sewage from Waverley, Bondi, Woollahra, Double Bay, Darling Point, Rushcutter's Bay, Elizabeth Bay, and parts of Woolloomooloo.

The southern main outfall commences at a point on the north side of Cook's River, near Botany Bay, and receives the drainage from Alexandria, Waterloo, Erskineville, Newtown, and portions of the Surry Hills district. The inlet-house, into which the sewage passes, is fitted with the latest machinery for straining the sludge, and for ejecting the fluid after filtration. Storm-water channels are also constructed at various points to carry off the superfluous water after heavy rainfalls.

The western outfall, which provides for the western suburbs, starts at a receiving chamber in the Rockdale end of the sewage farm, from which it runs to another chamber about a quarter of a mile to the north-east of Muddy Creek, and thence to a penstock chamber at Marrickville on aqueducts over Wollie Creek and Cook's River. The latter chamber receives the discharges from the eastern, northern, and western branch sewers, and drains part of Marrickville, Petersham, Stanmore, Newtown, Leichhardt, Annandale, Camperdown, Summer Hill, Ashfield, Canterbury, Enfield, Burwood, Five Dock, and Concord. A branch outfall has been constructed at Coogee, which discharges into the ocean, and serves the districts of Randwick, Kensington, and Coogee. On the northern side of the city, extensive works have been completed; in the borough of North Sydney septic tanks were built in 1899 to deal with the sewage matter; and at Middle Harbour, Mosman, and Manly, ample provision has been made for the sanitation of the districts.

The subjoined statement gives the transactions relating to Metropolitan Sewerage during the last ten years:—

Year ended 30th June.	Capital cost—interest-bearing.	Revenue.	Working expenditure.	Interest.	Net return after paying working expenses.	Net profit (+) or loss (-) after paying working expenses and interest.
	£	£	£	£	per cent.	£
1905	3,774,264	213,937	54,314	130,519	4·23	+ 29,104
1906	3,823,495	220,629	55,368	134,527	4·32	+ 30,734
1907	3,922,514	217,864	62,141	140,980	3·96	+ 14,743
1908	4,053,591	216,258	64,020	148,142	3·75	+ 4,096
1909	4,225,239	214,212	68,574	151,317	3·44	(-) 5,679
1910	4,351,381	223,131	70,851	151,943	3·49	+ 337
1911	4,496,290	234,208	79,636	159,070	3·43	(-) 4,498
1912	4,769,449	250,826	82,246	166,771	3·53	+ 1,809
1913	5,083,263	268,292	91,094	171,957	3·48	+ 5,241
1914	5,448,968	297,840	104,543	193,389	3·55	(-) 92

The sewerage rate from the city of Sydney and the eastern suburbs up to 1903 was 7d. in the £, the northern and the western suburbs being rated at 1s., but in 1904 a uniform rate of 11d. was imposed. In 1907 it was reduced to 10d. in the £, and in 1908 to 9½d., the latter being the rate ruling in 1913.

The length of sewers in the Metropolitan District and the population and houses served during the last ten years are shown below:—

Year ended 30th June.	Houses connected.	Estimated Population served.	Length of Sewers.	Length of Storm-water Drains.	Length of Ventilating Shafts.	Length of Sewers Ventilated.
	No.	No.	miles.	miles.	feet.	miles.
1905	85,958	430,000	630·42	44·71	256,535	622
1906	88,881	444,000	656·84	44·82	264,255	636
1907	91,940	457,000	684·38	46·15	281,885	654
1908	94,735	470,000	724·37	46·94	286,000	684
1909	99,442	497,000	760·16	47·30	297,910	714
1910	102,896	514,000	793·55	47·82	344,820	756
1911	106,879	534,000	825·20	48·85	376,900	795
1912	110,928	555,000	863·29	49·69	382,654	809
1913	114,690	573,000	890·53	52·24	401,344	853
1914	119,790	598,000	930·06	53·15	408,778	870

NEWCASTLE AND SUBURBS SEWERAGE WORKS.

The sewerage scheme for the Hunter District has its outfall at Merewether Gulf, some distance south from Newcastle. Two gravitation sewers which branch from the main, one at Merewether and the other in the city of Newcastle, have been completed and transferred to the control of the Hunter District Water and Sewerage Board, also the reticulation sewers for the areas capable of being drained by gravitation. The first transfer was made in July, 1907, and the particulars of cost, revenue, and expenditure to 30th June, 1914, are shown below:—

Year ended 30th June.	Capital cost— interest- bearing.	Revenue.	Working expendi- ture (including Sinking Fund).	Interest.	Net return after paying working expenses.	Net profit (+) or loss (-) after paying working expenses and interest.
	£	£	£	£	per cent.	£
1907	55,763	.....	.....	.....	.....	.....
1908	65,017	17	627	2,374	.....	- 2,984
1909	87,127	745	1,461	2,779	.....	- 3,495
1910	128,655	6,192	2,303	3,814	3·02	+ 75
1911	170,151	8,975	4,217	5,368	2·79	- 610
1912	246,915	10,999	6,002	7,331	2·45	- 2,334
1913	301,809	12,472	7,722	9,244	1·79	- 4,494
1914	331,694	14,622	8,743	11,274	1·77	- 5,395

The sewerage rate—1s. in the £ on the annual rental value—came into force on 1st January, 1909, and this was the rate ruling in 1914. As

the following table shows, the length of sewers under the control of the Board on 30th June, 1914, was 56½ miles, and 4,887 properties were connected:

Year ended 30th June.	Properties connected.	Estimated Population served.	Length of Sewers.	Ventilating Shafts.	Length of Sewers Ventilated.
	No.	No.	miles.	No.	miles.
1908	52	260	23.59	.....	.....
1909	228	1,140	23.67	183	11.45
1910	661	3,305	29.50	183	17.28
1911	1,465	7,325	29.91	285	17.68
1912	2,424	12,120	37.14	418	37.14
1913	3,457	17,285	51.30	623	51.30
1914	4,887	24,435	56.75	733	56.75

ROADS AND BRIDGES.

Main roads in New South Wales were first formed to connect the towns of Parramatta, Liverpool, Windsor, and Penrith with Sydney. All access to the interior of the country was considered barred by the apparently insurmountable sandstone precipices rising on the farther side of the Nepean, and until the year 1813 no effort to cross the mountains was attended with success. In that year, however, after a protracted season of drought, involving heavy losses of stock, the settlers recognised that the future of the country depended on an extension of the pastoral area, and three explorers, Blaxland, Lawson, and Wentworth, again essayed the task of finding a way over the mountains. After encountering tremendous difficulties, they succeeded in crossing the range, and discovered the rich pastures of the Bathurst Plains. Shortly after their return, Governor Macquarie despatched a party of surveyors to determine the practicability of making a road. The report was favourable, the construction of a track was at once begun, and the Great Western Road was completed as far as Bathurst on 21st January, 1815.

The opening up of the fertile lands around Bathurst by means of this mountain road gave such an impetus to settlement that it was found impossible to keep pace in the matter of road-making with the demands of the settlers. The authorities, therefore, for many years confined their attention to the maintenance of roads already constructed, and extended them in the direction of the principal centres of settlement. Had the progress of settlement subsequent to 1850 been as slow as that of the preceding years, this system would have sufficed; such, however, was not the case. The discovery of gold completely altered the circumstances, and during the period of excitement and change which followed, so many new roads were opened, and traffic increased to such an extent, that the general condition of the public highways was by no means good. The modern system of road-making may be said to have begun in the year 1857, consequent on the creation of the Roads Department; it was not, however, until 1864 that the whole of the roads, both main and subordinate, received consideration by the Government.

The principal main roads are:—

Northern Road—length, 405 miles, from Morpeth to Maryland, on the Queensland border.

Western Road—length, 513 miles, from Sydney, through Bathurst, Orange, and many other important townships, to the Darling River, at Bourke.

Southern Road—length, 385 miles, from Sydney to Albury. This road was, before the construction of the railway, the great highway between Sydney and Melbourne.

South Coast Road—length, 250 miles. This road after leaving Campbelltown, ascends the coast range, along the top of which it runs as far as Coal Cliff. It then traverses the Illawarra district, parallel to the coast, and passes through the rich lands watered by the Shoalhaven, Clyde, and Moruya Rivers, as far as Bega, whence it extends as a minor road to the southern limits of the State.

In no case has any of these roads the importance which it possessed before the opening of the railways, which for the greater part follow the direction of the main roads, and attract nearly all the through traffic. Thus many roads on which heavy expenditure has taken place have been more or less superseded, and the opening of new roads has been rendered necessary to act as feeders to the railways from outlying districts.

CONTROL OF ROADS AND BRIDGES.

Prior to 1907, when the Local Government Act came into effect, the State was divided into road districts, each of which was placed under the supervision of an officer directly responsible to the Commissioner for Roads. These officers had under their care the greater part of the roads and bridges of the State outside the incorporated areas, as well as a portion of those within such limits. The road trusts had the supervision of the expenditure of certain grants for the maintenance of roads in districts chiefly of minor importance, as well as some important roads in the vicinity of the metropolis.

On 1st January, 1907, the administration of the bulk of the works under the control of the Roads and Bridges Department (with the exception of those in the unincorporated areas of the Western Division, and certain bridges and ferries proclaimed as "national works") were transferred by the operation of the Local Government Act to the shires and municipal councils.

The Act authorises payments by way of endowment to municipalities and shires, the minimum endowment payable to shires being fixed at £150,000 per annum, to be distributed in accordance with a classification made every third year. It is provided also that the Minister for Works may withhold payment of endowment from a council if his requirements in respect of main roads are not complied with.

Between 1906 and 1912 the amount of endowment allotted to shires rose from £150,000 to £360,000 approximately, but the expenditure on the important roadways has not been sufficient to maintain them in a serviceable condition. It was decided, therefore, to amend the conditions under which Government assistance is granted, by reducing the amount of general endowment for each of the years 1912-15 to the minimum £150,000, and distributing an additional sum as a special endowment for the upkeep of the main roads.

LENGTH OF ROADS.

The length of roads under Government control on 30th June, 1906, was 48,311 miles, while 195 miles were under the care of road trusts, and 1,338 miles within the municipal areas were subsidised by the Government, making a total of 49,844 miles. There were also about 8,000 miles of roads and streets belonging to the municipal councils. In addition to the roads mentioned, there were about 1,500 miles of mountain passes, many of which presented most formidable difficulties, and their construction reflects great credit upon the engineering skill of the Department, which for so many years designed and supervised the construction and maintenance of the roads and bridges of the State. Since 1906, statistics of roads, streets, bridges, and public ferries are collected triennially, the date of the latest returns being 1912. In that year the length of roads in the State was, approximately, 94,834 miles, of which 38 miles were controlled by the Government, 9,762 miles by the municipalities, 79,089 miles by the shires; and 5,945 miles were in the unincorporated areas of the Western Division. The nature of these roads may be seen in the following statement:—

Divisions.	Mettled, Gravelled, Ballasted, &c.	Formed only.	Cleared only.	Natural surface.	Total.
	miles.	miles.	miles.	miles.	miles.
National	38	.....	.....	.....	38
Municipalities	3,725	1,902	2,067	2,068	9,762
Shires	12,631	9,247	22,076	35,135	79,089
Western Division	91	145	3,160	2,549	5,945
Total	16,485	11,294	27,303	39,752	94,834

BRIDGES.

Many of the earliest bridges erected in the State were built of stone, and are in existence still. Those erected in the period following the extension of settlement to the interior were principally of timber, and have since been replaced after an average life of about twenty-five years. Nearly all the large bridges of recent date are of iron and steel, and some of them have been erected under difficult engineering conditions, owing to the peculiarity of the river flow in certain parts of the country.

Pymont Bridge.

The total length of the Pymont structure and its approaches is 1,753 feet. The bridge itself spans a distance of 1,211 feet, of which the swing part represents 223 feet, the remainder being covered by the twelve side spans, each of 82 feet 4 inches. The swing span, weighing 800 tons, is carried on a pivot which has its foundation on a caisson of 42 feet diameter, sunk to a depth of 62 feet. Its floor space is 12,000 superficial feet, as against 10,600 on the Newcastle-on-Tyne bridge, and the roadway is 4 feet wider than that on the Tower Bridge of London. The swing is operated by two 50-h.p. electrical motors supplied with power from the Ultimo Power-house, and can be opened or closed in forty-four seconds, at a cost of five farthings for the double operation, which includes the opening and closing of the gates as well as the swing. The total cost of this bridge was £145,000.

Glebe Island Bridge.

The Glebe Island Bridge is over 2,800 feet long, and consists of a steel swing bridge in the centre of the bay, with a stone causeway approach to either shore. A steel over-bridge is provided on the Glebe side to permit of traffic thereunder to the area on the northern side of the bridge, which has been made by partly cutting down Glebe Island, and reclaiming with the debris a valuable deep-water frontage of 2,800 feet, with 13 acres of level land, which will soon be connected with the railway system of the State by a goods railway from Flemington to Belmore, and Wardell-road to Glebe Island and Darling Island. The main bridge is 353½ feet long between abutments, and possesses a steel swing span, 191 feet 2 inches long, affording two clear waterways, each of 60 feet, for shipping, as against one of 34 feet in the old swing. This increase in waterway permits of the passage of large oversea vessels, thus opening up the great possibilities of the frontages to the south of the bridge. The two steel side spans are 81 feet 2 inches centres, affording 20 feet clear headway above high-water mark in lieu of the 12 feet available in the old bridge. The bridge is provided with a steel floor carrying a 40-foot wood-blocked carriage-way and two 5-foot footpaths, which enormously improves the travelling facilities, and allows the easy movement of electric trams across the bridge. The swing span, though smaller than at Pyrmont, contains a floor space of 9,600 feet. The total weight of the swing span of the Glebe Island Bridge is 650 tons, and it revolves on a cast-steel roller 37 feet in diameter, carrying steel-covered treads. The swing, as well as the gates cutting off the road traffic at either end of the swing span, are operated by electricity, and it is possible to open or close the swing in forty-four seconds. The cost of this bridge was £107,000.

Hawkesbury River Railway Bridge.

The bridges used for railway traffic only are not included in the table showing particulars of bridges, &c., but the following description of the Hawkesbury River Railway Bridge may be of interest.

This bridge is the largest of its kind in Australia, and, as regards its foundations, one of the most remarkable in the world. It crosses the Hawkesbury River at a distance of 36 miles from Sydney, and was the last link in the continuous all-rail connection between New South Wales and the States of South Australia, Victoria, and Queensland.

There are in the bridge seven spans, each of 416 feet from centre to centre of the piers, the length of the bridge between abutments being 2,912 feet. The caisson for each pier is rectangular in form, with rounded ends, 48 feet by 20 feet, splaying out 2 feet wider all round at the bottom. The depths in feet of the six caissons below high-water level to which they were sunk, range from 101 feet to 162 feet, the last being the deepest bridge foundation in the world.

The roadway was completed on 23rd April, 1889, and after being thoroughly tested was formally opened for railway traffic on 1st May, 1889.

NUMBER OF BRIDGES AND FERRIES.

On 1st January, 1907, the period of the inception of the Local Government Act, the bridges of 20 feet span and over, including those in course of construction, numbered about 3,575. Of these, 256 bridges, of an aggregate length of 101,416 feet, which by reason of their cost, size, and extra-local importance would constitute a strain on the resources of the local councils, were proclaimed as "national works," to be maintained by the Government.

Where local conditions and limited traffic have not favoured the erection of a bridge, a punt or ferry has been introduced. The most important ferries, which are worked otherwise than by hand, have been proclaimed as national services. Prior to 1st December, 1907, it was the practice to charge a small fee for ferry transit; but on that date tolls were abolished, and public ferries are now free.

The latest particulars of the bridges, culverts, and ferries of the State are shown below:—

Classification.	Bridges over 20 feet span.		Culverts.		Ferries.
	Number.	Length.	Number.	Length.	Number.
		ft.		ft.	
National Works	274	* .....	.....	.....	14
Municipalities	774	41,185	4,083	136,116	13
Shares	3,435	202,735	32,394	285,989	99
Western Division (unincorporated)	117	20,225	88	845	3
Total	4,600	*	36,565	422,950	129

* Information not available.

TRAFFIC ROUTES IN SYDNEY AND SUBURBS.

A Royal Commission was appointed in 1908 with the object of investigating proposals for the improvement of the City of Sydney and its suburbs. An important section of the Report, issued in 1909, deals with the avenues of traffic.

The recommendations of the Commissioners regarding traffic facilities were calculated to meet the demands of traffic for the succeeding twenty-five years.

COMMUNICATION BETWEEN SYDNEY AND NORTH SYDNEY.

Another consideration connected with the traffic of the metropolitan area is the question of providing improved means of communication between Sydney and North Sydney. The population of the North Shore districts of the harbour has increased at a great rate, and since provision has to be made for the conveyance of passengers and vehicles by steamers across the harbour, it can be understood that many difficulties of harbour navigation are caused by the numerous ferry steamers plying to and from the Circular Quay.

A Royal Commission in 1890 favoured a high-level bridge as the means of communication, but concluded that the time was not opportune for undertaking the connection. In 1896 a Select Committee of the Legislative Assembly reported in favour of a tunnel in preference to a bridge, but enabling Bills introduced into Parliament were not completed. Two years later amended schemes were submitted to Parliament without definite results.

Tenders were invited for designs for a bridge in 1900 and 1901, and in the latter year a design was approved by an Advisory Board, but action was suspended, owing to temporary financial depression.

The large increase in population on both sides of the harbour and the consequent congestion of traffic led to the appointment of a Royal Commission in 1908. In the report, furnished in March, 1909, the Commissioners expressed the opinion that it was expedient to promptly provide increased and improved facilities of communication, and that the best practical and most economical method of establishing such direct communication, and avoiding obstruction to harbour navigation, was by subways.

During the years 1909 to 1913 various proposals for communication between Sydney, and North Sydney were submitted to the Parliamentary Standing Committee on Public Works, with the result that the following scheme, submitted by the Chief Engineer, Metropolitan Railway Construction, was recommended in July, 1913 :—

The construction of a bridge of the cantilever type extending from Dawes' Point to Milson's Point, and giving accommodation for four lines of railway—two to be used as tramways pending the electricification of the city railways; one footway, 15 feet wide; one motor roadway, 17 feet 6 inches wide; and one roadway, 35 feet wide. The distance across the proposed bridge and approaches is $1\frac{1}{4}$ miles, and a headway of 170 feet above water level is provided. The cost, including £100,000 for land resumption, was estimated at £2,750,000.

GOVERNMENT EXPENDITURE ON ROADS, BRIDGES, &c.

Although roads as the main arteries of traffic from the metropolis to the interior have been superseded by the railways, nevertheless they are still the sole means of communication throughout a large part of the interior, and serve as most valuable feeders to the railway system of the country. No revenue is derived directly from roads, but their indirect advantages to the country have been very great.

On 1st January, 1907, the administration of all roads, bridges, ferries, wharfs, and public watering places (other than those classed as national works and services), of municipalities and shires within the Eastern and Central Divisions, and the financial responsibilities therewith, were transferred under the Local Government Act to the municipal and shire councils. The funds of both shires and municipalities may, however, be subsidised, and shires are entitled to receive annually a total sum of at least £150,000 from the State.

In addition to the endowment and grants, the Government is still responsible for the administration and expenditure on account of public works and services within the Western Division, and such other works in the Central and Eastern Divisions as have been proclaimed "National."

In view of the transference of the administration of roads and bridges, with the exception of those noted previously, from direct State to local government control, the following return will be of interest. It shows the Government expenditure on works of a local character, before and after the inauguration of a general system of local government. The increase in the expenditure on services during the year 1914 was due to the payments on account of Main Roads, formerly included in Endowments and Grants.

Year ended 30th June.	Expenditure on Services.	Endowments and Grants.			Total Expenditure.
		Shires.	Municipali- ties.	Total.	
	£	£	£	£	£
1905	495,672	.....	7,048	7,048	502,720
1906	497,061	.....	4,944	4,944	502,005
1907	412,331	142,960	84,355	227,315	639,646
1908	165,798	249,842	65,104	314,946	480,744
1909	120,382	247,072	23,763	270,835	391,217
1910	127,287	306,225	23,762	334,987	462,274
1911	133,881	327,811	31,834	359,645	493,526
1912	141,891	359,044	23,046	382,090	523,981
1913	143,843	289,793	19,364	309,157	453,000
1914	251,730	144,610	2,399	147,009	398,739

EXPENDITURE ON ROADS, &c., BY MUNICIPAL AND SHIRE COUNCILS.

In the subjoined statement the expenditure by municipal and shire councils on behalf of roads, &c., is shown for the year 1913:—

City of Sydney—		£
Salaries—Road Maintenance	...	1,023
Maintenance of Streets	...	43,594
Footpaths	...	16,971
Woodpaving	...	10,869
Gullies	...	5,639
Street-lighting	...	23,758
Street Watering and Sanding	...	10,904
Centennial Park Streets	...	2,490
Tar Plant	...	2,974
	Total	£ 118,522
Municipalities (other than Sydney)—		
Maintenance, Repairs, and Renewals...	...	239,329
Construction	...	84,094
Street and Gutter Clearing	...	41,618
Kerbing and Guttering	...	40,937
Footpaths and Gutter Bridges	...	48,455
Street-watering	...	11,710
Street-lighting	...	68,670
Other, including Tree-planting, &c.	...	8,017
	Total	£ 542,830
Shires—		
Maintenance, Repairs, Renewals, &c...	...	325,793
Construction	...	264,818
Other Expenditure	...	2,997
	Total	£ 593,608
	Grand Total	£ 1,254,960

The grand total shown above does not include the interest payable on loans raised for permanent improvements, &c., the bulk of which has been expended on roads, &c.

The amount expended by municipalities, other than Sydney, on account of bridges was £4,386. In the shires the maintenance, repairs, renewals, &c., of bridges cost £12,173; whilst £24,324 was spent on construction. The cost of the upkeep of Pymont Bridge, previously a charge on the City Council, is now defrayed by the New South Wales Government.

PARKS AND RECREATION RESERVES.

It has always been the policy of the State to provide the residents of incorporated towns with parks and reserves for public recreation, and the city of Sydney contains within its boundaries a large extent of parks, squares, and public gardens. The most important are—Moore Park, where about 380 acres are available for public recreation, including the Association Cricket Ground, the Royal Agricultural Society's Ground, and the Zoological Gardens; the Botanic Gardens and Garden Palace Grounds, 65 acres, with the adjoining Domain, 85 acres, ideally situated on the shores of the Harbour, and Hyde Park, 40 acres, in the centre of the city. The total area covered is 669 acres, or 20 per cent. of the whole of the city proper. This does not include the Centennial Park, 552 acres in extent, situated on the outskirts of the city, formerly reserved for the water supply, but now used for recreation by the inhabitants of Sydney. This magnificent recreation ground has been cleared, planted, and laid out with walks and drives, and is a favourite resort of the citizens.

The suburban municipalities are also well served, as they contain, including the Centennial Park, about 4,022 acres of public parks and reserves, or about 4.2 per cent. of their aggregate area, dedicated to, and in some cases purchased for, the people by the Government.

In addition to these parks and reserves, the National Park, situated about 16 miles south of Sydney, and accessible by railway, was dedicated to the people in December, 1879. This park, with the additions subsequently made in 1880 and 1883, contains a total area of 33,747 acres, surrounding the picturesque bay of Port Hacking, and extending in a southerly direction towards the mountainous district of Illawarra. It is covered with magnificent virgin forests; the scenery is charming, and its beauties attract thousands of visitors.

Another large tract of land, designated Kuring-gai Chase, was dedicated in December, 1894, for public use. The area of the Chase is 35,322 acres, and contains portions of the parishes of Broken Bay, Cowan, Gordon, and South Colah. This park lies about 15 miles north of Sydney, and is accessible by railway at various points, or by water *via* the Hawkesbury River, several of whose creeks, notably Cowan Creek, intersect it.

In 1905 an area of 248 acres was proclaimed as a recreation ground at Kurnell, on the southern headland of Botany Bay, a spot famous as the landing-place of Captain Cook; and the Parramatta Park (252 acres) although outside the metropolis, may be mentioned on account of its historic interest.

In country districts, reserves have been proclaimed as temporary commons, and considerable areas have been dedicated from time to time as permanent commons attached to inland townships, which are otherwise well provided with parks and reserves within their boundaries.

A State Nursery is maintained at Campbelltown, from which plants, trees, and shrubs are distributed to the various parks and reserves.

Under the Public Parks Act the Governor may appoint trustees of any lands proclaimed for the purposes of public recreation, convenience, health, or enjoyment. The trustees are empowered to frame by-laws for the protection of shrubs, trees, &c., upon the land vested in them, and to regulate the use and enjoyment of such land by the public.

RACE-COURSES.

No race meeting may be held on any race-course in New South Wales unless such race-course is licensed under the Gaming and Betting Act, 1912. When used for horse-racing or pony-racing the running ground of such race-course must not be less than six furlongs in circumference. A limitation is made in certain cases regarding the number of days in any one year on which meetings for horse-racing, pony-racing, and trotting races or contests may be held on a race-course.

During the year ended 31st December, 1913, there were 506 separate licenses issued for horse-racing, pony-racing, and trotting contests, the license fees received amounting to £1,208. During the year 1914, the licenses numbered 527, and the fees were £1,229.

THEATRES AND PUBLIC HALLS.

Plans of buildings intended to be used for theatres and public halls must be approved by the Government. A license may be refused if the provisions of the Theatres and Public Halls Act, 1908, have not been complied with; or that alterations or additions to the building are necessary in order to provide for public safety, health, or convenience; or if it is considered that the building is not suitable for holding public entertainments or public meetings therein, or the site of such building is unsuitable.

At 31st December, 1914, there were 1,405 licensed theatres and public halls in New South Wales, in which seating accommodation was provided for approximately 688,800 persons.

FOOD AND PRICES.

NEW South Wales is capable of producing in abundance all requirements for the sustenance of human life, and so far as actual necessities are concerned, the State is practically independent of external supplies; food of all kinds is obtainable readily, and articles of diet, which in other countries are within the category of luxuries, are consumed by all classes of the people in New South Wales, indicating a fairly high standard of living.

In the portions of this Year Book dealing with primary and manufacturing production, sufficient evidence is adduced as to the various industries to show the extent to which the State is independent of external sources of supply; but as the community is yet in an early stage of development, the raw materials form a much larger proportion of production than the products of manufactures which usually accompany a more advanced growth.

For purposes of review, a summary is given of the production from local industries, and the extent to which food products are imported from oversea countries, may be seen by reference to the section of this Year Book relating to Commerce.

VALUES OF LOCAL INDUSTRIES.

During 1913 the total value of production from the principal industries reached the very satisfactory sum of £77,520,000, which is far in advance of the total of any former year. For many years the pastoral industry was the chief source of the wealth of the State, the production of 1913 being £20,738,000. The production from the manufacturing industry has increased very rapidly since 1906, and during the last two years has exceeded the pastoral, the value in 1913 being £23,482,000.

The statement below shows the estimated value of production of the various industries, at the place of production, at intervals since 1891:—

Value of Production. (*In thousands, 000 omitted.*)

Year.	Pastoral.	Agricultural.	Dairying.	Poultry, Bees, Rabbits.*	Forestry and Fisheries.	Mining.	Manufacturing. (Value added to raw materials.)	Total, all Industries.
	£	£	£	£	£	£	£	£
1891	14,725	3,615	2,735	.....	758	6,434	7,799	36,066
1896	11,774	5,374	2,546	.....	715	4,465	7,302	32,176
1901	12,552	7,060	3,046	.....	733	5,681	9,742	38,814
1906	19,743	7,518	3,425	1,693	1,536	7,913	11,906	53,734
1907	22,281	6,588	3,567	1,708	1,382	10,295	13,481	59,302
1908	18,846	8,319	4,064	1,732	1,165	8,384	13,633	56,143
1909	19,040	10,908	3,983	1,990	1,096	7,403	14,536	58,956
1910	21,028	9,493	4,796	2,119	1,108	8,455	16,794	63,793
1911	19,434	9,749	5,215	2,055	1,195	9,410	19,143	66,201
1912	19,440	11,817	5,758	2,089	1,303	11,229	22,464	74,100
1913	20,738	12,378	5,455	2,416	1,400	11,651	23,482	77,520

* Poultry and bee farming included with dairying in 1901 and previous years.

In the next statement are shown the equivalent values per head of population, of the products of local industries over the same period :—

Year.	Pastoral.	Agricultural.	Dairying. *	Forestry, Fisheries, Poultry, &c.	Mining.	Manu- facturing.	Total, all Industries.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1891	12 17 10	3 3 4	2 7 11	0 13 3	5 12 8	6 16 7	31 11 7
1896	9 5 4	4 4 7	2 0 1	0 11 3	3 10 4	5 14 11	25 6 6
1901	9 3 8	5 3 4	2 4 7	0 10 9	4 3 1	7 2 6	28 7 11
1906	13 6 0	5 1 3	2 6 2	2 3 6	5 6 7	8 0 5	36 3 11
1907	14 13 7	4 6 10	2 7 0	2 0 8	6 15 8	8 17 7	39 1 4
1908	12 3 10	5 7 7	2 12 7	1 17 6	5 8 6	8 16 5	36 6 5
1909	12 1 5	6 18 4	2 10 6	1 19 2	4 13 10	9 4 4	37 7 7
1910	13 0 2	5 17 6	2 19 4	1 19 11	5 4 8	10 7 10	39 9 5
1911	11 13 6	5 17 2	3 2 8	1 19 0	5 13 0	11 10 0	39 15 4
1912	11 3 8	6 15 11	3 6 3	1 19 0	6 9 2	12 18 5	42 12 5
1913	11 9 3	6 16 10	3 0 3	2 2 2	6 8 9	12 19 7	42 16 10

* Poultry and bee farming included with dairying in 1901 and previous years.

The following table shows the total value of production in various years, from 1871 onwards, and the resultant return per head of population :—

Year.	Value of Production.		Year.	Value of Production.	
	Aggregate (,000 omitted).	Per head of Population.		Aggregate (,000 omitted).	Per head of Population.
	£	£ s. d.		£	£ s. d.
1871	15,379	30 5 3	1908	56,143	36 6 5
1881	25,180	32 18 3	1909	58,956	37 7 7
1891	36,066	31 11 7	1910	63,793	39 9 5
1901	38,814	28 7 11	1911	66,201	39 15 4
1906	53,734	36 3 11	1912	74,100	42 12 5
1907	59,302	39 1 4	1913	77,520	42 16 10

These figures show that since 1871 the aggregate value of production has increased by over 62 million pounds, and the value per head of population, by £12 11s. 7d. From the primary industries alone the return in 1913 was £54,038,000, equal to £29 17s. 3d. per head. The figures afford ample justification for the investment of the capital which has secured such results.

Variations in prices, due mainly to causes beyond local control, and the general conditions of the season, are the most powerful factors in regulating the volume and value of production; but making due allowance for these factors, the steady advance noticeable throughout the period covered by the figures given above is a magnificent testimony to the wealth of the State, and the bountiful returns which it yields.

The steady progress of the value of production from the various industries during the last twelve years may be seen in the following statement, which shows the average annual value during quinquennial periods since 1902.

As in previous tables, the figures represent the actual value received by the primary producers at the place of production, and in the manufacturing industry, the value added to raw materials by the processes of treatment, not the total value of articles manufactured :—

Industry.	Average Annual Value of Production.							
	Total (,000 omitted.)				Per head of Population.			
	1902-1906.	1907-1911.	1912.	1913.	1902-1906	1907-1911.	1912.	1913.
Pastoral	£ 14,747	£ 20,126	£ 19,440	£ 20,738	£ s. d. 10 5 10	£ s. d. 12 14 1	£ s. d. 11 3 8	£ s. d. 11 9 3
Agricultural	6,395	9,012	11,817	12,378	4 9 3	5 13 9	6 15 11	6 16 10
Dairying	3,940	4,325	5,758	5,455	2 15 0	2 14 7	3 6 3	3 0 3
Poultry, Bees, Rabbits }		1,921	2,069	2,416		1 4 3	1 4 0	1 6 8
Forestry, Fisheries	1,020	1,189	1,303	1,400	0 14 3	0 15 0	0 15 0	0 15 6
Mining	6,423	8,789	11,229	11,651	4 9 8	5 10 11	6 9 2	6 8 9
Total Primary	33,525	45,362	51,636	54,038	22 14 0	23 12 7	29 14 0	29 17 3
Manufacturing	10,407	15,517	22,464	23,482	7 5 3	9 15 11	12 18 5	12 19 7
Total, all Industries	42,932	60,879	74,100	77,520	29 19 3	33 8 6	42 12 5	42 16 10

Taking the annual average for the quinquennium 1897-1901 as 100 in each case, the average for all industries for the 1902-06 period was 115, for the quinquennium 1907-1911, 163, and for the year 1913, 208. The dairying industry shows the largest relative increase, then the manufacturing industry :—

Industry.	1902-1906.	1907-1911.	1912.	1913.
Pastoral	112	153	148	157
Agricultural	108	152	199	209
Dairying, Poultry, &c.	135	214	268	269
Forestry, Fisheries	137	160	175	188
Mining	117	161	205	213
Total, Primary	115	161	183	191
Manufacturing	115	172	249	260
Total, all Industries... ..	115	163	199	208

FOOD CONSUMPTION.

With the cessation, on 13th September, 1910, of the old system of keeping records of all interstate trade, it became impossible to determine the value of imports to, and exports from, the State, or to assess the extent and value of commodities consumed, or, in some cases, produced locally. Consequently, tables which had been published hitherto, cannot be continued.

The annual consumption per capita of the principal articles of diet, based on an average of three years, ending in December, 1909, has been estimated as follows:—

		lb.	lb.		lb.
Meat	{ Beef ...	141·8	} 249·4	Salt	38·5
	{ Mutton ...	96·5		Butter	26·1
	{ Pork, &c. ...	11·1		Cheese	3·5
Fish	{ Fresh ...	7·0	} 11·6		gal.
	{ Preserved ...	4·6			
Potatoes	...	...	181·0	Milk { Fresh	17·4
Flour	225·4		{ Preserved ... ..	4·4
Rice	...	...	8·2	Tea	7·3
Oatmeal	...	...	7·6	Coffee	11·0
Sugar	...	...	103·8		

Meat.

The remarkable feature of the per capita quotations for New South Wales is the large amount of meat consumed. In other countries where meat and butter are not easily obtainable, these articles are replaced in the dietary, by cheese which is cheap and nutritious, and by suet and other fats.

Further information regarding the production of meat is given in the chapter relating to Pastoral Industry.

Fish.

The local supply marketed, which constitutes the bulk of fresh fish consumed, amounted in 1914 to 13,322,489 lb., exclusive of 11,125 dozen crayfish, 1,296 dozen crabs, 219,720 quarts of marine prawns, and 21,257 sacks of oysters. It is estimated that approximately 4,000,000 lb. are disposed of each year without passing through the recognised markets; supplies pass, unrecorded, from various rivers to country towns in the State, from the northern rivers into Queensland, and from the south into Victoria.

Potatoes.

The consumption of potatoes is subject to considerable fluctuation. In 1904 it amounted apparently to 125,000 tons, but fell to 87,000 tons in the succeeding year when prices became higher. In 1908 it reverted to the figures of 1904, but in 1909 it dropped to 96,000 tons. Local production varies greatly, but is seldom equal to the demand, and the State is usually compelled to import supplies, mainly from the neighbouring States.

Sugar.

The consumption of sugar is considerable, reaching the average of 103·8 lb. per head of population. The northern rivers district is adapted to the growing of sugar-cane, and during the four years ended 31st March, 1899, the average area cut was over 15,000 acres. With the growth of dairy-farming the industry has declined, and now within the State only 6,000 acres of cane are cut annually.

Tea and Coffee.

Tea enters largely into consumption amongst all classes, the average annual consumption being about 7 lb. per head. Coffee, on the other hand, averaged only 11 oz. per head; there are indications however that the consumption of coffee is increasing.

CONSUMPTION OF INTOXICANTS.

As with other commodities, so with alcoholic beverages, it is not possible to compute the volume and value of local consumption since 1909; in that

year the volume of spirits consumed in New South Wales was 1,295,400 gallons (proof), of which 123,800 gallons were Australian produce, and 1,171,600 gallons were imported. The consumption per head, .82 gallons, was equal to the average for the previous five years.

The average consumption of beer per head of population declined considerably from 1891, when the rate was 11.43 gallons per capita, and in 1905 was lower than in any previous year for which information is available, namely, 9.07 gallons per head. The rate subsequently rose in each year to about 10 gallons annually for each inhabitant. The consumption of beer in 1909 amounted to 16,213,500 gallons, of which 15,240,000 were brewed locally and 973,500 imported.

The wine entering into consumption in New South Wales is chiefly the produce of Australian vineyards; but the quantity produced in the State is much less than might be expected in a country so eminently adapted for viticulture. The quantity of wine consumed during 1909 amounted to 921,300 gallons, including 43,600 gallons of foreign wines; the consumption per head was .58 gallons.

TOBACCO.

The quantity of tobacco consumed in 1909 was 4,667,200 lb., the figures including tobacco, cigars, and cigarettes. This is equivalent to 2.96 lb. per inhabitant, and is slightly below the average of 1908, which was 3.03 lb. per head. The consumption is gradually increasing; from 1895 to 1899 the average per head was just over 2½ lb., and from 1900 to 1904 nearly 2¾ lb. per head. The figures for 1909 were as follows:—

Description.	Consumption of Tobacco.			
	Aggregate.			Per head of Population.
	Imported.	Australian.	Total.	
	lb.	lb.	lb.	lb.
Tobacco ...	492,600	3,231,500	3,724,100	2.36
Cigars ...	114,100	109,200	223,300	.14
Cigarettes ...	42,100	677,700	719,800	.46
Total ...	648,800	4,018,400	4,667,200	2.96

In regard to the description of tobacco used there had been a large increase in the quantity of cigarettes. In 1890 about 88 per cent. of the total consumption was of ordinary tobacco, in 1909 the proportion had fallen to 80 per cent.; of cigars, the consumption was about 8.5 per cent., as compared with 5 per cent.; and of cigarettes 3.5 per cent. in 1890, compared with 15 per cent. in 1909.

FOOD SUPPLY AND PRICES IN SYDNEY.

A Royal Commission was appointed in July, 1911, to conduct an inquiry into the food supply and prices in Sydney, with special reference to fish, meat, bread, milk, fruit, and vegetables. Evidence was collected in the neighbouring States as well as in many parts of New South Wales, and sectional reports dealing with the various commodities were issued to supplement the general report.

Generally the methods of production of foodstuffs are not calculated to secure the maximum output nor the highest quality that might reasonably be expected even under existing economic conditions. Considerable waste and deterioration occur as the result of inefficient methods of transport and

handling, the system of distribution is crude and expensive, and the multiplication of distributing agencies adds considerably to the cost to the consumer.

Regarding the prices of foodstuffs the investigation was limited to local causes affecting prices in the local market, and did not embrace such causes affecting the world's prices generally, as the increase in the world's gold supply, and the increasing demand for food products in new markets.

The outstanding cause of the rise in prices of foodstuffs, which has taken place during recent years is the relative deficiency in production. Apart from the extension of the export trade of the State, the sources of supply are taxed by a disproportionate increase of the food consuming classes, as compared with the producing classes. This fact is illustrated by a table in the chapter relating to Employment, showing the classification of the population according to occupation.

The complexity of the distributing system is an important factor of the cost of food. It is estimated that the costs of distribution amount to one-half, and in some cases more, of the price paid by the consumer. Under the present system it is impossible to make an appreciable reduction in these charges, but improvement may be effected by providing facilities for the direct transmission of foodstuffs in small parcels from the producer to the consumer; by extending the facilities for retail buying in the markets, and by increased intervention of public authorities in the work of distribution. The increasing stringency of Government regulations tends to raise the cost of production and distribution, but these regulations have the effect of improving the quality, and this fact must be taken into consideration in comparisons of prices.

Another factor of the rising prices is the change in the habits of consumers. The prosperity of recent years has in many ways increased the cost of supplying the demands of the ordinary householder—by increasing the demand for more expensive classes of meat, bread, fish, &c., which involves the waste of the cheaper, but not less nutritive classes. The practice of dining in restaurants and hotels, reduces the quantity consumed at home, with the result that the total cost of suburban distribution, which owing to increases in wages, fodder, &c., has risen greatly, is expended to supply a smaller average quantity to each householder. Moreover, the proportion of food supplied at contract rates to the restaurants and hotels has increased, and the tendency is for the supplier who obtains but a small return on his large orders to keep up the price on the small orders of individual housekeepers. It is stated also, that the demands of all classes of consumers upon distributors have become more exacting.

The increase in wages owing to the operations of Trade Unions, Wages Boards, &c., has contributed towards the rise in prices, by giving the working classes a higher purchasing power, and so increasing the demand for articles of general consumption, but otherwise wages increases in the particular trades investigated, except perhaps in the milk trade, have not directly caused any large increase in prices.

There was little evidence of any detrimental combinations among producers or distributors in the trades investigated, but as they may be affected seriously by combinations in any trade which supplies them with services or materials, and as the conditions which make detrimental combinations possible are always present in food supplying trades, the Commission recommended the extension of the law regarding monopolies and combinations, to cover those directly or indirectly concerned with the supply of foodstuffs.

FISH SUPPLY.

Conditions of Fishing Industry.

In the chapter relating to Fisheries it has been shown that, although the seaboard waters, rivers, estuaries, and coastal lakes of New South Wales contain immense quantities of edible fish, the industry has not been developed, and consequently the position of the fish supply is generally unsatisfactory. Supplies are irregular and inadequate; there is no effective system of distribution; and as a result, prices are high. The Commission recommended (a) the development of the deepsea fisheries, which now furnish only one-tenth of the Sydney supply, and (b) the improvement of the conditions under which the inshore fisheries (*i.e.*, fisheries in river estuaries, and coastal lakes and inlets) are conducted.

If within a reasonable time no satisfactory efforts have been made by private enterprise to exploit the vast resources of the ocean fisheries, it was recommended that the Government undertake the work and equip a small fleet with the most modern appliances for trawling, surface-netting, and long-line fishing.

In reference to this recommendation it is noted that the Government has purchased three trawlers in Great Britain for use in New South Wales waters; the vessels arrived at Sydney in April, 1915.

Handling, Marketing, and Distribution of Fish.

Communication between the inshore fishing-grounds and the Sydney market depends mainly on ocean transport, as only those between Newcastle on the north and Jarvis Bay on the south are connected by rail. After capture, the fish is taken to the point of shipment in the fishermen's boats; it is then washed, packed in cases, and consigned to agents in Sydney. For sea carriage the capacity of the cases varies from 252 lb. to 840 lb. of fish, exclusive of ice; fish carried by rail is packed in cases of a capacity of 65 lb. to 80 lb. The cases are usually the property of the agents, who charge a small rental for their use.

The quantity of fish available for consumption is considerably reduced and the quality impaired by careless handling and packing by the fishermen; by inefficient treatment on shipboard; by the want of proper accommodation for fish at points of shipment pending departure of steamer or train; by the common use of very large cases which renders the lower layers of fish unfit for food, and necessitates the transfer of fish to baskets on arrival at Sydney wharves.

The desirability of cleaning fish before shipment and as soon as possible after capture is urged emphatically; and, as this is not practicable under existing conditions, it is proposed that as a tentative measure it should be made compulsory to clean all fish before it is placed in cool storage.

The quantity of fish supplied is restricted by the want of regular and frequent communication from grounds not connected with Sydney by rail, while the cost of freight by steamer from some of the more prolific grounds tends to further restrict the supply of the commoner varieties.

Fish Markets.

There are three fish markets in Sydney, the bulk of the supply being handled in two—the Municipal Fish Markets and the Commonwealth Fish Exchange. The former is controlled by the Sydney Municipal Council, which acts as selling agent; private agents are, however, allowed to conduct business in the Council's building. The Commonwealth Fish Exchange is owned and controlled by a private company, most of the agents operating on its premises being shareholders.

Fish is sold in the markets by agents both by auction and by private treaty; the Municipal Council sells by auction only. Inspection in the Municipal Market is carried out by an officer of the Council and a Government Inspector, and in the Commonwealth Fish Exchange by a Government Inspector acting under the Pure Food Act.

The marketing charges, in addition to rail or steamer freight, are as follows:—

	per basket.
Wharfage dues	1d.
Cartage, wharf to market	6d.
Market dues—	
Municipal Market	4d.
Commonwealth Market... ..	3d.

Case rent—1s. per trip—is charged also by some agents, and on any fish placed in cool storage additional dues must be paid. The private agents charge a selling commission of 10 per cent., out of which they pay the market dues. The Municipal Council charges 5 per cent. commission, and debits the fisherman with the market dues.

Distribution.

The need for an effective system of general distribution of fish to private consumers is urgent. The buyers at the markets comprise mainly wholesale and retail dealers, and hotel, restaurant, and boarding-house keepers; few private consumers attend the sales.

In the nearer suburbs a few dealers maintain regular rounds for the purpose of house-to-house distribution. In the more distant suburbs distribution is carried on only by hawkers and basketmen, and their visits are intermittent and uncertain.

The Commission recommended that private markets be abolished, and that the Sydney Municipal Council act as sole agent for the sale of fish, with the exclusive right of conducting fish markets in the metropolitan area, and the power to engage in the retail sale and distribution of fish. The Commission recommended also that the Council discuss the propriety of purchasing direct from the fishermen on the fishing grounds: that the packing and inspection be regulated by the Department of Fisheries; that the Council establish receiving depôts at suitable places along the coast, and provide motor boats to collect fish and transport it to depôts, where it could be forthwith inspected, cleaned, packed in cases of convenient size, and stored in cool chambers pending despatch to Sydney; that the Council take appropriate measures to secure that cases be carried by rail and steamer, under proper conditions; that, plant for the treatment of inedible fish, fish offal, and for the manufacture of fish-oil be established at the proposed depôts; and that all fish be sold by weight, or by basket of 84 lb. net.

Prices of Fish.

Reliable statistics regarding the movement of prices are not obtainable readily, but there is sufficient evidence to show that the wholesale prices of all classes of fish have increased considerably.

The main cause of the high prices is the steadily increasing demand, with which the supply has not kept pace. The increase in the demand is not due solely to growth of population, as it is shown that during the period 1900–11 the quantity of fish marketed in Sydney increased by over 100 per cent., while the increase in the mean population was 32 per cent. The increase in the demand is attributable to general prosperity and to changes in the domestic and housing conditions of the people which have led to increased consumption in hotels and boarding-houses where fish is more regularly an item of food than in the average private household.

Crayfish.

The crayfishing industry admits of extensive development, and there is an increasing demand for this article of diet, the number marketed in 1914 being 132,865, as compared with 25,932 in 1901. As regards nutriment value, crayfish is equal to that of ordinary fish, but it is less digestible.

The present conditions of transport and methods of packing and handling cause considerable loss during carriage to market; to obviate this loss arrangements should be made to boil the crayfish before despatch to market, and the recommendations regarding handling and distribution of fish should apply to crayfish.

Oysters.

Oysters are marketed in sacks of 3-bushel capacity; they are culled by hand on beds in shallow water or between tide-marks, and by means of the oyster dredge or tongs in deep water beds. Owing to the increased demand oysters are marketed at a smaller size now than a few years ago.

All the Sydney oyster merchant's hold oyster leases, and, in addition to production from their own leases, market oysters for other lessees. The prices paid to producers by merchants, and to the latter by retailers, are fixed by private treaty. Competition in the oyster trade has been very keen during recent years, and producers have received high returns.

As in the case of other fish, the demand for oysters is far in excess of the supply, and the prices are relatively high.

The trade conditions of oyster culture differ from those of other branches of the fishery industry; oyster cultivation is apparently more remunerative, and oyster leases form an important source of revenue to the Department of Fisheries. Presuming, therefore, that the Department will offer every encouragement to persons engaged in this branch, the Commission did not extend their recommendations in regard to the handling and distribution of fish to the oyster trade.

Canned Fish.

There is a permanent demand for canned fish, especially in country districts, where fresh fish is not obtainable readily; at the present time this demand is supplied wholly by importation. In local waters there are large numbers of fish eminently suitable for preserving, and a bounty of $\frac{1}{2}$ d. per lb. has been provided by the Commonwealth Government for fish preserved in Australia, in addition to the protection afforded by cost of transportation, &c., and a duty of 1d. per lb. imposed on the imported article.

Canneries have not proved successful in New South Wales, owing partly to lack of experience of persons engaged, and partly to irregularity of supplies. The Commission recommended that the Sydney Municipal Council consider the advisability of establishing a plant for canning, smoking, preserving, &c., in connection with their markets.

MEAT SUPPLY.

Production and Sources of Supply.

In the chapter relating to Pastoral Industry particulars are shown regarding the production of live stock and the number of stock slaughtered for the meat supply.

The subdivision of large estates and the encroachment of agricultural settlement on vast areas used previously for stock-raising has an important relation to the meat supply, tending to encourage the breeding of sheep for mutton instead of for wool, and the substitution of crossbred sheep for the smaller merino. These conditions have an opposite tendency in the case of cattle; cattle for beef producing thrive best on large, sparsely-populated

areas, and, if land is suitable for sheep, it is not profitable to use it for cattle-raising. As a result, cattle-breeding is becoming restricted to the coastal belt, and in this division the cattle are of the dairying strain and not so suitable for beef as the classes which are being displaced.

Another influence operating to restrict supplies of the best classes of cattle is the opening up of new outlets for Queensland fat cattle which used to be sent directly to the Sydney market from the south-western portions of that State. The cattle now imported from Queensland are "stores" and require to be fattened for six or nine months; this increases the cost of placing them on the local market.

A fact of considerable economic importance in connection with the supply of meat for local consumption and the price of meat is that a much higher number of animals is required now to produce a given quantity of meat than was the case ten years ago. This is attributable partly to a decrease in the average size and weight of cattle slaughtered and partly to the preference for choice cuts fostered by the prosperity of recent years.

Cattle Saleyards, Flemington.

The cattle saleyards at Flemington, covering an area of 66 acres, and capable of accommodating on one day from 75,000 to 80,000 head of sheep and lambs, and 2,500 head of cattle, are controlled by the Meat Industry and Abattoirs Board.

Auction sales are held twice each week; pens are allotted for consignments of stock arriving. Sales are held in rotation, and are limited in time according to the number of consignments. The dues charged are at the rate of $\frac{3}{4}$ d. per head for sheep, and 5d. for cattle.

The following table shows the number of stock yarded annually at the Flemington Cattle Saleyards:—

Year.	Sheep.	Cattle.	Year.	Sheep.	Cattle.
1906	2,196,535	96,494	1911	3,407,835	193,953
1907	2,741,283	106,893	1912*	3,648,138	211,705
1908	3,104,025	117,496	1913*	2,721,356	265,126
1909	3,810,445	132,050	1914*	2,805,207	276,440
1910	4,064,650	155,833	1915*	3,381,937	255,876

* Year ended 30th June.

Information regarding the Sydney Municipal Small-stock yards is given subsequently.

Consumption of Meat.

The consumption of meat is influenced largely by prices. In the period of scarcity and high prices between 1900 and 1903 the average consumption decreased and the habit of abstention from meat engendered by these conditions persisted after the return of good seasons, and in 1911 the average was far below that of the period 1895-97, but it is rising steadily.

The local consumption of preserved meats, with the exception of tinned tongues, is very small, and the bulk of the products of large and efficient meat-preserving works is exported.

Transport, Handling, and Slaughter of Stock.

The stock for the metropolitan meat supply are for the most part sold at Flemington saleyards by agents who charge a selling commission of $2\frac{1}{2}$ per cent. After sale the stock are driven to the abattoirs at Glebe Island or Riverstone, or to suburban slaughterhouses, which number about 50. The bulk of the slaughtering is done at the public abattoirs at Glebe Island,

7 miles from the saleyards. There is no regulation to prescribe the length of time that must elapse before slaughter, but most butchers, in their own interests, provide rest paddocks.

Inspection at Glebe Island is under the direct control of the Board of Health, but the law regarding the inspection of private abattoirs is unsatisfactory; the duty is vested primarily in the local authorities, but in many cases its execution is left to the Board of Health.

New abattoirs at Homebush Bay, which were opened in April, 1915, are equipped with modern appliances, and are surrounded by ample space for resting paddocks, the total abattoir area being about 1,600 acres. When this establishment is in full working order many defects of the present system will disappear; it is recommended that all slaughtering for the metropolitan supply be concentrated in this establishment to facilitate inspection and supervision.

The centralisation of the stock-selling and killing in Sydney necessitates the carriage of live stock over long distances by rail. Under the present transit arrangements the stock are unnecessarily harassed, and the Commission emphasised the necessity for greater care and expedition in transport; the improvement most urgently needed, viz., speedier transit, appears to depend upon the extension of railway facilities by the duplication of trunk lines. The Commission considered a proposal to have the killing done in the country, but decided that the scheme is impracticable at present by reason of the enormous expenditure the change would entail, the necessity of chilling the meat for transmission to the metropolis, the greater expense of treating by-products, and the difficulty of regulating supplies from various centres. Moreover, the advantages are doubtful, as the railway journeys, though lessened, could not be wholly avoided.

Distribution of Meat.

There is no public meat market in Sydney, but buildings for this purpose are under construction at Pyrmont. Meat for metropolitan consumption is distributed by the wholesale butchers directly to the retail shops, except in the case of a few retail butchers who purchase their supplies on the hoof at Flemington.

There are about 18 or 20 carcass butchers, the majority being engaged exclusively in the beef trade. The chief mutton butchers number six—operations in this branch of the wholesale trade being restricted to persons possessing expert knowledge and substantial capital.

In Sydney and suburbs there are about 500 retail butchers. Generally, there is keen competition between them, and no arrangement exists for the regulation of prices.

The Commission recommended that, in order to simplify the process of distribution, a central authority be empowered to accept consignments of stock direct from the grower for slaughter, the carcass to be sold by auction on the grower's behalf, and that all meat for local consumption be graded and stamped at the Abattoirs.

Control of the Meat Trade.

The Commission recommended that, subject to the general supervision and co-operation of the Board of Health, the whole control and regulation of the sale of stock at the metropolitan yards, of the subsequent handling and slaughter, and of the wholesale and retail distributing trades, be vested in a single authority. At present the saleyards and public abattoirs are controlled by the Meat Industry and Abattoirs Board; the inspection and regulation of butchers' shops, the granting of butchers' licences, and the licensing and inspection of slaughterhouses are functions of the local authorities; and the Board of Health exercises powers of administrative supervision.

Prices and Profits.

The governing factor in the price of meat is the price paid for live stock at Flemington. The following statement shows the movement of the prices of fat stock during the years 1900-1913:—

Stock.	1900.	1902.	1904.	1906.	1908.	1910.	1912.	1913.
Sheep.								
Cross-breds—	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Extra prime wethers ...	...	...	21 3	20 9	18 3	17 9	23 0	20 3
Prime wethers ...	14 3	20 6	19 0	18 0	15 9	14 9	18 0	18 0
Good ,, ...	12 3	13 0	17 3	16 6	13 0	11 9	15 9	14 9
Medium ,, ...	10 6	10 3	15 3	15 0	10 6	8 6	11 6	11 3
Extra prime ewes ...	...	...	21 0	19 0	17 3	15 9	19 6	17 3
Prime ewes ...	13 0	20 0	17 0	17 0	15 0	14 6	16 0	15 3
Good ,, ...	11 9	12 0	16 0	15 9	12 6	10 0	13 6	12 6
Medium ewes ...	10 6	9 6	14 3	14 3	10 0	7 3	10 3	9 6
Merinos—								
Extra prime wethers ...	...	...	21 0	21 0	18 6	18 0	21 0	21 3
Prime wethers ...	14 0	19 0	18 6	17 9	15 9	15 3	17 9	16 6
Good ,, ...	12 3	13 3	17 0	16 0	12 9	11 9	15 3	14 9
Medium ,, ...	10 0	10 0	15 0	14 3	10 0	8 0	11 9	11 6
Extra prime ewes ...	...	...	16 9	17 0	15 3	14 3	18 3	19 3
Prime ewes ...	11 9	13 9	14 6	14 6	13 0	12 0	15 9	16 6
Good ,, ...	10 3	10 0	13 0	13 3	10 3	9 3	13 3	13 6
Medium ewes ...	9 6	7 9	11 9	11 6	7 9	6 0	9 3	10 6
Lambs—								
Extra prime woolly ...	...	...	17 3	16 6	15 3	14 3	16 9	18 0
Prime woolly ...	12 0	12 9	15 3	14 9	13 3	11 3	13 6	15 3
Good ,, ...	10 0	9 3	14 3	13 6	10 9	8 3	11 6	11 9
Medium ,, ...	7 2	6 9	11 9	11 0	8 0	5 0	8 6	8 3
Cattle.								
Bullocks—	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.
Extra prime ...	11 8	16 11	12 3	13 0	13 2	10 11	13 5	12 7
Best ...	11 0	12 15	10 10	10 12	10 14	8 15	10 14	10 18
Good trade beef ...	8 3	10 11	9 15	9 8	8 14	7 12	9 0	9 2
Medium ...	5 9	8 18	8 12	8 8	7 1	5 0	7 0	7 5
Cows—								
Extra prime... ..	7 16	12 5	10 10	9 11	9 18	7 7	8 12	8 4
Best	6 9	10 3	7 17	8 1	8 4	5 15	7 5	6 9
Good trade beef ..	6 7	8 12	7 0	7 6	6 13	4 9	5 15	5 9
Medium	3 12	6 15	6 7	6 10	5 9	3 3	3 10	3 13
Meat.								
Best beef, per 100 lb. ...	...	...	24 0	26 6	29 9	22 3	27 0	25 9

Apart from fluctuations, due to weather conditions, such as drought, which affected the prices of the period 1902-4, the prices of fat stock have varied little since 1900. The general level in 1911 was about the same as in 1900; in 1912 and 1913 the dry weather in the pastoral areas was responsible for a rise in prices, and during the more favourable period which followed supplies were light, as pastoralists refrained from marketing their stock.

The movement of wholesale prices since 1901 is illustrated below. The prices, compiled from returns published in the *Australian Meat Trades Journal*, represent the highest and lowest in each year, the range covering "firsts" and "seconds" in the case of mutton, and "hinds" and "fores" in the case of beef:—

Year.	Mutton.		Beef.		Year.	Mutton.		Beef.	
	per lb.		per lb.			per lb.		per lb.	
	d.	d.	d.	d.		d.	d.	d.	d.
1901	2 ³ / ₈	to 2 ¹ / ₄	2	to 3 ¹ / ₄	1908	1 ⁵ / ₈	to 3 ¹ / ₂	1 ¹ / ₂	to 3 ⁵ / ₈
1902	1 ⁷ / ₈	„ 5 ¹ / ₂	2	„ 7	1909	1 ¹ / ₄	„ 2 ³ / ₈	1 ¹ / ₄	„ 3 ¹ / ₄
1903	2 ¹ / ₂	„ 3 ¹ / ₄	2 ¹ / ₄	„ 5	1910	1 ¹ / ₄	„ 2 ¹ / ₄	1 ¹ / ₄	„ 3 ¹ / ₄
1904	2 ³ / ₈	„ 3 ¹ / ₂	1 ⁵ / ₈	„ 3 ¹ / ₈	1911	1 ⁵ / ₈	„ 2 ³ / ₈	1 ¹ / ₂	„ 3
1905	1 ⁵ / ₈	„ 3	1 ¹ / ₂	„ 3 ¹ / ₈	1912	2	„ 4 ¹ / ₄	1 ¹ / ₂	„ 5
1906	1 ⁷ / ₈	„ 2 ¹ / ₂	1 ³ / ₈	„ 3 ¹ / ₂	1913	2	„ 3 ¹ / ₄	1 ³ / ₄	„ 3 ³ / ₄
1907	1 ⁷ / ₈	„ 3	1 ⁵ / ₈	„ 3 ³ / ₄	1914	2 ¹ / ₂	„ 4 ³ / ₈	2	„ 4 ¹ / ₂

The retail prices reflect the movements of the wholesale. The following statement shows the average retail prices charged by cash butchers in Sydney; if delivered, an additional charge, ranging from ¹/₂d. to 1d. per lb. is made:—

Year.	Sirloin Roast.		Rump Steak.		Leg of Mutton.		Shoulder of Mutton.		Short-loin Chops.	
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
1901	4	to 5	6	to 7	2 ¹ / ₂	to 3	1 ¹ / ₂	to 2	3 ¹ / ₂	to 4
1902	4	„ 5	6	„ 7	2 ¹ / ₂	„ 5	1 ¹ / ₂	„ 2	3 ¹ / ₂	„ 4
1903	4	„ 5	6	„ 7	2 ¹ / ₂	„ 3	1 ¹ / ₂	„ 2	3 ¹ / ₂	„ 4
1904	4	„ 5	6	„ 7	2 ¹ / ₂	„ 3	1 ¹ / ₂	„ 2	3 ¹ / ₂	„ 4
1905	4	„ 5	6	„ 7	2 ¹ / ₂	„ 3	1 ¹ / ₂	„ 2	3 ¹ / ₂	„ 4
1906	4	„ 5	6	„ 7	2 ¹ / ₂	„ 3	1 ¹ / ₂	„ 2	3 ¹ / ₂	„ 4
1907	4 ¹ / ₂	„ 5	6	„ 7	3	„ 3	1 ³ / ₄	„ 2	4	„ 4
1908	4 ¹ / ₂	„ 5	5 ¹ / ₂	„ 7	3	„ 3	1 ³ / ₄	„ 2	4	„ 4
1909	4	„ 5	6	„ 7	2 ¹ / ₂	to 3	1 ¹ / ₂	„ 2	3	to 4
1910	4	„ 5	6	„ 7	2 ¹ / ₂	„ 3	1 ¹ / ₂	„ 2	3	„ 4
1911	4 ¹ / ₂	„ 5	6 ¹ / ₂	„ 7	2 ¹ / ₂	„ 3	1 ³ / ₄	„ 2 ¹ / ₄	3 ¹ / ₂	„ 4
1912	4 ¹ / ₂	„ 5 ³ / ₈	6 ³ / ₈	„ 7 ¹ / ₂	3	„ 3 ¹ / ₄	2 ¹ / ₄	„ 3 ¹ / ₈	4	„ 4 ⁷ / ₈
1913	4 ¹ / ₂	„ 5 ¹ / ₂	7	„ 8 ³ / ₈	3 ¹ / ₂	„ 4	3	„ 3 ³ / ₈	4 ¹ / ₂	„ 5
1914	5 ³ / ₄	„ 6	8	„ 9	4 ⁵ / ₈	„ 4 ³ / ₈	3 ³ / ₄	„ 4	5 ¹ / ₂	„ 6 ¹ / ₂

Meat Export Trade.

The maintenance and extension of the export trade, apart from its economic value to the State generally in providing a remunerative outlet for surplus stock, benefits the local meat market by encouraging the breeding of a class of sheep more suitable for mutton than the Merino, and tends to lessen the expense of slaughtering and handling in enabling the buyer for local consumption to handle larger numbers.

The export trade has little effect on the local trade in beef; in mutton it exercises a direct influence on local prices by preventing them from falling below the level of London parity. Prices of Australian mutton abroad are quality for quality higher than local prices.

The Commission directed the attention of the Government to the advisability of co-operation with the Governments of the Commonwealth and of the other Australian States in order to prevent foreign trusts from gaining control of the Australian sources of supply. More recently, in June, 1914, a Commission was appointed by the Commonwealth Government to inquire as to the operations of any person, combination, or trust tending to create any restraint of trade or monopoly in connection with the export of meat from Australia.

Following the decision of the Commonwealth Government since the outbreak of war, permits for the export of meat must be obtained from the Collector of Customs.

BREAD.

The Sydney bread supply is produced by about 200 master bakers, and is for the most part sold by them directly to the consumers. The conditions under which the bread is produced are satisfactory and the quality is good.

The method of distribution is unnecessarily expensive by reason of over-lapping in areas served by the carters, but the probable saving by the introduction of any suggested method of regulation is very small.

The price of bread is fixed periodically by the Master Bakers' Association. About 160 of the Sydney master bakers are members of the Association, but the price is observed generally by non-members also. Until the Necessary Commodities Control Act, 1914, came into operation the price was fixed with relation to the declared price of flour, but, owing to the practice on the part of the millers of giving extended terms of delivery for flour purchases, the declared price was not always the actual price paid by the baker.

The price of flour was fixed by an association of millers, and was, on the average, higher than the price obtainable for export, and higher also than it would be under competitive conditions. The excess, however, was due to special conditions in the trade and was not great enough to cause any substantial addition to the price of bread.

Prices of Bread.

The price of bread as fixed by the Master Bakers' Association at various times since 1900 is shown below in conjunction with the declared price of flour at the time when the price of bread was fixed:—

Date.	Price of 2 lb. Loaf.	Cost of Flour per ton.
	d.	£ s. d.
1900	2½	6 15 0
1902—April	2½	8 15 0
September	3	9 10 0
November	3½	10 10 0
1903—February	3½	12 0 0
December	3½	10 10 0
1904—February	3½	9 10 0
September	3	9 0 0
1907—June	3½	8 15 0
October	3½	10 0 0
1909—March	3½	10 0 0
1910—June	3½	8 15 0
1912—May	3½	9 15 0
1913—October	3½	8 15 0
*1914—December	4	11 17 6

* Fixed on recommendation of Necessary Commodities Control Commission.

The cost of manufacture and distribution, as distinguished from the cost of material, is an important factor of the cost of bread; it has increased since 1903, when it represented 33·8 per cent. of the total cost, as compared with 46·5 per cent. in 1912. The wages of bakers and carters rose from 7d. per loaf in 1902 to 1·07d. per loaf in 1912.

FRUIT.

The fruit supply of Sydney is derived mainly from orchards within the State, from Victoria and Tasmania, and from the United States of America, Sicily, and Italy. Relatively small quantities are obtained from Queensland and South Australia, and the bulk of the banana supply comes from Fiji.

From November or December to February or March the supply is for the most part locally grown; from March to October the market for all fruits, except citrus, is supplied chiefly from Victoria and Tasmania; in October shipments arrive from America. From May to December local supplies of citrus fruits are available, though importations of oranges and lemons are made from the United States of America from October to December, and from Italy from December to March.

It has been shown in the chapter relating to agriculture that, notwithstanding the favourable climatic conditions and the potentialities of the soil, fruit cultivation has not made satisfactory progress in New South Wales. The orchards are inspected by officers of the Department of Agriculture, but the powers of the inspectors are inadequate to cope successfully with fruit pests and diseases. Careless carriage and handling, bad picking and packing, and the want of cool storage in orchard districts, cause much loss of fruit. The system of distribution is very defective, and results in low returns to the grower and relatively high prices to the consumer.

There are two public fruit markets in Sydney, one controlled by the Sydney Municipal Council, and the other privately owned. The duplication involves unnecessary expense in supervision, while the concentration of the markets in the city causes great inconvenience to retail distributors in the suburbs. The charges and profits of individual distributors are not, on the whole, excessive; therefore, the remedy lies in the elimination of the unnecessary factors of the process of distribution.

Most of the defects which now hamper the fruit industry and injure the interests of the producers and consumers are due to the absence of co-operation in the processes of production, packing, pulping, storing, transport, and distribution; the Commission recommend that every encouragement be given to its development, and that a system of compulsory grading, such as exists in Canada, be introduced.

VEGETABLES.

No details are available regarding the local production of the different kinds of vegetables, except potatoes and onions, as the figures are included under a general heading, "Market Gardens," as shown in the chapter relating to Agriculture. Large supplies of vegetables are obtained from other Australian States.

No official records of the prices of vegetables are obtainable, but from evidence before the Commission, the following averages have been compiled:—

Vegetables.	1901.	1909.	1913.
Cabbages... per doz.	1s. 6d. to 2s. 6d.	3s. to 4s.	6s. to 7s.
Cauliflowers ..,	2s. 6d. to 3s. 6d.	4s. to 5s.	7s. to 10s.
Peas ... per bush.	2s. 6d.	.....	6s. 3d.
Beans,	2s. 6d.	4s.	6s.
Carrots ... per doz.	7d.	.....	1s. 2d.
Parsnips,	1s.	.....	2s. 6d.

Imported potatoes are sold by private treaty on the wharf shortly after arrival, and the prices are fixed by arrangement between sellers. Locally-grown potatoes are sold by auction in the railway yards.

The average wholesale prices of Tasmanian and Victorian potatoes and of onions are shown below in half-yearly periods between 1901 and 1914 :—

Year.	Potatoes.				Onions.	
	Tasmanian.		Victorian.		Jan.-June.	July-Dec.
	Jan.-June.	July-Dec.	Jan.-June.	July-Dec.		
	per ton. £ s. d.	per ton. £ s. d.	per ton. £ s. d.	per ton. £ s. d.	per ton. £ s. d.	per ton. £ s. d.
1901	5 0 0	6 0 0	*	*	10 0 0	10 5 0
1902	5 10 0	7 0 0	*	*	5 5 0	7 0 0
1903	4 2 6	2 15 0	*	4 0 0	3 7 6	3 5 0
1904	2 0 0	2 10 0	*	5 0 0	2 7 6	5 2 6
1905	6 5 0	8 10 0	6 5 0	6 12 6	9 15 0	14 0 0
1906	8 0 0	8 5 0	7 0 0	7 0 0	6 12 6	7 10 0
1907	3 10 0	3 0 0	4 0 0	4 0 0	3 2 6	4 2 6
1908	5 2 6	6 15 0	5 2 6	6 10 0	6 0 0	8 10 0
1909	5 10 0	6 0 0	5 12 6	6 10 0	6 10 0	6 0 0
1910	5 10 0	6 15 0	4 10 0	6 12 6	4 5 0	5 10 0
1911	7 0 0	6 7 6	5 7 6	5 15 0	3 2 6	5 0 0
1912	9 5 0	13 5 0	7 10 0	9 0 0	12 15 0	12 15 0
1913	7 18 6	6 11 6	6 13 0	3 17 6	7 1 6	7 14 6
1914	6 9 0	7 3 0	5 4 0	*	7 17 0	10 4 0

*None Offering.

MILK.

The milk supply of Sydney is derived partly from dairies in the metropolitan area, and partly from dairies in country districts, viz., the South Coast district between Wollongong and Nowra; the districts traversed by the Main Southern railway between Liverpool and Moss Vale; the Penrith, Windsor, and Richmond districts; and the districts around Branxton, Singleton, and Gosford, on the Northern railway line.

It is estimated that the consumption of milk in Sydney and suburbs amounts to about 44,500 gallons per day; about 14,500 gallons are obtained from the metropolitan dairies and 30,000 gallons from the country. The proportion of the city supply derived from metropolitan dairies is decreasing steadily, and in 1912 represented only 31 per cent. as compared with 45 per cent. in 1903. The chief reasons for the decline are the increased land values in the suburban areas and the high price of fodder—cows kept in the city and suburbs must be hand fed throughout the year. The average yield per cow is increasing in the metropolitan district, as the high cost of maintenance necessitates the culling of unprofitable animals from the herds.

On the other hand, there is strong evidence of diminishing productiveness in many parts of the South Coast district, where the bulk of the country milk is obtained. This has an important relation to the city milk supply, as, unless an improvement is effected, milk will have to be brought to the city from more distant parts of the State.

The law governing the conditions of milk production and distribution is contained mainly in the Dairies Supervision Act of 1901 and the Pure Food Act 1908. The duty of registering dairies, and supervising, and inspecting dairy premises, and cattle, is vested in local authorities, but in actual practice the administration is conducted by the Board of Health.

The standard for milk is fixed by regulation under the Pure Food Act. It must contain not less than 8·5 per cent. of milk solids (not fat), and 3·2 per cent. of milk fat. The Commission recommended the establishment of a system of milk-grading.

The milk from the metropolitan dairies is distributed direct to the consumer, and the country milk is handled by three large distributing companies. The milk which is sent to two of these companies is delivered at the country railway stations in 10-gallon cans, and carried in louvred vans to Sydney, where it is subjected to a pasteurising process. A preferable method is adopted in the case of the milk sent to the third company; it is treated at a country factory and sent in 600-gallon tanks to Sydney, where it is cooled again before distribution.

Pasteurisation, if carried out effectively, is a useful safeguard against the spread of disease by milk, and the Commission recommended that a definite standard of pasteurisation be formulated; that regular inspection of all pasteurising plant be maintained; that no pasteurised milk be distributed except within a fixed time after treatment; and that the sale of pasteurised milk under the representation that it is fresh milk be prohibited. Attention was directed to experiments made at the University of Liverpool, with the view of sterilising milk by the application of electricity. The results of this treatment were the destruction of all colon bacilli and those of a similar nature, and an enormous reduction in the total number of bacteria of all kinds; and the experiments indicate that tubercle bacilli may be destroyed also by this method. These results were achieved without interference with the nutritive properties of the milk.

The present system of distribution—especially in the case of raw milk—is expensive and ill-adapted for facilitating proper supervision of the milk. The cost is, approximately, 4d. to 6d. per gallon, or $\frac{3}{10}$ of the total price paid by the consumer. The following scheme was outlined by the Commission for the distribution of raw milk produced in the metropolitan dairies:—The establishment of co-operative depôts under continuous supervision of the controlling authority; all milk to be delivered at depôts by producers, and paid for according to grade; the milk to be cooled immediately after delivery, and distributed to consumers within a limited time after production. Such a system would make possible effective supervision, and considerably reduce the cost of distribution.

The distribution of country milk in the city is already conducted on somewhat similar lines, but the system is only partially co-operative, and a large proportion of the milk is sold wholesale to milk vendors and not directly to the consumers.

The range of wholesale and retail prices of milk during each year since 1901 is shown below. The wholesale price represents the price paid by the distributing companies to the farmer for milk delivered on trucks at country

railway stations; the retail price for country milk is the price charged by these companies, or by milk vendors, to the householder; and for fresh milk the retail is the price charged by the metropolitan dairyman:—

Year.	Wholesale.	Retail.		Year.	Wholesale.	Retail.	
		Country.	Fresh.			Country.	Fresh.
	per gal. d. d.	per qt. d.	per qt. d.		per gal. d. d.	per qt. d.	per qt. d.
1901	6 to 7	4	4-5	1908	6 to 12	5	5
1902	6 „ 10	4-5	5-6	1909	7 „ 10	5	5
1903	6 „ 10	5	5	1910	6 „ 9	4-5	5
1904	5 „ 6	3-4	4-5	1911	6 „ 9	4-5	5
1905	5½ „ 7	4	4	1912	6 „ 9	5	6
1906	6 „ 7	4	4	1913	6 „ 9	5	6
1907	6½ „ 9	4-5	4-5	1914	8 „ 11	5	6

The chief factors of the cost of production and distribution of metropolitan dairy milk are fodder and wages. During the period 1909-12 the cost of fodder amounted to half the price paid by the consumer, and since 1911 wages have absorbed about one-fifth. The rises in retail prices have been due mainly to increased prices of fodder.

The price paid to the farmer for country milk has varied from 5d. to 1s. per gallon; in view of the increased costs of production since 1901, it is generally agreed that in an average year the minimum price payable is 8d. per gallon. The milk received by the distributing companies is retailed to the householder at an advance of from 10d. to 11d. per gallon on the price paid to the farmer, but considerable quantities are sold to milk vendors at wholesale rates about 3d. per gallon higher than the price paid to the farmer.

No reduction can be expected in the price of milk from metropolitan dairies while the price of fodder is high; a reduction in the prices charged for country milk may be effected by the elimination of milk vendors and the better organisation of distribution to householders.

PROTECTION AND STANDARDISATION OF FOODS.

Prior to the passing in New South Wales of the Pure Food Act, 1908, limited powers of supervision regarding the preparation and sale of foods had been exercised by the Board of Health and by the various local governing bodies under Acts relating to public health, local government, dairies supervision, cattle slaughtering, &c. Since the enactment of a specific measure a definite system of regulation has become possible. The administration of the pure food law is entrusted primarily to the Board of Health, with an Advisory Committee, consisting of the President of the Board, and medical men, chemists, merchants, and others, on whose recommendations the Board makes regulations regarding the standardisation, composition, methods and conditions of manufacture, storage, sale, &c., in order to secure the wholesomeness, cleanliness, and purity of the food supply. Officers appointed under the Act may enter for the purpose of inspection any place used for the sale, storage, delivery, manufacture, or preparation of any article intended for use as a food or drug. The first code of regulations prescribing the standards for foods and drugs was gazetted on 15th July, 1909. The Commonwealth Department of Trade and Customs has control as to the composition and labelling of foods and drugs imported into Australia.

Pure food legislation having been enacted in several of the Australian States, great inconvenience arose from the want of uniformity, and it was deemed advisable to frame a code of standards and definitions which would

be applicable to all Australia both as regards imports and all articles manufactured and vended. With this objective, an Interstate Departmental Conference was held in Sydney during 1910, of principal medical officers, Government analysts, and representatives of commercial interests on Advisory Committees. The co-operation of the Commonwealth Department of Trade and Customs was an important feature of the Conference; all the States except Western Australia were represented.

The Conference issued a report which included a code for the guidance of State authorities in framing their regulations. The code then in force in New South Wales was chosen to guide the discussions of the Conference, and the report, except in a few minor details, closely resembles the New South Wales code.

The Conference resolved that it would be in the interest of the public health if the provisions of the Pure Food Act, passed in New South Wales in 1908 for the protection of the public from misleading or otherwise undesirable advertisements relating to food, drugs, and appliances, were adopted and enforced throughout Australia, and urged uniform administration of the food laws by the Central Department of Public Health of each State.

As an outcome of the Conference the President of the New South Wales Board of Health was appointed, during 1911, as a Royal Commission in each State of the Commonwealth, to collect evidence of traders and manufacturers affected by the food and drug laws, with a view to uniform legislation for the purpose of making regulations in the several States. The Commission found that the recent legislation concerning foods and drugs, and the regulations made thereunder, were acceptable to traders and manufacturers, and that very great progress had been made towards uniformity of State regulations as the result of the Conference of 1910.

To settle all points of difference a further Conference, similarly composed, met in 1913 to determine standards and regulations affecting importation and interstate trade, and also to bring into uniformity the administrative laws which regulate the keeping and sale of food within each State.

MARKETING.

Practically all commodities are distributed by private agents and consignees, and from all parts of the State various products are brought to Sydney which is at present the only oversea port of the State, excepting, of course, Newcastle, from which port the principal trade is in coal. In connection with the trade in wool, wheat, and live-stock (and these three commodities with butter are the most important items of the State's oversea trade), there is sufficient reason for the concentration in Sydney. The whole wool clip, excepting the relatively small proportion which goes to Melbourne from the Riverina stations, is forwarded to Sydney, which, as a wool-selling centre, is advancing steadily to the premier position amongst the world's markets. As regards wheat for export, the softer northern wheat must be combined with a harder grain, and Sydney forms the most convenient depot. The live-stock business is largely dependent on centres of population and distribution, and the traffic can be decentralised only so far as the frozen meat trade is distributed to the various ports provided with accessories for killing, freezing, and shipping.

The conditions which have thus necessitated the centralisation of the State's trade in Sydney have resulted in an apparently overgrown city with frequent congestion of traffic, and these conditions, coupled with the occasional interruptions to sea-borne traffic, as in butter and eggs from the North Coast, naturally affect prices.

The markets for various commodities are concentrated in proximity to the points at which the goods are discharged, such as the railway goods yards, and the wharves where cargoes are discharged.

MUNICIPAL MARKETS.

The Sydney Corporation (Consolidating) Act of 1902 empowers the City Council to establish public markets within its boundaries for the sale of fruit, vegetables, fish produce, or general merchandise; the Council may grant licenses for hawking and selling in the city, poultry, fish, vegetables, garden produce, and other articles as provided under the by-laws. The Council had a practical monopoly, within the city and within 14 miles of the city boundary, of cattle saleyards, and power to exercise a similar monopoly in regard to sheep, calves, pigs, horses, &c., until 1st July, 1912, when this control, so far as it affects sheep and fat stock, was assumed by the Government.

Under the Amendment Act of 1905, the Council has power to make by-laws for the regulation and control of all stands and stalls used, in any public way in the city, for the sale of refreshments or fruit.

Under the Local Government Act of 1906, municipalities (excluding Sydney) exercise among their primary functions control as to the regulation and licensing of the hawking of goods; both shires and municipalities have power to lease buildings, wharfs, markets, &c. Among the specific powers of shires is included dairy supervision; among the additional powers which may be acquired by shires and municipalities are those relating to the construction, establishment and maintenance of cattle saleyards and abattoirs and public markets; inspection and regulation of the wholesale and retail sale and of the storage and exhibition for sale of fish, and of rabbits, poultry, and game; and the regulation and supervision of the sale, storage, and exhibition for sale, conveyance, and mode of delivery by carcase or otherwise, of meat for human consumption, and of the disposal and removal of other meat, and of any offal, or other refuse.

SYDNEY MUNICIPAL MARKETS.

The Municipal Council of Sydney has undertaken the provision of an extensive scheme of markets. Land amounting to about 12½ acres was resumed in 1908 in the Engine-street area, then a closely-populated district, and also a growing manufacturing centre. Handsome structures have been erected for the marketing, in separate buildings, of vegetables, farm produce, fruit, fish, and poultry.

The area and cost respectively of the several markets is set down as follows:—

Market.	Floor Space.	Cost of Market.	Market. -	Floor Space.	Cost of Market.
	sq. ft.	£		sq. ft.	£
No. 1—Vegetable.	95,560	127,000	Fish	47,517	49,000
No. 2—Produce ...	45,300	48,300	Poultry	2,200	27,500
No. 3—Fruit ...	143,000	119,500			

The Council has control of the small-stock yards within the city.

The vegetable market has 288 stalls which are occupied by the *bona fide* grower, who brings his own produce to market, and conducts the sale by private treaty; the charges are on the due system at 1s. 6d. per cart load, the minimum amount payable for each stall is 3s. per week. The quantity of vegetables sold per annum, in favourable seasons, is estimated to range from sixteen to twenty thousand tons.

The produce market is occupied almost entirely by agents who receive products from the country and oversea; these agents are allotted stands on the scale of 1s. 6d. per load, with an additional reserving fee of 1s. per week for the particular stand. Surrounding this market are stores which are leased to the agents, who distribute to suburban and distant centres.

The fish market is managed on an entirely different plan, and is, in reality, apart from the electric lighting undertaking, the only municipal trading venture of the Council. Fish are consigned direct to the Council from the various districts, and are sold by the Council's officers at auction. Salt water, pumped from the harbour, is supplied to the markets, for cleansing the fish, and there is a cooling chamber available for the use of shopkeepers and others in the trade.

On 1st February, 1909, the Council undertook to receive the consignments of fish direct from the fishermen, and to dispose of same by public auction at a charge of 5 per cent. above actual running expenses.

The fruit market was designed with every convenience for the speedy and careful handling of this delicate food product. Fruit may be conveyed to the market directly by means of a special railway siding, 292 feet in length, which connects with the main railway system. Provision is made for sales by auction, if the consignors so desire, instead of private treaty. A disinfecting chamber for fruit is provided within the market area.

The poultry market provides accommodation for from fifteen to twenty thousand head of poultry; there is also a special floor for eggs, bacon, butter, cheese, &c.

In all these markets the officers of the Council are charged with the necessary authority for inspection and condemnation.

Small-stock Yards.

Small-stock yards are at the foot of Market street, Sydney, adjacent to the various wharves, most of this class of stock coming from the coastal districts by sea. Sales are held on three days each week.

The number of small stock yarded since 1910 was as follows:—

				Pigs.		Calves.
1910	...	...	...	66,153	...	31,967
1911	...	...	...	112,843	...	37,379
1912	...	...	...	110,898	...	48,336
1913	...	...	...	82,233	...	45,109
1914	...	...	...	66,910	...	30,687

Municipal Cold Storage Works.

These works, situated in the Market area immediately adjoining the Fruit Markets, are equipped with chilling and freezing rooms for the storage of fruit, dairy and farm produce, mutton and rabbits.

The total storage capacity of the Chambers, excluding passages and grading rooms, is 208,130 cubic feet.

Provision is made to supply power for an ice-making plant, also for a further addition of cooling space as may become necessary.

WHOLESALE PRICES.

The determination of average prices of food products is a difficult matter in view of the extensive area of New South Wales, its scattered population, the varying methods of transport, and the sparsity of large central markets. Consequently an average of prices prevailing throughout the State has not been attempted. The following figures represent prices determined in metropolitan markets; for country districts due allowance must be made for cost of transportation, &c.

Average wholesale prices at Sydney sales of the principal kinds of farm and dairy produce are given for the seven years, 1908 to 1914. The average for the year represents the mean of the prices ruling during each month, and does not take into account the quantity sold during the month. The figures are those quoted by the middleman and not those obtained by the producers :—

Farm and Dairy Produce.	1908.	1909.	1910.	1911.	1912.	1913.	1914.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Wheat ...bush.	0 4 3½	0 4 9½	0 3 10	0 3 6	0 4 1	0 3 7	0 4 2
Flour ... ton	9 11 0	11 2 0	9 14 6	8 9 10	9 8 11	8 12 9	9 9 8
Bran ...bush.	0 1 3	0 0 11½	0 0 10½	0 0 11½	0 1 2½	0 0 11	0 1 1
Pollard ... ,,	0 1 3½	0 1 1	0 0 19½	0 0 11½	0 1 3½	0 0 11½	0 1 1
Barley ... ,,	0 4 9	0 3 1	0 3 0½	0 2 9	0 4 4	0 2 11½	0 2 11
Oats ... ,,	0 3 3	0 2 5½	0 2 5½	0 2 8	0 3 6½	0 3 0	0 3 0
Maize ... ,,	0 4 7	0 4 2½	0 2 11½	0 3 0	0 4 8	0 4 1½	0 3 11½
Potatoes... ton	5 15 0	5 17 0	6 12 2	6 1 3	8 12 9	4 16 6	6 2 0
Onions ... ,,	6 5 0	6 16 6	4 16 3	4 7 9	12 4 3	7 18 9	9 5 3
Hay— Oaten or Wheaten ton	6 5 9	4 2 0	3 17 6	4 15 3	6 6 6	4 15 3	4 17 2
Lucerne.. ,,	5 4 0	3 19 0	3 1 7	3 5 0	4 18 9	4 19 0	4 9 4
Chaff ... ,,	6 1 3	4 10 6	4 4 0	4 4 3	5 14 0	4 7 9	5 3 6
Butter ... lb.	0 1 0½	0 0 10	0 0 11½	0 0 10½	0 1 0	0 0 11	0 0 11½
Cheese(loaf),,	0 0 8	0 0 7	0 0 6½	0 0 7½	0 0 8½	0 0 7	0 0 7½
Bacon ... ,,	0 0 8½	0 0 8½	0 0 7½	0 0 7	0 0 8½	0 0 9½	0 0 9½
Eggs ... doz.	0 1 1	0 1 1	0 1 0½	0 1 0½	0 1 2½	0 1 2½	0 1 1
Milk ... gal.	0 0 11	0 0 10½	0 0 10	0 0 9½	0 0 11½	0 0 11	0 0 11½
Poultry— Fowls ... pair	0 3 9	0 4 3	0 4 10	0 4 8	0 5 0	0 4 10	0 5 5
Ducks ... ,,	0 3 0	0 4 3	0 3 1	0 3 3	0 3 3	0 4 4	0 4 5
Geese ... ,,	0 6 3	0 5 3	0 6 2	0 5 8	0 6 3	0 7 0	0 7 8
Turkeys.. ,,	0 11 3	0 14 0	0 12 8	0 11 3	0 15 9	0 11 0	0 11 2
Bee produce— Honey ... lb.	0 0 2½	0 0 3	0 0 3½	0 0 2½	0 0 3	0 0 3½	0 0 3½
Wax ... ,,	0 1 2½	0 1 2	0 1 2	0 1 1½	0 1 2½	0 1 2½	0 1 2½

These figures call for little comment beyond the caution already given that in regard to the prices of commodities generally, the averages are irrespective of the quantities sold. As regards most of the articles in the list, the lower the price the larger the consumption. The exception to this rule is poultry, which is most in demand before the Christmas season, when prices are correspondingly high.

In comparison with the yearly averages, the averages of the wholesale prices current during each month of 1914 are quoted for the more important articles of New South Wales agricultural production:—

Month.	Wheat (M.Bing).	Flour.	Bran.	Pollard.	Oats.	Maize.	Hay (Oaten).
	per bushel. s. d.	per ton. £ s. d.	per bushel. d.	per bushel. d.	per bushel. s. d.	per bushel. s. d.	per ton. £ s. d.
January ...	3 5 ³ / ₄	8 6 9	10·5	10·8	2 9	4 4 ¹ / ₂	4 6 9
February ...	3 8	8 7 6	11·7	11·7	2 10 ³ / ₄	4 3 ¹ / ₄	4 5 0
March ...	3 9 ¹ / ₄	8 13 3	12·0	12·0	2 7 ¹ / ₄	4 3	4 3 3
April ...	3 9 ¹ / ₄	8 13 3	11·1	11·2	2 8	4 1 ¹ / ₂	4 12 6
May ...	3 10	8 17 0	11·8	12·0	2 5 ⁷ / ₈	3 8 ³ / ₄	4 4 3
June ...	3 10 ¹ / ₄	8 18 3	12·4	12·4	2 8 ¹ / ₂	3 10	4 13 3
July ...	3 10 ¹ / ₂	8 18 3	12·6	12·6	2 8 ¹ / ₂	3 9	4 6 9
August ...	4 4 ¹ / ₄	9 18 3	12·8	13·1	3 1	3 7 ¹ / ₂	4 4 3
September ...	4 11	11 0 0	14·1	14·2	3 2	3 10 ¹ / ₄	4 6 9
October ...	4 4	9 13 9	14·6	14·6	3 5 ⁷ / ₈	3 9 ³ / ₄	7 10 0
November ...	4 6	10 12 0	15·9	15·9	3 6	3 10	6 3 3
December ...	5 6	11 17 6	16·8	16·8	3 9 ³ / ₄	4 0	5 10 0

	Potatoes (Local).	Butter (Good Brands).	Cheese (Loaf).	Bacon (Sides).	Lard (Bulk).	Eggs.	
	per ton. £ s. d.	per lb. d.	per lb. d.	per lb. d.	per lb. d.	Country Consign- ments. s. d.	Suburban New Laid. s. d.
January ...	5 6 9	11	6	11 ¹ / ₄	7	0 10 ³ / ₄	1 2 ¹ / ₂
February ...	4 5 9	11 ¹ / ₂	6 ⁵ / ₈	9 ³ / ₄	7 ¹ / ₂	1 2 ³ / ₄	1 6 ¹ / ₄
March ...	3 15 0	11 ¹ / ₂	7 ³ / ₈	10 ³ / ₄	7 ¹ / ₂	1 3 ¹ / ₂	1 9 ³ / ₄
April ...	5 10 0	11	7 ³ / ₄	10 ⁵ / ₈	7 ¹ / ₂	1 5	2 2 ¹ / ₂
May ...	3 18 3	11 ¹ / ₂	9 ³ / ₈	9	7 ¹ / ₂	1 6 ¹ / ₂	2 1 ¹ / ₂
June ...	3 16 9	12 ¹ / ₂	9 ¹ / ₄	8 ⁷ / ₈	7 ³ / ₈	1 6 ³ / ₈	1 9 ¹ / ₂
July ...	4 5 9	12 ³ / ₄	9	8 ³ / ₄	7 ⁵ / ₈	1 5	1 6 ³ / ₄
August ...	4 0 0	12 ³ / ₄	9	8 ³ / ₄	7 ¹ / ₂	0 9 ¹ / ₄	0 10 ³ / ₈
September ...	3 8 9	11 ³ / ₄	8	9 ³ / ₈	7 ³ / ₈	0 9 ³ / ₈	0 9 ³ / ₈
October ...	3 16 3	11 ³ / ₈	6 ¹ / ₂	9 ⁷ / ₈	7 ¹ / ₂	0 8 ¹ / ₂	0 9 ³ / ₈
November ...	4 10 0	11 ³ / ₈	6 ¹ / ₂	9 ⁷ / ₈	7 ¹ / ₂	0 8 ¹ / ₂	0 10
December ...	10 2 6	11 ³ / ₈	5 ³ / ₈	9 ⁵ / ₈	7 ¹ / ₂	0 10 ³ / ₄	1 1 ¹ / ₂

For locally-grown wheat the quotations during 1914 rose from 3s. 5³/₄d. in January to 4s. 4¹/₄d. in August; since 15th September the price has been fixed by law. Of barley and oats, the bulk are imported, and the prices of these cereals during the year 1914 call for little notice. Maize, on the contrary, is largely of local growth, and its price varied from 3s. 7³/₄d. in August to 4s. 4¹/₂d. in January.

Prices for the various kinds of fodder were very high during the greater part of the year 1908, but showed a considerable decrease during the last three months of that year; the decreased prices persisted throughout 1909 and 1910; the dry weather conditions during 1912 caused a scarcity of supplies, and the prices rose again above the average of 1908. The prices declined during 1913 in consequence of favourable seasons and remained steady until October, 1914, when want of rain caused a large increase.

Root crops show very great range; thus locally-grown potatoes varied between £3 8s. 9d. in September and £10 2s. 6d. per ton in December when new potatoes were quoted at £10 10s. and a limited supply of old potatoes were obtainable at £4 3s.

Prices of the items set forth in the tables just given are determined by the local demand, wheat excepted, its price being fixed by that ruling in the markets of the world.

The prices of pastoral and other primary produce, which form so large a proportion of the exports of the State, are not sensibly affected by local consumption, but are established by the prices ruling in London. In the following table are given for six years the Sydney f.o.b. prices of the principal pastoral products:—

Pastoral Produce.	1909.	1910.	1911.	1912.	1913.	1914.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Beef lb.	0 0 2½	0 0 2½	0 0 2¾	0 0 2¾	0 0 3¼	0 0 3¾
Mutton „	0 0 2½	0 0 2½	0 0 2½	0 0 3	0 0 3	0 0 3½
Wool—Greasy „	0 0 9	0 0 9½	0 0 9	0 0 9	0 0 9¾	0 0 9½
Scoured „	0 1 3½	0 1 3¾	0 1 3	0 1 3¼	0 1 5	0 1 4
Sheepskins with Wool bale	19 11 8	20 0 0	17 15 0	19 16 0	22 17 0	20 18 0
Hides each	0 19 3	1 2 0	1 2 3	1 4 0	1 9 4	1 8 0
Leather bale	29 3 4	33 0 0	34 0 0	34 16 8	39 19 9	47 15 4
Hair lb.	0 1 5½	0 1 4½	0 1 3½	0 1 8	0 1 6½	0 1 5½
Bones cwt.	0 7 8¾	0 9 3	0 12 1	0 13 9	0 11 5	0 9 4½*
Horns 100	2 4 7	2 2 1½	2 2 10	2 11 6	2 7 0	2 2 2*
Hoofs cwt.	0 6 10	0 6 3	0 8 3	0 10 0	0 9 0	0 7 8*
Tallow „	1 7 3	1 10 0	1 8 6	1 9 3	1 10 3	1 8 4
Glue-pieces „	0 6 3	0 7 7	0 9 8	0 10 8	0 11 5	0 13 0½*

* Average of prices January–July only.

Leather is included as a pastoral product, although it might be regarded as a manufactured article; the prices have risen considerably during the period under review. The prices of wool, the staple product of the State, in 1913 were the highest since 1907, but did not reach the level of that year. The prices of the other articles decreased during 1908; and remained at a low level during 1909, but, on the whole, there was an improvement during 1910 and 1911.

In 1912 the prices of all the products shown in the table, with the exception of wool, sheepskins, hides, and tallow, were the highest throughout the period 1907–12; in 1913 the prices, with the exception of hair, bones, and hoofs, were higher than in 1912. In 1914 the prices were affected by the war—the price of meat rose considerably and that of leather was maintained at a high level; but trade dislocations resulted in a decline in the prices of wool, skins, hides, and tallow, towards the close of the year, however, there was a marked improvement.

The following statement shows the fluctuations during 1914 in the prices obtained in London for the more important articles of New South Wales produce :—

Month.	Wheat.	Flour.	Butter (Finest Quality).		Wool.		Tallow.
			Average Top.	Average Bottom.	Greasy.	Scoured.	
	per qr.	per ton.	per cwt.	per cwt.	per lb.	per lb.	per cwt.
	s. d.	£ s. d.	s.	s.	d.	s. d.	s. d.
January ...	38 0	9 11 0	113½	110½	11	1 5	35 0
February ...	33 6	9 11 0	112½	110	10¾	1 4	34 0
March ...	38 9	9 3 0	110½	107	10	1 5	33 6
April ...	33 6	9 2 9	104½	101½	9½	1 5	34 0
May ...	38 6	9 7 6	104	93	10½	1 5	33 0
June ...	38 3	9 5 6	104½	101½	10	1 7	32 6
July ...	37 9	9 2 6	109½	107½	10¼	1 7	32 0
August ...	45 3	12 10 0	*	*	11	1 7	33 0
September ...	47 9	12 10 0	*	*	10	1 4	31 6
October ...	47 6	12 15 0	*	*	9½	1 3	30 0
November ...	49 6	12 17 0	127	124	10	1 4	29 6
December ...	50 6	13 0 0	136	133	10	1 3	30 0

* On account of the European war no quotations were given.

PRICES OF METALS.

The next table shows the Sydney f.o.b. prices of the principal metals and of coal produced in the State. These, like pastoral products, are not affected by the local demand, but depend upon the prices obtained in the world's markets :—

Metals.	1909.	1910.	1911.	1912.	1913.	1914.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Silver ...oz.	0 1 11½	0 2 1	0 2 0¾	0 2 4	0 2 3¾	0 2 1¼
Copper ...ton	57 10 0	56 3 4	54 18 4	72 10 0	68 13 4	60 16 8
Tin ...,,	133 2 0	153 3 4	188 1 8	209 1 8	202 5 0	153 0 0
Lead ...,,	12 11 0	12 13 4	13 3 4	17 3 4	18 15 0	19 1 8*
Coal ...,,	0 10 8	0 10 8	0 10 8	0 10 8	0 10 9	0 10 7

* No quotations during 3 months, August-October.

The values of the industrial metals showed a large decline during 1908, and the low prices continued until 1912, except in the case of tin, which advanced steadily from the beginning of 1909, reaching a maximum in 1912. During 1912 there was a steady advance in the prices for all these metals, but, with the exception of lead, were slightly lower in 1913. In 1914 the prices were affected adversely by the war. The export price of coal has been fairly constant throughout the period reviewed.

INDEX NUMBERS—EXPORT PRICES.

The following statement shows the variation since 1901 of price levels as indicated by index numbers calculated on the f.o.b. prices Sydney, of the principal articles of domestic produce exported from New South Wales, with the average prices prevailing in 1901 adopted as the basis :—

Period.	General Index— All articles.	Pastoral Products— Wool, Tallow, Hides, Leather, &c.	Metals— Silver, Lead, Copper, Tin.
1901	1,000	1,000	1,000
1902	1,065	1,096	935
1903	1,065	1,125	992
1904	1,071	1,112	1,011
1905	1,150	1,192	1,149
1906	1,277	1,316	1,432
1907	1,343	1,354	1,461
1908	1,164	1,122	1,073
1909	1,188	1,137	1,066
1910	1,205	1,214	1,111
1911	1,194	1,194	1,189
1912	1,327	1,263	1,454
1913	1,367	1,408	1,451
1914	1,356	1,451	1,302

The fluctuations in the prices of the same series during 1914, as compared with 1901, are shown in the following figures :—

Month.	Index Numbers.		
	General Index— All Articles.	Pastoral Products— Wool, Tallow, Hides, Leather, &c.	Metals— Silver, Lead, Copper, Tin.
January ...	1,337	1,396	1,374
February ...	1,363	1,417	1,415
March ...	1,357	1,410	1,389
April ...	1,389	1,510	1,326
May ...	1,374	1,486	1,306
June ...	1,382	1,497	1,288
July ...	1,378	1,487	1,285
August ...	1,320	1,454	1,020
September ...	1,317	1,378	884
October ...	1,303	1,439	943
November ...	1,315	1,438	1,201
December ...	1,358	1,489	1,257

PRICES IN UNITED KINGDOM.

To show the universal prevalence of rising prices, the following index numbers are quoted, as disclosed in investigation made by the British Board of Trade, of wholesale prices current in the United Kingdom in the years

1901-1913. As Great Britain is the principal market for New South Wales exports, it is evident that the upward tendency of prices in the world's market must reflect in local prices in many commodities, but especially in those in which the export trade is being developed; the figures are on the basis of 100 as representing the price in 1900 :—

Year.	Grain.	Meat, Fish, and Dairy Produce.	Sugar, Tea, Coffee, Cocoa and Tobacco.	Wine and Foreign Spirits.	Total Food and Drink.	Foreign Wheat.
1901	102·6	99·3	94·7	96·7	100·1	97·4
1902	102·3	104·4	84·4	91·8	101·4	98·4
1903	102·2	102·1	86·4	99·5	100·6	99·9
1904	106·9	98·3	92·5	100·8	101·2	103·1
1905	104·2	97·7	104·8	107·9	101·2	106·3
1906	102·3	102·2	88·7	103·2	101·0	103·4
1907	109·3	104·8	94·2	100·0	105·5	113·1
1908	113·8	103·3	99·0	97·8	107·0	123·5
1909	114·7	105·8	100·0	99·0	108·7	136·0
1910	105·9	111·7	111·7	100·2	109·2	123·4
1911	114·3	109·2	114·1	104·1	111·6	116·8
1912	124·0	116·8	120·4	111·9	119·9	124·7
1913	118·6	119·6	106·8	106·4	117·7	121·8

The average level of wholesale prices of food and drink (including tobacco) increased steadily from 1906 to 1912 and in the latter year showed an increase of 7·4 per cent. as compared with 1911 and of 18·7 per cent. as compared with 1906. In 1913 these prices showed a decline of 1·8 per cent.

London Retail Prices.

In the following statement is shown the range of London retail prices over the years 1901-14 for six principal food products, 1900 prices representing 100 in each case :—

Year.	Bread.	Beef (British).	Mutton (British).	Butter.	Eggs.	Potatoes.
1901	94·3	99·7	99·6	101·8	95·9	94·9
1902	101·4	105·3	100·2	99·7	97·2	81·6
1903	108·4	102·5	99·5	96·8	94·5	101·1
1904	108·3	99·5	98·8	95·7	96·7	102·1
1905	109·0	97·9	100·1	99·1	98·1	80·3
1906	102·5	97·6	99·9	102·5	100·7	83·0
1907	106·7	99·4	99·5	100·7	102·9	89·2
1908	115·1	103·2	99·1	106·3	100·7	93·4
1909	124·3	102·1	94·7	102·8	107·1	78·4
1910	119·5	107·1	96·3	106·2	105·7	76·9
1911	113·8	103·7	94·1	108·7	110·4	95·1
1912	119·5	108·9	100·4	113·8	114·1	95·9
1913	120·3	109·5	105·1	112·3	112·5	96·6
1914	120·3	111·0	108·5	113·0	122·3	84·9

SYDNEY RETAIL PRICES.

The following table shows the average retail prices in Sydney of various commodities at intervals from 1890 to 1911. The quotations are based on the prices charged in the shops throughout the metropolitan district.

Commodity.	1890		1895		1900		1905		1910		1911	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Bread ... 2 lb. loaf	0	3½	0	2¾	0	3	0	2¾	0	3½	0	3½
Tea ... lb.	1	6	1	6	1	4	1	3	1	3	1	3
Coffee ... "	2	0	1	9	1	6	1	6	1	6	1	6
Sugar ... "	0	3½	0	2½	0	2½	0	2½	0	2½	0	2½
Rice ... "	0	4	0	4½	0	2½	0	2½	0	2½	0	2½
Oatmeal ... "	0	3	0	2	0	2½	0	2½	0	2½	0	2½
Starch ... "	0	5	0	4	0	3½	0	5	0	5	0	5
Soap ... "	0	3½	0	2	0	3	0	3½	0	3½	0	3
Potatoes ... cwt	6	0	4	3	6	9	10	6	7	6	7	6
Butter ... lb.	1	0	1	0	0	11	1	1	1	1	1	1
Cheese ... "	0	8	0	8	0	7½	0	8	0	9	0	9
Eggs ... doz.	1	6	1	0	0	11	1	0	1	3	1	3
Bacon ... lb.	1	0½	0	7½	0	7½	0	9	0	10	0	9
Beef, fresh ... "	0	4	0	3	0	3½	0	5½	0	5½	0	5½

Since the beginning of 1912 returns of prices have been collected monthly and particulars have been obtained regarding a larger number of articles; the mean of the monthly prices during 1912 and subsequent years is shown in the following statement:—

Article.	Average Prices.			Article.	Average Prices.		
	1912.	1913.	1914.		1912.	1913.	1914.
Bread ... per 2 lb. loaf	s. d.	s. d.	s. d.	Beef (fresh)—	s. d.	s. d.	s. d.
Flour ... 25-lb. bag	2 10½	2 9½	2 11¼	Ribs ... lb.	0 4½	0 4½	0 5
„ self-raising 2 lb.	0 4½	0 4½	0 4½	Flank ... „	0 4	0 4	0 3½
Tea ... lb.	1 3	1 3	1 3	Shin with-			
Coffee ... „	1 6	1 6½	1 7	out bone } „	0 3½	0 3½	0 3½
Cocoa ... „ ½ lb.	0 4½	0 4½	0 4½	Gravy beef }			
Sugar ... „ lb.	0 3	0 3	0 2¾	Steak—Rump „	0 7	0 7½	0 8½
Rice ... „	0 2½	0 3	0 3	Shoulder „	0 3½	0 3½	0 4½
Sago ... „	0 2½	0 2½	0 2½	Buttock „	0 4	0 4	0 4½
Jam (Australian) „	0 5½	0 5½	0 5½	Beef (corned)—			
Oatmeal ... 5 lb.	1 2	1 1½	1 1½	Round... „	0 4½	0 4½	0 5
Raisins ... lb.	0 6½	0 6½	0 6½	Brisket			
Currants ... „	0 7½	0 7	0 6½	with bone „	0 2½	0 2½	0 3½
Starch ... „	0 5½	0 5½	0 5½	Brisket			
Blue ... doz. squares	0 8½	0 8½	0 8½	without			
Candles ... lb.	0 6½	0 7	0 7	bone... „	0 3½	0 4	0 4½
Soap ... „	0 3½	0 3½	0 3½	Mutton—			
Potatoes ... 14 lb.	1 10½	1 0¾	1 1	Leg ... „	0 3½	0 3½	0 4½
Onions ... lb.	0 2½	0 1½	0 1½	Shoulder „	0 3	0 3½	0 3½
Kerosene ... gal.	0 11½	1 0½	1 0½	Loin ... „	0 4	0 4½	0 5½
Milk ... qt.	0 5	0 5½	0 5½	Neck ... „	0 3½	0 3½	0 4
Butter ... lb.	1 3½	1 1½	1 2½	Chops—Loin... „	0 5½	0 4½	0 6
Cheese—New... „	0 10½	0 9½	0 10	Leg... „	0 4½	0 4½	0 5½
„ Matured „	1 0½	0 10½	0 11½	Neck „	0 3½	0 4½	0 4½
Eggs—New laid doz.	1 7½	1 8½	1 6½	Lamb—			
„ Fresh ... „	1 4½	1 5½	1 3½	Fore-quarter each	2 2	2 5	2 8½
Bacon—				Hind-quarter „	3 2½	3 6½	3 11½
Middle cut lb.	0 11½	1 1	1 0½	Pork (fresh)—			
Shoulder... „	0 7½	0 8½	0 8	Leg ... lb.	0 8	0 8½	0 9½
Ham ... „	0 11½	1 2½	1 1½	Loin... „	0 8	0 8½	0 9½
Beef (fresh)—				Belly „	0 7	0 8	0 7½
Sirloin... lb.	0 5	0 5	0 5½	Chops „	0 8½	0 9	0 10½

While these tables are useful for comparative purposes, in regard to the cost of living, the figures do not disclose a most interesting feature in a history of prices, namely, the fluctuations during each year, which are pronounced, especially in the case of perishable produce. The prices in each month of the year 1914 are shown below :—

Article.	Jan.	Feb.	Mar.	Apl.	May.	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Bread	2 lb. loaf	3½	3½	3½	3½	3½	3½	3½	3½	3½	3½	3½
Flour	2½ lb. bag	33	33	33	33	33	33	36½	40½	36½	36½	40½
" Self-raising ...	2 lb.	4½	4½	4½	4½	4½	4½	4½	4½	4½	5	5
Tea	lb.	15	15	15	15	15	15	15	15	15	15	15
Coffee	"	19	19	19	19	19	19	19	19	19	19	19
Cocoa	"	4½	4½	4½	4½	4½	4½	4½	4½	4½	4½	4½
Sugar	lb.	2½	2½	2½	2½	2½	2½	2½	2½	2½	2½	2½
Rice	"	3	3	3	3	3	3	3	3	3	3	3
Sago	"	2½	2½	2½	2½	2½	2½	2½	2½	2½	2½	2½
Jam (Australian) ...	"	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½
Oatmeal	5 lb.	13½	13½	13½	12½	12½	12½	12½	12½	12½	15	15
Raisins	lb.	6½	6½	6½	6½	6½	6½	6½	6½	6½	6½	6½
Currants	"	7	7	7	6½	6½	6½	6½	6½	6½	6½	6½
Starch	"	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½
Blue	doz. squares	8½	8½	8½	8½	8½	8½	8½	8½	8½	8½	8½
Candles	lb.	7	7	7	7	7	7	7	7	7	7	7
Soap	"	3½	3½	3½	3½	3½	3½	3½	3½	3½	3	3
Potatoes	14 "	11	12	13	13½	13	12	12½	13	12½	13	12
Onions	lb.	1½	1½	1½	1½	1½	1½	1½	1½	1½	1½	1½
Kerosene	gal.	12½	12½	12½	12½	12½	12½	12½	12½	12½	12½	12½
Milk	qrt.	5½	6	6	5½	5	5	5	5	5	5	5
Butter	lb.	13½	14½	14½	13½	13½	15½	15	15½	14½	13½	14
Cheese—												
New	"	8½	9½	9½	10½	11½	11½	11½	10½	10½	9½	8½
Matured	"	9½	10½	11½	11½	12½	12½	12½	11½	10½	9½	10½
Eggs—												
New laid	doz.	16½	19½	27	32	29½	27½	22½	12½	12½	11½	11½
Fresh	"	13½	16	20½	24	23	23	20½	10½	10½	9½	9½
Bacon—												
Middle cut	lb.	13	13½	13½	12½	12½	11½	12	12½	13½	12½	12
Shoulder	"	8½	10	9	8	7½	7½	7½	8	7½	8	8
Ham	"	15	16	15	13½	12½	12½	12½	12½	12½	13½	14½
Beef (fresh)—												
Sirloin	"	5½	5½	6	6½	6	6	6	6	6	6	6½
Ribs	"	4½	4½	5	5½	5	5	5½	5½	5	5	5½
Flank	"	3½	3½	3½	3½	4	4	4½	4½	3½	4	4½
Shin (without bone) }	"	3½	3½	4	4	3½	3½	3½	3½	3½	3½	3½
Gravy beef	"											
Steak—												
Rump	"	8	8	8½	8½	9	9	9	9	9	9	9
Shoulder	"	4	4	4½	4½	4½	4½	4½	4½	4½	4½	4½
Buttock	"	4½	4½	5	5	4½	4½	4½	4½	4½	4½	5
Beef (corned)—												
Round	"	4½	4½	5	5½	5	5	5	5	5	5	5½
Brisket (with bone) ...	"	3½	3	3½	3½	3½	3½	3½	3½	3½	3½	3½
" (without bone) ...	"	5	4½	5	5	4½	4½	4½	4½	4½	4½	5
Mutton—												
Leg	"	4½	4½	5	5	4½	5	4½	4½	4½	4½	4½
Shoulder	"	3½	3½	4	4½	4	4	4	4	4	4	4
Loin	"	4½	4½	5	5½	5	5	5½	5½	5½	5	5
Neck	"	4	4	4	4	4	4½	4	4	4	4	4
Chops—												
Loin	"	5	5½	6	6	6	6	6½	6½	6	6	6½
Leg	"	5	5½	6	6	6	6	6½	6½	6	6	6
Neck	"	4½	4	4½	4½	5	5	4½	4½	4½	4½	4½
Lamb—												
Forequarter	each	30	30	33	33	36	36	34½	34½	30½	30	31
Hindquarter	"	45	45	48	51	48	50	51	51	45½	45	44½
Pork (fresh)—												
Leg	lb.	9	9	9	9	9	9	9½	9½	9½	9½	9½
Loin	"	8½	9	9	9	9½	9	10	9½	9½	9½	9½
Belly	"	7	7	7	7½	8	7½	7½	7½	8	8	8
Chops	"	10	10	10	10	10½	10	10½	11	11	11	11

The average prices of the main grocery lines showed little variation throughout the year. The price of flour increased in August as a result of an increase in the price of wheat.

The price of oatmeal was lowered in March, but was increased considerably in November as a result of the unsatisfactory yield of the oat crop in the neighbouring States.

In average seasons the local production of potatoes is far below the demand, and the deficiency is met by importation from Tasmania and Victoria. The prices were slightly lower than in the corresponding months of 1913 until the end of the year; a sharp rise occurred in December, 1914.

As in the case of potatoes, the local production of onions is supplemented by importation, mainly from Victoria. The price did not vary greatly during 1914.

Butter being an article of export, fluctuations in the London prices are reflected by similar movements in the prices at Sydney during the export season—September to March. The movements in June and September were seasonal, the prices of butter usually advance at the beginning of winter, when supplies decrease, and drop with the approach of spring weather.

The prices of cheese were higher than in 1913; the decreases in the closing months of the year were seasonal.

The price of hams was advanced towards the end of the year in response to the increased demand for the Christmas season.

FOOD SUPPLIES AND PRICES DURING WAR.

The following is a review of the measures taken by the Government of New South Wales to regulate the supplies of foodstuffs and other necessary commodities during the war, and to prevent undue inflation of prices.

Necessary Commodities Control Act.

The Necessary Commodities Control Act was passed in August, 1914, to provide for the review of prices of necessary commodities during the present war, and for a further period not exceeding six months, as determined by proclamation. A "necessary commodity" is defined as follows:—

- (a) Coal, firewood, coke, or other fuel.
- (b) Gas for lighting, cooking, or industrial purposes.
- (c) Any article of food or drink for man or for any domesticated animal.
- (d) Any article which enters into, or is used in the composition or preparation of any of the foregoing.
- (e) Any article which, after a report of the Commission has by resolution of both Houses of Parliament, been declared to be a necessary commodity.

The Act provided for the appointment of a Commission of three persons, one being a judge of the Industrial Arbitration Court, to inquire into and report as to prices of necessary commodities, and to advise the Governor as to maximum selling prices.

The Governor, by notice in the *Gazette*, may declare the maximum prices at which any necessary commodity may be sold for consumption in New South Wales, and may fix different prices according to differences in quality, description, or quantity sold, also for different parts of the State, and may vary any price fixed. The Governor may also annul any such notice.

Any person who sells or offers for sale, any necessary commodity at a price higher than the declared price, is liable to a penalty of £100, or in case of sale, may be required to refund the excessive amount to the purchaser; and

any person who refuses to sell at the declared or lower prices any necessary commodity in his possession, in excess of his family requirements for six months, is liable to a penalty not exceeding £100.

The Governor, on the recommendation of the Commission, may order to be furnished returns of all necessary commodities in the State, and under Section XI of the Act, may authorise the seizure and distribution of necessary commodities withheld from sale, paying the declared price less a reasonable amount to cover expenses.

Wheat Acquisition Act.

The Wheat Acquisition Act was passed in December, 1914, to enable the Government to acquire wheat in New South Wales, to provide for compensation, and for the sale and distribution of wheat so acquired; also for varying or cancelling certain contracts for the sale and delivery of wheat. The Act will cease to operate on 30th September, 1915.

The Governor, by notification in the *Gazette*, may declare that any wheat is acquired by the Crown, and the wheat becomes the absolute property of the Crown, freed from all mortgages, liens, pledges, interests and trusts; and the rights and interests of every person in the wheat are converted into a claim for compensation under the provisions of the Act.

The amount of compensation was fixed at 5s. per bushel of wheat of fair average quality, delivered at the nearest railway station; and a further amount per bushel may be paid if so determined by the Commissioners appointed under the Necessary Commodities Control Act.

The administration of the Act is entrusted to a Board of five persons appointed by the Governor, who are empowered to dispose of the wheat on behalf of the Government. All contracts made in New South Wales prior to the passing of the Act in relation to New South Wales wheat of the 1914-15 season to be delivered in the State were declared void; also contracts for the sale of flour to be delivered after 1st January, 1915.

On the 18th and 22nd December, 1914, the wheat in certain areas and in transit to Sydney was acquired, and on 24th December a notification was made of the acquisition of all wheat in New South Wales, except the quantity which at that date was actually in transit to the other Australian States.

The validity of the Wheat Act was challenged by the Federal Government on the ground that the detention of wheat under contract for delivery in another State was in contravention to provisions of the Commonwealth Constitution Act relating to trade and commerce. The case was heard before the Interstate Commission, who determined that the State Government had acted in contravention to the Commonwealth law, but on appeal to the High Court the Wheat Acquisition Act was declared valid.

Meat Supply for Imperial Uses Act.

In February, 1915, the Imperial Government made a request for the co-operation of the New South Wales Government in securing the whole of the Australian supply of beef and mutton available for export during the continuance of the war, the object being to obtain supplies for the armies of Britain and her Allies, and to prevent any excessive advance in the price of Australian meat in the United Kingdom. Consequently the Meat Supply for Imperial Uses Act was passed on 17th February, 1915, and all stock and meat in New South Wales was declared subject to the Act. Upon a written order of the Minister, all stock and meat mentioned therein becomes the property of the Crown, free of all mortgages and other encumbrances, and the owners are entitled to payment at prices fixed by a board appointed

under the Act. A proclamation has been issued notifying that the Act will remain in force until 31st August, 1915, and this period may be extended.

The prices fixed by the Board of Control for meat taken into cold storage up to 31st May, 1915, are indicated below. The prices are conditional upon delivery by the vendors of the meat free on board ship; no interest or charges may be claimed by the vendors for the meat until it has been 28 days in cold storage, but thereafter they may be paid interest at the rate of 6 per cent. on the value of the meat, and the storage charges will be paid by the Government:—

Mutton.	F.A.Q./G.A.Q.		3rds.	Beef.	G.A.Q.		F.A.Q.		3rds.
	per lb. d.	per lb. d.			per lb. d.	per lb. d.	per lb. d.		
Wether	4½	4½	4½	Ox—Sides	4½	4½	4½	4½	4½
Ewe	4½	4	4	Hinds	5½	5½	5½	5½	5½
Teg	4½	4½	4½	Fores	4½	4½	4½	4½	4½
Lamb	5½	5½	5½	Cow—Sides	4½	4½	4½	4½	4½
				Hinds	5½	4½	4½	4½	4½
				Fores	4½	3½	3½	3½	3½

Up to the end of May, 1915, the quantity of meat requisitioned under the authority of the Act and shipped from Sydney was 13,162,855 lb., consisting of 194,776 carcasses of mutton and lamb, and 31,823 quarters and 113 buttocks of beef; the value was £292,853.

Necessary Commodities Control Commission.

The Necessary Commodities Control Commission commenced its sittings on 26th August, 1914. Conferences were held with similar authorities created by the Commonwealth and the Victorian and South Australian Governments in order to attain such uniformity of action as the varying conditions of the different States would allow. With regard to wheat it was decided that any inflation of London prices due solely to the state of war should be eliminated from the declared prices in Australia. In anticipation of a shortage in the Commonwealth owing to unfavourable harvest conditions the Federal Government, by proclamation dated 23rd September, 1914, prohibited the export of wheat and flour except by permission. The export of meat also was prohibited except with the consent of the Minister for Trade and Customs.

A summary of the matters dealt with by the Necessary Commodities Control Commission to the end of May, 1915, is shown hereunder:—

Wheat, Flour and Bread, &c.—At the end of July, 1914, the prices of these commodities were:—Wheat 4s. per bushel approximately, flour £9 per ton, and bread 3½d. per 2 lb. loaf. In consequence of the war, the drought conditions in Australian wheat areas, and the operations of speculators, the prices had increased at the date of the first report of the Commission, 15th September, 1914, to 5s. 3d. per bushel of wheat and £11 10s. 0d. per ton of flour, the price of bread being unaltered. The wheat stocks at that date were largely in the hands of shippers, and the Commission considered it advisable to bring into operation Section XI of the Act in order to prevent the export of wheat without regard to the interests of Australia, and with this object in view recommended that a maximum selling price for wheat be declared, viz., 4s. 2d. per bushel. The declaration of a uniform price for the whole State gave wheat in the country the advantage of freight and other charges ranging from 3d. to 4d. per bushel, and in order to equalise the

conditions the Commission recommended, on 15th October, that the price at Sydney be increased to 4s. 6d. per bushel. These prices related to the 1913-14 wheat, and were cancelled on 5th January, 1915. Since the commencement of the Wheat Acquisition Act the Government buying price has been 5s. per bushel and the selling price on rails at mill siding 5s. 6d. per bushel.

On 15th September, 1914, it was notified that in the counties of Cumberland and Northumberland the highest selling prices of flour should be £9 10s. 0d. per ton, and of bread 3½d. per 2lb. loaf, and that in other parts of the State the variations between the local prices and these declared prices should be the same as before the war. On 15th October and 20th November, 1914, increases were notified in the prices of flour amounting to 17s. 6d. and £2 17s. 6d. respectively above these prices. From 15th December an increase of ½d. per 2 lb. loaf of bread was allowed. On account of the rise in the price of flour an increase of ¼d. per lb. in the price of biscuits as at 20th January was notified on 23rd January, 1914. Prices of bran, pollard, and sharps were declared also upon recommendations of the Commission.

Oatmeal.—In consequence of a great increase in the price of oats owing to crop shortage in Victoria and other places whence oats for milling purposes are obtained, the Commission recommended the granting of applications to raise the price of oatmeal.

Butter.—The price of butter in New South Wales has for some years past been based on London parity, and has been fixed by a committee consisting of the managers of three of the largest controlling companies. Since the commencement of the war the London prices have been high, and notwithstanding a bountiful season in this State the prices gradually increased from 104s. per cwt. for the period, 28th September—12th December, 1914, to 120s. per cwt. on 21st January, and 130s. on 1st April, 1915. Export to the United Kingdom ceased about the end of February, and subsequently considerable quantities of New South Wales butter were sent to the other Australian States, where owing to shortage of supplies the prices had risen above London parity, and the producers' committee decided to increase the price in New South Wales to correspond with that in Victoria. On 1st April, however, the Necessary Commodities Control Commission recommended and the Government proclaimed the prices of butter as set forth in the statement below.

Groceries.—Almost immediately after the outbreak of war the wholesale grocers raised the prices of imported commodities, the increases ranged generally from 7½ per cent. to 20 per cent.; a few days later, however, the increases were in most instances abandoned and the Commission took no action as to fixing prices.

Sugar and Jam.—Applications to the Commission to raise the price of sugar from £21 per ton were unsuccessful, and an application for an increase in the price of certain jams and canned fruits was refused also.

Cream of Tartar, Baking Powder, Self-raising Flour.—In consequence of the cessation of importation there was a considerable increase in the price of cream of tartar, which is an important constituent of baking powder and of self-raising flour. Upon inquiry in October, 1914, the Commissioners did not consider it necessary to take any action to regulate the price as the supplies of cream of tartar and tartaric acids were almost exhausted, and failing further importation the price of baking powder and self-raising flour would probably become dependent upon the prices of substances used in manufacture as substitutes.

Patent Medicines, Drugs and Drug Preparations.—The Commission recommended that these commodities should be included in the list of necessary commodities.

White Lead.—Shortly after the outbreak of war the price of white lead was raised about 16 per cent. as the result of the temporary prohibition of exportation by the Imperial authorities and in anticipation of increases in cost of freight, insurance, &c. Subsequently the prices gradually fell to normal level and no action was taken under the provisions of the Act.

Fermented and Spirituous Liquors, &c.—Upon the publication of proposals to increase the tariff on 3rd December, 1914, a public announcement was made that the wholesale and retail prices of wine, spirits, and other beverages supplied by licensed houses would be raised. To prevent the increases being made prior to inquiry a Government proclamation was issued on 9th December to declare that the highest selling prices, both wholesale and retail, should be those ruling on 3rd December. Subsequent to inquiry an increase was allowed equal to the amount of additional duty, and actual increases paid in freight, insurance and exchange on imported liquors.

Tobacco.—In anticipation of increases in the price of tobacco the Commission reported on 9th December, 1914, that tobacco, cigars, cigarettes and other tobacco preparations should be included in the list of necessary commodities.

Gas.—The price of gas in areas served by the Australian Gaslight Company, the North Shore Gas Company, Ltd., and the City of Newcastle Gas and Coke Company, Limited, is regulated by the Gas Act of 1912, which prescribed a standard price of 3s. 6d. per 1,000 cubic feet; provision is made for an increase in the standard price to cover any increase in the cost of production. The companies are required to reduce their charges below the standard price in proportion to any increase in dividend beyond the standard rate of dividend payable in accordance with the provisions of the Act, and must reduce the rate of dividend in proportion to any increase in the standard price.

In October, 1914, on the recommendation of the Necessary Commodities Control Commission the price of gas supplied by the Australian Gaslight Company and the North Shore Gas Company was increased to 3s. 10d. per 1,000 cubic feet. These companies supply gas in the Metropolitan area. The prices proclaimed on the recommendation of the Necessary Commodities Control Commission, to May, 1915, are shown below:—

Commodity.	Date of Notification.	Locality.	Maximum Selling Price.
Wheat* ...	15 Sep., 1914	New South Wales	4s. 2d. per bushel.
	16 Oct., 1914	Co. Cumberland and Northumberland	4s. 6d. ,,
		Other localities ...	4s. 2d. ,,
Flour... ..	15 Sep., 1914	Co. Cumberland and Northumberland	£9 10s. 0d. per ton.
	16 Oct., 1914	Co. Cumberland and Northumberland	£9 17s. 6d. ,,
		Other localities ...	17s. 6d. per ton in advance of price which prevailed in each locality on 1st Aug., 1914.
	20 Nov., 1914	Co. Cumberland and Northumberland	£11 17s. 6d. per ton.
		Other localities ...	£2 17s. 6d. per ton in advance of price which prevailed in each locality on 1st Aug., 1914.
Bread ...	15 Sep., 1914	Co. Cumberland and Northumberland	3½d. per 2lb loaf.
	16 Oct., 1914	Other localities ...	The price which prevailed in each locality on 1st. Aug., 1914.
	15 Dec , 1914	Co. Cumberland and Northumberland	4d. per 2lb. loaf.
		Other localities ...	½d. per 2lb. loaf in advance of price which prevailed in each locality on 1st Aug., 1914.

* Annulled, 5th Jan., 1915.

Commodity.	Date of Notification.	Locality.	Maximum Selling Price.
Bran and Pollard.	16 Oct., 1914	Co. Cumberland and Northumberland Other localities ...	£6 5s. 0d. per ton. 5s. per ton in advance of price which prevailed in each locality on 1st Aug., 1914.
	20 Oct., 1914	„ „ ...	5s. per ton in advance of price which prevailed in each locality on 10 Sep., 1914.
	20 Nov., 1914	Co. Cumberland and Northumberland Other localities ...	£7 per ton. £1 per ton in advance of price which prevailed in each locality on 10 Sep., 1914.
	23 Jan., 1915	Co. Cumberland and Northumberland	Wholesale—Bran, £7 10s. 0d. per ton; Pollard, £8 per ton. Retail—Lots not exceeding one ton, 3d. per bushel in excess of wholesale price. Lots exceeding one ton, 2d. per bushel in excess of wholesale price.
	3 May, 1915	Other localities ... New South Wales	Wholesale—In advance of price which prevailed in each locality on 10 Sep., 1914:—Bran, £1 10s. 0d.; Pollard, £2. Retail—Lots not exceeding one ton, 3d. per bushel in excess of wholesale price. Lots exceeding one ton, 2d. per bushel in excess of wholesale price. No charges for carriage may be added unless such charges were in force on or before 10 Sep., 1914.
Sharps ...	16 Mar., 1915	„ „	£11 per ton, delivered in Sydney.
Chaff* ...	3 May, 1915	„ „	In country on rail—Wheat and Oaten, £7 10s. 0d. per ton; Lucerne, £6 10s. 0d. per ton. In Sydney, ex truck, including all customary charges—Wheat and Oaten, £8 10. 0d. per ton; Lucerne, £7 10s 0d. per ton.
Hay*... ..	3 May, 1915	„ „	Wheat and Oaten, in stack, £6 per ton. Lucerne—On farm, in stack, £5 per ton; on farm, in bales, £5 12s. 6d. per ton; in country, on rail or steamer, £5 17s. 6d. per ton; in Sydney, on wharf, £5 17s. 6d. per ton, plus actual freight paid; in railway yards, ex truck, including all customary charges, £6 17s. 6d. per ton.
Chickwheat...	4 May, 1915	„ „	Wholesale, on truck or ex store, Sydney—Cash, 5s. 7d. per bushel; booked, 5s. 9d. per bushel. Retail, in parcels of one bag of 3 bushels or under—The above wholesale price, plus actual charges for freight and handling into store, and 3d. per bushel on sale to consumer, or 1½d. per bushel on sale to distributor. Price not to exceed 6s. 6d. per bushel.

*These prices were varied on 13th May, 1915.

Commodity.	Date of Notification.	Locality.	Maximum Selling Price.
Oatmeal ...	2 Mar., 1915	New South Wales...	Plain, £28 per ton in bulk. Flaked, £30 " "
Biscuits ...	23 Jan., 1915	"	½d. per lb. in advance of prices (wholesale) prevailing on 20th January, 1915.
Butter ...	3 April, 1915	"	Wholesale at Sydney— 1st grade, 124/- per cwt. 2nd " 119/- " " 3rd " 114/- " " At factory, the above whole- sale prices, less freight to Sydney. At other places, the above wholesale prices, with cost of transport added. Retail, 2d. per lb. in addition to above wholesale prices. Wholesale—Same as above. Retail—Cash 2d. per lb. in ad- dition to wholesale. Booked 2½d. per lb. in ad- dition to wholesale. Delivered by butter men— 3d. per lb. in addition to wholesale.
	13 April, 1915	"	Wholesale at Sydney— 1st grade, 133/10 per cwt. 2nd " 128/10 " " 3rd " 123/10 " " These prices include usual cart- age charge not exceeding 6d. per cwt. Where new boxes are used prices to be 1/6 per cwt. higher. Wholesale at Factory—The above prices, less freight to Sydney. Other places—The above prices with cost of trans- port added. Retail—Cash 2d. per lb. in ad- dition to wholesale. Booked 2½d. per lb. in ad- dition to wholesale. Delivered by butter men— 3d. per lb. in addition to wholesale.
	29 May, 1915	"	The butter value of the cream as indicated by Cream Chart of N.S.W. Agricultural Depart- ment, less 3d. per lb. of butter content and less the cost of carriage to nearest place of manufacture.
Cream (applied to other pur- poses than the manufac- ture of butter or consump- tion in N.S.W.)	29 May, 1915	"	Prices (wholesale and retail) which prevailed on 3rd Dec., 1914.
Wines, Spirits, Beers and other drinks (in licensed houses).	10 Dec., 1914	"	Prices which prevailed on 3rd December, plus amount of ad- ditional excise duty.
Beers, Colonial	15 Dec., 1914	"	Prices from 11th Jan. to be those ruling on 1st Aug., 1914, plus additional amount equivalent to increases in duty, cost of freight, insurance and ex- change.
Wines, Spirits, Beers and other drinks —Imported.	5 Jan., 1915	"	

Commodity.	Date of Notification.	Locality.	Maximum Selling Price.
Gas	17 Sept., 1914	Area supplied by Australian Gas Light Co. and North Shore Gas Co., Ltd.	3/6 per 1,000 cubic ft.
Kerosene, Benzine, Heavy Benzine, Motor Spirit, Benzolene—Oil Companies' prices.	4 Nov., 1914	Sydney—On rail or boat.	3/10 per 1,000 cubic ft.
	4 May, 1915		Kerosene, 7/5 per case of 8½ gal. Benzine, 13/10 " 8 " Heavy Benzine, 12/10 per case of 8 gal. Motor Spirit, 14/6 per case of 8 gal. Benzolene, 16/6 per case of 8 gal. The above prices, plus cost of carriage (if any) that has hitherto been charged.
Kerosene—Wholesale Distributors' prices.	4 May, 1915	Metropolitan Area	The above prices, plus actual amounts of carriage paid.
		Outside Metropolitan Area.	The above prices, plus usual carriage charge (if any).
Kerosene—Retail prices.	4 May, 1915	Sydney—On rail or boat.	8/3, less 2½ per cent., per case of 8½ gal.; <i>pro rata</i> for tins or cases containing other quantities.
		Metropolitan Area	The above price, plus actual carriage paid.
Kerosene—Retail prices.	4 May, 1915	Other localities ...	4d. per quart, with usual price for containers extra.
		Metropolitan Area	4/9 per tin of 4½ gal.; <i>pro rata</i> for tins containing other quantities.
Benzine, Heavy Benzine, Motor Spirit, Benzolene—Retail prices.	4 May, 1915	Outside Metropolitan Area.	The above price per tin, plus actual carriage paid.
		Sydney	Benzine at rate of 15/2 per case of 8 gal. Heavy Benzine at rate of 14/2 per case of 8 gal. Motor Spirit at rate of 15/10 per case of 8 gal. Benzolene at rate of 17/10 per case of 8 gal.
		Country	The above retail Sydney prices, plus actual freight paid.

COST OF LIVING.

The rapid increase in the cost of living during recent years has engaged public attention throughout the world, and official investigations relating to this subject have been conducted in Great Britain, the United States of America, Canada, Germany, France, and other European countries, as well as in Australia and New Zealand.

Particulars given above in connection with the food supply of Sydney show that the prices of various food commodities have increased considerably in New South Wales during the past decade.

An important decision relating to the cost of living was given in February, 1914, in the Court of Industrial Arbitration of New South Wales, where an inquiry was conducted in order to obtain an authoritative declaration as to the living wage to serve as a basis of awards of wages by the Wages Boards.

The living wage is standardised as the wage which will do neither more nor less than enable a worker of the class to which the lowest wage would

be awarded to maintain himself, his wife, and two children—the average dependent family—in a house of three rooms and a kitchen, with food, plain and inexpensive, but quite sufficient in quantity and quality to maintain health and efficiency, and with an allowance for the following other expenses:—fuel, clothes, boots, furniture, utensils, rates, life insurance, savings, accident or benefit societies, loss of employment, union pay, books and newspapers, train and tram fares, sewing machine, mangle, school requisites, amusements and holiday, intoxicating liquors, tobacco, sickness and death, domestic help, unusual contingencies, religion or charity.

The evidence placed before the Court included statistical information supplied by the Government Statistician, budgets collected by employers and employees, municipal records, and returns supplied by house and estate agents. The decision of the Court was that the living wage in Sydney, calculated on the basis shown above, is not more than £2 8s. per week.

In consideration of the budgets and other evidence it is estimated that the weekly expenditure is apportioned amongst the various items as follows:—

	£	s.	d.
Food and groceries	1	2	0
Rent...	0	12	0
Other expenditure	0	14	0
	<hr/>		
	£2	8	0

EMPLOYMENT AND INDUSTRIAL ARBITRATION.

EMPLOYMENT.

Age Distribution.

Legislation in regard to education, apprenticeship, and the regulation of industry determines age 14 as the normal minimum age at which children may find employment; the upward limit is naturally, for the majority of the population, within the age group 60-65, being defined for practical purposes by the fact that old-age pensions may be claimed from the Commonwealth Government on attainment by women of age 60, and by men of age 65. The population as at the census of April, 1911, classified in working and non-working or dependent ages—*i.e.*, infancy and old age—and exclusive of the population of the Federal Territory situated within the boundaries of New South Wales, was as follows:—

Age Groups.	Population.			Percentage of Total.		
	Males.	Females.	Total.	Males.	Females.	Total.
Working ages—						
14-20	116,397	113,347	229,744	7·1	6·9	14·0
21-29	146,174	138,305	284,479	8·9	8·4	17·3
30-39	119,349	110,604	229,953	7·2	6·7	13·9
40-49	97,578	81,038	178,616	5·9	4·9	10·8
50-59	66,889	50,869	117,758	4·1	3·1	7·2
60-64	20,023	.....	20,023	1·2	...	1·2
Total	566,410	494,163	1,060,573	34·4	30·0	64·4
Non-working ages—						
Under age 14 ...	250,430	244,584	495,014	15·2	14·9	30·1
60-64 ... ..	.....	16,352	16,352	...	1·0	1·0
65 and over ...	36,368	30,134	66,502	2·2	1·8	4·0
Total	286,798	291,070	577,868	17·4	17·7	35·1
Unspecified ...	4,490	3,803	8,293	·3	·2	·5
Total, all ages ...	857,698	789,036	1,646,734	52·1	47·9	100·0

In every thousand persons in the population, 644 were classified in the working ages while the persons excluded from that category were approximately 351, the ages of the remaining 5 having been unspecified.

A Occupations.

Records of occupation, however, show that the persons classed as breadwinners numbered only 437 per thousand of population. The following table displays the proportions of breadwinners to non-breadwinners:—

Classification.	Population.			Percentage of Total.		
	Males.	Females.	Total.	Males.	Females.	Total.
Breadwinners—						
Specific Occupations	575,300	134,612	709,912	34·93	8·18	43·11
Independent	5,507	3,401	8,908	·33	·21	·54
Total	580,807	138,013	718,820	35·26	8·39	43·65
Dependent	265,731	650,480	916,211	16·14	39·50	55·64
Unspecified	11,160	543	11,703	·68	·03	·71
Total	857,698	789,036	1,646,734	52·08	47·92	100·00

The persons whose occupations were unspecified, constituting only 7 per 1,000 of the total population, are negligible factors in comparison. Similarly, the independent class is relatively small, so that the population appears in two main sections—breadwinners in specific occupations, and dependents, the latter class, including married women and other persons engaged in services for which no money-wage is paid, such as domestic duties.

Dependent males comprised somewhat less than one-third of the male population, while dependent females represented five-sixths of the female population. The class, independent males, was numerically and relatively larger than the class, independent females.

The breadwinners were distributed in the occupational groups as follows:—

Class.	Males.	Females.	Total.	Percentage of Total Population.		
				Males.	Females.	Total.
Professional	36,703	19,377	56,140	2·23	1·18	3·41
Domestic	18,898	54,483	73,381	1·15	3·31	4·46
Commercial	68,208	18,112	106,320	5·36	1·10	6·46
Transport and Communication	60,367	1,597	61,964	3·66	·10	3·76
Industrial	171,921	36,093	208,014	10·44	2·19	12·63
Primary Producers	199,143	4,950	204,093	12·09	·30	12·39
Independent	5,507	3,401	8,908	·33	·21	·54
Total	580,807	138,013	718,820	35·26	8·39	43·65

Class and Status.

The class and grade of males excluding the dependent classes were as follows:—

Class.	In Employment.				Unem- ployed.	Others.		Total.
	Proprietors.		Assistants.			Not Ap- plicable.	Not Stated.	
	Employ- ing Labour.	Non- employ- ers.	Remune- rated.	Unre- muner- ated.				
Professional	3,041	8,334	25,870	45	388	3,940	166	36,763
Domestic	3,398	1,468	12,732	190	696	726	82	18,873
Commercial	12,015	10,180	57,767	610	1,891	5,273	372	86,236
Transport and Communication	2,246	3,558	51,192	277	1,598	1,866	360	60,367
Industrial	14,740	6,138	135,194	436	7,617	7,108	678	171,921
Primary Producers	33,080	25,170	119,358	16,247	3,544	3,552	7,992	209,143
Independent .. .. .	..	..	..	..	..	5,507	..	5,507
Unspecified	176	138	593	2,582	676	4,545	2,280	11,189
Total	68,582	49,676	393,616	20,387	16,210	32,307	11,189	501,167

In this classification of population, inmates of hospitals, charitable or penal establishments, etc., have been classed according to their usual avocations, when such were indicated.

For females, the classification on the same basis was as follows:—

Class.	In Employment.				Unem- ployed.	Others.		Total.
	Proprietors.		Assistants.			Not Ap- plicable.	Not stated.	
	Employ- ing labour.	Non- employ- ers.	Remune- rated.	Unre- muner- ated.				
Professional	321	4,679	11,215	63	262	2,682	166	39,377
Domestic	1,660	1,789	47,658	812	1,466	999	159	54,483
Commercial	679	1,634	12,102	490	312	2,119	186	36,312
Transport and Communication	40	5	1,536	7	5	4	..	1,597
Industrial	1,612	4,067	28,967	195	582	316	354	36,695
Primary Producers	1,177	586	249	2,779	..	15	164	8,950
Independent .. .. .	..	..	..	..	..	3,401	..	3,401
Unspecified	43	7	88	123	73	14	195	583
Total	5,672	12,827	101,815	4,860	2,700	9,550	1,123	138,556

The following table shows a summary of the class and grade of males and females:—

Class.	In Employment.				Unem- ployed.	Others.		Total.
	Proprietors.		Assistants.			Not ap- plicable.	Not stated.	
	Employ- ing labour.	Non- employ- ers.	Remune- rated.	Unre- muner- ated.				
Professional	3,362	8,003	37,085	198	650	6,622	310	56,740
Domestic	4,904	2,957	60,390	1,602	2,102	1,725	241	73,261
Commercial	12,894	11,874	60,860	1,500	2,903	7,392	588	106,329
Transport and Communication	2,246	3,563	52,728	284	1,463	1,370	360	61,564
Industrial	14,362	10,265	164,051	651	8,199	7,514	1,092	208,914
Primary Producers	34,257	25,756	110,607	19,026	3,544	2,567	7,326	204,493
Independent .. .. .	..	..	..	..	..	8,908	..	8,908
Unspecified	219	145	631	2,705	749	4,759	2,445	11,763
Total	74,254	62,563	495,431	25,256	18,910	41,857	12,312	730,523

Occupational Status.

The classification, as regards occupational status, emphasises the preponderance of assistants, as compared with proprietors. The following tables include persons whose class of occupation was not specified:—

Grade.	Persons.			Percentage of Total Population.			Percentage of Active Breadwinners.		
	Males.	Females	Total.	Males.	Females	Total.	Males.	Females	Total.
Proprietors—									
Employers	68,582	5,672	74,254	4.16	0.34	4.50	9.39	0.77	10.16
Non-employers	49,676	12,827	62,503	3.02	0.78	3.80	6.80	1.76	8.56
Assistants—									
Remunerated	393,616	101,815	495,431	23.90	6.15	30.08	53.88	13.94	67.82
Unremunerated	20,387	4,869	25,256	1.24	0.30	1.54	2.79	0.67	3.46
Unemployed	16,210	2,700	18,910	0.99	0.16	1.15	2.22	0.37	2.59
Others	43,496	10,673	54,169	2.64	0.65	3.29	5.95	1.46	7.41
Total	591,967	138,556	730,523	35.95	8.41	44.36	81.03	18.97	100.00

Proprietors represent 8.3 per cent. of the total population, or 18.72 per cent. of active breadwinners. Assistants represent 31.62 per cent. of total population, or 71.28 per cent. of breadwinners.

Proprietors were grouped in occupational classes as follows:—

Class.	Employers.			Non-employers.			Total.		
	Males.	Females	Total.	Males.	Females	Total.	Males.	Females	Total.
Professional	3,041	321	3,362	3,324	4,679	8,003	6,365	5,000	11,365
Domestic	3,304	1,600	4,904	1,168	1,789	2,957	4,472	3,389	7,861
Commercial	12,015	879	12,894	10,180	1,694	11,874	22,195	2,573	24,768
Transport and Communi- cation	2,216	40	2,256	3,558	5	3,563	5,774	45	5,819
Industrial	14,750	1,612	16,362	6,138	4,067	10,205	20,883	5,679	26,562
Primary Producers	33,080	1,177	34,257	25,170	586	25,756	58,250	1,763	60,013
Unspecified	176	43	219	138	7	145	314	50	364
Total	68,582	5,672	74,254	49,676	12,827	62,503	118,258	18,499	136,757

Assistants on the same basis were grouped thus:—

Class.	Remunerated.			Unremunerated.			Total.		
	Males.	Females	Total.	Males.	Females	Total.	Males.	Females	Total.
Professional	25,876	11,215	37,085	45	63	108	25,915	11,278	37,193
Domestic	12,732	47,658	60,390	190	812	1,002	12,922	48,470	61,392
Commercial	57,767	12,102	69,869	610	890	1,500	58,377	12,992	71,369
Transport and Communi- cation	51,192	1,536	52,728	277	7	284	51,469	1,543	53,012
Industrial	135,104	23,967	164,071	436	195	631	135,540	29,162	164,702
Primary Producers	110,353	249	110,602	16,247	2,779	19,026	126,605	3,028	129,633
Unspecified	593	88	681	2,582	123	2,705	3,175	211	3,386
Total	393,616	101,815	495,431	20,387	4,869	25,256	414,003	106,684	520,687

Age and Occupation.

Since the last issue of this Year Book census records for the year 1911 have been published showing for the State of New South Wales the population classified according to age and occupation. The breadwinners and dependents of each sex classified in age-groups are shown below:—

Age-Group.	Breadwinners.			Dependents.			Unspecified.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Under 15.. ..	10,726	3,797	14,523	255,127	256,176	511,303	423	8	431
15-19.. ..	73,088	33,324	106,412	8,224	47,574	55,798	1,660	117	1,786
20-24.. ..	85,138	31,317	116,455	877	51,447	52,324	1,299	80	1,385
25-44.. ..	244,272	46,273	290,545	486	180,001	180,487	1,961	175	2,136
45-60.. ..	112,156	14,672	126,828	225	73,742	73,967	1,146	39	1,184
60-64.. ..	19,380	2,720	22,100	81	13,626	13,707	562	0	568
65 and over.. ..	32,670	5,206	37,876	178	24,806	25,084	3,520	22	3,542
Unspecified	3,377	704	4,081	533	3,008	3,541	580	91	671
Total	580,807	138,013	718,820	265,731	650,480	916,211	11,100	543	11,703

Of the males under 15 years of age 4 per cent. were breadwinners; between the ages 15 and 19 years the percentage increased to 8·9; and in all age groups over 20 years the proportions of breadwinners were high, the margin of dependents being extremely small. Of the females the highest proportion of breadwinners (41·2 per cent.) was in the group 15 to 19 years, thereafter the proportion decreased gradually to 16·6 per cent. at ages 45 to 64 years, then showed a slight increase in the group 65 years and over.

The following statement shows the proportion of breadwinners to the total number of males and females in each age group, and also the proportion in each age group to the total breadwinners:—

Age Group.	Breadwinners.		Ratio of Breadwinners to total in each Age Group.		Ratio of each Group to total Breadwinners.	
	Males.	Females.	Males.	Females.	Males.	Females.
Under 15	10,726	3,797	per cent. 4·03	per cent. 1·46	per cent. 1·85	per cent. 2·75
15-19	73,088	33,324	89·89	41·19	12·58	21·15
20-24	85,138	31,317	98·89	37·84	14·66	22·69
25-44	244,272	46,273	99·80	20·45	42·06	33·53
45-60	112,156	14,672	99·80	16·59	19·31	10·63
60-64	19,380	2,720	99·58	16·64	3·34	1·97
65 and over	32,670	5,206	99·46	17·29	5·62	3·77
Unspecified	3,377	704	.....	.....	·58	·51
Total	580,807	138,013	68·61	17·50	100·00	100·00

The analysis in the following table, which shows the breadwinners under and over 20 years of age classified in industries, indicates that the primary producers included the largest number of male workers under 20 years of age, and the industrial class the largest number of females in that age group; the females aged 20 years and over were most numerous in the domestic class.

The proportion of male breadwinners under 20 years was 14·4 per cent.; the commercial class showed the highest proportion, 17 per cent., followed closely by the industrial class, 16 per cent. Twenty-seven per cent. of the female breadwinners were under 20 years of age; the proportion was

highest in the industrial class, 41 per cent.; in the commercial class, 28 per cent., and in the domestic class and primary producers 25 per cent. were under 20 years.

Class.	Males.				Females.			
	Under 20.	20 and over.	Un-specified	Total.	Under 20.	20 and over.	Un-specified	Total.
Professional	3,357	33,293	113	36,763	2,208	17,096	73	19,377
Domestic	1,061	16,807	160	18,808	13,619	40,509	355	54,483
Commercial	14,696	73,193	404	88,293	5,086	12,988	78	18,112
Transport and Communication	7,094	52,816	427	60,367	266	1,328	5	1,597
Industrial	27,505	143,452	961	171,921	14,701	21,255	137	36,093
Primary Producers	29,309	168,566	1,268	199,143	1,213	3,769	28	4,950
Independent	12	5,454	41	5,507	18	3,355	28	3,401
Total Breadwinners	83,814	493,616	3,377	580,807	37,121	100,188	764	138,013

OCCUPATIONS AND CONJUGAL CONDITION OF FEMALES.

Interesting information regarding the occupations of females in relation to their conjugal condition was disclosed by the census records of 1911. Of the breadwinners, 77.7 per cent. were classified as never married, 11.9 per cent. were married, and 9.7 per cent. were widowed; of the dependents those never married represented 55.3 per cent., married, 39.9 per cent., and widowed, 4.6 per cent. The proportion of proprietors was much greater amongst the married and widowed breadwinners than amongst the unmarried.

Classification.	Never married.	Married.	Widowed.	Divorced.	Not stated.	Total.
Professional	16,173	1,918	1,196	63	27	19,377
Domestic	41,206	7,730	5,047	335	95	54,483
Commercial	13,504	2,172	2,376	51	9	18,112
Transport and Communication	979	333	228	5	2	1,597
Industrial	32,433	2,260	1,245	135	20	36,093
Primary Producers	2,223	1,364	1,350	13	.....	4,950
Independent	779	596	2,003	18	5	3,401
Total	107,297	16,443	13,445	670	138	138,013
Dependents	359,944	259,727	30,091	520	198	650,480
Unspecified	362	46	35	.....	100	543
Total Females	467,603	276,216	43,571	1,190	456	789,036

The distribution as breadwinners or dependents of the females in each conjugal condition group is indicated by the following percentages:—

Conjugal Condition.	Breadwinners.	Dependents.
Never married	per cent. 22.96	per cent. 57.04
Married	5.95	94.05
Widowed	30.88	69.12
Divorced	56.30	43.70

INTERCENSAL VARIATIONS.

Age Distribution.

The percentage variation as between the population of working and non-working ages in 1901 and in 1911 is as follows:—

Age Group.	1901.			1911.		
	Males.	Females.	Total.	Males.	Females.	Total.
Non-working ages—	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
Under 14 years... ..	17·0	16·6	33·6	15·2	14·9	30·1
Males 65 and over; females 60 and over	2·0	2·3	4·3	2·2	2·9	5·0
Total non-working ...	19·0	18·9	37·9	17·4	17·7	35·1
Working ages—						
Males 14—64; females 14—59	33·2	28·6	61·8	34·4	30·0	64·4
Unspecified	·2	·1	·3	·3	·2	·5
Total all Ages ...	52·4	47·6	100·0	52·1	47·9	100·0

The figures for 1911 are exclusive of the population in the Federal Territory. The increase of 4 per cent. in the proportion at working-ages reflects the results of the encouragement of immigration throughout the latter half of the decennium.

The variation in the age distribution of breadwinners of each sex between the years 1901 and 1911 is shown below:—

Age Group.	Proportion of Breadwinners in each Age Group.				Proportion of total Breadwinners.			
	1901.		1911.		1901.		1911.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
Under 15 ...	3·72	1·16	4·03	1·46	2·03	2·46	1·85	2·75
15—19... ..	87·99	37·29	89·89	41·19	13·73	23·26	12·58	24·15
20—24... ..	98·64	38·26	98·89	37·84	13·57	21·86	14·66	22·69
25—44... ..	98·39	21·81	99·80	20·45	44·78	34·16	42·06	33·53
45—64... ..	97·42	21·67	99·77	16·60	20·40	13·54	22·65	12·60
65 and over ...	84·07	26·57	99·46	17·29	4·98	4·57	5·62	3·77
Unspecified ...	.....	.....	.....	.....	·51	·15	·59	·51
Total ...	63·75	17·59	68·61	17·50	100·00	100·00	100·00	100·00

Dependency.

Taking two groups, breadwinners including persons of dependent means and indefinite occupations, and dependents, the proportion in each class per cent. of the total population at the respective census dates between

1861 and 1911 was remarkably constant; the comparatively small class of those whose occupations were not recorded has been excluded:—

Census Years.	Percentage Distribution.					
	Males.		Females.		Total.	
	Bread-winners.	Depend-ents.	Bread-winners.	Depend-ents.	Bread-winners.	Depend-ents.
1861	67·58	32·42	19·07	80·93	46·46	53·54
1871	63·19	36·81	16·01	83·99	41·67	58·33
1881	64·37	35·63	16·29	83·71	42·61	57·39
1891	63·13	36·87	17·36	82·64	42·09	57·91
1901	63·75	36·25	17·59	82·41	41·76	58·24
1911	68·61	31·39	17·50	82·50	43·96	56·04

The relatively high proportion of breadwinners in 1861 may be taken as a reflex of local conditions in a preponderance of able-bodied adults resulting from the opening up of the gold-fields and the consequent influx of immigrants. Thereafter no abnormal changes are apparent in the distribution of population.

Unfortunately, the basis of classification of occupations has not been constant from census to census. The first census record of occupational distribution of population in New South Wales was obtained in 1841, when attention centred on pastoral and agricultural pursuits as constituting the important, and, in fact, almost the sole, industries of the people. Details available concerning other occupations are insufficient for fair comparisons. This condition was maintained, with but slight modification, in subsequent census records till 1881, when the classification of occupations was elaborated, the unspecified section was curtailed, records of unemployed persons were obtained, and the classification by sex, in occupation, was made more definite.

Specified Occupations.

In regard to specific occupations, the grouping at each census was as follows; persons classed as independent have been excluded:—

Class.	1871.		1881.		1891.		1901.		1911.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Professional ..	6,817	2,075	11,546	4,238	21,186	10,417	26,855	14,529	36,768	19,377
Domestic ..	8,721	16,507	12,639	25,000	17,704	38,249	20,133	52,090	18,398	54,483
Commercial ..	23,119	2,473	41,441	4,194	50,957	4,732	67,097	10,567	88,208	16,112
Transport and Com- munication ..	.....	.....	.....	.....	34,208	500	42,822	1,045	60,367	1,597
Industrial ..	49,316	6,126	97,293	10,326	118,998	17,819	122,692	23,996	171,921	36,093
Primary Producers— Agricultural ..	45,733	6,361	60,365	6,520	66,478	7,022	75,834	1,735	77,599	1,036
Pastoral ..	17,109	1,666	17,333	2,335	27,212	334	31,312	595	69,734	3,266
Dairying ..	.....	.....	.....	.....	4,996	4,758	15,850	2,235	.....	.....
Mining ..	18,529	.....	18,393	.....	30,936	1	38,378	4	39,551	23
Forestry ..	.....	.....	.....	.....	5,224	3	6,738	23	6,358	6
Other ..	.....	.....	.....	.....	.....	.....	.....	.....	5,911	19
Total ..	160,404	35,208	250,060	52,713	377,779	33,835	447,806	107,469	575,300	134,612

As stated previously, the figures and classification for 1871 and 1881 are not on a strictly comparable basis with those for the subsequent censuses. The percentage distribution of the persons in specified occupations for 1891, 1901, and 1911 was as follows:—

Class.	1891.			1901.			1911.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
Professional	4.59	2.26	6.85	4.84	2.61	7.45	5.17	2.73	7.90
Domestic	3.83	8.29	12.12	3.63	9.49	13.12	2.66	7.67	10.33
Commercial	11.01	1.03	12.04	12.08	1.90	13.98	12.43	2.55	14.98
Transport and Commu- nication	7.41	.11	7.52	7.71	.19	7.90	8.50	.23	8.73
Industrial	25.78	3.86	29.64	22.10	4.32	26.42	24.22	5.08	29.30
Primary Producers	29.21	2.62	31.83	30.29	.84	31.13	28.06	.70	28.76
Total	81.83	18.17	100.00	80.65	19.35	100.00	81.04	18.96	100.00

The percentages for 1911 show considerable decreases in two classes—domestic, and primary producers. The industrial class had improved over the position at 1901, but had not quite recovered to the position of 1891. Other classes all showed improvement. Detail figures in regard to the subclasses of primary producers show the aggregate proportion, made up as follows:—

Primary Producers.	1891.		1901.		1911.	
	M.	F.	M.	F.	M.	F.
Agricultural	14.40	1.52	13.67	.31	10.93	.23
Pastoral	5.89	.07	5.64	.11	9.82	.46
Dairying	1.08	1.03	2.85	.41		
Mining	6.70	.00	6.91	.00	5.58	.00
Forestry	1.14	.00	1.22	.01	.90	.00
Other ... ..					.83	.01
Total	29.21	2.62	30.29	.84	28.06	.70

ANNUAL RECORDS OF PRIMARY AND MANUFACTURING INDUSTRIES.

For the intervals between the census periods, records as to the numbers of persons in occupations are restricted to the primary industries, and to the manufacturing section of the industrial group, concerning which groups annual returns are collected in this Bureau of Statistics. The following are the figures showing persons permanently employed in the principal industries of the State since 1904. In regard to women and girls engaged in agriculture and dairying, it must be remembered that the majority are

only partly so employed, in conjunction with, or in addition to, their usual domestic duties. In the manufacturing industry, employees in establishments where no machinery is used are not recorded, unless at least four persons are engaged:—

Year.	Agricultural.		Dairying.		Pastoral.	Mining.		Manufacturing.	
	Males.	Females.	Males.	Females.		Metal.	Coal and Shale.	Males.	Females.
					Males.	Males.			
1904	63,111	5,742	17,641	13,750	27,886	23,691	14,146	53,457	14,579
1905	62,419	5,608	19,287	14,509	29,919	24,795	14,137	56,111	16,064
1906	63,448	5,715	21,476	15,626	32,598	27,347	15,199	59,979	17,843
1907	57,327	5,235	22,374	15,424	40,405	26,402	17,356	65,953	20,514
1908	55,324	5,469	24,887	16,908	39,625	20,881	18,084	67,616	21,482
1909	59,541	4,770	25,514	17,803	38,714	17,836	18,569	69,184	22,518
1910	59,091	5,228	27,449	19,404	40,008	19,369	18,044	75,384	24,327
1911	58,299	5,782	27,488	19,422	43,387	19,360	17,657	82,083	26,541
1912	58,984	5,759	26,537	18,439	41,893	19,807	18,051	88,178	27,383
1913	61,525	6,950	25,961	18,478	40,543	19,914	18,966	93,036	27,364

There has been during the whole period a steady increase in the labour permanently employed in all the principal industries, with the exception of agriculture and metal-mining.

Since 1910 the number of persons employed in agriculture has increased, while in pastoral and dairying a decrease is evident; but, as in many cases, agriculture is associated with other rural occupations, persons may be returned as engaged in agriculture in one year, and in other rural pursuits in another year.

Employees in pastoral industries increased rapidly in number until 1907; but the figures for 1910, though showing a recovery from the depression of 1908 and 1909, were slightly below the record of the year 1907. The highest point for the decennium was reached in 1911.

A noticeable feature of the table is the rapidly-increasing extent to which women and girls are employed in factories, while the increase in the number of men and boys employed also was maintained steadily. This condition is discussed in detail in Part "Manufacturing Industry," of this volume. The decline in the number of metal-miners since 1906 is a reflex of the effect of low prices current for metals.

Grouping the figures shown above in Primary and Secondary Industries, the following results are obtained:—

Year.	Primary.			Secondary.— Manufacturing.	All Industries.		
	Rural.	Mining.	Total.		Males.	Females.	Total.
1904	128,130	37,837	165,967	68,036	199,932	34,071	234,003
1905	131,442	38,932	170,374	72,175	206,668	35,881	242,549
1906	138,862	42,546	181,409	77,822	220,047	39,184	259,231
1907	140,915	43,758	184,673	86,467	229,817	41,323	271,140
1908	142,153	38,965	181,118	89,698	226,417	48,799	275,216
1909	146,342	36,405	182,747	91,702	229,358	45,091	274,449
1910	151,180	37,413	188,593	89,711	239,345	48,359	287,704
1911	154,979	37,017	191,996	108,624	248,274	61,745	310,019
1912	151,382	37,858	189,240	115,561	253,450	51,601	305,051
1913	153,457	38,890	192,347	120,409	259,945	52,792	312,737

Comparing Primary and Secondary Industries as above, it is noticeable that the Primary Industries experienced adverse periods in 1908 and 1909.

and in 1912, when the numbers employed showed decreases as compared with the figures for the year immediately preceding. In no case, however, was the decrease reflected in the secondary group.

Reviewing the proportional increases under each head as between 1901 and 1911, and 1913, the advance is most noticeable, particularly in the female sections of the manufacturing or secondary group; taking the numbers at 1901 as a base, representing 100 in each case, the following figures mark the relative positions in 1911 and 1913:—

	1911.			1913.		
	M.	F.	Total.	M.	F.	Total.
Primary—Rural	124	132	125	123	133	125
Mining	101	...	101	106	...	106
Total	118	132	120	119	133	121
Secondary—Manufacturing ...	151	227	164	171	234	182
Total	127	168	133	135	171	139

ADEQUACY OF LABOUR.

The adequacy of labour for the development of the resources of the State is measurable by numbers and by efficiency. Sparseness of population in every State is an outstanding feature of economic conditions throughout Australia, and in recent years the question has been raised in several States, including New South Wales, as to the necessity for the introduction of workers from abroad in order to provide adequate labour to continue the expansion of the natural resources of the States.

A Commission appointed in 1911 to investigate the question of a labour shortage in New South Wales, demonstrated that the volume of unsubsidised immigration, induced by systematic advertisement of the State and its resources, was inadequate to meet the demand for labour; and assisted immigration was confined within fairly definite limits; the special training and preparation of young people for entrance to the skilled trades hitherto had not been undertaken extensively, nor had the developments effected in recent years in the educational system yet had time to affect materially the influx of workers to such trades. The remedy suggested for the deficiency of labour was a more extensive system of immigration, in the direction of registering the applications of employers, arranging for guarantees where such could possibly be secured, and for priority of choice to those employers who tendered such guarantees. In this extension the Immigration Bureau would be developed into a labour exchange, and be enabled to adjust the flow of assisted immigration according to the volume of the voluntary inflow.

During 1913 the excess of arrivals from, as compared with departures to, countries outside the Commonwealth, was 18,998. For the same period the number of assisted immigrants was 9,860 (4,180 males and 5,680 females), the average since 1st January, 1906, being 6,332 per annum.

IMMIGRATION.

COMMONWEALTH CONTROL.

Power to legislate with regard to immigration and emigration is conferred upon the Commonwealth Parliament, under the Commonwealth of Australia Constitution Act, and the legislation under this section is contained in the following enactments:—Immigration Act, 1901-1912; Pacific Island

Labourers Act, 1901-1906; Contract Immigrants Act, 1905; Emigration Act, 1910.

The enactments relating to immigration operate in the direction of restricting the right of entry of persons to the Commonwealth; they supersede and embody, with necessary modifications, the pre-Federation policy of the several States, which generally imposed limitations upon the admission, within their boundaries, of persons regarded as undesirable for medical and other reasons.

General Conditions.

The Acts define the classes of persons who come under the heading of prohibited immigrants, including persons who fail to pass prescribed dictation tests, or do not possess the prescribed certificate of health, criminals, and immoral persons, or persons otherwise undesirable. Persons suffering from serious transmissible or communicable disease are debarred specifically; also idiots, imbeciles, feeble-minded or epileptic persons; and the Immigration Act of 1912 makes special provision for the establishment of medical bureaux at places outside the Commonwealth; and for the appointment of medical referees in the Commonwealth or outside it, to conduct the medical examination of immigrants, or intending immigrants. The onus of the introduction of prohibited immigrants lies chiefly upon the masters, owners, agents, or charterers of vessels, a penalty of £100 attaching in respect of each such entrant or stowaway, as well as the liability for maintenance and deportation. A stowaway is defined as any person other than a *bona fide* passenger, or a member of the crew duly entered on the ship's articles. The administration is empowered to search vessels for stowaways.

Exemption from the general provisions of the Acts may be claimed by persons holding exemption certificates, by persons accredited by any Government, by members of the King's regular sea and land forces, and by masters and crews of public vessels of any Government, and of vessels trading to Commonwealth ports, providing in regard to the vessels last referred to that if any of the crew be missing when the vessel clears the port, such person may be declared a prohibited immigrant, and the master, &c., held responsible. The prescribed dictation test may be imposed at any time up to two years after the admission of an immigrant. Provision is made for the conditional entry of prohibited immigrants for a limited period.

Contract Immigrants.

The Contract Immigrants Act, 1905, regulates the admission of immigrants under contract to perform manual labour. Contracts in this connection must be in writing, made by or on behalf of some person named and resident in Australia. They are subject to Ministerial approval, which may be withheld if the fulfilment of the contract is likely to be prejudicial to the public welfare, either as affecting an industrial dispute, or as to the conditions of, and standards prevailing in, local industry. It may be withheld, also, if there is insufficient evidence of difficulty in obtaining a worker of equal skill and ability within the Commonwealth. This latter provision is not applicable to contract immigrants who are British subjects, born in the United Kingdom or descended from a British subject there born; nor does the Act apply to domestic servants and personal attendants accompanying their employers.

The following statement shows the number of contract immigrants admitted to Australia since 1907, and also the numbers of those whose

contracts designated some locality in New South Wales as the subject place of the contract:—

Year.	Contract Immigrants admitted to Australia.			Contracts relating to New South Wales.
	British.	Non-British.	Total.	
1907	731	241	972	56
1908	20	2	22	14
1909	152	6	158	34
1910	38	1	39	10
1911	332	20	352	12
1912	201	16	217	89
1913	27	1	28	11
1914	20	...	20	1

During the year 1914 no contracts were disapproved, nor were any contract immigrants refused admission.

The Pacific Island Labourers Act prohibits the importation, and regulates the deportation of Pacific Islanders engaged for labour on sugar plantations.

EMIGRATION.

The Emigration Act, 1910, operates in the direction of restricting the emigration of children and aboriginal natives from Australia, regulating contracts in relation thereto, and supervising the transportation or removal of prohibited emigrants.

ENCOURAGEMENT OF IMMIGRATION.

The Commonwealth.

Encouragement of immigration, as undertaken by the Commonwealth, has been confined to advertisement of the attractions of Australia generally, with a view to promoting the flow of voluntary immigration to the different States.

The amounts expended by the Commonwealth during the past five years are shown in the following statement:—

Expenditure.	1909-10.	1910-11.	1911-12.	1912-13.	* 1913-14.
In United Kingdom—	£	£	£	£	£
For Newspaper advertising	2,037	5,325	4,839	4,073	} 29,542
For other purposes ...	3,518	4,675	8,444	10,284	
In Australia ...	2,555	5,640	6,713	5,905	11,004
Total ...	8,110	15,640	19,996	20,262	40,546

The amounts expended in Australia are chiefly the costs of advertising, of the production of photographs, lantern slides, and cinematograph films, and publications, in which are described conditions of life and industry in Australia.

The State Policy.

State-assisted immigration was inaugurated in New South Wales in the year 1832, and maintained until 1885. After an interval of twenty years, the policy was resumed in 1905.

The following statement shows the expenditure on, and the resulting increase of population from, the encouragement of immigration by the State in each year since 1906:—

Year ended 30th June.	Expenditure, exclusive of Administration.	Immigrants assisted.						Unassisted Immigrants placed in employment.
		Nominated.		Selected.		Total.		
		Males.	Females.	Males.	Females.	Males.	Females.	
*1906	£ 1,226	23		143		166		.....
1907	8,979	199		1,612		1,811		284
1908	13,184	835		2,088		2,923		966
1909	22,436	1,656		2,301		3,957		1,219
1910	26,815	1,068	1,184	1,455	526	2,523	1,710	1,730
1911	32,786	2,422	2,317	1,960	599	4,382	2,916	2,317
1912	59,186	4,577	4,304	2,942	1,033	7,519	5,337	3,269
1913	69,656	5,002	6,148	1,745	754	6,747	6,902	3,787
1914	33,158	1,983	3,401	662	768	2,045	4,169	3,377
Total...	266,528	35,119		18,588		53,707		16,949

* Six months—January to June.

For the financial year 1914-15 the sum of £25,000 has been voted for the promotion of immigration and advertising the State, whilst an additional sum of £6,709 has been voted to meet that proportion of the joint expenditure of the amalgamated Immigration Department of New South Wales and Victoria which is chargeable to New South Wales. These votes are supplementary to the usual vote, approximating £20,000, for maintenance and administration of the office of the Agent-General in London, and of the Immigration and Tourist Bureau in Sydney.

Nomination and selection of immigrants are confined chiefly to persons in the United Kingdom, and the following statement shows the proportion of British subjects, in comparison with foreign-born, among assisted immigrants, in the period 1906-1914:—

Year ended 30th June.	Immigrants from—						Total.		
	United Kingdom.		Other British Possessions.		Foreign Countries.		Nominated.	Selected.	Total.
	Nominated.	Selected.	Nominated.	Selected.	Nominated.	Selected.			
*1906	23	143	...	...	...	...	23	143	166
1907	199	1,331	...	281	...	...	199	1,612	1,811
1908	795	1,898	33	189	7	1	835	2,088	2,923
1909	1,530	2,269	90	24	36	8	1,656	2,301	3,957
1910	2,210	1,953	20	12	22	11	2,252	1,981	4,233
1911	4,675	2,524	4	3	60	32	4,739	2,559	7,298
1912	8,781	3,953	1	...	93	17	8,881	3,975	12,856
1913	10,997	2,482	3	...	150	17	11,150	2,499	13,649
1914	5,197	1,396	23	8	164	26	5,384	1,430	6,814
Total	34,407	17,959	174	517	538	112	35,119	18,588	53,707

* Six months—January to June.

Assisted passages are granted to immigrants who are classified as selected or as nominated. The former include only farmers, agricultural labourers, and domestic servants. The selection of assisted immigrants is made mainly from the population of the United Kingdom; but a proportion may

be drawn from Canada, South Africa, and other parts of the British Empire, also other European countries, and from the United States of America, provided they are eligible under the regulations of the Commonwealth Immigration Acts. Selected immigrants must be under 45 years of age, of good character, and in general must afford satisfactory evidence that they are likely to prove suitable settlers. Assistance is given also in respect of their wives and families. Selected immigrants are brought to the State for minimum net fares of £6 for domestic servants and £8 for agriculturists.

Arrangements exist with various steamship companies for reductions in the ordinary rates for passages from the United Kingdom, Belgium, Italy, and other European countries. Besides these reductions a Government contribution, ranging from £4 to £8, is made towards the fares, these concessions being allowed to persons approved in London by the Superintendent of Immigration and who settle in the State.

The following statement shows the distribution of selected immigrants in their respective occupational classes in each financial year:—

Year ended 30th June.	Rural Workers.			Domestic Servants.	Other.	Families of foregoing.
	Farmers.	Farm Labourers.	Total.			
*1906	14	56	70	7	15	51
1907	51	455	506	39	534	503
1908	17	775	792	545	323	428
1909	20	1,478	1,498	544	4	255
1910	11	1,428	1,439	434	.....	108
1911	12	1,831	1,843	387	.....	329
1912	11	2,472	2,483	520	205	767
1913	10	1,662	1,672	549	3	275
1914	13	529	542	579	.....	321
Total ...	159	10,716	10,875	3,604	1,084	3,037

* Six months—January to June.

Since 1912 there has been a diminution in the immigration of selected agriculturists; as to domestic servants the numbers, though increasing, are still judged inadequate to meet the demand, and, as a further encouragement to this class of immigrant, the Government arranged to advance part of the fare to competent girls, the advance to be repaid in instalments after arrival. Arrangements have been made also whereby a person resident in New South Wales may prepay the cost of the passage for a domestic to be selected, who will repay the advance in instalments extending over a period of six months; it has been found, however, that domestics desirous of immigrating prefer the greater freedom of choice of employment under other schemes. A feature of the domestic section of immigration is the recent increase in the numbers persuaded to emigrate by their former friends, who are allowed to arrange positions for them, subject to the approval of the Immigration Bureau.

Persons nominated for assisted passage by relatives in the State may be granted a reduction of £4 on each full fare. In the case of wives and families nominated by persons resident in the State, a reduction of £6 is made, which may be increased to £8 per adult if the nominator is a farmer or farm labourer. Thus the lowest net fares to nominated accepted immigrants are £6 per adult for wives and families of farm workers, £8 for wives and families of other workers, £10 for all other nominees. All nominees must be under 45 years of age (except in the case of a wife, whose age must not exceed 50 years). Sound health and good character are essential. Children between the ages of 3 and 12 years at date of

embarkation are carried at half rates, whilst one child, under 3 years, travelling with its parents, is carried free; any additional children under 3 years are charged quarter rates.

Until the year 1912 the nomination system was available for farm labourers, domestic servants, artisans, and manual workers, and in case of nominees, who were near relations of the nominators, for other occupations. In 1912, the nomination system was restricted to the wives and children of nominators, but persons eligible and nominated before this alteration in policy were, of course, exempted from the restriction. In 1913 the system was extended to include brothers and sisters, with their families, if of approved occupations. Nominators are required to lodge the reduced steamer fare, and an undertaking that employment awaits the nominees, or that adequate provision will be made for their maintenance. Any immigrant who settles upon the land as owner, lessee, or labourer, within a reasonable time of his arrival, may be granted a remission of one-third of the railway fare for himself and family when travelling to the district in which he settles, and of one-third of the railway freight charged on household furniture, stock, and agricultural implements which were in his possession on arrival. These concessions may be granted also to nominated immigrants proceeding to the homes of their nominators, or travelling to take up farm work or domestic service.

Selection of Subsidised Immigrants.

Till 1912 intending immigrants from the United Kingdom were selected or approved after nomination per medium of the Agent-General's office in London, but in 1913 the Government established an Immigration Department in London, and the Superintendent thereof now makes all arrangements for assisted passages.

Co-operation of the States.

In the early part of 1913 the Attorney-General of New South Wales, being in London, was enabled to arrange for conjoint action with Victoria in regard to the regulation and supervision of immigration. For this purpose the Immigration Office in London of the State of Victoria was amalgamated with the New South Wales Office, as from 1st July, 1913. This action resulted practically from discussion at the Premiers' Conference of 1912 on immigration, particularly in relation to disparity of passage rates in force under the immigration policies of the different States. The resolutions of the Conference on this subject were:—

1. That the following immigration passage rates and bonuses to immigration agents recommended by the immigration officers of the States be agreed to by this Conference.

That all States charge the following minimum rates to immigrants:—

Farmers, farm-hands, skilled artisans, and all nominated, assisted, or indented male immigrants, £6.

Adult females, £3.

Children of immigrants—under 12 years of age, £1 10s.

It is to be understood that, while no States shall charge lower amounts than those mentioned, no objection will be made to higher rates being imposed.

That age limits for all State-aided immigrants be fixed as follows:—

Males, married women, and widows, 45 years.

Single women, 35 years.

The only free immigrants to be those whom the shipping companies carry free.

An adult immigrant is an adult within the meaning of the steamship companies' passenger rates regulations.

2. That the maximum bonus payable to immigration agents be as follows:—

- (a) Per adult, £1.
Per child under 12 years, 10s.
- (b) In the case of an assisted immigrant recruited by an agent nominating his wife and family within twelve months of his arrival in the State, a similar bonus on account of the wife and family be paid to the agent.
- (c) In the cases of immigrants with capital of £200 and over, which capital is deposited with the Agent-General for transmission to the State, an additional bonus of 1 per cent. on the capital so deposited be paid to the agent.

That the immigration passage rates and bonuses to immigration agents recommended be brought into operation after the 31st day of March, 1912.

That the Commonwealth Government be asked to provide 25,000 assisted passages per annum for immigrants, arranging with the shipping companies and paying the cost of transportation on a uniform basic rate, the States to select the immigrants and place them, as at present, and any State being at liberty to supplement the number of assisted passages allotted to it at the same rate.

Reception of Immigrants.

Vessels carrying immigrants are met on arrival by officers of the Immigration Bureau, and in certain cases, where large numbers of immigrants are travelling from England, an officer joins the vessel at Melbourne. Suitable accommodation is available for all immigrants pending their entry into situations, and advice is given freely. In the majority of cases assisted immigrants go to employment at once. Details have been given previously regarding the numbers of immigrants placed in employment in each year through the agency of the Immigration Bureau.

The question of providing a Government Depôt for the accommodation of immigrants was under the consideration of the Government during 1912. The provision of such a building was approved, but before a suitable site was secured accommodation was made available through the efforts of organisations, such as the Church of England Men's Society, and the Central Methodist Mission. The Government then arranged with the Church of England authorities to provide accommodation for 400 people at their Welcome Home.

TRADE UNIONS.

The Trade Union Act of 1881 defines a "Trade Union" as "any combination, whether temporary or permanent, for regulating the relations between workmen and employers, or between workmen and workmen, or between employers and employers, or for imposing restrictive conditions on the conduct of any trade or business, whether such combination would or would not, if this Act had not been passed, have been deemed to have been an unlawful combination by reason of some one or more of its purposes being in restraint of trade."

The Act provided simple machinery for the incorporation, free of cost, of Unions, and the practical advantages of registration quickly became evident to those interested in industrial organisation.

In regard to Trade Union contracts, an express stipulation of the Act is that nothing contained in it shall enable any Court to entertain any legal

proceeding instituted with the object of directly enforcing or recovering damages for breach of—

(1) Agreements—

- (a) between members of a Trade Union as such concerning the condition on which any members . . . shall or shall not sell their goods, transact business, employ or be employed.
- (b) for the payment by any person of any subscription or penalty to a Trade Union.
- (c) for the application of funds of a Trade Union to—
 - (i) provide benefits to members, or
 - (ii) furnish contributions to any employer or workman not a member of such Trade Union, in consideration of such employer or workman acting in conformity with the rules or resolutions of such Trade Union, or
 - (iii) discharge any fine imposed upon any person by sentence of a Court of Justice.
- (d) made between one Trade Union and another.

(2) Bonds to secure the performance of any of the above-mentioned agreements.

This section does not, however, render unlawful any such agreements as are mentioned above, nor does any provision of the Act affect agreements—

- (i) between partners as to their own business;
- (ii) between employer and employee regarding such employment;
- (iii) in consideration of the sale of goodwill of a business or of instruction in any profession, trade, or handicraft.

The Industrial Arbitration Act, 1901, provided for the incorporation as industrial unions, &c., and the Industrial Disputes Act, 1908, while stripping registration for industrial purposes of its authority to confer any altered legal status, did not affect the incorporation of any Unions duly registered under the Act of 1901, at the time of its expiration. Similarly the Industrial Arbitration Act, 1912, preserved existing registrations, and still restricted to the registered Trade Union the right of being the only applicant which may obtain registration as an Industrial Union of employees.

The outcome of these events is reflected in the records of registrations for individual years. The maximum number of registrations of Trade Unions in any year was 46 in 1902. The next highest numbers were 38 in 1890 and 35 in 1901, and the registrations in 1913, viz., 17 are below the average of the previous six years.

Incorporation and Dissolution.

In the thirty-two years, 1882-1913, 471 Unions have been incorporated under the Trade Union Act. The numbers, for quinquennial periods, of new Unions registered and of such registrations since cancelled or still effective, as at December, 1913, are as follows:—

Period.	Trade Unions Registered.	Registrations of each Period.	
		Since Cancelled.	Still Effective.
1882-6	49	28	21
1887-91	92	76	16
1892-6	23	19	4
1897-1901	43	18	25
1902-6	96	80	27
1907-11	125	42	83
1912	26	5	21
1913	17	...	17
Total ...	471	257	214

The majority of Unions are clearly of comparatively recent formation, since 148 out of 214 existent are less than twelve years old. The total number existent at the end of 1913, viz., 214, represents approximately 45 per cent. of the Unions formed throughout the period. Of the Unions formed in the last twelve years, 44 per cent. have already disappeared. The average life of all extinct Unions was seven years.

Cancellations for the most part have been directly consequent upon non-compliance with the requirements of the law in regard to making returns as to the membership and funds, which default was usually attributable to the moribund condition of the Union. In a few instances registrations were terminated by amalgamation of Unions, or by their absorption in other bodies.

The steady progression of recent years is indicated in the following statement:—

Year.	New Unions Registered.	Number of these Unions defunct at 31st Dec., 1913.	Average Membership of Unions Reporting.
1907	13	9	693
1908	25	5	745
1909	27	15	767
1910	29	9	749
1911	31	4	804
1912	26	5	962
1913	17	...	1,019

Aggregate Funds and Membership.

The following statement shows the position of all Trade Unions for each of the last four years, as regards finances and membership:—

	1910.	1911.	1912.	1913.
Unions existent, end of year	174	191	209	214
Total income	£129,754	£163,448	£199,157	£209,478
Total expenditure	£123,794	£146,959	£173,474	£183,304
Total assets	£98,758	£114,687	£151,543	£193,520
Membership	130,346	153,504	201,144	218,005
Income per member	19s. 11d.	21s. 3d.	19s. 9d.	19s. 3d.
Expenditure per member	19s. 0d.	19s. 2d.	17s. 3d.	16s. 10d.
Amassed funds per member	15s. 2d.	14s. 11d.	15s. 1d.	17s. 9d.

The Unions are classified in two groups according to their constitution, viz., of employers and of employees. The following table displays their relative positions as at 31st December, 1913:—

Trade Unions.	No.	Membership.			Funds.	
		Aggregate.		Per Union Reporting.	Aggregate.	Per Union Reporting.
		Males.	Females			
Employers	15	4,104	193	266	£ 3,174	£ 212
Employees	199	206,514	7,194	1,074	190,346	957
Total	214	210,618	7,387	1,019	193,520	904

The following statement gives a general view of the numerical strength of all Trade Unions during the last four years:—

Membership.		1910.	1911.	1912.	1913.
Less than..	100	47	54	49	48
100 and less than	500	65	65	77	85
500 "	1,000	22	24	23	22
1,000 "	1,500	12	15	15	11
1,500 "	2,000	6	6	11	15
2,000 "	3,000	2	9	8	7
3,000 "	4,000	2	2	4	5
4,000 "	5,000	2	1	3	4
5,000 "	8,000	2	4	5	4
8,000 "	10,000	1	.....	.....	2
10,000 "	20,000	.....	1	2	2
20,000 "	25,000	.....	1	1	1
Exceeding	25,000	1	.....	.....	.....
Not stated	...	12	9	11	8
Total	...	174	191	209	214

EMPLOYERS' UNIONS.

The finances of the fifteen employers' unions for the year 1913 were:—

Receipts.	Expenditure.	Assets.
Contributions ... £ 6,247	Legal Charges ... £ 526	Cash—In Bank ... £ 833
Interest ... 32	Management & Other 7,321	Cash not bearing interest. 840
Other Receipts ... 1,474		Other Assets ... 1,501
Total ... 7,753	Total ... 7,847	Total ... 3,174

Appended is a list of the employers' unions, showing assets and membership:—

Group.	Trade Unions reporting.	Assets.	Membership.	
			Males.	Females.
Licensed Victuallers...	1	£ 179	1,167	189
Carriers and Carters...	2	927	1,455	.....
Builders, Contractors, and Tuckpointers...	4	1,362	275	.....
Farriers ...	1	156	364	.....
Butchers ...	1	356	106	.....
Bakers ...	1	119	155	.....
Tug and Lighter Owners ...	1	20	27	.....
Laundrymen ...	1	50	63	.....
Basket-makers ...	1	1	10	.....
Hairdressers ...	1	4	318	.....
Dairymen ...	1	*	164	4

* Outstanding liabilities, £81.

The accumulated funds and the membership at December, 1913, are shown in the following table, which also discloses the relativity of expenditures for benefits and for legal charges to total expenditures:—

Industrial Classification.	Funds.	Membership.			Funds per member.	Percentage of Total Expenditure absorbed in—		Percentage of group membership to total.	
		Males.	Females.	Total.		Benefits	Legal Charges		
Building	£ 23,171	19,922	.....	19,922	23	3	20.75	6.73	9.32
Rural, Agricultural, and Farming	13,742	21,694	.....	21,694	12	8	2.00	2.96	10.15
Mining, Quarrying, and Smelting	40,336	28,241	.....	28,241	28	7	49.12	3.82	13.22
Engineering and Metal Working	21,635	15,724	.....	15,724	27	6	31.44	8.33	7.36
Clothing, Boots, Hats	4,819	3,916	2,370	6,286	15	4	.03	28.24	2.94
Printing, Bookbinding, &c.	10,151	3,192	655	3,847	62	9	11.87	3.80	1.80
Food and Drink	10,614	14,481	1,000	15,541	13	8	3.38	10.60	7.27
Manufacturing, n.e.i.	15,652	12,202	1,506	13,708	22	10	7.59	9.33	6.41
Railways and Tramways	18,486	35,406	.....	35,406	10	5	8.25	9.69	16.37
Other Land Transport	2,530	6,089	.....	6,089	8	4	...	18.86	2.85
Shipping and Sea Transport	9,357	19,750	.....	19,750	9	6	.23	13.89	9.24
Labour Councils and Federations of Employees	8,594	.....	.....	.....	...	...	...	2.09	...
Eight-hour Committees	1,505	.....	.....	.....	...	...	...	.07	...
Miscellaneous	9,753	25,897	1,603	27,500	7	1	14.15	7.95	12.87
Total	190,346	206,514	7,194	213,708	17	10	20.36	7.14	100.00

The strongest unions financially are those connected with the printing and bookbinding trades. Next in order of importance, measured by accumulated assets per capita of membership, are the mining and engineering groups. In all three of the transport groups the accumulated assets are low.

The relation of the expenditures for benefits, and for legal charges, to the total expenditure, discloses some interesting variations, *e.g.*, the expenditure on benefits rises almost to one-half the total expenditure in the mining and smelting group, and falls as low as .03 per cent. in the clothing, boots, and hats group, while on the average it represents 20.36 per cent. of the total. Legal charges, including expenditure in connection with wages boards, &c., rise to 28.24 per cent. of total expenditure in the clothing, boots, and hats group, and fall to 2.96 per cent. in the rural group, the average being 7.14 per cent. for all groups.

As regards expenditure for benefits, the largest outlay was for unemployment benefit, and practically the whole amount was expended by the Unions in two groups, *viz.*, mining, quarrying, &c., and engineering and metal working.

Trade Unions of employees embrace all types of occupations, and the majority of wage-earners, the impetus towards organisation being derived

immediately from the necessity of establishing the status of the Union as an industrial body.

The most noticeable features of their recent development are the extension of organisation to embrace the trades in which women workers are numerous, and the consolidation of branches of industries.

Consolidation.

The numerical strength of employees' unions in 1913 is displayed in the following statement:—

Membership.	Unions.	Membership.	Unions.
Exceeding 20,000	1	Exceeding 2,000	7
„ 12,000	1	„ 1,500	15
„ 11,000	1	„ 1,000	9
„ 8,000	2	„ 500	22
„ 7,000	2	„ 100	78
„ 6,000	1	Less than 100	42
„ 5,000	1	Not stated ...	8
„ 4,000	4		
„ 3,000	5	Total ...	199

During recent years considerable progress has been made in the direction of closer unionism of subsidiary or allied industries; various conferences have been held with the object of promoting uniformity of trade conditions and of wages throughout Australia.

Organisation of Women Workers.

At the end of 1913 women unionists numbered 7,194, and represented 3.37 per cent. of the total membership. In industrial groups the women unionists were distributed as follows:—

Group.	Membership.			Percentage of Total.	
	Males.	Females.	Total.	Males.	Females.
Clothing ...	3,916	2,370	6,286	1.83	1.11
Printing ...	3,192	655	3,847	1.49	.34
Food and Drink ...	14,481	1,060	15,541	6.78	.50
Manufacturing ...	12,202	1,506	13,708	5.72	.79
Professional ...	1,948	369	2,317	.91	.17
Domestic ...	4	52	56	.....	.02
Shops and stores ...	3,822	382	4,204	2.72	.18
Watchmen, Caretakers, and Cleaners ...	700	480	1,180	.83	.23
Hospitals, &c. ...	500	270	770	.23	.13
Other Groups ...	163,740	60	163,800	36.62	.02
Total ...	206,514	7,194	213,708	66.63	3.37

LABOUR FEDERATIONS, &C.

The financial operations of the Labour Federations and Eight-hour Demonstration Committees for the year 1913 are summarised as follows:—

Group.	Number.	Receipts.				Management and Other Expenditure.	Assets.		
		Capitation Fees.	Interest.	Other Receipts.	Total.		Cash.	Other.	Total.
Labour Federations ...	4	£ 1,404	£ 4	£ 823	£ 2,231	£ 2,056	£ 558	£ 8,036	£ 8,594
Eight-hour Committees	3	16	25	3,189	3,230	3,037	1,465	41	1,506

Local unions are affiliated with the Labour Federations, which have their headquarters at Sydney, Newcastle, and Broken Hill—the three largest industrial centres of New South Wales.

COMMONWEALTH INDUSTRIAL ARBITRATION.

The legislation of the Commonwealth Parliament relating to arbitration is embodied in the Commonwealth Conciliation and Arbitration Act, 1904-14, and the Arbitration (Public Service) Act, 1911. These Acts are both mediatory and regulative. The former constitutes an Industrial authority which, in the matter of intervention in industrial disputes, has jurisdiction only when such disputes extend beyond the limits of a single State.

The main objects of the Commonwealth Arbitration and Conciliation Act are:—(a) To prevent lockouts and strikes in relation to industrial disputes; (b) to constitute a Commonwealth Court of Conciliation and Arbitration having jurisdiction for the prevention and settlement of industrial disputes; (c) to provide for the exercise of the jurisdiction of the Court by conciliation, with a view to amicable agreement between the parties; (d) in default of amicable agreement between the parties, to provide for the exercise of the jurisdiction of the Court by equitable award; (e) to enable States to refer industrial disputes to the Court, and to permit the working of the Court and of State industrial authorities in aid of each other; (f) to facilitate and encourage the organisation of representative bodies of employers and of employees, and the submission of industrial disputes to the Court by organisations, and to permit representative bodies of employers and of employees to be declared organisations for the purposes of this Act; (g) to provide for the making and enforcement of industrial agreements between employers and employees in relation to industrial disputes.

The Commonwealth Court of Conciliation and Arbitration consists of a President appointed from among the Justices of the High Court. The President is charged with the duty of endeavouring to reconcile the parties to industrial disputes, and to prevent and settle industrial disputes in all cases in which it appears to him that his mediation is desirable in the public interest. In the discharge of these duties he may convene compulsory conferences under his own presidency.

The Court has jurisdiction to prevent and settle industrial disputes certified by the Registrar as proper to be dealt with by it in the public interest, or submitted by an organisation by plaint or by a State industrial authority, or referred by the President after a compulsory conference at which no agreement was reached. The Court endeavours to induce the settlement of disputes by amicable agreement, or, failing an agreement,

determines the disputes by award. The awards are made for a specified period up to a maximum of five years, and after the expiration of the definite period they continue until a new award is made, unless the Court orders otherwise. A State law or an award or order of a State industrial authority becomes invalid if inconsistent with an award or order of the Commonwealth Court of Conciliation and Arbitration.

An award of the Court may not be challenged or questioned, but in any proceeding before the Court the President may state a case for the opinion of the High Court upon a question of law.

The extensive powers conferred upon the Court include the power to hear and determine disputes, to make orders or awards, to impose penalties for breach or non-observance of orders, &c., and to grant a minimum rate of wages and preference for members of organisations.

Registration of organisations of employers or of employees, representing at least 100 employees, is provided for. Registered organisations are entitled to submit disputes to the Court, and to be represented before the Court in the hearing of disputes.

Any organisation may make an industrial agreement with any other organisation or any person for the prevention of disputes by conciliation and arbitration.

The Arbitration (Public Service) Act, 1911, extends the provisions of the Commonwealth Conciliation and Arbitration Act to organisations of employees in the Public Service of the Commonwealth; an association of less than 100 employees in any industry in the Public Service may be registered as an organisation, if its membership comprises at least three-fifths of all employees in that industry in the Public Service of the Commonwealth. Registered organisations may submit to the Court by plaint any claim relating to salaries, wages, rates of pay, or terms or conditions of service or employment of members.

At 31st December, 1914, there were 18 Commonwealth awards and 179 industrial agreements in force, of which 16 awards and 96 agreements apply in New South Wales. At 1st May, 1914, there were 5 organisations of employers and 106 of employees on the Register.

A claim for preference to unionists has been included in nearly every dispute dealt with by the Commonwealth Court, but it has been granted in only one instance, as it is the usual practice to refuse to order preference in the cases of respondents who undertake not to discriminate against members or officials of the associations.

As regards conciliation, good results have been obtained in the settlement of disputes through conferences; between 1st January, 1910, when the provision of the Act authorising the President to convene compulsory conferences came into force, and 1st May, 1914, thirty-three conferences were summoned; twenty-five resulted directly in the settlement of disputes and eight were not directly effective.

STATE INTERVENTION IN INDUSTRY.

The year 1851 marks the starting-point in the history of industrial development in New South Wales. Till that time Australia seemed destined to rank as a purely pastoral country, distance from the world's markets and sparseness of population militating against progress in agriculture or other forms of production. The period immediately preceding the discovery of payable gold deposits was marked by over-speculation in land, culminating in acute financial distress in 1842; and subsequently there occurred an appreciable fall in wages. During 1849, the labour market in Sydney, where

the conditions prevailing throughout the country were duly reflected, was relieved of a proportion of its surplus labour by the commencement of emigration to California consequent upon gold discoveries there. In 1851, the discovery of gold in payable quantities in New South Wales occurred opportunely to relieve the still prevailing depression; and from 1851 to 1858 the attention of the population was directed chiefly to gold-seeking. The discoveries and developments of this period have been far-reaching in their economic effects upon standards of living, prices of commodities and of labour, expansion of industry, extension of means of communication, distribution of population, and particularly upon the direction of immigration. Between 1859 and 1862 a degree of stability in industry was evolved, though the period was essentially one of transition, characterised by decreasing gold-winnings, with a corresponding diminution in the earnings of working miners. Naturally, many gold-seekers were diverted to other pursuits. The Land Act of 1861 helped materially in the renewal of activity in agrarian pursuits; and the history of the last half-century is written in the fairly steady and consistent development of a varied industrial life, though marked by vicissitudes of season and by variations in policy and procedure consequent upon the necessarily experimental nature of much legislation.

A landmark in this half-century is the critical period which closed with financial distress in 1893. Considerable expenditure of public moneys and a vigorous policy of immigration combined to attract population to New South Wales, and with the curtailment or cessation of expenditure on public works, the story of fifty years before repeated itself in a labour market again congested. The year 1885 witnessed the attainment of the highest point in a scale of wages which had improved steadily for some fifteen years; and in 1886, coincidentally with the restriction in public and private business, came a fall in prices of commodities and a more or less general reduction in wage standards.

In the six years, 1886-1892, strikes and trade disputes were common occurrences, not merely in New South Wales, but throughout Australia, and thenceforward strikes figure more or less prominently in the industrial history of the State.

The more important of the early dislocations are remarkable for their spread and duration. In 1886-7 collieries in the southern district were idle for nearly twelve months as the result of disputes and strikes. In 1888 coal-miners in the northern mining district were on strike for several months. In 1888-9 the completion of various public works released some 12,000 men, mainly unskilled labourers, from the ranks of industry. In 1890 the maritime and the pastoral industries were in upheaval, and in 1892 silver mines at Broken Hill were idle for nearly three months in consequence of strikes. The year 1895 represents the turning-point. The wage rate, which may be taken as the industrial barometer, and which for ten years previously had been low and variable, evidenced a degree of stability, and since that date no extraordinary fluctuations have been apparent, but the wage standard has been improved consistently.

The complications affecting the industrial community between 1886 and 1896 are reflected in the Statute Laws of New South Wales, particularly as relating to the regulation of industry. Various Bills were prepared, and one introduced in the Legislature, proposing intervention between employers and employees. In 1890 the Census and Industrial Returns Act empowered the Government Statistician to report upon the conditions prevailing in the factories within the State; but in spite of an accumulation of evidence as to the urgent necessity for regulative supervision, legislative action was deferred till 1896, when the Factories and Shops Act

was passed, following the lead of the Victorian Act of 1885. In December, 1899, as a corollary to the regulation of the manufacturing industry, regulation of shops, in regard to hours during which goods might be sold, was initiated by the Early Closing Act, 1899.

Coincidentally with these efforts to regulate the conditions prevailing in manufacturing and retail establishments, attention was given to the problem of regulating the relations between employers and employees generally, so as to obviate dislocations of industry. In 1882 a Bill was introduced into Parliament for the establishment of a council composed of members of Employers' Unions and of the Trades and Labour Council, to provide for conciliation on the lines adopted in France, but the Bill was shelved.

In 1887 a scheme, based upon English precedent, was drawn up by a joint committee of the Employers' Union and of the Trades and Labour Council, but was rejected. In the same year a Trades Conciliation Bill was introduced in the Legislature, the machinery projected following the lines of the voluntary conciliation which had for some years proved satisfactory in the building trade. This measure also failed to become law; but Parliamentary attention was focussed on the subject of mediation in industrial disputes, and the Parliament of New South Wales has since given much attention to legislation having for its object the improvement of the industrial conditions of the people generally, and involving particularly the settlement of trade disputes and the regulation of hours of employment and rates of wages.

The legislation enacted in this State has been of an experimental nature, subject to modification in the light of experience gained, and of the exigencies of time and the ever-changing conditions of an advancing civilisation, involving new conditions of labour and new methods of production and distribution.

MEDIATORY LEGISLATION.

The effective history of mediatory legislation dates from 1890, when a Royal Commission of Inquiry was appointed, following on the maritime strike in that year, to investigate the causes of industrial disputes and to indicate means for their prevention. A result of this Commission was the Trades Disputes Conciliation and Arbitration Act, 1892. As the preamble of the Act declares, the establishment of Councils of Conciliation and of Arbitration for the settlement of disputes between employers and employees should conduce to the cultivation and maintenance of better relations, and of more active sympathy, between employers and their employees, and be of great benefit in the public interest by providing simple methods for the prevention of strikes and disputes, through which industrial operations are liable to serious and lasting injury, against the welfare and peaceful government of the country.

The Act was intended to be operative for four years from 31st March, 1892; its initiation was facilitated by the progress made by trade unionism, both in the way of organisation of trades and by securing direct representation in Parliament.

Councils of Conciliation and of Arbitration were established, to which applications were referable from employers and employees regarding disputes or claims. Pending the division of the State into industrial districts, a general Council of Conciliation was projected, to be composed of twelve to eighteen representatives elected by employers and employees. The district councils were to be elected for two-year terms, and to be composed of two representatives of employees' associations registered under the Trade

Union Act, and two of registered employers' associations. Apart from the ordinary Councils of Conciliation, special conciliators might be appointed by the parties to a dispute. Then, supplementary to the Councils of Conciliation, there was a Council of Arbitration elected for a similar term of two years, but composed of three members, being representatives selected by employers and by employees, with a third chosen by mutual agreement of the first two. To this council matters might be referred after failure of the Council of Conciliation, or directly, and the Council of Conciliation might sit as assessors to the Council of Arbitration, if the parties so agreed. The latter council sat as an open court, and was guided by the principles of equity and good conscience. Representation by attorney was not permissible, but the council had full power to summon witnesses, and to enter upon premises for inspection. Awards, which had to be issued within one month of conclusion of sittings, were enforceable by legal process only by prior agreement of the parties, but the claims were made to deal with matters of wages, workmanship, conditions of work, quality of food supplied to employees, and sanitation of workshops.

As this Act did not compel either party to a dispute to submit its case to the Council of Arbitration and Conciliation, nor to abide by any award made in a case submitted, it proved ineffective. From the date of appointment of the two councils to the end of 1894 only one case for conciliation and one for arbitration were taken. Negotiations in other cases were unsuccessful. The Parliamentary vote for administration lapsed on 31st December, 1894; and though the Act remained in force till 31st March, 1896, its machinery having broken down, it was inoperative. During this period, however, the first regulative legislation in regard to factories and shops was passed, viz., the Factories and Shops Act, 1896.

The Conciliation and Arbitration Act, 1899, aimed at the prevention, as well as the settlement, of trade disputes; it authorised the Minister, in cases where a disagreement was pending, or probable, between an employer and employees, to direct inquiry into the causes and circumstances of the difference, and to take steps to enable the parties to meet together under the presidency of a chairman mutually selected, with a view to an amicable settlement. In the event of failure, the Minister could direct a public inquiry into the causes of the difference, and on the application of either employers or employees, or of both, could appoint a board of conciliation. On the application of both parties an arbitrator could be appointed, but parties to a dispute were not compelled to submit their cases, and to remedy the imperfections disclosed further legislation was enacted.

These initiatory enactments were aimed at the elimination of the strike as an instrument in the settlement of industrial disputes, or at least at minimising the disastrous consequences to which the community becomes liable. Contemporary with these mediatory measures legislation was originated in Victoria to deal with sweated industries, and to determine fair wage rates generally. Subsequent legislation in this State associated these two ideals by embodying in a specific enactment the combined objective, the prevention of strikes and lock-outs, and the assessment of fair wages and working conditions.

Arbitration.

The Industrial Arbitration Act, 1901, provided for the registration and incorporation of industrial unions and the making and enforcing of industrial agreements; constituted a Court of Arbitration for the hearing and determination of industrial disputes and matters referred to it; defined the jurisdiction, powers, and procedure of such Court, and provided for the

enforcement of its awards and orders. This Act remained in force until the 30th June, 1908; but in the year 1905 it was so extended by the Industrial Arbitration (Temporary Court) Act that if the Registrar, or in cases of appeal the Court, were satisfied that compliance had been made with the Act, there could be registered, as an industrial union, any person or association of persons, or any incorporated company or any association of incorporated companies, employing on an average, taken per month, not less than fifty employees; and any trade union or association of trade unions.

An industrial union could make with another industrial union or with an employer, an agreement in writing relating to any industrial matter; the Court had jurisdiction to hear and determine, according to equity and good conscience, industrial disputes and industrial matters referred to it, and to make orders or awards in pursuance of such hearing and determination. An industrial dispute was defined to be a dispute in relation to industrial matters arising between an employer, or industrial union of employers, and an industrial union of employees or a trade union, and included a dispute arising out of an industrial agreement.

This Act, in providing for the prevention of strikes and lock-outs, made it a misdemeanour for any person who, before a reasonable time had elapsed for a reference to the Court of the matter in dispute, or while any proceedings were pending in the Court in relation to an industrial dispute, did any act or thing in the nature of a lock-out or strike; or suspended or discontinued employment or work in any industry; or instigated to or aided in any of the abovementioned acts.

Industrial Disputes and Wages Boards.

In the Industrial Arbitration Act, 1901, the principal innovation lay in the extension of the definition of industrial disputes, so as to include consideration of conditions prevailing in industries in which no dispute existed technically. Under the Act of 1908, which represents the third stage in the development of an industrial code, a social ideal was definitely evolved that every normal individual is entitled to a reasonable standard of comfort consistent with the welfare of the community.

All awards, orders, and directions of the Court of Arbitration, and all industrial agreements current and in force at the commencement of the Act, remained binding on the parties, and on the employers and employees concerned, for the period fixed by the Court, or by the award, or agreement, or where no period was fixed, for one year from 1st July, 1908. Any industrial agreement might be rescinded or varied in writing by the parties, any such variation, if filed with Registrar, to be binding as part of the agreement.

Provision was made for the registration of trade, as industrial unions, and the expiration of the Industrial Arbitration Act, 1901, did not affect the incorporation of industrial unions registered under that Act, while any trade union registered under the Act might make a written agreement with an employer relating to any industrial matter.

The Industrial Court consisted of a judge, sitting with assessors, when necessary.

A board could be constituted for an industry on application to the Industrial Court by—

- (a) an employer or employers of not less than twenty employees in the same industry;

- (b) a trade union registered under the Act having a membership of not less than twenty employees in the same industry;
- (c) an industrial union whose members are such employers or employees; or
- (d) where there is no trade or industrial union of employees in an industry having membership and registered as aforesaid, or where such union fails to make application, then not less than twenty employees in such industry.

Each board consisted of a chairman and not less than two (nor more than four) other members as determined by the Industrial Court, one-half of whom were employers and the other half employees at some time engaged in any industry or group of industries for which the board was constituted. Where the employers or employees consisted chiefly of women and girls, the Court could waive this qualification of quondam employment.

A board with respect to the industry or group of industries for which it was constituted might—

- (a) decide all disputes;
- (b) fix the lowest prices for piece-work, and the lowest rates of wages payable to employees;
- (c) fix the number of hours and the times to be worked in order to entitle employees to the wages so fixed;
- (d) fix the lowest rates including allowances as compensation for overtime and holidays and other special work;
- (e) fix the number or proportionate number of apprentices and improvers, and the lowest prices and rates payable to them, according to age and experience;
- (f) appoint a tribunal, other than the board itself, for the granting of permits allowing aged, infirm, or slow workers, who are unable to earn the lowest rates of wages fixed for other employees, to work at the lowest rates fixed for aged, infirm, or slow workers. If no such tribunal is provided by the board, the Registrar has jurisdiction to grant such permits;
- (g) determine any industrial matter;
- (h) rescind or vary any of its awards.

At any time within one month after publication of an award by a board, any trade or industrial union or any person bound by the award could apply to the Industrial Court for leave to appeal to such Court. The Court alone had power to rescind or vary any award or order made by it, or any award of a Board which had been amended by the Court, or any award of a Board which had been dissolved or was no longer in existence; but where public interests were endangered, the Crown might intervene in proceedings, and make any necessary representations; or, further, the Crown might at any time after the making of an award, apply for leave, and appeal to the Industrial Court. Under the Amending Act of 1910 proceedings for the enforcement of awards and penalties were made referable to a Magistrate's Court, and in accordance with this proviso the Industrial Registrar's Court was constituted as a Court of Petty Sessions.

Conciliation and Arbitration.

The laws in force in the first period of attempted legislative intervention in industrial difficulties, viz., the Trades Disputes Conciliation and Arbitration Act, 1892, and the Conciliation and Arbitration Act, 1899, were based on the principle of voluntary conciliation as the most effective instrument in the adjustment of grievances. The latter Act was short-lived, being

replaced by the Arbitration Act of 1901, which remained in force for seven years until 1908. From this Act the principle of pure conciliation was omitted, its ineffectiveness having been shown primarily in the lack of a legal tribunal to enforce the findings of the Court. The basis of the rejection of conciliation lay in the precedent established in New Zealand, where also its ineffectiveness was regarded as proven, and the principle was being abandoned in favour of arbitration. Into the Act passed by the State Parliament in 1901 was introduced a principle quite new to the earlier arbitration enactments, viz., the extension of the arbitration principle beyond the area of an existing dispute, to the regulation of wages and working conditions generally.

On account of the large number of cases promptly cited before the Industrial Court, and the possibility of securing an injunction against the Court, there ensued a state of congestion ultimately culminating in considerable industrial unrest, when experience had proved the Act to be cumbered by technicalities.

In the Industrial Disputes Act of 1908 an effort was made to combine the relatively simple procedure of conciliation courts with the compulsory powers of the Arbitration Court as to enforcement of findings and awards, while still maintaining the machinery for regulating wages and working conditions in industry generally. But after some three years' experience, adverse criticism was directed against this the fourth attempt at settlement of the industrial problem, the most serious objection being found in the multiplicity of boards and the danger of overlapping of awards, due to an entire absence of co-ordinating principles.

In 1911-12, while the Industrial Disputes Act, 1908, and its amendments, were still operative, provisional conciliatory machinery was established pending reconsideration by Parliament of the whole position as to mediatory and regulative legislation.

The operations of this tribunal are shown subsequently in connection with the operation of conciliatory machinery. The results of this measure of intervention were deemed so satisfactory as to be worthy of permanence; and in the Industrial Arbitration Act, 1912, mediation is a prominent feature.

EXISTING LEGISLATION.

The existing legislation of the State for the constitution of industrial tribunals is comprised in two enactments, the Industrial Arbitration Act, 1912, and the Clerical Workers Act, 1910; in intimate relationship with these Acts, as constituting arbitral tribunals, is the Gas Act, 1912, providing for regulation of a specific industry.

Industrial Arbitration.

The principal points of the Industrial Arbitration Act, 1912, relate to the operations of Industrial Boards, &c. Provision is made for the registration of industrial unions of employers and employees, and also for the cancellation of registration by request, or by determination of the Court. Unions of employees may make industrial agreements with employers, or with any other industrial union, such agreements to be filed, and binding for a maximum period of five years.

In the constitution of the Court of Industrial Arbitration, as a superior Court, and Court of Record, governed in procedure and decisions by the rules of equity and good conscience, provision was made for the appointment of an additional Judge or of a deputy, and for the constitution of Industrial Boards, of two or four members equally representing employers and employees, with a Chairman appointed by the Minister. The Court is

empowered to recommend "such transposition, division, combination, re-arrangement, or regrouping of" scheduled industries as may be desirable, and where question arises as to the demarcation of callings, may constitute a special board to determine such question. The maximum tenure of office by Board members is three years. Concerning the jurisdiction and procedure of Boards and of the Court, details are given hereafter. Where public interests are, or would be, likely to be affected, the Crown may intervene in proceedings before a Board or the Court, or appeal from an award of a Board, and make such representation as may appear necessary to safeguard the public interests.

In the enforcement of awards and orders, "any property of a union, whether in the hands of trustees or not, shall be available to answer any such order."

Appeal from the Registrar or an Industrial Magistrate lies to the Court, any decision of the Court to be final.

Penalties imposed may be recovered in courts of summary jurisdiction, and paid to the public revenue.

Clerical Workers.

Complementary to the Industrial Disputes Act, 1908, and its amendments, the Clerical Workers Act, 1910, was passed to enable the constitution of a tribunal to fix a minimum wage for persons engaged in clerical work, as difficulty was experienced in applying the machinery of the Industrial Disputes Act as to Wages Board to work of this nature, which, moreover, was not an industry or calling scheduled under the Act. The Clerical Workers Act provides that, on application to the Industrial Court by any employer of not less than ten clerks, or by not less than ten clerks in the same or similar employment, the Court may—

(1) Fix the minimum wages and rates for overtime payable to clerks, such minimum to be a real minimum, based on the wage which, in the Court's opinion, should be paid to

(a) The lowest grade of efficient clerical labour, if it does not classify such labour; or

(b) The lowest grade of efficient labour in each class, if it classifies such labour.

The classification is determinable by age, experience, qualification, nature of employment, or in any other way practical, expedient, and just.

(2) Provide specially for aged, infirm, or slow workers.

The provisions of the Industrial Disputes Act, 1908, were applicable for the making and enforcing of awards, which would be binding for three years.

No tribunal has been constituted under this Act, which remains supplementary to the Industrial Arbitration Act, 1912; nor have any proceedings whatever been taken under its provisions.

Gas Industry.

The Gas Act, 1912, is designed to prescribe standards of illuminating power, purity, and pressure for gas, and to regulate the price of gas and the operations of suppliers. In regulating the price of the commodity, the regulative authority must allow for variations in cost of production, due to alterations in labour conditions, including wages, made by award of a constituted tribunal.

The meters tested during the year 1914 numbered 48,832, of these, 46,342 were stamped as correct, and 2,490 were found incorrect.

JURISDICTION AND PROCEDURE OF REGULATIVE TRIBUNALS.

Development of Jurisdiction.

The Industrial Arbitration Act, 1901, aimed at the determination of disputes referred to it rather than at the constitution of a regulative tribunal. The jurisdiction of the Court of Arbitration extended to all industries except domestic service, and its awards applied without limitation of area throughout the State.

The Industrial Disputes Act, 1908, aimed at the constitution of Wages Boards to determine the conditions which should govern employment in specified industries. Boards could be constituted for industries or occupations or local sections of industries or for any division or combination of employees in industries as might be judged expedient by the Court. In practice, boards were constituted for industries, but employees were associated according to trades, to materials worked in, or to goods made, with the result that there were boards for trades, for business, and for industries or associations of trade—all with exemptions for certain classes of employees or employers.

Under the Industrial Arbitration Act, 1912, the powers of the Court and of its subsidiary tribunals are not limited to the relationships of employment. The range of industries and callings is defined by schedule, and boards may be constituted for any industry or calling or for division or combination in such industry or calling. In practice, old boards have been re-established so far as is consistent with the conditions of the Act. Thus a material distinction between the Wages Board system as operative under the Industrial Disputes Acts, 1908-1910, and the Industrial Boards, provided under the Industrial Arbitration Act, 1912, lies in the grouping of allied industries under one chairman, and in the arrangement of such boards more upon the basis of craft or calling than of industry, the ultimate aim being the maintenance of some twenty-eight subsidiary Arbitration Courts, each having power to deal with a group of allied industries, but subject to the general control of the Court of Industrial Arbitration, which in its supreme direction will co-ordinate the work of the minor courts.

*Industries and Callings.**Schedule I.*

The following extended form of the Schedules I and II to the Act displays the method of grouping of industries and callings, as at the end of 1914. The first schedule covers the majority of industries, and is capable of extension from time to time to meet the requirements of advancing opinions. The additions made to the original Schedule I, published in July, 1912, are indicated in heavy type:—

Designation of Group.	Industries and Callings.
Building trades ...	Carpenters, joiners, stonemasons, bricklayers, slaters, tilers, shinglers, plasterers, gantry and crane men, painters, paper-hangers, decorators, signwriters, plumbers, gasfitters, builders' labourers, and all other employees engaged in the erection, alteration, or demolition of buildings, monumental masons and assistants, marble and slate workers, tuckpointers, tile-layers, stone-machinists and all other employees engaged in the preparation of stone for use in the erection of buildings.

Designation of Group.	Industries and Callings.
Clothing trades ...	Tailors, tailoresses, machinists, cutters and trimmers, pressers, brushers, folders, and examiners, felt and straw hat makers, textile workers, and all other persons engaged in the manufacture of clothing, felt and straw hats, and textile goods.
Coal-mining (North)	Coal-miners, wheelers, surface hands, and other persons employed in or about coal-mines north of Sydney.
Coal-mining (South)	Coal-miners, wheelers, surface hands, and other persons employed in or about coal-mines in the Metropolitan and the South Coast Districts.
Coal and shale mining (West).	Coal-miners and shale-miners, wheelers, surface hands, and other persons employed in and about coal and shale mines west of Sydney.
Domestic	Hotel, club, restaurant, caterer, tea-shop, boarding-house, and oyster-shop employes, hairdressers, barbers, wig-makers, laundry employes, hospital nurses, and attendants, ambulance employes; employes of insane asylums and public charitable institutions, billiard-markers, medical school laboratory and microbiology department attendants.
Engine-drivers	Shore engine-drivers, firemen, greasers, trimmers, cleaners, and pumpers.
Gas-makers	All persons employed in the making, distribution, supply and lighting of gas, or the reading of gas-meters.
Food supply and distribution (No. 1).	Bakers and assistants, bread-carters, pastrycooks, employees in biscuit and cake factories, confectioners; butchers employed in shops, factories, slaughter-houses, and meat-preserving works, including carters; fruit preparers and canners and jam factory employes; candied-peel makers, employees in meat-preserving works, poulterers, and assistants; and yardmen, grooms, carters, and labourers employed in connection with any such callings.
Food supply and distribution (No. 2).	Milk and ice carters, milk weighers and receivers, aerated water, cordial, and beverage makers, brewery employes, malt-house and distillery employes, bottlers, washers, wine and spirit-store employes, ice manufacturers, cold-storage employes, freezing and cooling chamber employes; persons engaged throughout the State of New South Wales in the manufacture of butterine and margarine and in butter, cheese, and bacon factories, and persons employed in the milk industry in the county of Cumberland, including employes of dairymen and milk vendors; grooms, labourers, and carters employed in connection with any such callings.
Furniture trades ...	Cabinetmakers, wood-turners, french-polishers, upholsterers, chair-makers, blind-makers, mattress-makers, wire-mattress makers, picture-frame makers, carpet-planners, broom-makers, brush-makers, glass-workers, sawmill and timber-yard employes, wood machinists, coopers; wicker, pith-cane and bamboo workers; wood-carvers, pianoforte makers, billiard-table makers, loose cover cutters, carpet-cutters and fixers, and box and case makers, employes in box and case factories, and sawyers wherever employed; and yardmen, carters, grooms, and labourers employed in connection with any such callings.
Government Railways.	The employes of the Chief Commissioner of Railways and Tramways engaged on and in connection with the railways of the State.
Government Tramways.	The employes of the Chief Commissioner of Railways and Tramways employed on and in connection with the tramways of the State.
Government employes.	The employes of the Sydney Harbour Trust Commissioners, The Metropolitan Board of Water Supply and Sewerage, The Hunter District Water Supply and Sewerage Board, and Fire-Brigade employes, and all employes on Government dredges; assistants and attendants in the microbiological and other public bureaux of scientific investigation and research; nurses, attendants, and other employes in industrial homes, hospitals for the infirm, for the sick, and for the insane; health and sanitary inspectors.

Designation of Group.	Industries and Callings.
Iron and ship-building trades.	Engineers, smiths, boilermakers, iron-ship builders, angle-iron smiths, fitters, turners, pattern-makers, ironmoulders, black-smiths, coppersmiths, tinsmiths, sheet-iron workers, makers of gas-meters, makers, repairers, and fitters of cycles and motor cycles, makers, fitters, repairers, and installers of electrical apparatus and installations, and persons employed in the maintenance of electrical apparatus and installations or in running electrical plant, engine-drivers, firemen, greasers, trimmers, cleaners and pumpers employed on land, ship and boat builders, and ship painters and dockers; farriers, employees engaged in the manufacture of iron or steel, wire-netting makers, wire-workers, wire-fence, nail and tubular gate makers, iron-pipe makers, moulders, grinders, dressers, and polishers of any metal, and brassfinishers, canister makers, metal-ceiling employees and sheet-metal fixers ; employees engaged in the manufacture of metallic bedsteads, metallic cots, metallic chair-beds, and metal parts of perambulators, waggon and carriage makers and repairers, agricultural and pastoral implements, and machinery makers and repairers, stove, oven and grate makers and repairers, and plano-frame makers, ship joiners, and ship carpenters, and all other persons engaged in the iron and ship-building trades ; and all labourers and assistants employed in connection with any such callings.
Leather trades ...	Boot, shoe, and slipper makers, coachmakers, coachpainters, coach-trimmers, and wheelwrights, saddle, harness, portmanteau, and bag makers, leather makers, tanners and curriers, fellmongers, wool-classers, wool and basil workers, leather-dressers, and boot, shoe, and slipper repairers ; and all labourers and assistants employed in connection with any such callings.
Labourers ...	Persons engaged in the construction of railways, tramways, roads, bridges, and water conservation and irrigation works, cement makers, concrete workers, rock-choppers, plate-layers, hammer and drill men, timberers, pipe-layers, manhole builders, tool-sharpeners, navvies with or without horses and drays, gangers, employees of shires or municipal councils, and of the City Council, timber-getters and carters; persons engaged in the demolition of buildings, sewer miners, lime burners and makers, surveyors' labourers ; and all labourers and assistants employed in connection with any such callings.
Manufacturing (No. 1).	Brick, tile, pipe, pottery, terra-cotta, and chinaware makers and carters, tobacco, cigar, and cigarette makers and employees, bag and sack makers, boiling-down employees, bone-millers and manure makers, makers of kerosene, naphtha, and benzine, or any other shale products, all persons engaged in or in connection with the manufacture and repair of rubber goods, sail, tent, and tarpaulin and canvas makers ; and all labourers and assistants employed in connection with such callings.
Manufacturing (No. 2).	Cardboard-box makers, grain, starch, and mill employees, condiment makers, tea, starch, pickles, and condiment packers, soap and candle makers, jewellery manufacturers and jewellers, electroplaters, goldsmiths, silversmiths, gilders, chasers, engravers, lapidaries, persons engaged in the manufacture or repair of watches, clocks, electroplate ware, spectacles, optician employees (mechanical), metal badge workers, wholesale drug factories' employees, coffee and other mill employees, persons employed in or in connection with the manufacture and refining of sugar, and in all the products of sugar-cane ; and all labourers and assistants employed in connection with any such callings.
Metalliferous Mining (Broken Hill).	Miners and all persons engaged in and about the mines and quarries and ore smelting, refining, treatment, and reduction works of Broken Hill.

Designation of Group.	Industries and Callings.
Metalliferous Mining (General).	Metalliferous miners, limestone miners, quarrymen, and all persons engaged in and about metalliferous and limestone mines, quarries, mining dredges, or sluicing processes, ore smelting and refining treatment and reduction works, employees engaged in or in connection with mining for minerals other than coal or shale, and all persons engaged in and about diamond and gem-bearing mines.
Pastoral and rural workers.	Wool-classers in charge of wool-rooms in shearing-sheds, or in charge of both wool-rooms and shearing-boards in shearing-sheds, shearers, shearing-shed employees, shearers' cooks, wool-pressers, rouseabouts.
Printing trades ...	Compositors, linotype, monoline, and other type-setting or type-casting machine operators, and attendants, letter-press machinists, book-binders, paper-rulers, lithographic workers, metal varnishers, stone polishers, guillotine machine cutters, process engravers, paper makers, and all persons employed in paper mills, stereotypers, electrotypers, readers, feeders, flyers, publishing employees, book-sewers, folders, numberers, wire-stitchers, perforators, embossers, tin-box makers, copper-plate printers, metallic printers, box cutters and cardboard box makers, and all other persons employed in or in connection with the callings herein mentioned or the printing industry.
Professional and shop workers.	Professional musicians, journalists, and paragraph writers, and newspaper and magazine illustrators, shop assistants, cashiers, in shops and office assistants in shops, warehouse employees, employees in any branch of the process of photography, employees in dental workrooms, and theatrical employees.
Shipping ...	Shipmasters, officers, marine engineers, marine motor drivers and coxswains , sailors, lamp-trimmers, donkeymen, greasers, firemen, trimmers, deckhands, stewards, cooks, persons employed on ferry boats, dredges, tug-boats, and ferry-beats, turnstile hands, ticket and change bands, wharf cleaners, and all other persons employed in connection with ferry services.
Transport ...	Drivers and loaders of trolleys, drays, and carts, wharf labourers and stevedores, coal-lumpers and coal-trimmers, cab and omnibus drivers, motor-waggon drivers, wood and coal carters, yardmen, grooms, and stablemen, storemen and packers; and all persons in any way employed in connection with the carting of goods, produce, or merchandise.
Miscellaneous ...	Billposters, undertakers, and undertakers' assistants and drivers, livery stable employees, drivers and buggy boys employed in connection with the use of light vehicles for commercial purposes , cab, omnibus, taxi-cab, and motor-car drivers; coke-workers, rope-makers, lift attendants, office-cleaners and caretakers, watchmen, caretakers and cleaners employed in or in connection with any place of business, employees engaged in the working and maintenance of privately-owned railways. Any such division, combination, arrangement, or re-grouping of the employees in the industries or callings mentioned in this Schedule, whether according to occupation or locality as the Minister, on the recommendation of the Court, may direct.

In the constitution of Boards, the demarcation of callings, and the designation of special boards, the guiding principle was the numerical limitation of awards and the prevention of overlapping, consistently with the preservation of established conditions and the curtailment of administrative expenses. In regard to Government employees, section 26 of the Act specifies that "Employees employed by the Government of New South Wales or by any of its departments . . . shall be paid rates and prices not less than those paid to other employees not employed by the Government or its departments doing the same class of work under similar circumstances. But the

fact that employment is permanent or that additional privileges are allowed in the service by the Government or its departments shall not of itself be regarded as a circumstance of dissimilarity. The Court or an Industrial Board shall not fix rates and prices for such first-mentioned employees lower than those fixed for such other employees."

A judgment of the Industrial Court, as recorded on 19th February, 1913, after the hearing of argument in regard to applicant Government employees—Microbiology Department attendants under the Domestic group—decided that direct employees of the Crown were excluded from the jurisdiction of boards. To obviate the difficulty thus created provision was made specifically for the inclusion in the Schedule of certain Government employees.

Industries which are in the nature of home industries are scheduled separately:—

Schedule II.

Dressmakers, shirt, blouse, and costume makers, milliners and makers of underclothing (including outdoor workers).

This schedule also is capable of extension. The members of boards constituted under this heading are to be appointed by the Minister, the employers' and employees' representatives, and the jurisdiction of the board being recommended by the Court. Where employers or employees in the industries or callings consist chiefly of women, members may be appointed who are not engaged in those industries or callings; otherwise for the most part representative board members are men intimately connected with the particular industry or calling.

Functions of Boards.

The powers of boards in making awards include—

- (a) fixing the lowest prices for work done by employees, and the lowest rates of wages payable to employees, other than aged, infirm, or slow workers;
- (b) fixing the number of hours and the times to be worked in order to entitle employees to the wages so fixed;
- (c) fixing the lowest rates for overtime and holidays and other special work, including allowances as compensation for overtime, holidays, or other special work;
- (d) fixing the number or proportionate number of apprentices and improvers and the lowest prices and rates payable to them;
- (e) determining any industrial matter;
- (f) rescinding or varying any award made in respect of any of the industries or callings for which it has been constituted;
- (g) declaring that preference of employment shall be given to members of any industrial union of employees over other persons offering their labour at the same time, other things being equal: Provided that where any declaration giving such preference of employment has been made in favour of an industrial union of employees such declaration shall be cancelled by the Court of Arbitration if at any time such union, or any substantial number of its members, takes part in a strike or instigates or aids any other persons in a strike; and if any lesser number takes part in a strike, or instigates or aids any other persons in a strike, such court may suspend such declaration for such period as to it may seem just.

Where an institution, carried on wholly or partly for charitable purposes, provides for the food, clothing, lodging, or maintenance of any of its employees or any of its inmates who are deemed to be employees, the board in its award as to the wages of such employees or inmates, shall make due allowance therefor. The board may exempt such institution from all or any terms of the award, where the food, clothing, lodging, and maintenance provided by the institution, together with the money (if any) paid by the institution to such employees or inmates as wages, are at least equal in value to the value of the labour of such employees or inmates.

Awards are binding for a maximum period of three years on all persons engaged in the industries or callings and within the locality covered. Appeal lies to the Court, but the pendency of an appeal does not suspend the operation of the award.

Proceedings before a board may be commenced by—

- (a) reference to the board by the Court or the Minister; or
- (b) application to the board by employers or employees in the industries or callings for which the board has been constituted.

To induce agreement in case of an application or reference the board will inquire expeditiously and carefully into the matter and anything affecting the methods thereof; it is empowered to enter, for inspection, premises used in the industry, to conduct its proceedings in public or in private, and in respect of witnesses to compel attendance and evidence as under section 136 of the Parliamentary Electorates and Elections Act, 1902. Advocates or agents appearing before the board must be, or have been, actually and *bona fide* engaged in one of the industries or callings in respect of which proceedings are taken.

In the first constitution of Industrial Boards under the Industrial Arbitration Act, 1912, the Court, recognising that industries in Broken Hill could be regulated best by local tribunals, excluded the county of Yancowinna from the jurisdiction of State-wide boards excepting those for textile workers, wire-mattress makers, broom-makers, brush-makers, glass-workers, fire brigade employees, gas-meter makers, motor and cycle makers and repairers, electrical fitters and repairers, wire-netting makers, tinsmiths, rock-choppers, cigar-makers, oil-workers, soap and candle makers, cardboard box makers, paper-makers, and musicians.

Subsequently local boards were constituted for three industries—painters, tailors, and bakers of Yancowinna.

Difficulty of administration ensued on the requirement of one chairman for a group of industries throughout the State, and ultimately the Court, using its power of transposition, dissolved the board covering tailors, etc., varied other boards, and constituted a Metalliferous Mining (Broken Hill) Group No. 1 board for members in county Yancowinna of the industries and callings mentioned in Schedules 1 and 2 of the Act, not already included in any existing board, and excepting miners and all persons engaged in and about mines and quarries, and ore smelting, refining treatment, and reduction works at Broken Hill.

A conciliation committee for county Yancowinna was designed with a magisterial tribunal for the enforcement of awards and claims.

Cost of Industrial Boards.

The expenditure for Industrial Boards, apart from administration, for years ended 30th June, has been as follows:—1909, £3,498; 1910, £9,665; 1911, £8,795; 1912, £11,264; 1913, £13,635; 1914, £14,149.

Fees, in addition to fares, payable to members of Boards and Committees, as determined by Regulation of 23rd October, 1912, are as follows:—

Chairman—£1 per hour for the aggregate of hours occupied by sittings of the Board.

Members—6s. 8d. per hour for the aggregate of hours occupied by sittings of the Board.

When his place of residence is so situated that he cannot reasonably return home at night from the place of meeting—

Chairman, at the daily rate of 17s. 6d. ; minimum payment, 10s.

Member at the daily rate of 12s. 6d. ; minimum payment, 7s. 6d.

Operations of Industrial Boards.

From February 1902, to July, 1908, the Court of Industrial Arbitration made eighty-nine awards. From July, 1908, to April, 1912, 213 Wages Boards under the Industrial Disputes Acts, 1908-1910, issued 430 awards.

To the end of June, 1914, 228 Boards had been constituted under the Industrial Arbitration Act, 1912, which was operative from 18th April, 1912; of these 17 were dissolved, and 211 remained in existence.

The number of awards of Boards for the year ended 30th June, 1914, was 126, and 125 variations were made; while the awards of the Court numbered 1, and variations and amendments 36; the number of awards in force at 30th June, 1914, was 266.

INDUSTRIAL AGREEMENTS.

Trade Unions were empowered under the Industrial Arbitration Act, 1901, to make written agreements with employers in regard to any industrial matters, the practice of collective bargaining, which had been followed by well-organised unions for years, then first receiving statutory sanction. Agreements relating to any industrial matter could be made by an industrial union with another industrial union or with an employer, and when filed, were binding between the parties. Rescissions and variations of agreements also had to be made in writing and duly filed.

Between 1901 and 1903 twenty-eight industrial agreements were filed, of which eleven were subsequently extended as common rules of the industry concerned. The validity of this procedure being questioned, the High Court of Australia decided in December, 1904, that it was a condition precedent to the exercise of the power of the Court of Arbitration to declare a common rule, that there should be in existence an award, order, or direction made by that Court in pursuance of a bearing or determination upon a reference under the Act. In November, 1905, the Court of Arbitration declared, by judgment, that the Court had no power to make an award, unless a dispute had been initiated and referred to the Court for determination. Thus an agreement was not convertible into an award for the purpose of making it a basis for a common rule. Under the Industrial Disputes Act, 1908, the power of the industrial union of employees to make an agreement was continued. Each agreement was binding on the parties, and on every person while remaining a member of the contracting trade union or branch. Under the Industrial Arbitration Act, 1912, the agreement may be enforced in the same manner as an award; its maximum duration is fixed at five years, as against three years under the previous enactments. Otherwise, conditions relating to agreements were not altered materially.

Following is a statement of the number of agreements filed in each year since 1902:—

Year.	Agreements Filed.	Year.	Agreements Filed.	Year.	Agreements Filed.
1902	} 28	1907	11	1911	27
1903		1908	12	1912	44
1904	18	1909	28	1913	36
1905	6	1910	21	1914	50
1906	13				

The noticeable increase in the number of industrial agreements made between 1905 and 1914 as compared with previous years, reflects the measure of encouragement afforded to voluntary collective bargaining.

At 31st December, 1914, eighty-two agreements were in force, to which thirty-five unions had been contracting parties; following is the number of agreements current arranged according to the industries concerned:—

Industries.	Agreements.	Industries.	Agreements.
Billiard-marking	1	Painting	1
Biscuit-making	4	Photography	1
Butchering... ..	1	Nail and Barb Wire Working	2
Caretaking and Cleaning	1	Printing	14
Engine-driving and Firing	5	Rubber Working	1
Do do Colliery	18	Saw Milling	1
Do do Locomotive	1	Shearing	1
Farrying	1	Shipping	9
Hospital Employees	3	Theatrical Employees ...	1
Journalism	4	Trolley-draysmen and Carters	4
Labourers	1		—
Mining—Coal	5	Total	82
Municipal and Shire Employees	2		

ENFORCEMENT OF AWARDS AND INDUSTRIAL AGREEMENTS.

Proceedings before the Court of Industrial Arbitration for the enforcement of awards, and recovery of penalties, included the following:—

Year.	Orders for Recovery of moneys due under Awards.	Convictions for—		
		Lock-outs.	Strikes.	Unlawful dismissal.
1909	8	2	5	3
1910	20	2	5	1
1911	12	...	132	...
1912	4	...	108	...
1913	3	...	362	...
1914	...	...	407	...

During the year ended 30th June, 1914, there were 461 cases in respect of strikes, and 407 convictions were recorded.

Since 1901, breaches of awards and industrial agreements have constituted grounds for prosecution of offences in the Arbitration and lower Courts of the State, the penalties recoverable being subject to some limitations. The practice of leaving the onus of enforcement of awards upon the parties interested proved unsatisfactory, and the duty of enforcing awards and

orders has been allocated to a professional prosecuting officer, aided by a staff of industrial inspectors.

The following statement shows the cases under the Industrial Arbitration Act, 1912, heard by the Industrial Magistrates during the two years ended 30th June, 1914:—

Classification.	1912-13.		1913-14.	
	Cases.	Con- victions.	Cases.	Con- victions.
Non-payment of Wages Awarded ...	97	35	114	35
Non-payment of Fines and Subscrip- tions to Union	71	30	136	41
Breach of Award or Industrial Agree- ment	1,116	837	1,333	995
Failure to keep Time-sheets and Pay- sheets of Employees	630	589	712	671
Failure to Exhibit Copy of Award ...	452	420	485	451
Obstructing Inspector ... ..	...	...	4	4

Particulars regarding judicial proceedings under the Industrial Arbitration Act have been shown in the chapter relating to Law Courts.

CONCILIATION COMMITTEES.

The machinery for conciliation provided by the Industrial Arbitration Act, 1912, is as follows:—

- (a) The Special Commissioner, charged with the responsibility of intervening in all cases where he becomes aware, directly or indirectly, of an actual or threatened dispute, which might emerge into a strike.
- (b) Conciliation Committees, to fulfil the same functions as the Commissioner, but in large-scale industries.
- (c) The power of the Minister for Labour and Industry to refer any matter to a Board, without formality.
- (d) The power of the Court of Industrial Arbitration to exercise the functions of a Board in dealing with any matter referred to it.

In the larger industries liable to minor disputes, Conciliation Committees were designed to promote settlement, it being left to the Special Commissioner to intervene in other industries.

Simultaneously with the formal constitution of Industrial Boards in July, 1912, certain conciliation districts were proclaimed, and the industries entitled to Conciliation Committees specified, as follow:—

Northern Colliery District.
Southern "
Western "
Cobar Metalliferous District.

Broken Hill Metalliferous District.
Gas Industry, as to persons employed in
the making, distribution, supply, and
lighting of gas and the reading of gas
meters.

The privately constituted Joint Conciliation Committee, operative from 28th February to 31st December, 1912, in connection with the coal-mining industry at Newcastle, was accepted as the equivalent of a Conciliation Committee constituted under the Act.

The Committee consisted of five representatives each of the Hunter District Colliery Proprietors' Defence Association, and the Northern District Colliery Employees' Federation, and a Chairman. A rule of the Committee was, that all work must continue pending the hearing and settlement of disputes.

The Southern Colliery District Conciliation Committee consists of two representatives each of employers and employees, with a Chairman.

The Conciliation Committee for the Western Colliery Association consists of a Chairman and two representatives of the employers and two of the employees.

INVESTIGATION AND INSPECTION.

Industrial Intervention and Inspection.

In May, 1911, while the Industrial Disputes Act, 1908, and its amendments, were still operative, an Investigation Officer was appointed, whose chief function was to receive and record complaints as to breaches of awards and failures to comply with obligations imposed under the Act, to review the reports of inspectors, and to direct prosecutions consequent thereon. In October, 1911, an active policy of conciliatory intervention between industrial disputants was undertaken, and concurrently with the procedure for the enforcement of awards, &c., the Investigating Officer was engaged in mediatory services wherever disputes or dislocations were known to be pending. Statutory authority was given to this process of intervention with the commencement of the Industrial Arbitration Act, 1912, and the Investigation Officer was appointed a Special Commissioner on 1st July, 1912. From 9th October, 1911, to 31st December, 1914, intervention in 191 cases had resulted in dislocations being prevented in 107 cases, while dislocations were curtailed and brought to a conclusion in 79 cases, leaving only 5 cases in which mediatory efforts failed.

The range of the Special Commissioner's work has been limited since March, 1914, on account of a judgment delivered in the Industrial Court to the effect that parties to a dispute cannot be compelled to meet in conference when a strike or lockout has actually occurred.

During the year ended 30th June, 1914, 4,461 complaints as to breaches of awards, &c., were received at the Investigation Office; 2,230 prosecutions were initiated, of which 162 were withdrawn or struck out, and 155 were dismissed. The penalties in fines and costs amounted to £3,540.

Factory Inspection.

The provisions of the Factories and Shops Acts are applicable only in localities specifically proclaimed as factory districts, and records of the proclamations have kept pace with the extensions of the manufacturing industries. The Metropolitan district was originally defined by proclamation on 1st February, 1897, as an area of 535 square miles, extending westward to Parramatta, northward to Broken Bay, and southward to George's River. Subsequent additions increased the area to 5,414 square miles. Newcastle district was declared in 1899, Broken Hill municipality in 1903. The Western factory district, as originally proclaimed in 1904, covered 657 square miles in the southern part of Hartley electorate; extensions included the towns of Bathurst, Blayney, Orange, Mudgee, and Lyndhurst. Goulburn district was proclaimed in 1907, and Albury district in 1909; additions to the latter in 1914 included the town of Wagga.

Altogether, the six factory districts embrace 34,434 square miles, and include practically the whole area in which manufacturing is carried on:—

Factory District.	Area—sq. miles.
Metropolitan	5,414
Newcastle	4,579
Broken Hill	26
Western	12,158
Goulburn	6,288
Albury	5,969
Total	34,434

Inspectors under the Factories Act, the Early Closing Act, and the Industrial Arbitration Act are under the control of the Department of Labour and Industry. The total number of inspectors is 30, of whom 4 are women, and inspectors can be called upon to deal with complaints relating to any phase of industrial legislation. A legal officer is attached to the administrative staff for the purpose of advising and assisting the administrative officer in control of the inspectors.

PREFERENCE TO UNIONISTS.

The question of preference to unionists is of vital importance in relation to industrial organization.

In the majority of awards made by boards, a clause has been inserted granting, unconditionally, preference to unionists, all other things being equal. In occasional cases preference has been made subject to a restriction, viz., in the case of Trolley-draysmen (Newcastle) providing that the existing employment of non-unionists should not be prejudiced, and in the Caterers (Metropolitan) Award, in which the preference was not extended to women.

Awards granting preference are far more numerous than those in which restricted preferences are given.

Apparently there has been no general rule governing the decisions of boards in this matter, for where there are several awards relating to various branches in an industry, it will generally be found, as in the iron trades, that in one or two branches the preference is unconditional, while in other branches there is no preference whatever in favour of unionists.

In a few cases the preference clause is in the nature of a prohibition of discrimination against unionists.

WAGES.

From 1880 to 1887, wages were high, the purchasing power of money was also high. Between 1887 and 1891 there was little variation in the nominal rate of wages in skilled trades, though for unskilled labour the rates experienced a decided decline. In 1893 there was a heavy fall generally; wages, as compared with the previous year, dropped 10 per cent. for mechanics, and still more for unskilled labourers. The second half of that year marked the beginning of a new industrial period, under vastly changed conditions; during 1894 employment became further restricted, and through 1895 the decline continued, the wage-rate of that year for skilled workmen being 22 per cent., and for unskilled labourers about 17½ per cent., below the rates of 1892. During 1896 wages in several trades improved, and subsequently steady advances and regular employment have been the rule. In 1898, 1899, and 1900, employment in the building trades was plentiful, and wages generally recovered, rising to the level of 1889. During the period of depression there was a stoppage of nearly all forms of speculative activity; on the other hand, there was a marked extension of agriculture and mining.

After the inauguration of the Commonwealth of Australia in 1901 there was a decided impetus in developmental work, thus leading to increased production. At the close of the same year an Industrial Arbitration Act was passed by the State Parliament; and the operation of this Act, with the succeeding legislation in the direction of adjustment of wages and conditions of work, has assisted materially to improve the status of the workers.

Since 1908 the number of trades in which wages are regulated by awards has extended so rapidly that but few occupations remain without the jurisdiction of industrial tribunals. The principle running through the awards of boards, &c., is the stipulation of an adequate living wage, and the minimum adult wage ranges between 8s. and 9s. per day for any class of labour. The question of the cost of living enters into the determination of a living wage, and judgments and awards tend more and more to embody all the factors determining effective wages, rather than to compromise between the standards of employer and employee. Early in 1914, as a result of an inquiry into the cost of living, the living wage for adult males was assessed by his Honor Judge Heydon at 48s. per week.

Details as to average wages paid in industries are shown in part "Manufactories and Works" of the Statistical Register.

Variations in the Principal Industries.

Adhering to the general classification of the principal industries as (a) rural, viz., agriculture, dairying and pastoral, (b) mining, (c) manufacturing, a comparison of wages paid in typical branches of such industries at intervals since 1895 reveals some interesting facts.

The following statement indicates the range of wages paid, in addition to board and lodging, for various classes of rural work:—

Trade or Calling.	1895.		1900.		1905.		1910.			1913.	
	s.	d.	s.	d.	s.	d.	s.	d.	s.	s.	
Boundary riders ... per week	15	0 to 20	16	3	20	0	20	0 to 25	20	to 25	
Bush carpenters ... ,,	15	0 ,, 30	21	3	25	0	25	0 ,, 30	25	,, 30	
Cooks—Station ... ,,	20	0 ,, 40	21	3	20	0	22	6 ,, 30	25	,, 30	
Farm labourers ... ,,	10	0 ,, 15	16	3	20	0	20	0 ,, 25	20	,, 25	
Milkers ... ,,	10	0 ,, 18	15	0	16	3	20	0 ,, 25	20	,, 25	
Shearers, no rations per 100	17	6 ,, 20	18	9	20	0	24s.		24s.		
Married Couples ... per annum	£50 to 80		£70 to 75		£70 to 80		£90 to 120			£100 to 120	
Stockmen... ,,	50	,, 70	58	,, 100	52		52	,, 65	52	,, 65	
Vignerons... ,,	60	,, 70	37	10s.	39		52	,, 55	52	,, 55	

In the above table, average wages for 1900 and 1905, as deduced from the data available, have to be compared with the range of nominal wages in other years, and it is therefore possible to review the figures only on very broad lines. The main feature of the comparison is that the general level of wages has been raised in almost every case, any exceptions being traceable to the exigencies of a particular season. Thus, for farm labourers, the wage rose from the range of 10s.-15s. per week in 1895, to the range of 20s.-25s. per week in 1910 and 1913. Similar variations of the wage-level followed for other branches of rural work, in which class are embraced the trades hitherto least organised, and necessarily, least capable of being organised, both on account of the inherent difficulties of seasonal occupations and of the character of the work, which does not generally call for technical training.

In the mining group, the figures show a change of rates during the period 1895-1913, which is not, however, nearly so marked as in the rural industries, because skilled workers and better organisation have prevailed in the mining group:—

Trade or Calling.	1895.		1900.		1905.		1910.		1913.	
Coal-mining—	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Miners ... per ton	2 0	to 2 11	1 10	to 3 2	1 9½	to 3 0	2 0½	to 4 2	2 2½	to 4 2
Wheelers... per day	s. d.		7 0	„ 8 6	6 6	„ 9 0	7 0	„ 9 6	8 0	„ 10 0
Screenmen „	s. d.	s. d.	6 6	„ 8 3	6 6	„ 7 6	6 6	„ 7 6	7 0	„ 9 6
Engine-drivers „	7 6	„ 10 0	11 0	„ 12 6	11 0	„ 12 6	8 9	„ 13 0	per hour.	
Labourers... „	5 6	„ 8 6	6 6	„ 7 6	6 6	„ 7 6	7 0	„ 8 0	8 0	to 9 0
Metal-mining—	s. d.		s. d.		s. d.		s. d.		s. d.	
Miners ... „	9 0		9 0		9 0		11 0		11 0	
Truckers ... „	7 6		7 6		7 6		9 6		9 6	
Engine-drivers „	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Labourers ... „	9 0	to 10 0	9 0	to 10 0	9 0	to 10 0	11 0	to 12 0	11 0	to 14 0
	s. d.		s. d.		s. d.		s. d.		s. d.	
	7 6		7 6		7 6		9 6		9 6	

In the manufacturing industry, comparison becomes more difficult, with the increasing variety and complexity of the work, and the rapid development since 1901, accompanied by the extension of the Wages Board awards to so many branches. The following may be taken as typical of different branches of this class of work, the figures, as in the previous tables, applying to adult workers:—

Trade or Calling.	Average Rates.						Minimum Award Rates.	
	1895.		1900.		1905.		1910.	1914.
	£	s. d.	£	s. d.	£	s. d.	£	s. d.
Bakers... .. per week	1 5 0	to 2 15 0	2 11 9		2 13 3		2 12 6	3 5 0
Confectioners... „	1 10 0	„ 2 10 0	2 6 3		2 15 6		2 16 0	3 0 0
Millers ... „	3 0 0	„ 3 10 0	2 7 6		2 12 6		2 10 0	3 0 0
Boot-clickers ... „	1 10 0	„ 3 0 0	1 14 3		2 3 6		2 8 0	3 0 0
Tailors (slop) ... „	2 0 0	„ 2 10 0	2 3 3		2 19 0		2 15 0	3 0 0
Tailoresses (slop) „	0 10 0	„ 1 15 0	0 18 3		1 2 4		1 8 0	30s to 35s
Picture-frame makers (joiners) ... „	1 7 6	„ 2 12 0	2 0 3		2 8 9		2 10 0	3 0 0
Bookbinders ... „	2 12 0	„ 3 5 0	2 9 6		2 11 4		2 16 0	3 5 0

To make these comparisons more complete and representative of the whole circle of industrial activity, figures relating to various branches of the building and allied trades and to domestic service, are given for the same periods. In connection with domestic service, the question of a

rising wage is a question primarily of supply and demand for such labour, which has not hitherto been subject to regulation by award.

Trade or Calling.	1895.	1900.	1905.	1910.	1914.
<i>Males, per day, without board and lodging.</i>					
Building :—	s. d.	s. d.	s. d.	s. d.	s. d.
Carpenters	8 0	9 6	9 4	11 0	11 8
Bricklayers	8 6	11 0	11 0	12 0	13 6
Masons	7 8	11 0	11 0	12 0	13 0
Plasterers	7 0	9 6	10 0	11 0	13 6
Painters	7 0	9 0	9 4	10 0	10 8
Boilermakers... ..	8 0	10 3	10 3	10 4	12 8
Labourers and navvies	6 0	6 10	7 0	8 0	10 0
<i>Females, per week, with board and lodging.</i>					
Domestic :—	s. d.	s. d.	s. d.	s. s.	s. d. s. d.
Housemaids	10 0	11 3	12 0	14 to 16	17 6 to 20 0
Laundresses	14 0	18 9	18 0	20 ,, 25	25 0 ,, 30 0
Nursemaids	7 6	7 0	10 0	10 ,, 12	12 6 ,, 17 6
General servants	11 6	11 0	15 0	10 ,, 20	17 6 ,, 25 0
Cooks	14 0	20 0	17 0	17 ,, 25	25 0 ,, 35 0

It is noticeable that the rate of wage progression in the different industries has been very uneven; and a detailed study of the whole question would probably yield valuable results. But in reviewing the figures quoted in all the tables above, particular stress must be given to the fact that they are taken only as representative of adult workers in skilled or unskilled trades, and no special deductions can be made from them in the absence of figures to show the extent and effect of factors such as juvenile or slow workers. Further, in discussing the extent of the admitted increase in wages generally, consideration must be given to the relation of wages to the question of food and prices, as evidencing the spending power of money, and to the degree to which the increase of wages corresponds to the generally increased cost of living. The relative force of the two increases and the distinction of cause and effect are not ascertainable without reliable data.

Regulation.

Fixation of wages by specific legislation is confined practically to the Minimum Wage Act, 1908, noted hereunder. The Truck Act, 1900, regulates contracts made with respect to, and the payment of wages, so as to prohibit such payments being made in goods or otherwise than in money. The service of legal process also is subject to the conditions of this Act. Other legislation touching the matter of wages has relation to methods and conditions of work, rather than to rates of payment, excepting, of course, recent legislation already described in regard to industrial arbitration and industrial disputes, where the assessment of equitable wages is specified as an important function of the tribunals under the Acts.

Minimum Wage.

The Minimum Wage Act, 1908, which was consolidated with the Factories and Shops Act, 1912, provided that the minimum wage should be not less than 4s. per week in respect of any person employed in preparing or manufacturing any article for trade or sale, or in any factory under the Factories and Shops Act, or working at any handicraft; or any shop-assistant as defined by the Early Closing Act.

The provisions do not apply where all persons employed as workmen and shop-assistants are members of the employer's family, related in the first or second degree by blood or first degree by marriage to the employer.

Overtime for the workman is any time worked beyond forty-eight hours per week, or after 6 o'clock in the evening, or, for a shop-assistant, after half an hour after the closing time of the shop.

When any boy under 16 years of age, or any girl or woman is employed overtime after 6 o'clock in the evening, a sum, not less than 6d., must be paid as tea money on the day such overtime is worked.

An amount not less than 3d. per hour, or portion of an hour, must be paid for overtime to any boy under 16 years of age, or any girl or woman; the full rate of time and a half, however, is to be paid in cases where the overtime pay would exceed 3d. per hour.

Every employer must keep a record of overtime worked by such of his workmen or shop-assistants (boys under 16 years of age, and all girls and women), and must produce such record and furnish extracts therefrom to inspectors.

No person may pay or give or receive any consideration, premium, or bonus for the employing by him of any woman or girl on the manufacture of any article of clothing or wearing apparel.

The provisions as to the Minimum Wage are in operation over the whole State.

Contraventions or breaches of these provisions, or of the regulations thereunder, are reported to the Minister for Labour and Industry by inspectors, and proceedings may be instituted with the authority of the Minister. During the year 1913 there were five convictions of employers who failed to pay tea money as prescribed.

Aged, Infirm, and Slow Workers.

Applications for variations from award rates of wages were made, under the Industrial Disputes Act, 1908, and its amendments, to the Registrar of the Industrial Court, and to any tribunal which might be constituted for the purpose by an Industrial Board.

Under the Industrial Arbitration Act, 1912, the Registrar alone has power to determine when and how such variations shall be permitted.

For the year ended 31st December, 1914, 609 applications were granted for permits to pay less than award rates to aged, infirm, and slow workers, and 101 were refused. The number of permits cancelled was 8, and 72 applications for permits were not proceeded with.

HOURS OF WORK.

In 1855, after a strike, the principle of an eight-hour working day for operative masons was established. In the fifteen years following, the spread of the movement was not great, but in 1871 the Eight-hour Day celebration (since held annually) was inaugurated by the four classes then working the eight-hour day, viz., stonemasons, brickmakers, carpenters, and general labourers; since that inauguration, a forty-eight hour week has become the standard of custom for the majority of trades, and in recent years has been fixed by the awards of Boards as the legal standard. In practice the eight-hour principle is applied in five working days of eight and three-quarter hours each and four and a quarter hours on Saturday.

Early Closing of Shops.

Under a voluntary system of early closing of shops in the city of Sydney and in adjacent suburbs, the working hours of many employees were reasonable. Infringement of agreements in regard to this voluntary system caused

considerable dissatisfaction, and in December, 1899, the Early-closing Act was passed, to operate from 1st January, 1900. It was applicable to the Metropolitan and Newcastle districts as delimited in the schedules to the Act, and to all municipalities, while its operation might be extended to unincorporated areas. The Act provided that in metropolitan and Newcastle districts each shopkeeper should be given the option of closing his shop at 1 o'clock on either Wednesday or Saturday of each week, and where this option was not taken Wednesday was deemed to be the day chosen. During 1900, 566 shopkeepers, chiefly importers and warehousemen, notified Saturday as their early-closing day. All others selected Wednesday. In many country municipalities the early-closing day has been altered, after a poll, from Wednesday as originally fixed by proclamation to Saturday, and Friday substituted for Saturday as the late-closing night. Subsequent amendments of the Early Closing Act were necessitated by the conflicting interests between scheduled and non-scheduled shops.

Universal Half Holiday.

In 1905 a movement in favour of a universal half holiday was initiated; in 1909 a Royal Commission of Inquiry was appointed to investigate the desirableness of amending the Early Closing Acts so as to provide for a universal half holiday in the Metropolitan and Newcastle districts. In September, 1909, the Commission reported adversely. In August, 1910, the Saturday Half Holiday Act was passed; it was applicable to metropolitan and Newcastle districts, and to all other country shopping districts in county Northumberland. The operation of the Act has since been extended by proclamation to many other country shopping districts.

Shops are permitted to remain open till 10 p.m. on Friday, 6 p.m. on other week nights, and 1 p.m. on Saturday.

Many factories complete the full week's work within five days, so leaving the Saturday a full holiday.

General Conditions.

In prescribing limits to the hours of work of women and boys, legislation both in England and in Australia has been concerned with the following subjects:—

- (a) The aggregate hours to be worked per week.
- (b) Overtime in excess of this aggregate.
- (c) Number of hours' work per day.
- (d) Night-work.
- (e) Number of hours of continuous work.
- (f) Meal times.

In factories in New South Wales, as in other States of the Commonwealth, the maximum working week for women and juveniles is forty-eight hours, under the Factories and Shops Act, 1912, with a maximum period of five hours' continuous labour and an overtime limitation of three hours per day.

The Royal Commission of Inquiry into the Shortage of Labour (1911), inquired also into the hours and general conditions of employment of female and juvenile labour in factories and shops, and the effect on such employees. Details as to the class and amount of such labour employed in factories are given in Part "Manufacturing Industry" of this Year Book.

The Commission was of opinion that from the point of view of health the factory buildings in the metropolis (to which locality inquiry was confined) varied between wide extremes of fitness, the older factory buildings being far below a fair standard, while buildings originally erected for stores or warehouses have been adapted to factory work, at the expense of essentials of ventilation and lighting, and provisions for safety from fire, and for comfort of the employees.

Emphasis was placed upon the necessity for prohibition of factory work in buildings of galvanized iron, or insistence upon lining of roof of buildings in occupation.

Adequacy of safety provisions in case of fire is determinable by Inspectors, and the Commission recommended that standardised requirements in this direction should be embodied in the statute law.

Air space requirement under the Factories and Shops Act is 400 cubic feet per person employed. To prevent overcrowding, aggregate air space is insufficient, and the Commission suggested a definite interval of air space as the minimum between individual workers, and the prevention of vitiation of air by gas-heaters, &c.

As to dust, the statutory requirement is that any factory or shop, or any portion thereof, shall be ventilated in such a manner as to render harmless, as far as practicable, all the gases, vapours, dust, or impurities, generated in the course of the manufacturing process or handicraft carried on therein, that may be injurious to health. . . . Where grinding, glazing, or polishing on a wheel or any other process is carried on, whereby dust is generated, which is inhaled by the employees to an injurious extent, such inhalation could be to a great extent prevented by the use of a fan, or by other mechanical means of ventilation.

Standardisation by Award.

The majority of Wages Boards awards have legalised the 48-hour normal working week, but there are cases in which a shorter working week has been prescribed. The shortest week fixed is 36 hours, and this applies to rock-choppers and sewer-miners, and to employees engaged on night-duty for the Metropolitan Board of Water Supply and Sewerage and the Sydney Municipal Council.

In several awards relating to transport services the hours are limited by fortnightly computation to ninety-six, but subject to a provision that such hours are to be worked, as far as practicable, in twelve shifts of eight hours each.

Of the trades working more than forty-eight hours per week, the most prominent are those connected with transport services and food supplies; in most cases in which a working week in excess of 48 hours is prescribed, the workers are regarded generally as unskilled, the chief groups being carters and shop assistants.

APPRENTICESHIP.

Under the Apprentices Act of 1901, any person resident and trading in New South Wales may take apprentices under certain conditions regulating the apprenticeship, *e.g.*, as to age limitation and probation before completion of indentures. The Act limits the working time of apprentices to forty-eight hours per week, with saving clauses as to rural industries and domestic service. The minimum age of apprentices is 14 years, and limitations upon the proportion of apprentices to adults are fixed in the

majority of cases in awards of wages boards. In the majority of awards the proportion of apprentices or improvers to adult workers is one to three, with a maximum, as in the printing trades, of seven apprentices in any institution or business. Information is not available as to the total number of persons now serving in this State under indentures of apprenticeship (which are three-party contracts binding the employer, the employee, and his guardian); nor as to the extent of instruction imparted, and premiums usually paid.

The Royal Commission of Inquiry as to the Shortage of Labour, &c., in 1911-12, made investigations as to the cause of the decline in the apprenticeship of boys to skilled trades, and the practicability of using technical and trade classes as aids to or substitutes for apprenticeship.

The decline of the apprenticeship system is a characteristic feature of industrial development in practically every community, and is common to all trades and industries, both to factory trades in which machinery is developed to a high point of specialisation and to the handicrafts which also are being subdivided into specialities.

An important contributory factor in the decline of apprenticeship in New South Wales is, according to the findings of the Commission, the facility with which highly remunerative wages may be obtained in unskilled trades. While technical education is unlikely to give satisfaction as a substitute for apprenticeship its value as an adjunct is realised, and the Commission recommended that the school-leaving age be raised from 14, as required under the Public Instruction Act, 1880, to 16 years of age, so as to obviate the hiatus between the cessation of general education and the commencement of the specialised trade or technical training, which usually is not commenced till age 16.

Generally, wages or industrial boards have exercised control over apprenticeship in individual trades, but the Commission recommended the constitution of an Apprenticeship Commission with power—

- (a) to classify for apprenticeship trades and branches of trades, determinable as skilled;
- (b) to determine, with regard to apprenticeship, the period, rates of pay, length of attendance at technical classes, and amount of pay for certificated attendance;
- (c) to supervise the carrying out by masters and apprentices of the apprenticeship agreement and transfers from one master to another.

A new apprenticeship law was suggested to determine—

- (a) compulsory apprenticeship for future juvenile labour in skilled trades;
- (b) technical education, if procurable, to be obligatory on all apprentices;
- (c) additional pay to apprentices for certified technical study.

OUTWORKERS.

Under section 14 of the Factories and Shops Act, 1896, occupiers of factories are required to keep, and to supply to the factory inspectors, full records regarding outworkers employed. Permission to engage outdoor workers is required by certain awards.

SHEARERS' ACCOMMODATION.

The Shearers' Accommodation Act, 1901, was intended to become operative on 1st January, 1902, but in view of the fact that the State was then

experiencing a drought, the provisions of the Act were suspended temporarily. The Act is administered in conjunction with the inspectorial work under the Factories and Shops Act, &c. During the year ended 31st March, 1915, 1,495 stations were visited, 1,944 huts inspected, of which 1,812 were regarded as satisfactory. The new huts built numbered 33.

DERANGEMENTS TO INDUSTRY.

Interruptions to industry from such causes as fires and floods, the blocking of bar harbours, &c., are unavoidable, but no reliable records are available to show the extent of the resultant suspension or slackening of industrial operations or the amount of loss or depreciation of perishable products. In regard to the manufacturing industry, it is shown that the average time worked in all classes of manufacturing is slightly more than eleven and a half months per year, and an analysis of the details given shows the extent of the variations from that average.

Seasonal Slackness.

In the summer-time industries, particularly manufacturing, in the city and suburbs suffer to a certain extent from seasonal slackness. For instance, in January, and even in February, slackness and half-time working are to be anticipated in trades such as order tailoring, mantle, and costume making. But such slackness is the necessary corollary to high-pressure work and overtime, which usually prevail in the weeks before the Christmas season. In the clothing trades, manufacturers for retail shops have to face the difficulty of rush orders, it being the practice of such shops to allow their stocks to run out entirely before placing fresh orders. Further, the practice of indenting surplus English stocks to catch the corresponding Australian season's trade causes some uncertainty regarding estimates of local requirements. In the tailoring trade, and especially in the highest class work, the intermittent character of the employment is particularly apparent.

Intermittency.

The question of continuity of employment affects particularly the building trades, and in a less degree seasonal occupations.

As regards the building trades, the reserves of workers cannot, under normally favourable conditions, be great; but, on the other hand, no system of organisation yet devised can adjust the volume of work to the waiting labour so as to ensure absolute continuity of employment while obviating delay in the fulfilment of contracts. So long as the general volume of trade is maintained, however, no abnormal intermittency need be feared.

INDUSTRIAL DISLOCATIONS.

The primary object of the mediatory and regulative legislation enacted in New South Wales is to obviate industrial dislocations; but, though a large measure of success has resulted from the operation of the various Acts, the absolute elimination of dislocations from industrial operations has not yet been secured.

The provision for repression of dislocations in the Industrial Arbitration Act, 1901, in which the principles of mediation and regulation were first displayed as converging ideas, implied misdemeanour only if the action or condition occurred (a) before a reasonable time elapsed for reference to the Court of the matter in dispute, or (b) during the pendency of proceedings in the Court in relation to an industrial dispute. Actions tending to suspen-

sion or discontinuance of employment, in circumstances with which the arbitral system was not capable of dealing, were not imputable as misdemeanours.

Penalising provisions were embodied in the Industrial Disputes Act, 1908, enacted "to prohibit strikes and lock-outs." Its discipline for offences met with opposition from a section of the community, to whom strikes appeal as the readiest means of redress of all grievances; and in spite of the prohibition and penalising of strikes and lock-outs, a strike was declared which involved all the coal-fields of the State—Northern, Southern, and Western.

To cope with the position, the Industrial Disputes Amendment Act, 1909, provided for a penalty of twelve months' imprisonment for any attempt to instigate or aid in anything in the nature of a strike or lock-out or discontinuance of work in any industry. Power was given to officers of police to enter buildings, by force if necessary, and to seize documents, when there was reasonable ground for the belief that such buildings were being used for the purpose of fostering the continuance of a strike or lock-out; and where the strike or lock-out related to a necessary commodity (defined as coal, gas, water, or any article of food, the deprivation of which might tend to endanger human life or to cause serious bodily injury) meetings intended to foster such a strike or lock-out were illegal. Persons taking part in such meeting became liable to imprisonment for twelve months. A penalty of £500 was attached to any attempt to restrain the trade of the State in a necessary commodity, or to monopolise or combine to the detriment of the public.

The Industrial Arbitration Act, 1912, in replacing the Act of 1908, aimed at obviating strikes and lock-outs. The inefficiency of penal proceedings for all cases is postulated, and the characterisation of a strike or lock-out as criminal gives way to its characterisation as an extravagant expedient, liable to penalisation extending to a charge on any moneys then or thereafter due to the person ordered to pay such penalty. The Court also may grant a writ of injunction to restrain any person from continuing to instigate or to aid in a lock-out or strike, the maximum penalty attaching being imprisonment for six months.

The number of dislocations recorded since July, 1907, classified in mining and non-mining industries, is shown below:—

Year.	Mining.				Non-mining.	All Industries.
	Coal and Shale.	Metal-liferous.	Rock.	Total.		
1907*	34	...	...	34	24	58
1908	124	12	4	140	83	223
1909	70	15	6	91	60	151
1910	38	7	4	49	87	131
1911	43	4	5	52	54	106
1912	79	...	1	80	47	127
1913	83	6	4	93	76	169
1914	212	6	2	220	93	313

* July-December.

These figures show that the majority of dislocations occur in the coal and shale mining group. There was a remarkable increase in the number of dislocations during 1914. This fact is emphasised in the following statement, which shows, as far as can be ascertained, the number of workers

involved, and the time lost by industrial dislocations, since July, 1907. Figures relating to 198 dislocations during the period 1907-13 have been excluded, as complete data were not available:—

Year.	Dislocations.			Workers Involved.			Working Days Lost.		
	Mining.	Non-mining.	Total.	Mining.	Non-mining.	Total.	Mining.	Non-mining.	Total.
1907*	30	11	41	21,645	496	22,141	204,966	712	205,678
1908	130	51	181	30,243	13,550	43,793	130,746	106,683	237,429
1909	85	43	128	35,956	6,667	42,623	1,969,920	47,047	2,016,967
1910	39	42	81	7,032	7,204	14,236	61,508	39,262	100,770
1911	41	30	71	10,831	9,479	20,310	246,875	110,346	357,221
1912	75	35	110	27,389	3,775	31,164	67,869	28,100	95,969
1913	91	69	160	28,848	13,378	42,226	237,577	129,196	366,773
1914	220	93	313	56,372	18,884	75,256	573,641	174,007	747,738

* July-December.

Separating the cases involving a loss of 10,000 or more working days, it will be seen that such dislocations—classified as principal in the appended statement—represent less than 5 per cent. of the total. Owing to incomplete information, 198 cases between 1907 and 1913 have been excluded from the table:—

Year.	Principal Dislocations.			Other Dislocations.		
	Number.	Workers involved.	Working days lost.	Number.	Workers involved.	Working days lost.
1907*	3	12,755	172,935	38	9,386	32,743
1908	7	9,130	85,940	174	34,663	151,489
1909	13	23,204	1,907,403	115	20,919	109,564
1910	4	891	57,765	77	11,845	43,605
1911	8	7,984	176,688	63	12,326	180,533
1912	1	500	21,000	109	33,604	74,969
1913	8	8,977	274,387	152	31,549	92,386
1914	8	8,989	551,331	305	66,267	196,407

* July-December.

The number of workers involved and the amount of time lost were greater in 1914 than in any other year of the period reviewed except 1909, when the general coal strike occurred. The principal dislocations during 1914 include a series which originated on 27th May at a number of collieries in the Northern district, consequent upon a dispute with regard to the afternoon shift. The dispute was not concluded until March of the following year; up to 31st December, 1914, nearly 440,000 working days had been lost. In February, 1914, the butchering employees in Sydney ceased work for twenty-one days, a dispute having arisen concerning a claim for increased wages and reduced working hours; a compromise was effected after 34,180 working days had been lost. The ironworking assistants having claimed an increase of wages, ceased work on 17th February; the dispute lasted twenty-four days and involved a loss of 81,565 working days.

Duration of Dislocations.

Appended is a table distinguishing between mining and non-mining, and showing the dislocations lasting one day or less, and over one day:—

Year.	Industries and Duration.								
	Mining.			Non-Mining.			Total.		
	One Day or less.	Over one Day.	Not stated.	One Day or less.	Over one Day.	Not stated.	One Day or less.	Over one Day.	Not stated.
1907*	14	16	4	8	5	11	22	21	15
1908	62	66	12	30	30	23	92	96	35
1909	23	62	6	21	24	15	44	86	21
1910	17	23	9	35	14	38	52	37	47
1911	12	30	10	17	19	18	29	49	28
1912	48	28	4	16	26	5	64	54	9
1913	54	37	2	25	46	5	79	83	7
1914	125	95	...	31	62	...	156	157	...

* July-December.

The number of workers affected by dislocations lasting one day or less during 1914 was 37,401, and the loss of working days 35,752. Thus these brief dislocations accounted for approximately 50 per cent. of the total number under review, 50 per cent. of the workers involved, and 5 per cent. of the working days lost.

More complete information is given in the following table regarding the duration of the dislocations which occurred in 1914:—

Duration in Days.	Dislocations.	Workers involved.	Working days lost.
No ordinary time lost	8	36	.....
Under 1 day	11	3,112	1,499
One day	137	34,253	34,253
Over 1 and not exceeding 7 ...	103	21,723	59,883
" 7 " " " 14 ...	25	9,241	130,193
" 14 " " " 21 ...	12	1,507	26,390
" 21 " " " 28 ...	3	1,649	35,427
" 29	1	200	5,800
" 31	1	20	620
" 35	1	90	3,150
" 37	1	225	2,590
" 44	1	285	12,540
" 45	1	250	7,850
" 65	2	83	1,185
" 102	1*	6	612
" 167	5*	2,576	425,746
Total	313	75,256	747,738

* Pending at 31st December.

Causes of Dislocations.

An analysis of the causes, as set down by the participants, reveals that the majority of dislocations during 1914 in the non-mining industries were the result of disagreement as to wages and in the mining in relation to working conditions; 61 per cent. of the working time lost was in consequence of disputes in regard to hours in the mining industry. The following statement shows the causes, the workers affected, and the time lost as the result of 313 dislocations during 1914:—

Cause.	Mining.			Non-mining.			All Industries.		
	Disloca- tions.	Work'rs in- volved.	Work- ing days lost.	Disloca- tions.	Work'rs in- volved.	Work- ing days lost.	Disloca- tions.	Work'rs in- volved.	Work- ing days lost.
Wages	38	3,203	21,963	28	3,657	141,326	66	16,860	163,289.
Hours	23	6,343	454,929	11	3,350	3,362	34	10,193	458,291
Employment of persons or classes of persons.	46	9,402	30,599	24	1,861	10,694	70	11,233	41,293
Trade unionism .. .. .	.....	.....	.....	4	461	465	4	461	465
Working conditions.. ..	61	14,757	42,596	20	3,961	16,425	81	18,718	59,021
Sympathy	4	516	1,332	1	300	1,500	5	816	2,832
Miscellaneous	48	16,651	22,222	5	294	325	53	16,945	22,547
Total.. .. .	220	56,372	573,641	93	13,884	174,097	313	75,256	747,738

Settlement of Dislocations.

The methods of settlement have been classified in four groups termed "strife," "arbitration," "replacement," and "other." The first-mentioned term implies that the contest was brought to a conclusion by the defeat of one of the parties or by the arrangement, without intervention, of a truce between them; the second indicates that a settlement was effected by private mediatory offices, by official conciliation, or by reference to an independent tribunal or the statutory machinery. The settlements by replacement and by methods not definitely ascertained are combined in the following table:—

Year.	Dislocations settled by—			Total.
	Strife.	Arbitration.	Other Methods.	
1907*	28	8	22	58
1908	146	23	54	223
1909	93	18	40	151
1910	66	9	61	136
1911	56	16	34	106
1912	75	32	20	127
1913	95	53	21	169
1914	245	45	23	313

* July-December.

In 1914 nine dislocations were settled by replacement, this method being applicable chiefly to dislocations connected with unskilled labour and in unorganised trades.

Results of Settlements.

Of the 313 recorded dislocations in 1914, 120, or 38 per cent., resulted in resumption of work with modified conditions, more or less in accordance with the workers' claims. In 158, or 50 per cent., no modifications were

granted, while the results of the remaining 35 cases were not recorded. The following statement affords a comparison of the results for the years 1907 to 1914:—

Year.	Modification.	No Modification.	Not stated.	Total Dislocations.
1907*	21	13	24	58
1908	110	52	61	223
1909	84	27	40	151
1910	50	40	46	136
1911	59	14	33	106
1912	67	34	26	127
1913	106	43	20	163
1914	120	158	35	313

* July-December.

The following statement shows, as far as can be ascertained, the workers involved and the time lost classified according to the results of the dislocations; complete information was not available in respect of a number of dislocations which occurred during the years 1907-13. In 1914, 53 per cent. of the workers involved, and 81 per cent. of the time lost, was in respect of dislocations in which no modifications were granted:—

Year.	Modification.			No Modification.		
	Dislocations.	Workers involved.	Working days lost.	Dislocations.	Workers involved.	Working days lost.
1907*	17	15,327	190,741	10	2,198	5,279
1908	104	27,703	194,778	40	8,566	23,317
1909	63	29,685	1,651,926	25	2,507	7,998
1910	38	9,696	96,250	26	2,793	5,043
1911	51	14,408	183,382	10	4,160	170,282
1912	65	16,092	69,012	28	9,297	18,359
1913	102	31,663	329,581	39	7,429	32,269
1914	120	23,822	127,654	158	40,205	608,084

* July-December.

INDUSTRIAL ACCIDENTS.

Factories.

In regard to the largest declared factory districts, viz., Metropolitan and Newcastle, accidents, fatal or otherwise, are reported from year to year, the responsibility resting upon factory inspectors of seeing that all dangerous portions of machinery are properly and securely fenced and guarded.

The following table shows in comparative form for the two districts the accidents reported during the years 1910-13, and the accident rate per 10,000 employees:—

Accidents.	Number.				Rate per 10,000 Employees.			
	1910.	1911.	1912.	1913.	1910.	1911.	1912.	1913.
Fatal	2	3	3	13	·27	·33	·35	1·46
Permanent disablement ..	2	5	2	1	·27	·63	·23	·11
Partial disablement	86	91	105	99	11·67	11·44	12·36	11·15
Temporary incapacitation ..	343	405	405	375	46·54	50·90	47·66	42·24
Total	433	504	515	488	58·75	63·35	60·60	54·86

On the figures shown above, temporary incapacitation is the result of approximately 78 per cent. of the accidents; records are not available to show the time lost through these mishaps. The remaining 22 per cent. of accidents resulted in death or disablement, which, whether permanent or partial, means the practical removal of the disabled person from the ranks of labour.

Lifts and Scaffolding.

The inspection of lifts and scaffolding, like industrial inspection, is undertaken with a view to safeguarding the interests and wellbeing of employees and other persons. This function of supervision is performed by the Department of Public Works.

The construction of high buildings, particularly of steel and concrete, involves considerable risk of accident. Three fatalities were reported in connection with building operations during 1913-14, and there were 14 non-fatal accidents which necessitated absence from work of the injured for more than two weeks, and 14 mishaps of a less serious nature. One fatality and 8 non-fatal accidents occurred in connection with cranes and hoists. Three fatalities in connection with lifts were recorded and 5 minor mishaps, in which two persons were injured.

Lifts.

The lifts in commission in the Metropolitan area in June, 1914, were classified as follow:—

Classification.	Electric.	Hydraulic.	Belt Driven.	Total.
Passenger	378	123	1	502
Goods	331	397	65	793
Goods-Passenger	62	28	1	91
Service	110	36	46	192
Whips, &c.	53	140	211	404
Total	934	724	324	1,982

There are approximately 1,400 cranes of all classes subject to inspection. During the year ended 30th June, 1914, the cranes and hoists temporarily

erected numbered 309, and cranes permanently erected 64. Notices of intention to erect scaffolding, numbering 951, were received by the Department of Public Works during the year under review.

Mining.

In the chapter of this Year Book dealing with the Mining Industry, full particulars are given of the fatalities and accidents occurring in this industry, which is generally quoted as the typical hazardous occupation. The incapacitation rate per 1,000 employees for 1913 is shown as 4.47.

INDUSTRIAL DISEASES.

As regards industrial diseases, no reliable records are available; but certain avocations are, with good reason, regarded as unhealthy; for instance, rock-chopping and sewer-mining, insulating work involving handling of charcoal, and, notably, manufactures in which industrial poisons are employed, as in the manufacture of metals, lead colours, and electric accumulators, in the pottery, painting, gem-polishing, file-cutting, and similar industries.

In the majority of unhealthy trades there are frequent compensating advantages in the way of short hours and high wages.

UNEMPLOYMENT.

Census Records.

The following table shows for each industrial group the number and proportion of persons who were unemployed in New South Wales at the Census in April, 1911:—

Class.	Unemployed.		Proportion in Each Class.	
	Males.	Females.	Males.	Females.
			per cent.	per cent.
Professional	388	262	1.06	1.35
Domestic	696	1,466	3.68	2.69
Commercial	1,891	312	2.14	1.72
Transport and Communication ...	1,398	5	2.32	.31
Industrial	7,617	582	4.43	1.61
Primary Producers	3,544	...	1.78	.....
Unspecified	676	73	6.06	13.44
Total	16,210	2,700	2.76	2.00

The percentage of unemployed to total breadwinners was 2.76 for males and 2.00 for females.

Comparison with previous census records is impossible, for lack of data.

Trade Unions and Unemployment.

Since 1910 efforts have been made to obtain information from the trade unions as to unemployment amongst members; the results have not been satisfactory, as a large number of unions do not supply the information, mainly owing to lack of records. For the year 1913 particulars were not supplied by fifty employees' unions, with a membership of 89,891, comprising a majority of workers in those occupations in which employment is casual. Returns were received from 123 unions, and are summarised in

the following statement, which shows in industrial groups the unions affected by unemployment as at 31st December, 1913:—

Group.	Unions Reporting—				Unions which did not supply Information.	
	No Unemployment.		Unemployment			
	Unions.	Members.	Unions.	Members.	Unions.	Members.
Building	9	2,871	7	9,202	5	7,849
Clothing	2	775	2	373	3	5,138
Engineering and Metal Working	2	608	15	12,321	1	2,795
Food and Drink	7	3,781	9	6,353	8	5,407
Land Transport (exclusive of Railways and Tramways)	6	843	2	5,146	1	100
Mining and Smelting	6	3,997	8	13,425	9	10,819
Pastoral	1	820	1	400	3	20,474
Printing, Bookbinding, &c.	1	74	5	1,599	2	2,174
Railways and Tramways ... ..	...	...	...	...	1	136
Shipping and Sea Transport	5	995	2	2,802	5	15,572
Manufacturing, n.e.i.	6	3,576	12	7,240	3	2,892
Miscellaneous	7	848	8	6,563	9	16,535
Total	52	19,188	71	65,424	50	89,891

The total membership of the unions from which information as to unemployment was obtained was 84,612. At the end of the year 8,071 members were unemployed, 3,336 having been idle for more than two weeks. Lack of work was the principal cause of unemployment.

Group.	Reporting Unemployment.		Members Unemployed.			Causes of Unemployment.				
	Unions.	Members.	Under Two Weeks.	Over Two Weeks.	Total.	Lack of Work.	Accident.	Sickness.	Industrial Disputes.	Other Causes.
Building	7	9,202	115	99	214	170	...	44	...	...
Clothing	2	373	12	30	42	42	...	...	...	...
Engineering and Metal Working	15	12,321	172	311	483	430	2	49	2	...
Food and Drink	9	6,353	605	597	1,202	1,047	...	5	150	...
Land Transport (exclusive of Railways and Tramways)..	2	5,146	85	...	85	76	...	9	...	...
Mining and Smelting	8	13,425	3,098	1,817	4,915	4,350	80	274	117	94
Pastoral	1	400	...	1	1	...	...	...	1	...
Printing, Bookbinding, &c.	5	1,599	29	51	80	62	...	12	6	...
Railways and Tramways ... ..	...	...	...	...	...	...	...	...	...	...
Shipping and Sea Transport	2	2,802	...	70	70	70	...	...	...	...
Manufacturing, n.e.i.	12	7,240	476	148	624	611	5	8	...	...
Miscellaneous	8	6,563	143	212	355	355	...	...	...	...
Total	71	65,424	4,735	3,336	8,071	7,213	87	401	276	94

Records of Department of Labour and Industry.

After the outbreak of war, in August, 1914, the Department of Labour and Industry made provision to collect information regarding the extent of unemployment which necessarily supervened upon the dislocation of trade and industries.

The departmental estimate of unemployed persons, excluding strikers, in the principal districts during each month from August, 1914, to April, 1915, were as follows:—

Month.	Sydney.	Newcastle.	Broken Hill.	Other Districts.	Total.
1914.					
August	5,515	1,300	2,012	2,712	11,539
September	6,574	1,144	1,830	1,986	11,534
October	7,038	772	732	2,853	11,395
November	6,779	321	604	3,245	10,949
December	7,280	292	586	2,895	11,053
1915.					
January	8,128	295	387	2,225	11,035
February	6,009	330	161	2,113	8,613
March	5,118	314	138	2,136	7,716
April	4,953	2,449	88	2,046	9,536

The number of unemployed persons was reduced from 13,539 at the end of August, 1914, to 7,706 in March, 1915, but rose to 9,536 in April, when unemployment increased in the Newcastle district owing to the fact that a number of mining employees who had declined work during the strike at the Maitland collieries were unable to obtain employment after its conclusion, in March, owing to slackness in the oversea coal trade resulting from the embargo placed upon the export of that commodity. These estimates of unemployment, however, do not make allowance for the diversion of employees to military and naval services, and therefore the number of persons actually unemployed, that is persons who depend on employment in the various industries, and desire work but are unable to obtain it, was much lower than is indicated by the above table. For the five months December, 1914-April, 1915, it is probable that the number of such persons did not exceed the following figures:—December, 7,287; January, 7,385; February, 5,835; March, 4,706; and April, 7,229. Taking into consideration the fact that under normal conditions a number of persons are unemployed, or only casually employed, it will be seen that the excess of unemployment arising from war conditions is comparatively small.

In addition to the unemployed there are many workers only partially employed, the system of reducing the working hours per week in order to give employment to more persons having been introduced in some industries, notably in railway construction and other public works.

The conditions of employment, as indicated by the Labour Department's record for April, 1915, were as follows:—

Industry.	Persons ordinarily employed in industries.	Persons diverted to Military and Naval Services.	Persons in part time employment.	Estimated number of persons actually unemployed.
Building Trades	25,332	1,790	2,490	975
Manufacturing—				
Clothing, &c.... ..	26,756	610	3,500	204
Engineering	18,123	2,119	1,100	348
Food Supply	18,854	945	635	368
Leather Trades	1,368	250	50	.....
Power, Light, and Heat	8,795	913	.....	28
Printing	8,157	280	244	38
Shipbuilding	4,620	90	.....	46
Woodworkers	14,667	900	538	115
Other Manufacturers	12,033	629	643	429
Domestic	18,113	789	.....	26
Transport (sea and land)	131,380	3,281	380	118
Mining	38,711	1,300	8,570	2,695
General Labouring	170,261	9,234	34,932	1,699
Miscellaneous	50,206	4,530	15	140
Total	547,376	27,660	53,097	7,229

The figures relating to part time employment represent the number of persons in regular employment whose working hours have been reduced, and does not include casual workers.

The following particulars relating to the effect of the war upon industrial employment have been obtained from returns of the factories registered under the Factories and Shops Act, which are furnished periodically to the Chief Inspector of Factories, usually as at 31st October of each year. The returns were collected as at 30th September, 1914, when the commercial dislocation arising from the war was severely affecting the manufacturing industry, and again at 30th April, 1915:—

Date of Returns.	Factories Registered.	Employees.			Increase in Number of Employees.	
		Males.	Females.	Total.	Numerical.	Per cent.
31 Oct., 1912 ...	5,203	64,319	28,263	92,582	4,232	4·8
31 Oct., 1913 ...	5,561	67,046	28,533	95,584	3,002	3·2
30 Sept., 1914 ...	5,883	63,033	26,779	89,812	5,772*	6·0*
30 April, 1915 ...	6,164	65,820	27,323	93,143	3,331	3·7

* Denotes decrease.

The number of employees in September, 1914, showed a decrease of 6 per cent. as compared with October, 1913, but during the nine months ended April, 1915, there was an improvement equal to 3·7 per cent., the factories which showed actual increases being metal, machinery, and shipbuilding works and factories connected with the production of oils, fats, drugs, chemicals, food, drink, and leatherware. The decrease in the number of employees between October, 1913, and April, 1915, amounted to 2·6 per cent.

RELIEF OF UNEMPLOYMENT.

The question of relief of unemployment first received practical political attention in 1885, when, following upon a period of severe pastoral, commercial, and industrial depression, a Casual Labour Board was instituted. Between that date and 1890 extensive relief works were undertaken till a normal condition of the labour market was attained. Subsequently unemployment again became prevalent, and in place of the Casual Labour Board, a Government Labour Bureau was constituted in February, 1892. By 28th February, 1893, some 18,600 persons were registered for employment, and 18,154 persons were sent to employment, chiefly in unskilled trades. In 1893-4 Newcastle was included in the area of operations of the Board, and fossicking on the old gold-fields of the State became accepted as a form of relief.

At this period also a system of using surplus labour to improve rural lands was initiated; and up to 30th June, 1898, a total area of 432,724 acres was cleared by this means. An Act was passed in 1893 to establish labour settlements on Crown lands; three were established, viz., Pitt Town, Wilberforce, and Bega. The last-mentioned two are still in existence, and particulars of their operations are shown in the chapter relating to Agriculture. The Pitt Town settlement was not successful, and in 1898 a casual labour farm was opened on the site.

Government expenditure for the relief of the unemployed reached a maximum in the year ended February, 1896, when 14,062 men were registered at the Labour Bureau; since that year there has been much less demand for Government assistance, although in the year ended June, 1901,

in consequence of industrial depression, a large number of men were unemployed, and registrations at the Bureau numbered 10,639. A Labour Depôt was opened at Randwick as a relief station for destitute men, and work was provided on road and railway construction, water conservation works, and land clearing. In consequence of drought, many industrial trades suffered severely in 1902-3, but public works were instituted for the purpose of relief; and, owing to better organisation, the number of persons who sought the assistance of the Labour Bureau, 2,854, was remarkably small. During the prosperous seasons which succeeded the drought employment was exceptionally brisk in all trades.

In 1914 special measures were taken to mitigate the effects of unemployment arising from war conditions, and from the drought which severely affected the pastoral and wheat-growing areas of the State. In addition to the State Labour Branch and the Women's Employment Agency in operation in Sydney, a self-registration system was introduced, by which persons seeking employment were enabled to register at the Department of Labour and Industry by transmitting post-free letter-cards; and subsequently post-free cards were provided also for the use of employers requiring workers; additional offices for the transactions of labour agency work were established, viz., at Newcastle in September, 1914; at Broken Hill in October; at Woonona in January, 1915; and at Orange in February. At these exchanges persons wanting work may register their requirements, capabilities, and characters; and employers may state what class of labour they desire. Constant endeavour is made to suit the one to the other, and employes are assisted to reach their employment. All these operations are conducted at the cost of the State, no fees being charged to employers nor to employees. Railway and steamer fares are issued on credit, terms for repayments being arranged according to circumstances. Usually the payment of fares is guaranteed by either the employer or some responsible person, but they may be issued on the personal acknowledgment of the recipient, and his promise to repay the same.

The operations of the employment agencies during each month of the year 1914 are shown below:—

Month.	State Labour Branch and Newcastle Agency.			Women's Employment Agency.		
	Applications for Employment.	Applicants placed.	Positions made available during month.	Applications for Employment.	Applicants placed.	Positions made available during month.
January	655	779	...	...	..	..
February	884	601	...	...	...	...
March	909	793	...	...	...	...
April	762	784	...	...	...	...
May	1,030	1,266	1,264	574	32	103
June	823	800	902	305	55	163
July	996	844	963	350	91	362
August	792	533	1,238	437	107	359
September	2,895	1,178	2,273	378	138	316
October	1,556	1,334	1,547	348	130	249
November	1,319	780	935	339	139	202
December	1,288	600	921	236	155	184

Training and Relief.

Since 1910 the Pitt Town Farm has been maintained primarily as an agricultural training farm for city and oversea youths. Particulars relating to its operations are given in the chapter of this Year Book relating to Agriculture.

At the Randwick Labour Depôt, where a pig, poultry, vegetable, and flower farm, and a State dairy have been established, destitute men unable to maintain themselves, are given lodging, food, and a small money allowance in exchange for labour. Competent tradesmen, if employed at their trade, are paid extra. The period of residence must not exceed three months, nor recommence without a similar interval. A certain amount of training is given, and whenever possible trainees are sent to employment with private employers.

Any man who is the head of a family requiring relief may obtain three days' work in each week at the Randwick Depôt, where he is housed and fed, and on the conclusion of his work, given a norder for 7s. 6d. worth of food materials. Breaks are made in this relief from time to time so as to induce recipients to make other arrangements. In exceptional cases orders are issued in advance of work, and sometimes without work being exacted. These, however, especially the latter, are rare, and are used only to meet urgent cases of destitution and want of food.

Cheap Dwellings for Workmen.

To compensate for the reduction in the hours of work of labourers and tradesmen employed on Government works, it was decided during the month of October, 1914, to erect canvas dwellings to house the families of these workmen at a nominal rental. The dwellings were erected on a site at Randwick; they contain three rooms, the approximate original cost being £10 each, and the rental from 1s. 6d. to 2s. 6d. per week. As a comparatively small number of Government workmen made application for the dwellings, they were made available to other applicants. At 31st December, 1914, there were 27 families in residence, the population being 52 adults and 80 children.

Sydney Clerks' and Warehousemen's Benefit Association.

A friendly society, the Sydney Clerks and Warehousemen's Benefit Association, endeavours to regulate clerical labour.

The following figures show the extent of out-of-employment benefits granted to members of the Association in recent years:—

Year.	Mean Membership.	Aggregate Benefits.	Year.	Mean Membership.	Aggregate Benefits.
	No.	£		No.	£
1905	362	261	1910	775	231
1906	456	245	1911	791	252
1907	491	212	1912	876	377
1908	579	330	1913	954	250
1909	706	211	1914	945	496

Particulars as to the number of beneficiaries in each year are not available.

The extent of out-of-employment benefits provided by trade unions has been shown previously in this chapter.

WORKMEN'S INSURANCE.

State Legislation.

Legislation in relation to employers' liability in New South Wales is based upon English statute law.

The State enactments are the Employers' Liability Act, 1897, and the Workmen's Compensation Act, 1910, the provision of old-age and invalid pensions being a function of the Federal Government.

The Employers' Liability Act, 1897, gave to a workman, who had suffered personal injury in the course of his employment, the same common law remedies against his employer as if he had been injured by one not his employer.

Workmen's Compensation Act, 1910.

This Act, which came into operation in January, 1911, follows the lines of the English Act of 1897. It provides for compensation to workmen for injuries suffered in the course of their work, and applies to employment in or about any railway, tramway, factory, workshop, mine, quarry, wharf, vessel, engineering or building work, except mines where benefits are afforded under the Miners' Accident Relief Act. Employers of less than four persons are exempt from the provisions of the Act. Casual workers are not entitled to benefits, nor is compensation payable in respect of injury which does not disable the workman for at least two weeks, or which is caused by misconduct of the workman.

Compensation in case of death ranges from £200 to £400 when there are several relatives wholly dependent on the earnings of the workman, the amount being reducible proportionately with the number of dependents and the degree of their dependence. If the workman leaves no dependents, the compensation is limited to medical and funeral expenses up to £12. Where total or partial incapacity results, the employer must make a weekly payment, not exceeding 50 per cent. of the average weekly earnings during the preceding twelve months, up to a maximum of £1 per week, and a total liability to the employer of £200. In the case of employees under 21 years of age receiving less than 20s. a week, 100 per cent. of average earnings is substituted for 50 per cent. up to a maximum of 10s. per week. Aged and infirm workmen may contract themselves out of these general provisions, or the maximum amount of compensation may be reduced by agreement made between the employer and workman.

In substitution for these benefits any scheme of compensation is admissible which is certified by the Registrar of Friendly Societies as not less favourable to the workman and dependents than the corresponding scales contained in the Act.

The Act does not exclude the operation of the common law or the Employers' Liability Act, 1897, but the employers' liability, even when apparent, must be established by processes of litigation. The employers' risk is for the most part covered by insurance, but concerning this section of the business of insurance companies, no details are available.

Employers are required to make annual returns to the Minister for Labour and Industry regarding operations under the Act. During 1914 returns were received from 448 employers, who employed an average number of 120,707 males, and 2,384 females to whom the Act applied. Compensation amounting to £15,256 was paid in respect of 65 deaths; 136 cases of non-fatal accidents were settled by the payment of lump sums amounting to

£8,043, and in 6,250 cases of disablement £30,159 was paid in weekly instalments; the duration of such compensation was as stated below:—

Duration of Compensation.	Number of Cases.	Duration of Compensation.	Number of Cases.
Less than 2 weeks	3,189	13 ,, ,, 26	130
2 weeks and less than 3	980	26 ,, ,, 52	42
3 ,, ,, 4	587	1 year and less than 2	4
4 ,, ,, 13	1,122	Not stated	196
		Total... ..	6,250

The particulars disclosed by the returns received during the last two years are compared in the following statement:—

Particulars.	1913.	1914.
Returns Received	488	448
Approximate average number of employees to whom Act applies—		
Males	77,088	120,707
Females	3,774	2,384
Compensation—Deaths—		
Cases... ..	62	65
Amount paid	£14,797	£15,256
Disablement—Weekly payments—		
Cases... ..	6,061	6,350
Amount paid	£30,275	£30,159
Non-fatal cases settled by payment of lump-sum—		
Cases... ..	156	136
Amount paid	£9,079	£8,043
Total Compensation	£54,151	£53,458

Miners' Accident Relief Fund.

As regards the mining industry, which is exempted specifically from the jurisdiction of the Workmen's Compensation Act, some particulars of the Miners' Accident Relief Fund are given in part "Mining Industry" of this Year Book and additional information is shown hereunder. The provisions of this measure for compensation to injured workmen differ considerably from the general theory as to the employer's liability for injuries to his workmen, in that the burden of the risk is carried by three parties—the employer, the employee, and the Government of the State. Of the funds required to pay the benefits, the State and the employer each contribute 25 per cent., and the employee the remaining 50 per cent.

The mines subject to the provisions of the Act during the year 1914 numbered 198, but owing to suspension of operations, the number at the end of the year was reduced to 157.

The gross revenue for the year 1914 was £66,804, a decrease of £5,096 as compared with the previous year. The shrinkage in revenue is attributed to a material decrease in the labour employed. The total amount deducted from wages was £26,962, representing an average year's contribution from 27,653 persons, as compared with 31,272 in 1913. The contributions by mine

owners amounted to £14,023, which includes one-third of the contributions made by checkweighmen and pickmen.

The Government subsidy for the year 1914 was £14,023, and interest received on investments amounted to £11,754.

The funds invested at 31st December, 1914, amounted to £330,000, of which £11,000 was added during the year, the whole sum being represented by New South Wales Funded Stock bearing interest at 3½ to 4 per cent. The expenditure for the year was £55,426, or £3,385 in excess of the year 1913.

The following table summarises the beneficiaries during the year 1914:—

Beneficiaries.	Claims existing, 31st Dec., 1913.	Claims allowed, 1914.	Benefits Determined.				Claims existing on 31st Dec., 1914.
			By Death.	By Marriage.	By Age	Other-wise.	
Fatal Accidents—							
Widows	337	33	3	19	...	2	346
Fathers	12	1	2	...	...	...	11
Mothers	41	5	1	...	...	...	45
Sisters and Guardians ...	19	3	...	...	...	3	19
Children	552	80	3	...	68	11	550
Disablement—							
Persons permanently disabled	258	64	19	..	...	4	299
Children	221	93	...	...	25	23	266

The year 1914 was free from anything that might be described as a mining disaster. The accidents, fatal and non-fatal, since 1901, are shown below:—

Period.	Average Number of Employees.	Fatal Accidents.		Non-fatal Accidents.	
		Number.	Per 1000 Employees.	Number.	Per 1000 Employees.
1901-5*	21,377	57	2.67	3,484	162.98
1906-10*	26,626	56	2.10	5,538	207.99
1911	28,034	64	2.28	6,024	214.88
1912	29,390	77	2.62	6,211	211.33
1913	31,272	78	2.49	6,184	197.75
1914	27,653	53	1.91	5,557	200.91

* Average.

Commonwealth Legislation.

In addition to the general enactments of the State, specific enactments of the Commonwealth provide for compensation to men in a particular class of work which is subject to special risks, and to officers in the Service of the Commonwealth Government.

Seamen's Compensation.

The Seamen's Compensation Act, 1911, provides for compensation to seamen for injuries suffered in the course of their employment. It is applicable to seamen (a) on ships in the service of the Commonwealth, other than naval or military service; (b) on ships trading with Australia or engaging in any occupation in Australian waters, and being in territorial waters of any territory which is part of the Commonwealth; and (c) on ships engaged in trade and commerce with other countries or among the States. In case of ships not registered in Australia, the two last clauses apply only in relation to seamen shipped under articles of agreement entered into in Australia, and while the ships are subject to the law of the Commonwealth. Compensation is not payable in respect to any injury which does not disable the seaman for at least one week; in case of death, the amount of compensation, when deceased leaves dependents, is the equivalent of three years' wages in the particular employment, or £200, to a maximum amount of £500.

The compensation is reducible with the measure of dependence, but the minimum for a seaman leaving no dependents is the cost of medical attendance and burial to the value of £30.

In case of total or partial incapacity, the maximum compensation is 50 per cent. of average earnings during the twelve months previous to the injury.

Periodic returns as to compensation are required from the owner or master of every ship on which seamen are employed to whom the Act is applicable, the returns to specify—

- (a) The number of injuries in respect of which compensation has been paid.
- (b) Amount of such compensation.
- (c) Other particulars as required.

INDUSTRIAL LEGISLATION.

For many years subsequent to the establishment of Responsible Government in New South Wales in 1855, the majority of the population were engaged chiefly in pastoral or mining industries, in sparsely-settled districts. Local conditions neither promoted nor necessitated the concentration of attention upon industrial activity, with consequent legislation in that direction. Between 1871 and 1881, however, manufacturing came into prominence as an integral part of the industrial life of the State; the increasing population displayed a tendency to aggregation in defined localities, and for some ten years, till 1892, legislative interest expressed itself in a desultory way in specific enactments intended for the betterment of conditions obtaining in industry. In this period world-wide interest was displayed in the question as to the necessity and the wisdom of protective legislation for the betterment of environment for the great body of workers.

The Legislature of New South Wales was alert to the general trend of thought and opinion. The Parliamentary session of 1892 constitutes a landmark in the industrial history of New South Wales, for three vastly differing enactments were passed, which signalled a new era of activity in legislation, viz. :—

Protection of Children Act.

Diseased Animals and Meat Act.

Trade Disputes and Conciliation Act.

These enactments formed the nucleus of a body of statute law which has been expanded by subsequent legislation, and is being amended constantly in the effort to give concrete form to advancing standards and ideals.

The enactments which initiated the era of consistent consideration for the welfare of the general body of the people are notable in that they apply to three diverse aspects of life—(a) the dependent stage of infancy; and (b) the adult period as to (1) health, (2) working conditions. In codifying the industrial laws in New South Wales the sequence of introduction which displays the direction of attention of legislators indicates also the trend of popular thought.

Historically, the earliest subjects to receive attention were such as related to industrial conditions and safeguards in trade. The sequence of treatment of individual trades placed shipping in the first rank, followed in order by retail trading, mining, agricultural, and pastoral industries. Health interests and matters relating to food and drink and bodily welfare were antecedent to the subject-matter of general welfare and protection; while in regard to the helpless and extreme stages of life, youth received consideration as being proximate to the working years, before the extremes of infancy and old age, which were concerned more remotely with the industrial problems.

In 1901 the Commonwealth of Australia was inaugurated, and its Parliament was empowered, under the Commonwealth of Australia Constitution Act, 1900, to make laws under stated conditions for the peace, order, and good government of the Commonwealth, particularly in matters of trade and commerce, taxation, bounties on production, borrowing money on public credit, postal, telegraphic and telephonic services, defence, lighthouses, astronomical and meteorological observations, quarantine, fisheries, statistics, currency, banking, insurance, bills of exchange, bankruptcy, copyright, and patents, naturalisation, marriage, divorce, pensions, migration, external affairs, and railway control in relation to defence and railway construction subject to the consent of the State concerned.

With the transfer of these subject-matters to the Federal Parliament, an acceleration is noticeable in the attention given by the Parliament of the State to economic measures for the advancement of industrial efficiency and well-being, which acceleration is in part attributable to the expanding popularity of protective regulation by statute law, and in part to the additional opportunity afforded for attending to subjects of social reform. Thus, New South Wales now possesses a body of statute law which forms an industrial code sufficiently comprehensive to compare favourably with similar codes governing other advanced communities.

An analytical list of the principal industrial laws of New South Wales has been given in previous years, and need not be recapitulated. The provisions of a number of these Acts, which have for their object the amelioration of the conditions of the industries, have been discussed in various chapters of this Year Book.

INDEX.

- Abattoirs, 865
 Board, 650, 737
 Control, 865
 Abercrombie Caves, 51
 Aborigines, 104
 Ages, 651
 Census Records, 105
 Children, 651
 Education, 651
 Expenditure, 650
 Home, 650
 Protection Board, 105
 Reserves, 651
 Absent Voting, 64
 Absentee Taxpayers, 729, 730
 Accidents, 151
 Assurance, 433
 Deaths, 151
 Industrial, 948
 Factories, 948
 Lifts and Scaffolding, 949
 Mines, 285
 Railways, 794
 Tramways, 803
 Insurance, 433
 Pensions, 700
 Rates—
 General, 151, 949
 Specific, 151, 949
 Relief—
 Compensation, 956
 Railways, 794, 795, 803
 Tramways, 803
 Miners, 287
 Accommodation—
 Factories, 940
 Shearers, 942
 Accounts, 715
 Closer Settlement, 721
 General Banking, 716
 General Loan, 716
 Old Deficiency, 718
 Public Works, 722
 Railways Loan, 740
 Special, 738
 Deposits, 738
 System, 715
 Acquisition of Lands, 498
 Acts of Parliament, 69
 Additional Bars, 454
 Administrative Government, 69
 Admiralty Court, 459
 Adoption of Children, 659
 Advance Notes, 322
 Advances—
 Miners, 228
 Settlers, 590
 Trading Banks, 416
 Aerated Waters, &c., 383
 Affiliated Colleges, 211
 38433—A
 Afforestation by Prisoners, 487
 Agate, 279
 Aged Workers, 939
 Agent-General for N.S.W. in London, 70
 Agents, Commercial, 346
 Ages—
 Aborigines, 651
 And Conjugal Condition, 110
 Census Records, 96, 109, 893
 Factory workers, 357
 General population, 96
 Death, 129
 Marriage, 114
 Intercensal Variations, 96, 899
 Mothers, 122
 Occupations, 827
 Prison Population, 476
 School Children, 169
 Agreements, Industrial, 931
 (See also Employment)
 Agriculture, 539
 Acreage—
 Cultivation, 539
 Principal Crops, 542
 Advances to Settlers, 599
 Agricultural—
 Bulletins, 584
 Bureaux, 589
 College—Hawkesbury, 186, 584
 Gazette, 584, 589
 High School, 185
 Royal Agricultural Society, 213
 Shows, 589
 Societies, 589
 Apples, 577
 Apprentice Farms, 586
 Apricots, 577
 Area—
 Cultivated, 539
 For Wheat-growing, 551
 Arrowroot, 569
 Artesian Bores, 597
 Artichokes, 569
 Barley, 564
 Hay, 566
 Bathurst Experiment Farm, 585
 Bounties on Products, 583
 Cane, Sugar, 579
 Citrus Fruits, 576
 Closer Settlement, 599, 598
 Condoblin Experiment Farm, 587
 Coomamble Experiment Farm, 587
 Co-operative Activity, 589
 Cowra Apprentice Farm School, 586
 Crops, 539
 Double, 542
 Gourd, 579
 Lins, 439
 Minor, 578
 Principal, 542

Agriculture—*continued.*

Relative Importance, 542
 Root, 568
 Value, 543
 Cultivation—
 Area, 539
 Holdings, 543
 Demonstration Farms, 586
 Department of State, 584
 Dry Farming, 553
 Education, 185
 Employment, 581, 902
 Ensilage, 567
 Experiment Farms, 585
 Plots, 588
 Fallowing, 556
 Farming—
 Implements, 379, 578
 Methods—
 Dry Farming, 553
 Fallowing, 556
 Irrigation, 891
 Share Farming, 545
 Farrer Scholarships, 588
 Fertilisers, 581
 Fodder, 566
 Freights, 792
 Fruits, 574
 Dried, 575
 Gardens—
 Market, 579
 School, 185
 Gazette, 584, 589
 Glen Innes Experiment Farm, 586
 Government—
 Federal Bounties, 583
 State, Advances to Settlers, 590
 Grants to Societies, 589
 Grafton Experiment Farm, 585
 Grape Vines, 574
 Grasses—
 Native, 539
 Sown, 539, 567
 Green Food, 566
 Hawkesbury College, 585
 Hay, 565
 Implements, 379, 579
 Instruction, 185
 Irrigation, 891
 Labour, 579
 Lands, 539
 Lemons, 577
 Liens on Crops, 439
 Loans—State, 590
 Lucerne, 566
 Machinery, 379, 579
 Maize, 562
 Manures, 581
 Melons, 578
 Millet, Broom, 565
 Oats, 564
 Onions, 569
 Orangeries, 576
 Orchards, 575
 Persons Employed, 581
 Potatoes, 568
 Sweet, 569
 Poultry, 635
 Prices, 557, 569

Agriculture—*continued.*

Production, 855
 Factories, treating, 372
 Values, 543
 Pulse, 578
 Pumpkins, 579
 Raisins, 575
 Ringbarking, 542
 Root Crops, 568
 Rural Training, 185
 Rye, 565
 Share Farming, 545
 Shows, 589
 Societies, 589
 Sugar Cane, 570
 Sultanas, 575
 Tenant Occupancy, 512
 Tobacco, 569
 Tomatoes, 578
 Training, 185
 College—Hawkesbury, 186
 Schools—
 Apprentice, 586
 Farm, 186, 587
 Secondary—Hurlstone High, 185
 University, 203
 Turnips, 569
 Value, 543
 Viticulture, 574
 Wheat, 546, 550
 Wine, 574
 Alcohol, Consumption, 858
 Ale and Beer, 384
 Alienation of Crown Lands, 494
 Early, 494
 Extent, 531
 Legislation, 494
 Progress, 514, 520, 532
 Resumed Land, 503
 Aliens—
 Immigration, 102
 Legislation, 102
 Naturalisation, 106
 Alkali, 374
 Allowance—
 Maternity, 115, 655
 Men of Letters, 700
 Widows, 658
 Wives, Deserted, 658
 Alluvial Mining, 231
 Alpine Resorts, 52
 Aluminium, 265
 Alunite, 265, 279
 Ambulance—
 Civil, 677
 Mining, 287
 N.S.W. Marine, 677
 Police, 472
 Railways and Tramways, 677, 804
 St. John, 677
 Amethyst, 279
 Analyses, Coal, 272
 Anchorages, 16
 Angora Goats, 599
 Animals—
 Diseases, 649
 Goats, 599
 Live Stock, 599
 Noxious, 620

- Animals—*continued*.
 Quarantine, 608, 610
 Sales—
 Prices, 613
 Yards, 864, 875
 Antarctic Expeditions, 44
 Anthropometry—
 State School Children, 666
 Anticyclones, 33
 Antimony, 261
 Anti-tuberculosis Dispensaries, 676
 Apoplexy, Deaths, 144
 Appellate Jurisdiction, 469
 Criminal Appeal Court, 469
 Full Court, 469
 High Court of Australia, 470
 Land Appeal, 469
 Privy Council, 470
 Quarter Sessions, 469
 Supreme Court, 469
 Appendicitis—
 Deaths, 149
 Hospital Cases, 671
 Apples, 577
 Apprehensions by Police, 448
 Apprentices—
 Commission, 200
 Farms, 586
 Industrial, 941
 State Children, 660
 Appropriations, Loan, 739
 Apricots, 577
 Apsley Falls, 55
 Aquamarine, 278
 Arbitration, Industrial, 457, 893, 920,
 923
 Commonwealth, 916
 State, 922
 Ardlethan Tin Mines, 254
 Area of—
 Australia, 13
 British Empire, 14
 Crops, 539
 Cultivation, 539
 Holdings, 525-537
 Lands—
 Crown, available for Settlement,
 518-520
 Enclosed, 534
 Forest Reserves, 495
 Grassed, 536
 Leased—
 Crown Land, 518
 Private Land, 500
 Mining, 228
 Business Licenses, 224
 Leases, 228
 Occupation, 228
 Rights, 228
 Reserved, 495
 Rural Holdings, 531
 Timber Reserves, 495
 Wheat, suitable for, 551
 Lord Howe Island, 13
 Municipalities, 808
 New South Wales, 13, 493
 River Basins, 23
 Rural Holdings, 531
 Shires, 808
 Area of—*continued*.
 Sydney, 808
 Under Crops, 539
 Arms and Explosives, 389
 Small Arms Factory, 389
 Arrests, 448
 Arrivals (*see* Immigration), 90
 Arrowroot, 569
 Arsenic, 279
 Art—
 Conservatorium, 221
 Gallery, National, 48, 214, 218
 Artesian Basin (*See* Mining Map)
 Bores, 20, 46, 597
 Water, 597
 Articled Clerks, 198
 Arts—
 Conservatorium, 221
 Schools of, 220
 Arts and Professions, 220
 Asbestos, 284
 Asphalt, 375
 Assaying, 401
 Assembly, Legislative, 63
 Assessments, Government, 639
 Assistants, 895
 Assisted Immigration, 89, 91
 Assurance—
 Accident and Invalidity, 433
 Accumulated Funds, 431
 Assets, 432
 Bonus Additions, 425
 Business, 425
 Companies, 425
 Endowment, 424
 Fire, 433
 Industrial, 426
 Invalidity, 433
 Legislation, 424
 Liabilities, 432
 Life, 424
 Companies, 425
 Industrial, 426
 Local Business, 428
 Management Expenses, 431
 New Business, 429
 Ordinary Business, 425
 Policies in Force, 425
 Premium Income, 425
 Revenue, 430
 Miners' Accident, 287
 Summary, 427
 Workmen's Compensation, 956
 Asylums—
 Benevolent, 673
 Blind, 686
 Deaf and Dumb, 686
 Destitute, 673
 Hospitals, 673
 Infirm, 649, 673
 State, 649, 673
 Attractions, Tourist, 46
 Auctioneers' Licenses, 454
 Revenue, 454
 Auction Sales—
 Crown Lands, 501
 Auriferous Land, 239
 Australasian Trained Nurses' Association,
 222

- Australia, Commonwealth of, 57
 Arbitration, Industrial, 916
 Area of States, 13
 Bank, 406
 Bounties, 259, 276, 330, 348
 Capital Cities, 94
 Capital Territory—
 Area, 13
 Ordinance, 62
 Transfer, 13
 Census, 85
 Coinage, 397
 Constitution, 57
 Alteration, 61
 Duties—
 Customs, 331
 Excise, 332
 Elections, 60
 Expectation of Life, General Popu-
 lation, 896
 Federal Territory, 13
 Financial Relation with States, 752
 Franchise, 60
 Functions, 57
 Governor-General, 58
 High Court, 470
 House of Representatives, 60, 61
 Immigration, 903
 Inauguration, 57
 Industries Preservation, 330
 Land Taxation, 729
 Legislation—
 Coinage, 397
 Commerce and Shipping, 289, 329
 Manufactures Encouragement, 349
 Maternity Allowances, 115, 655
 Men of Letters (Literary) Fund, 700
 Meteorology, 33-44
 Naval Station, 81
 Navy, 80
 Note Issues, 402
 Parliament, 59
 House of Representatives, 60, 61
 Senate, 59, 60
 Pensions, 699-701
 Population, 87
 Quarantine, 318
 Referenda, 61
 Seat of Government, 62
 Senate, 59-60
 Settlement, 1
 Taxation, 402
 Australian Agricultural Co., 494
 Australian Museum, 214, 223
 Automatic Telephones, 769
 Aviation School, 79
 Awards, Industrial (*see* Employment), 931

 Baby Clinics, 649
 Bacon and Ham, 632
 Export, 633
 Factories Curing, 381
 Prices, 876, 877, 882
 Production, 632
 Bagatelle Licenses, 454
 Bakery, State, 383
 Baking Powder, 391, 887
 Ballimore Mineral Spring, 27

 Bankruptcy—
 Jurisdiction, 462
 Records, 434
 Banks and Banking—
 Account, General, 716
 Banking, 411
 Clearing House, 419
 Coin and Bullion, 414
 Commonwealth Bank of Australia,
 406
 Notes, Tax, 401, 402
 Savings, 407
 Commonwealth, 410
 Penny, 408
 School, 197, 408
 State, 407
 Trading, 410
 Advances, 414, 416
 Assets, 412
 Australian Notes, 402
 Capital, 411
 Clearing House, 411
 Deposits, 412, 414, 416
 Discount Rates, 417
 Dividends, 418
 Exchange, 417
 Settlement, 419
 Institutions, 411
 Interest, 417
 Landed Property, 414
 Liabilities, 412
 Local Business, 413
 Metallic Reserves, 415
 Notes, 401, 411
 Paper Currency, 401
 Pool, 419
 Profits, 418
 Relation of Advances to Deposits,
 416
 Reserve Funds, 411
 Baptist Church, 710
 Bark, Tanning, 373
 Barley, 564
 Barristers, 222, 471
 Barytes, 283
 Basalt, 281
 Basket and Wickerware, 395
 Bathurst Experiment Farm, 186, 585
 Batteries, Crushing, 229
 Bauxite, 258, 265
 Bay—
 Botany, 17, 48
 Broken, 17, 53
 Byron, 16, 55
 Jervis, 18, 49
 Trial, 16, 55
 Watson's, 17, 49
 Bayview, 54
 Beaches, Surfing, 47, 49, 54
 Beans and Peas, 578
 Bedding Factories, 391
 Bee Farming, 636
 Beef—
 Consumption, 617, 858
 Export, 618
 Prices, 619, 866, 867, 878, 882
 Production, 863
 Supply, 863
 Bee-keeping, 636

- Beer, 384
 Breweries, 384
 Consumption, 859
 Licenses—
 Breweries, 454
 Club, 454
 Hotel, 452, 453
 Prices, 888
 Beeswax, 636, 876
 Bega Labour Settlement, 509
 Belubula Caves, 51
 Benefit—
 Societies—
 Building, 422
 Friendly, 686
 Subsidies, 691
 Benevolence—
 Aborigines Protection, 651
 Asylums, 673
 Collections, 678
 Dispensaries, 676
 Expenditure, 673
 Homes, 673
 Hospitals, 666, 673
 Industrial Schools, 201
 Leper Lazaret, 674
 Expenditure, 650
 Societies, 676
 State Children's Relief Board, 652
 State Expenditure, 673
 Subsidy, 677
 Berowra Creek, 54
 Berry Experiment Farm, 586, 633
 Berthing Charges, 291
 Beryls and Corundum, 278
 Beverages, Alcoholic—
 Consumption, 858
 Licenses to Sell, 452, 454
 Manufacture, 384
 Billiards and Bagatelle—
 Factories, 391
 Licenses, 454
 Revenue, 454
 Bills—
 Exchange, 417
 Lading, 329
 Sale, 440
 Treasury, 743
 Bird Island, 18
 Births, 115
 Birthplaces, 98
 Deaths in Child-birth, 151
 Excess over Deaths, 69, 121
 Females, 118
 Illegitimate, 118
 Issue of Marriages, 115
 Legitimation Act, 119
 Males, 118
 Maternity Allowances, 115
 Mothers—
 Ages, 122
 Deaths in Child-birth, 151
 Multiple, 120
 Notification, 654
 Plural, 120
 Rates—
 Country Districts, 117
 Illegitimate, 118
 Births—*continued.*
 Rates—*continued.*
 Legitimate, 116
 Urban Areas, 117
 Registration, 108
 Sexes of Infants, 118
 Sydney and Suburbs, 117
 Triplets, 120
 Twins, 120
 Biscuits, 382
 Bismuth, 260, 262
 Blackheath, 32, 50
 Blankets, 387
 Blindness, 625
 Blind-deaf Mutes, 685
 Institutions, 686
 Blow-hole, Kiama, 49
 Blue-metal Quarries, 281
 State, 281
 Blue Mountains, 21, 49
 Boards—
 Abattoirs, 650, 737
 Aborigines Protection, 105, 651
 Advances to Settlers, 590
 Closer Settlement, 509, 528
 Country Water Supply, 831
 Dental, 221
 Fire Commissioners, 433
 Health, 649
 Housing, 706
 Hunter District Water and Sewerage,
 843
 Industrial, 623
 Irrigation, 591
 Meat Industry, 650
 Medical, 221
 Metropolitan Hospitals, 649
 Military, 74
 Miners' Accident Relief, 287
 Naval, 74
 Pastures Protection, 613
 Pharmacy, 222
 Pre-Maternity, 650
 Prospecting, 225
 Railway Commissioners, 773
 Defence, 798
 War Council, 798
 Sludge Abatement, 227
 State Children's Relief, 652
 Sydney Harbour Trust, 289
 Tuberculosis Advisory, 141, 649,
 675
 Water and Sewerage, 839
 Water Conservation and Irrigation,
 Trust, 591
 Western Land Board, 598
 Boats,
 Building, 390
 Fishermen's, 643
 Boiling-down and Tallow Refining, 372
 Bond, Articles in, 345
 Bondi Beach, 48
 Bonedust, 620
 Bones, 620, 878
 Books, Paper, Printing—
 Factories, 389
 Imports, 341
 Postage, 758

- Boot and Shoe—
 Factories, 388
 Imports, 341
 Booth and Stand Licenses, 454
 Border Railways, 779
 Bores (see Mining Map), 223
 Artesian, 20, 46, 597, 613
 Mining, 230
 Botanic—
 Gardens, 47, 214
 Herbarium, 214
 Botany Bay, 17, 48
 Boundaries, of States, 14
 Bounties, Federal—
 Agricultural Products, 583
 Canned Fish, 863
 Exports, 330
 Fish Preserving, 645
 Iron and Steel, 259
 Kerosene, 276
 Manufactured Products, 348
 Shale Oils (Kerosene), 276
 Sugar, 573
 Wool Tops, 331
 Bowral, 51
 Box and Case Making, 377
 Boy Scouts, 76
 Boys in Mines, 232
 Bran, 383
 Brands, Stock, 613
 Brass, 379
 Braunitz, 262
 Bread, Prices, 868, 882, 886
 Supply, 868
 Breadwinners, 894
 Breeding—
 Cattle, 599, 607
 Horses, 609
 Poultry, 635
 Sheep, 601
 Wheat, 553
 Breweries, 384
 Brewers' Licenses, 454
 Bricks, Clays, 375
 Brickworks—
 Government, 282, 376
 Private, 375
 Bridegrooms, Ages, 114
 Brides, Ages, 114
 Bridges, 847, 849
 Control, 848
 Expenditure, 852
 Glebe Island, 850
 Hawkesbury River, 850
 National Works, 849
 North Sydney, 851
 Pymont, 849
 Brigades, Fire, 433
 Bright's Disease—
 Deaths, 150
 Hospital Cases, 671
 Brisbane Water, 54
 British Empire (see Imperial)
 Area, 14
 Trade with, 336
 Broadwater, 26, 54
 Broken Bay, 17, 53
 Broken Hill—
 Factory District, 934
 Railways, 784
 Silver Mines, 247, 287
 Tramways, 801
 Bronchitis, Deaths, 147
 Bronze, Coinage, 400
 Broom Millet, 565
 Brooms and Brushware, Manufacture 395
 Broughton Island, 18
 Brunswick River, 55
 Buildings, 361
 Benefit Societies, 422
 Building Stones, 280
 Materials, 280
 Postal, 754
 Ships and Boats, 390
 Bulk Handling, Wheat, 560
 Bulli, 31, 49
 Pass, 49
 Bullion, Exports, 344
 Bundanoon, 53
 Bungonia—
 Caves, 51
 Mineral Spring, 27, 52
 Bureau—
 Employment, 160
 Government Tourist, 46
 Microbiology, 649
 Statistics, 70
 Burns, Deaths, 152
 Burragorang Valley, 20, 52
 Burrinjuck—
 Railway, 777
 Reservoir, 32, 53, 591
 Bursaries—
 Endowment Fund, 194
 Scholarships, 193
 Bush—
 Book Club, 218
 Nurses, 677
 Business—
 Colleges and Shorthand Schools, 196
 Licenses, 224
 Undertakings, Governmental, 720
 Butter—
 Consumption, 858
 Exports, 633
 Factories, 381, 630, 692
 Fats, 627
 Freights, 634, 792
 Imports into United Kingdom, 634
 Local Consumption, 858
 Manufacture, 628, 630
 Milk, Separated, 628
 Prices—
 London, 634
 Sydney—
 Retail, 882, 887
 Wholesale, 876, 877, 887
 Production, 625, 629
 Separating, 628
 Value, 635
 Butter fat, 627
 Butterine, 381
 Cabinetmaking—Factories, 391
 Cabinet Ministers, State, 67

- Cable Services, 763
 Cablegrams, 765
 Deferred, 766
 Press, 766
 Week-end, 766
 Eastern Extension, 763
 Lines, 764
 Messages, 765
 New Caledonia, 763
 New Zealand, 763
 Norfolk Island, 763
 Pacific, 763
 Rates, 765
 Subsidised Press, 766
 Tasmania, 764
 Week-end Cable Letters, 766
- Cadets (*see also* Defence)—
 Junior, 76
 Military, 76
 Naval, 82
 Senior, 76
- Cadia Copper Mine, 251
 Cairngorm, 279
 Cambewarra Pass, 49
 Camden, 52
 Camels, 599, 612
 Prices, 615
 Campbelltown, 52
 Camp Schools, 185
 Canadian-Pacific Mail Service, 760
 Canals—
 Panama, 305
 Suez, 305
 Canberra, 13, 32, 53
 Cancer, 143
 Ages, 143
 Sexes, 143
 Candle and Soap Factories, 374
 Cane, Sugar, 384, 570
 Canning—
 Fish, 382
 Fruit, 383
 Jam, 383
 Meat, 382
 Cap Factories, 388
 Capes and Headlands, 15
 Capital—
 Cities, 94
 Cost of—
 Railways, 773
 Tramways, 773
 Invested in Factories, 361
 Capital Punishment, 483
 Carrots, 569
 Case-making, 377
 Catholic Church, Roman, 709
 Cattle, 599, 607
 Brands, 613
 Breeds, 608
 Calvings, 608
 Dairy, 600, 608
 Diseases, 319, 649
 Dogs, 621
 Export, 609
 Herd Testing, 633
 Hides, 620
 Imports, 608
 In various Countries, 612
 Marketing, 864
 Cattle—*continued.*
 Prices, 614, 866
 Production, 864
 Saleyards, 864
 Slaughtering, 617
 Stud, 608
 Tick, 624
 Causes of Death, 132
 Caves, 27, 51
 Abercrombie, 51
 Belubula, 51
 Bungonia, 51
 Jenolan, 51
 Wellington, 51
 Wombeyan, 51
 Yarrangobilly, 51
 Cement Manufacture, 281, 376
 Census, 85
 Aborigines, 104, 651
 Enumerations, 85
 Population, 85, 86
 Aborigines, 104, 651
 Ages, 96
 Aliens, 102
 Australian Capitals, 94
 Birth-places, 98
 Bind Persons, 685
 Capital Cities, 94
 Chinese, 104
 Conjugal Condition, 103, 109
 Country Districts, 94
 Deaf Mutes, 685
 Education, 160, 164
 Federal Territory, Canberra, 86
 Length of Residence, 91
 Metropolis, 92
 Municipalities, 92, 95
 Naturalised British Subjects, 107
 Non-Europeans, 102
 Occupations, 893
 Religions, 712
 School Population, 160, 164
 Sex Distribution, 95
 Shires, 94
 States, 87
 Sydney, 93
 Centenarians, Death, 129
 Cereals—
 Barley, 564
 Maize, 562
 Oats, 564
 Wheat, 546
 Certificates—
 Auditor's, 839
 Clerks, 839
 Local Government Officers, 839
 Mining, 227
 Physical Fitness, Children, 192
 School, 160
 Ship Masters and Officers, 302
 Shipping, 302
 Cerussite, 244
 Cervante, 261
 Chaff, 372
 Prices, 876
 Chair-making, 391
 Chambers of Commerce, 346
 Manufactures, 350

Charitable Institutions—

- Collections, 678
- Relief, State, 650

Charities (see Benevolence).

Charts, Coastal Surveys, 310

Chase, Kuring-gai, 54

Cheese—

- Consumption, 858
- Export, 633
- Factories, 381
- Making, 628, 629
- Prices, 876, 877, 882
- Production, 625, 630
- Value, 635

Chemicals—

- Artesian Water, 20, 46
- Factories, 391
- Laboratory 224
- Materials Mined—
- Alunite, 265, 279
- Arsenic, 279
- Standardisation, 872

Cherries, 577

Child-birth Deaths, 151

Children—

- Ages at School, 160
- Anthropometry, 666
- Apprenticeship, 941
- State Children, 660
- Attending School, 168
- Births, 115
- Boarding-out, 653, 658
- Certification for Work, 360
- Commercial Education, 200
- Cottage Homes, 659
- Courts, 448
- Deaths, 124
- Causes, 184
- Delinquent and Defective, 201, 656, 665
- Dental Inspection, 666
- Dependent, 656
- Employed in Theatres, 653
- Examinations—
- Dental, 665
- Medical—
- Military Training, 76
- School Hygiene, 191, 652
- Hygiene, 649
- Illegitimate—
- Births, 118
- Deaths, 128, 156
- Infantile Paralysis, 189
- Infant Life Protection, 652, 664
- Institutions, 655
- Juvenile Offenders, 652
- Smoking, 652
- Labour in Factories, 357, 359
- Legitimation, 119
- Life Assurance, 424
- Medical Inspection, 191, 663
- Mortality, 123
- Causes, 132
- Country, 124
- Urban, 124
- Neglected, 450, 652, 656
- Nurseries, Day, 677
- Permits to Work, 360
- Probationary Systems, 662

Children—continued.

- Protection, 450, 653, 656
- School Age, 168
- School, Diseases, 664
- Sex Distribution, 95
- State Relief Board, 652
- Street Trading, 653, 662
- Surviving at 5 years, 128
- Theatre Licenses, 653, 656
- Vision, 665

Chilled Meat, 618

China Clay, 283

Chinese—

- Miners, 231
- Population, 104

Chippendale Municipal Housing, 707

Chromium, 263

Chronology, 1

Chrysolite, 279

Churches (see also Religion)

- Census Records, 712
- Church and School Lands, 494
- Constitution and Government, 708
- Ministers for Celebration of Marriages, 714

Cider and Perry Licenses, 454

Cigarettes, Consumption, 850

Cigars and Cigarettes—

- Consumption, 850
- Factories, 385

Cinnabar, 264

Circuit Courts, 467

Circular Quay, 47

Cirrhosis of Liver, Deaths, 150

Cities, 29

- Population, 94

Citizen Forces, 77

Citral, 392

Citronella, 392

Citrus Fruits, 676

City of Sydney, Map, 805

City Underground Railway, 780

Civil Ambulance, 677

Civil Jurisdiction, 459

Civil Registration of Births, Deaths, and Marriages, 108

Clarence River, 23, 55

- Class and Status, Employees, 895

Clays, 282

Clay Works, 375

Clearances—

- Banks, 419
- Shipping, 291

Clergy (see also Religion)

- Licensed to Celebrate Marriages, 714

Clerical Workers, 361, 924, 956

Climate, 33

- Air Currents, 34

- Antarctic Depressions, 35

- Anticyclones, 34

- Barometric Pressure, 30

- Climatological Data—

- Coast, 39

- Plains, 41

- Slopes, 42

- Sydney, 39

- Tablelands, 40

- Cyclones, 34

Climate—*continued.*

- Divisions of State, 38
- Influences, 35
- Legislation, 33
- Meteorological Bureau, 44
- Meteorology, 33
- Observatory Records, 44
- Rainfall, 37
- Seasons, 34
- Signals, 33
- Snowfall, 40
- Stations, 33
- Temperature, 34, 39
- Weather, 33
- Wet and Dry Regions, 38
- Winds, 33, 39
- Zones, 33
- Closer Settlement (*see* Land), 509, 528
 - Area, 511
 - Fund, 721
 - Promotion Act, 512
- Clothing and Textile Factories, 386
- Club Lake (Kosciusko), 26
- Clubs—
 - Licenses, 452, 454
 - Rifle, 78
- Coachbuilding Works, 390
- Coal and Coal Mining, 265
 - Accidents, 285
 - Analyses, 272
 - Coke, 273
 - Collieries, 269
 - Consumption, 268
 - Cutting Machinery, 268
 - Development, 267
 - Divisional Records, 269
 - Dust Committee, 273
 - Employment, 271
 - Exports, 268, 269
 - Gas Works, 393
 - Geological Age, 265
 - Legislation, 224
 - Miners, 231
 - Miners' Accident Relief Fund, 267
 - Northern District, 269
 - Prices, 267, 272
 - Production, 267
 - Proximate Analyses, 272
 - Southern and South-western District, 270
 - State Mines, 272
 - Wages, 232
 - Weighing, Machinery Inspection, 475
 - Western District, 271
 - Working Days, 232

Coast—

- Anchorage, 16
- Charts and Surveys, 310
- Climate, 39
- Configuration, 15
- Districts, 19, 39
- Harbour Lights, 306
- Headlands, 15
- Hospital, 649
- Indentations, 16
- Length, 14
- Lighthouses, 306
- Line 15

Coast—*continued.*

- North, 39, 55
- Rivers, 23
- Settlement, 524
- Shipping, 301
 - Fares, 323
- Signal Stations, 306
- Surveys, 310
- Tourist Attractions, 46
- Trade, 291
- Cobalt and Nickel, 264
- Cobar Field, 252
- Coffee—
 - Consumption, 858
 - Prices, 882
- Coff's Harbour, 16
- Coinage, 397
- Coke, 273
 - Ovens, 274
 - Prices, 273
 - Production, 273
 - Works, 393
- Cold Storage Works, Municipal, 875
- Collections, Public, 678
 - Hospital Saturday Fund, 679
 - United Charities Fund, 679
- Colleges—
 - Agricultural (Hawkesbury), 186
 - Business, 196
 - Military (Duntroon), 53, 79
 - Naval, 83
 - Teachers, Training, 188
 - University, Affiliated, 211
- Commerce, 329
 - Chambers, 346
 - Classification, Imports and Exports, 335
 - Commercial Causes, Court, 466
 - Commonwealth—
 - Legislation, 329
 - Customs—
 - Drawbacks, 329
 - Duties, 329
 - Revenue, 329, 331
 - Distribution of Trade, 334
 - British Empire, 336
 - Foreign Countries, 336
 - United Kingdom, 339
 - Excise Revenue, 331
 - Exports—
 - Classification, 334
 - Domestic, 343
 - Imports, 334
 - Description, 341
 - Legislation, 329
 - Customs and Tariff, 329
 - Sea Carriage of Goods, 329
 - Secret Commissions, 330
 - Trade Descriptions, 329
 - Local Industries, 330
 - Preservation and Encouragement, 330
 - Occupations, 894
 - Oversea Trade, 343
 - Re-exports, 343
 - Ships Stores, 344
 - Tariffs, 329
 - University Training, 200
- Commercial Causes, 466

- Commission—
 Decentralisation in Railway Transit, 778
 Food Supply and Prices, 859
 Improvement of Sydney and Suburbs, 780
 Necessary Commodities Control, 884
 Original, of New South Wales, 13
 Royal, of Inquiry, 72
 Subject-matters, 72
 Trusts, 72
- Commissioners—
 Commercial—
 America, 346
 Asia, 346
 Canada, 346
 Railway, 773
 Sydney Harbour Trust, 72
 Water Conservation and Irrigation, 591
- Common Law, 458, 465
- Commonwealth (see Australia), 57
 Arbitration, 916
 Bank, 406
 Immigration, 903
 Land Tax, 724, 729
 Literary Fund, 700
 Railways, 777
- Communicable Diseases, 674
- Como, 48
- Companies—
 Assurance, 425
 Incorporated, 420
 Insurance, 433
 Investment, 421, 422
 Legislation, 420
 Limited, 421
 No-Liability, Mining, 421
 Registration, 420
 Trading, 421
- Compensation—
 Legislation—
 Commonwealth, 959
 State, 956
 Miners', 287
 Railways, 795
 Tramways, 803
 Workmen's, 956
- Concentrated Milk, 381
- Concentrates—Metals, 248
- Conciliation, Industrial (see Employment) 922, 933
- Concrete Works, State, 379
- Condensed Milk, 381
- Condiments, 381
- Conditional Leases, 505
- Conditional Purchases, 499
 Balance Outstanding, 750
- Conditional Purchase Leases, 504
- Condobolin Experiment Farm, 587
- Confectionery, Factories, 381
- Conferences—
 Education, 159
 Interstate—
 Forestry, 642
 Statisticians, 88
- Congregational Church, 710
- Conjugal Condition, 109
 Female Workers, 898
- Conservation, Water, 591
- Conservatorium of Arts and Music, 221
- Consolidated Revenue Fund, 718
- Constitution (see also Government), 56
 Commonwealth—
 Alteration, Referenda, 61
 Constitution, 57
 Parliaments, 56
 Commonwealth, 57
 State, 56
 State, 56
 Development, 56
- Constitutional Government, Cost, 68
- Consumption—
 Beef, 858
 Beer, 859
 Butter, 858
 Cheese, 858
 Cigarettes, 859
 Cigars, 859
 Coffee, 858
 Fish, 858
 Flour, 858
 Food, 857
 Home, Waterfall, 649, 676
 Intoxicants, 858
 Meat, 858, 864
 Milk, 858
 Mutton, 858
 Oatmeal, 858
 Pork, 858
 Potatoes, 858
 Rice, 858
 Salt, 858
 Spirits, 859
 Sugar, 858
 Tea, 858
 Tobacco, 859
 Wine, 859
- Consumptive, Hospital, 676
- Contagious Diseases, 489
- Contract Immigrants, 904
- Contracts, Mail, 759
- Conventions, Federal, 57
- Conversion of Tenures, 501, 515
- Conveyance, Lands, 437
- Convictions (Summary), 448, 450
- Convulsions of Children, Deaths, 145
- Coogee, 48
- Cooma, 32, 53
- Coonamble Experiment Farm, 587
- Cooperage, 377
- Co-operation—
 Agriculture, 589
 Building Societies, 422
 Butter Factories, 630
 Trading Societies, 422
- Cootamundra Aboriginal Children's Home, 651
- Copper, 238, 250
 Prices, 879
 Production, 251
 Works, 379
- Copra Oil, 374
- Copyright, 471
- Cordials, Factories, 383

- Cornflour, 381
 Coroners—
 Courts, 455
 Inquests, 456
 Corporate Bodies, 720, 736
 Corundum, 278
 Cost of Living, Sydney, 891
 Cottage Homes, Adults, 673
 Children, 659
 Farm, 659
 Council—
 Executive, 58
 Legislative—
 Constitution, 63
 First, 56
 Railway War, 79
 Courts—
 Admiralty, 459
 Appellate, 469
 Criminal Appeal, 469
 Full, 469
 High of Australia, 470
 Land Appeal, 469
 Privy Council, 470
 Quarter Sessions, 469
 Supreme, 469
 Bankruptcy, 462
 Children's, 448, 450
 Circuit, 467
 Coroners, 455
 Criminal Appeal, 469
 District, 456
 Divorce, 463
 Equity, 460
 High (of Australia), 470
 Higher, 468
 Industrial Arbitration, 457
 Land Appeal, 469
 Licensing, 452
 Lower (Magistrate's) Courts, 447
 Apprehensions, 448
 Childrens, 448, 661
 Drunkenness, 484
 First Offenders, 480
 Habitual Offenders, 482
 Small Debts, 451
 Sentences, 450
 Marine Inquiry, 320, 466
 Petty Sessions, 447
 Probates, 460
 Quarter Sessions, 467
 Rules, 459
 Small Debts, 451
 Superior, 468
 Civil Cases, 459
 Supreme, 457
 Wardens, 224
 Cowan Creek, 54
 Cowra Apprentice Farm School, 586
 Cows, 600
 Cranes, 949
 Cream, 381, 628
 Creameries, 381
 Cream of Tartar, 887
 Creel, The, 52
 Crews, 302
 Coastal Vessels, 302
 Crime and Criminals (*see* Prisons)
 Criminal Appeal Court, 469
 Criminal Habitual, 482
 Influx Prevention, 491
 Criminal Jurisdiction, 467
 Crippled Children, 659
 Cronulla, 48
 Crops, Area, 539
 Double, 542
 Liens, 439
 Relative Importance, 542
 Value, 543
 Croup and Diphtheria, Deaths, 138, 671
 Hospital Cases, 671
 Crown Lands, 538
 Acts, 496
 Cultivated, 542
 Holdings, 538
 Leases, 507
 Leases (Mining), 225, 228
 Cucurbit Crops, 578
 Cultivation, 535 (*see* Agriculture)
 Culverts, 851
 Currants and Raisins, 575
 Currency, 397
 Metallic, 397
 Coinage—
 Bronze, 400
 Gold, 398
 Silver, 400
 Standard, 397
 Minting, 398
 Note, 401
 Currents, Littoral, 43
 Customs (*see* Commerce)
 and Excise Revenue, 331, 724
 Cutlery, 379
 Cyanide Works, 380
 Cycles and Motors, 390
 Cyclones, 34
 Daceyville, 706
 Dairying, 625
 Bacon and Hams, 631
 Butter, 625, 628
 By-products, 631
 Catt'e, 625
 Cheese, 625, 629
 Coastal Districts, 625
 Cows, 625
 Employment, 902
 Exports, 633
 Factories, Co-operative, 630
 Farming, 625
 Herd-testing, 633
 Implements, 635
 Industry, 625
 Inspection, 649
 Instruction, 633
 Lard, 620, 632
 Machinery, 635
 Milk Yield, 625-627
 North Coast, 625
 Prices, 634, 876, 877
 Production, 625, 855
 Butter, 625
 Cheese, 625
 Milk, 625
 Value, 635
 Science Schools, 587
 Share-farming, 626

- Dairying—*continued*.
 Supervision, 649
 Swine, 631
 Value, 876, 877
 Darling Harbour, 47
 Darling River, 24, 301
 Water Conservation, 595
 David Berry Hospital, 649
 Dead Letters, 756
 Deaf, Mutism, 684
 Schools, 201
 Deaths, 123
 Accidents, 151
 Ages, 129
 Apoplexy, 144
 Appendicitis, 149
 Bright's Disease, 150
 Bronchitis, 147
 Cancer, 143
 Causes, 132
 Centenarians, 129
 Child-birth, 151
 Cirrhosis of Liver, 150
 Convulsions, 145
 Coroners Inquiries, 456
 Country Districts, 124
 Croup, 138
 Diabetes, 144
 Diarrhoeal Diseases and Enteritis, 149
 Digestive Disorders, 149
 Diphtheria, 139
 District Records, 124
 Goals, 488
 Gastritis, 149
 General Diseases, 133
 Hæmorrhage, Brain, 144
 Heart Disease, 146
 Illegitimate Children, 123, 156
 Index of Mortality, 132
 Infants, 124
 Infectious Diseases, 134
 Influenza, 139
 Inquests, 456
 Insanity, 145
 Local Diseases, 133
 Measles, 137
 Meningitis, 144
 Metropolis, 124
 Nephritis, 150
 Notifiable Infectious Diseases, 139
 Phthisis, 140
 Pneumonia, 147
 Prisons, 488
 Rates—
 Country and Urban, 124
 Diseases, 135
 General, 123
 In Ages, 129
 Registration, 108
 Scarlet Fever, 137
 Seasonal Occurrence, 153
 Smallpox, 135
 Suicides, 152
 Total, 134
 Tuberculous Diseases, 140
 Typhoid, 135
 Violence, 133, 151
 Whooping Cough, 138
- Debentures, 740
 Debility—
 Congenital, 134
 Senile, 134
 Debt—
 Bankruptcy, 434, 462
 Imprisonment, 460
 Local Authorities, 824
 Public, 743
 Security, 750
 Small Court, 451
 State, 743
 Commissioners, 738
 Security, 750
 Decentralisation, Railway, 778
 Dedications of Land, 513
 Defence, 73
 Australian Navy, 86
 Auxiliary Organisation, 76
 Aviation School, 79
 Cadets, 76
 Citizen Forces, 77
 Expenditure, 83
 Factories, 83
 Forces, 77
 Cadet, 76
 Citizen, 77
 Military, 77
 Naval, 82
 Historical Review, 73
 Junior Cadets, 76
 Land, 73, 79
 Legislation, 74
 Liability for Service, 75
 Military, 73, 78
 College, 53, 79
 Training, 102
 Militia Forces, 77
 Naval, 80
 Board, 80
 College, Jervis Bay, 83
 Forces, 82
 House, Royal, 83
 Navy—
 Australian, 81
 Imperial, 81
 Reserve, 82
 Station, 81
 Training, 82
 College, 83
 Ships, 83
 Rifle Clubs, 78
 Royal Military College, 53, 79
 Senior Cadets, 76
 Small Arms Factory, 83
 Uniform Railway Gauge, 796
 Universal Training, 75
 University Course, 209
 War Railway Council, 79
 Vessels, 81
 Deficiency Bills, 718, 743
 Delinquent and Defective Children, 201
 656
 Demonstration Farms, 586
 Density of Population, 92
 Dentists, 221
 Clinic, 210
 Dental Board, 221

- Dentists—continued.**
 Hospital, 210
 Inspection of School Children, 665
 Registration, 221
 School, 222
Departments (see Government).
Departures, 90 (see Emigration).
Dependency, 804.
Dependent Children, 656.
Deposits—
 Bank, 416
 Savings Bank, 409
 Trading, 416
Deserted Wives and Children, Act, 478
 652
Designs and Trade Marks, 471.
Destitution—
 Public Expenditure, 650
 Relief, 650
Diabetes, Deaths, 144
Diamonds, 277
 Drills, 230
Diarrhœal Diseases—
 Deaths, 149
 Hospital Treatment, 671
Diatomaceous Earth, 284
Digestive System, Deaths, 149
Dingoes, 621
Diphtheria—
 Cases, 139
 Deaths, 138
 Hospital Treatment, 671
Disasters and Wrecks, 320
 Meat, 649
Discount Rates, 417
Disease, Animals, 141, 649
 Meat, 649
 Persons—
 Classification, 132
 Contagious, 139
 Cost, 668
 Hospital Treatment, 671
 Industrial, 950
 Notifiable (Infectious), 139
 Quarantine, 318
 School Children, 664, 665
 Seasonal Prevalence, 153
 Treatment in Hospitals, 671
 Plants, 318
Dislocations, Industrial, 943
 Durations, 946
 Settlements, 947
Dispensaries, Tuberculosis, 676
Distilleries, 384
Distribution, 860
 Bread, 868
 Fish, 861, 862
 Fruit, 869
 Meat, 865
 Milk, 871
 Vegetables, 869
District Courts, 456
 Nursing Association, 677
 Schools, 181
Districts, Tourist, 46
 Alpine Snowfields, 52
 Blue Mountains, 49
 Hawkesbury, 53
 Illawarra, 48
 Jenolan and other Caves, 51
Districts—continued.
 Kosciusko, 52
 New England Highlands, 55
 North Coast, 55
 Northern Lakes, 54
 South Coast, 48
 Southern Highlands, 52
 Sydney and Surroundings, 47
Dividends of Banks, 418
Divorce, 463
 Courts, 463
 Grounds of Suit, 465
 Jurisdiction, 463
 Matrimonial Causes Jurisdiction,
 463
 Petitions, 463
 Remarriage, 113
 Sex of Petitioners, 464
Docks and Slips, 312, 300
Dogs—
 Cattle and Sheep, 620
 Native, 621, 623
 Registration, 455
Dok rite, 281
Dolphin, Fishing, 645
Domain, 47
Domestic Employment, 804
 Production, 343
 Export, 343
 Science, 199
 Wages, 938
Donkeys, 590-612
 Prices, 615
Dorrigo, 20, 31
Double Bay, 47
Double Cropping, 536, 542
Drawbacks, Customs, 331
Dreadnought Farm Trust, 587
Dredging, 226, 310
 Gold, 242
 Harbours and Rivers, 310
 Leases, 243
 Output, 243
 Plant, 243
 Tin, 255
Dressmaking, 386
Drills, Diamond and other, 230
Drink (see Beverages)
Drowning—
 Accidents, 152
 Suicide, 153
Drugs, 391
Drunkennes, 484
Dry Cows, 600
Dry Farming, 553
Duck Creek Farm, 585
Ducks, Prices, 876
Dumb Persons, 684
Duntroon Military College, 53, 798
Duplication, Railway, 775
Dural Demonstration Orchard, 586
Duties—
 Customs, 331
 Death, 723
 Excise, 332
 Stamp, 720, 723
Dwellings, 703
 Act, 809
 Building Societies, 422

- Dwellings—*continued*.
 Chippendale, 707
 Daceyville, 706
 Garden Suburbs, 706
 Government Provision (*see* Housing Board)
 Housing Board, 703
 Materials, 704
 Municipal Provision, Sydney, 707
 Occupied, 703
 Rental Values, 705
 State Advances, 708
 Workers, 705
 Dye Works, 386
 Eaglehawks, 623
 Early Closing, 939
 Early Settlement, 494
 Earth—
 Diatomaceous, 284
 Fuller's, 283
 Earthenware, 375
 Inspection of Pipes, 377
 Eastern Extension, Cable, 763
 Echo Point, 50
 Economics, University Course, 200
 Education, 157
 Accommodation in State Schools, 173
 Activities, Specialised, 199
 Administrative Offices, 174
 Advancement, 212
 Ages of Students, 169
 Agriculture, 185, 584, 587
 Annual Cost, State Schools, 164, 172
 Art—
 Conservatorium, 221
 Gallery, 218
 Attendance of Students, 166, 168
 Blind, 201, 686
 Bursaries, 193
 Business Colleges, 196
 Camp Schools—
 Railway, 177
 Rural, 185
 Census Records, 160
 Centralisation of Schools, 175
 Commercial, 200
 Commission, 159
 Conference, 159
 Consolidation, Small Schools, 175
 Continuation Schools, 178
 Cookery Classes, 199
 Deaf and Dumb, 201, 686
 Development, Recent, 159
 Diffusion, 160
 District Schools, 181
 Domestic Schools, 199
 Enrolment, 166
 Examinations, 197
 Expenditure, State, 164, 172
 Federal Capital Territory, 181
 Fees in State Schools, 172
 Higher (Secondary), 178
 Illiteracy, 160
 Inspection—
 Medical, 191
 Supervisional, 191
 Kindergarten, 177
 Leaving Certificate, 160
 Libraries, 214
 Education—*continued*.
 Minimum Attendance, 169
 Montessori Methods, 177
 Museums, 214
 Observatory, 213
 Parents and Citizens' Associations, 197
 Private Schools, 165
 Ages of Scholars, 169
 Attendance, 166
 Denominational, 170
 Enrolment, 166
 Teachers, 165
 Qualifying Certificate, 160
 Ragged Schools, 202
 Railway Institutes, 197
 Reformatories, 201
 Religion—
 Instruction in State Schools, 172
 of Scholars, 169
 Savings Banks, School, 197
 Scholarships and Bursaries, 193
 Schools—
 Ages of Students, 169
 Agricultural, 185
 Attendance, 166, 168
 Boards, 191
 Bursaries, 193
 Deaf and Dumb and Blind, 201, 686
 Denomination, 170
 Enrolment, 166
 Kindergarten, 177
 of Arts, 220
 Population, 160
 Private, 165
 Ragged Schools, 202
 State—
 Ages of Students, 169
 Attendance, 166, 168
 Camp—
 Railway, 177
 Rural, 185
 Classification, 178
 Consolidation, 175
 Continuation, 178
 District, 181
 Evening, 177, 179
 Expenditure, 164, 172
 Farm, 201
 Health of Children, 191, 663
 High, 178
 Industrial, 201
 Kindergarten, 177
 Medical Inspection of Children
 191, 663
 Montessori Methods, 177
 Primary, 174
 Public, 165
 Reformatory, 201
 School Boards, 191
 Secondary (High), 179
 Subsidised, 176
 Superior, 178
 Syllabus, 157
 System, 157
 Teachers, 165
 Technical, 181
 Trade, 184
 Training, 188
 Travelling, 177

Education—continued.State—*continued.*

- Subsidies, 176
- Summer, 185
- Sunday, 708
- Sydney Grammar, 195
- Teachers, 165
 - Private, 165, 195
 - Ragged, 202
- Scientific Societies, 212
- Teaching Staffs, 165
 - Private Schools, 165-195
 - Public (State), 165
 - University, 207
- Technical, 181
 - Colleges, 181
 - Enrolment of Students, 184
 - Expenditure, 172
 - High School, 179
 - Scholarships, 195
 - Trade Schools, 184
 - University of Sydney, 202

Eggs—

- Laying Competitions, 635
- Prices, 876, 877, 882
- Production, 635

Eight-Hour Committees, 916**Elections, 60**

- Act, Expenses, 720
- Commonwealth, 60
 - House of Representatives, 61
 - Senate, 60
- Franchise—
 - Commonwealth Parliament, 60
 - Shires, 806
 - State Parliament, 64
 - Women's, 60, 64
- Legislation, 64
 - Second Ballot, 64
- Referenda, 61
- State, 64
 - Absent Voters, 65
 - Franchise, 64
 - Law, 64
 - Ministries, 67
 - Second Ballot, 64
 - Voting, 65

Electoralates Distribution, 65**Electricity—**

- Coal Cutting, 268
- Factory, 393
- Generation, 393
- Lifts, 949
- Light, 393, 635
- Municipal, 635
- Power, 393, 635
- Railways, 780
- State Power Supply, 394
- Tramways, 799
- Water Power Schemes, 394

Electroplating, 392**Electrotyping, 389****Elizabeth Bay, 47****Emeralds, 278****Emery, 284****Emigration, 89, 90, 903**

- Chinese, 90
- Land, 90

Emigration—continued.

- Pacific Islanders, 903
- Sea, 90

Employment, 347, 356

- Age Classification, 357, 893
- Agreements, 931
- Agriculture, 581, 902
- Apprenticeship, 660, 941
- Arbitration, Industrial, 893
- Assistants, 895
- Awards, Industrial State, 931
 - Breaches, 932
 - Enforcement, 932
 - Expiry, 931
 - Hours of Work, 939
 - Variations, 931
- Breadwinners, 894
- Bureau, 160
- Census Records, 893, 895
- Children, 357-360, 653-662
- Class and Status, 894, 895
- Commercial Class, 894
- Dairying, 902
- Dependents, 894, 899
- Dislocations, 943
- Disputes, 921
- Distribution—
 - Age, 893
 - Industry, 896
 - Sex, 893
- Domestic Class, 894
- Early Closing, 939
- Employees—
 - Census Records, 895
 - Sex Distribution, 893
 - Unions—
 - Industrial, 911
 - Trade, 913
- Employers—
 - Census Records, 895
 - Liability, 956
 - Unions—
 - Industrial, 912
 - Trade, 912
- Engine Drivers, 361
- Factories, 347, 356
 - Adults, 357
 - Age Distribution, 357
 - Children, 357
 - Females, 357
 - Occupational Status, 361
 - Sex Distribution, 357
 - Time Workcd, 350
 - Wages, 350
- Females, 357, 895
- Fluctuations, 943
- General Conditions, 940
- Grades of Occupation, 894, 895
- Importation of Labour, 903
 - Industrial—
 - Accidents, 948
 - Agreements, 931
 - Arbitration, 893
 - Classes, 894
 - Diseases, 950
 - Dislocations, 943
 - Disputes, 921
 - Legislation, 917
 - Unions, 909, 911

- Employment—*continued.*
 Intermittency, 943
 Labour—
 Adequacy, 903
 Bureau, 953
 Federations, 916
 Force, 893
 Shortage, 903
 Legislation, 919, 920, 959
 Living Wage, 938
 Manufacturing, 347, 356, 902
 Minimum Wage, 938
 Mining, 230, 902
 Occupations, 894
 Outworkers, 942
 Pastoral, 902
 Postal, 755
 Primary Producers, 894, 902
 Prisoners, 487
 Professional Class, 894
 Proprietors, 895
 Railways and Tramways, 804
 Rates of Wages, 936
 Registry Offices—
 Labour Bureau, 954
 Shipping, 322
 Remunerative, 895
 Seasonal Slackness, 943
 Sex Distribution, 833
 Shipping, 322, 325
 Status, Occupational, 896
 Strikes and Lockouts, 943
 Causes, 947
 Convictions, 943
 Duration, 946
 Principal, 945
 Results, 947
 Settlements, 947
 Teachers, 165-195
 Trade Unions, 913
 Tramway, 804
 Transport and Communication, 894
 Unemployment, 950
 Relief, 953
 Unions—
 Industrial, 909
 Trade, 909
 Wages, 935
 Boards, 931
 Factories, 348-364
 Minimum, 938
 Rates, 936
 Women and Girls, 365, 915
 Emu Plains Irrigation Farm, 586
 Enclosed Lands, 534
 Endowment—
 Assurance, 424
 Bursary, 194
 Municipalities, 811
 Shires, 806-827
 University, 203
 Engine-drivers, 361
 Engineering—
 Local Government Certificate, 839
 Mining Certificate, 227
 University, 206
 Works, 379
 England, Church of, 708
 Ensl'age, 567-626
 Enteritis, 149
 Enumeration, Census, 85, 86
 Equity—
 Jurisdiction, 460
 Procedure, 459
 Essential Oil, 392
 Citral, 392
 Citronella, 392
 Eucalyptus, 392
 Estates—
 Absentees, 445
 Deceased, 441
 Real—
 Mortgages, 438
 Transactions, 436
 Resumption, 503
 Estimates of Population, 87
 Eucalyptus Oil, 392
 Examinations, 197
 Dental, School Children, 665
 Medical—
 School Children, 191, 663
 School, 197
 University, Public, 197
 Exchange of Land, 502
 Exchange Rates, 417
 Settlement, Banks, 419
 Excise—
 Duties, 332
 Legislation, 331
 Quantities on which paid, 332
 Revenue, 331, 724
 Sugar, 573
 Executions, 483
 Executive Council, 58, 63
 Government, 58
 Expectation of Life—
 Australian Population, 696
 Friendly Societies, 695
 Immigration, 905
 Expeditions, Scientific, 44
 Expenditure, Public, 715
 Immigration, 905
 Business Undertakings, 720
 Defence, 83
 Education, 164-172
 General Government, 720
 Heads, 719
 Immigration, 751
 Loan, 741
 Net, 719
 Parliamentary Government, 68
 Pensions, 720
 Postal Services, 755
 Railway, 785
 State Children, 654
 System, 715
 Tramway, 801
 Experiment Farms, 585
 Plots, 588
 Explosives, 389
 Exports, Oversea, 338
 Annual Averages, 334
 Bacon and Hams, 633
 Beef, 618
 Bounties, 330
 Butter, 633
 Cattle, 617
 Domestic Produce, 343

Exports—*continued.*Domestic Produce—*continued.*

- Dairying, 866
- Pastoral, 617-620
 - Hides, 620
 - Horses, 610
- Fruit, 579
- Inspection, 329
- Legislation, 330
- Meat, 617, 618
- Plants, 579
- Preserved Meats, 618
- Prices, 868-880
- Rabbits and Hares, 620, 623
 - Skins, 623
- Re-exports, 343
- Supervision, 329
- Tallow, 620
- To British Possessions, 338
 - Foreign Countries, 338
 - United Kingdom, 338
- Values, 334
- Vegetables, 579
- Wheat, 558
- Wool, 604
 - Wool Tops, 331
- Extradition, 491
- Eye-sight of School Children, 665
- Fair Rents Bill, 705
- Fallowing, 556
- F.A.Q. Standard Wheat, 559
- Factories, 347
 - Accidents, 948
 - Accommodation, 941
 - Act, 348
 - Age of Employees, 357
 - Bounties for Products, 348
 - Buildings, 361
 - Capital Investments, 361
 - Child Labour, 357
 - Classification, 350
 - Aerated Waters, 383
 - Agricultural—
 - Implements, 379
 - Products, Treating, 372
 - Ale and Beer, 384
 - Arms and Explosives, 389
 - Art Metal, 379
 - Bacon Curing, 381
 - Basketware, 395
 - Bedding, 391
 - Beer and Ale, 384
 - Billiard-table Making, 391
 - Biscuits, 382
 - Boats, 390
 - Boiling Down, 372
 - Books, Paper, Printing, 389
 - Boot and Shoe, 388
 - Bottles, 375
 - Box and Case, 375
 - Brass and Copper, 379
 - Breweries, 384
 - Bricks, 375
 - Brooms and Brushes, 395
 - Butter, 381
 - Cabinetmaking, 391
 - Candle, 374
 - Cap, 388
 - Case, 375

Factories—*continued.*Classification—*continued.*

- Cement, 376
- Cheese, 381
- Chemicals, 391
- Cigars and Cigarettes, 385
- Clay Works, 375
- Clothing and Textiles, 386
- Coachbuilding, 389
- Coke Works, 393
- Condensed Milk, 381
- Condiments, 381
- Confectionery, 381
- Cooperage, 377
- Co-operative Dairy, 680
- Cordage, 386
- Cordials, 383
- Cornflour, 381
- Creameries, 381
- Cutlery, 379
- Cyanide Works, 380
- Cycles, 390
- Dairy, 630
- Defence Supplies, 83
- Distilleries, 384
- Docks and Slips, 390
- Dressmaking, 386
- Drugs and Chemicals, 391
- Dye Works, 386
- Electricity, 393
- Electrotyping, 389
- Engineering, 379
- Explosives, 389
- Fellmongering, 372
- Fertilisers, 391
- Flour Mills, 382
- Food and Drink, 380
- Foundries, 379
- Freezing Works, 382
- Furniture and Bedding, 391
- Furriers, 386
- Galvanised Iron, 379
- Gasworks, 393
- Glass, 375
- Grease, 374
- Hat and Cap, 388
- Heat, Light, and Power, 393
- Hosiery, 387
- Ice, 381
- Instruments, Musical, 389
 - Surgical and Scientific, 392
- Iron Works, 379
- Jam and Pickle, 383
- Jewellery, 392
- Joinery, 377
- Kerosene, 393
- Knitting, 387
- Leatherware, 395
- Lime Works, 376
- Manures, Artificial, 391
- Marble, 375
- Margarine, 382
- Medicines, 391
- Metal Works, Machinery, 378
- Milk, Condensed, 381
- Millinery, 386
- Mills—
 - Flour, 382
 - Saw, 377

Factories—*continued.*Classification—*continued.*Mills—*continued.*

Sugar, 384

Tweed and Woollens, 386

Minor Wares, 395

Motors, 390

Musical Instruments, 389

Nails, 379

Oatmeal, 381

Oils and Fats, 374

Oilskins, 386

Ore Dressing, 379-380

Papermaking, 389

Pastoral Products, 372

Perambulator, 390

Photo Engraving, 389

Pickles, 383

Pipes and Tiles, 375

Preserving Works—

Fish, 382

Fruit, 383

Meat, 382

Printing, 389

Prosecutions, 457

Railway Workshops, 379

Raw Materials, 372

Refineries—

Metal, 379

Sugar, 385

Refrigerating, 382

Rope, 386

Saddlery, 389

Sailmaking, 386

Sauces, 383

Sausage-skin Making, 372

Saw Mills, 377

Ship and Boat Building, 390

Shirts, 386

Shoe and Boot, 388

Size of Establishments, 355

Slate, 375

Slop Clothing, 386

Small Arms, 389

Smelting, 379

Soap and Candles, 374

Spices, 381

Stereotyping, 389

Stone, Clay, Glass, 375

Stoves and Ovens, 378

Sugar Mills, 384

Surgical, Scientific Appliances, 392

Tailoring, 386

Tallow Refining, 372

Tanneries, 372

Tents, Tarpaulins, 386

Ties, 386

Tiles, 375

Timepieces, 392

Tinsmithing, 379

Tobacco, 385

Toys, 395

Tramway Workshops, 379

Umbrellas, 395

Upholstering, 391

Vehicles, Saddlery, 389

Vinegar, 381

Waggon Building, 389

Wickerware, 395

Factories—*continued.*Classification—*continued.*

Wire-working, 379

Wood-working, 377

Woollen Mills, 386

Woolscouring, 372

Costs, Running, 368

Country, 354

Early Records, 347

Employment, 347

Children, 357

Women and Girls, 357, 358

Establishments, 347, 350, 352

Location, 353

Number, 352

Size, 355

Expansion, 347

Females employed, 357

Fertilisers, 391

Fuel used, 368

Inspection, 348, 934

Juveniles employed, 358

Land and Buildings, 361

Legislation, 348

Location, 353

Machinery and Plant, 348, 350, 363

Materials used, 368

Mechanical Power, 350-363

Metropolitan and Country, 354

Outworkers, 942

Production, 367

Registration, 348

Salaries, 364

Size of Establishments, 355

Slips, 390

State Clothing, 388

Time Worked, 350

Urban, 353

Value of Production, 348, 367

Wages, 348, 364

Falls—

Apsley, 55

Belmore, 53

Fitzroy, 53

Katoomba, 50

Leura, 50

Loddon, 52

Minne-ha-ha, 50

Tia, 55

Wentworth, 50

Fares—

Ferry, 322

From Sydney, 323

Rail, 790

Steamer, 323

Tram, 800

Farm Cove, 47

Farm Home, Children, 659

Farmers' Winter Schools, 185

Farming and Farms (*see also* Agriculture)

Bees, 636

Dairying, 625

Experiment, 585

Fallowing, 556

Farmers Plots, 588

Winter Schools, 585

Implements, 579

Irrigation, 504, 591

Methods Dry, 553

Farming—*continued.*

- Poultry, 635, 876
- Produce Prices, 876
- Schools, 201
- Share, 545

Farrer—

- Scholarships, 588
- Wheats, 554

Fats and Oils, 374, 620, 627

Fat Stock, 614

Federal Capital Territory, 13, 32, 62

- Schools, 181

Federal Elections, 60

- Government, 57
- Parliament, 59

Federal Land Tax, 729

- Absentees, 729
- Residents, 729

Federal Pass, 50

Federation, 57 (*see also* Australia)

- Labour, 916

Feeble-minded, 659, 684

Fellmongering, 372

Felspar, 283

Female—

- Labour, Factories, 357
- Occupations, 895

Fences—

- Enclosed Lands, 534
- Rabbit-proof, 622

Ferberite, 260

Ferries, 322, 850

- Private, Sydney Harbour, 322
- State, 322, 850

Fertilisers—

- Manufacture, 391
- Use, 581

Fever—

- Scarlet, 137
- Typhoid, 135

Finance—

Private, 397

- Assurance, 424
- Banking, 410
- Companies, 420
- Co-operative Societies—
 - Building, 422
 - Trading, 422
- Currency, 397

Friendly Societies, 689

Hospital, 668

Incomes for Taxation, 446

Insurance, 433

Life Assurance, 424

Local Government, 814

Mortgages, 438

Probates, 723

Property, 441

Real Estate, 436

Savings Banks, 407

University, 205

Public, 715

Commonwealth—

- Australian Notes, 402
- Bank of Australia, 406
- Bounties, 259, 276, 330, 348
- Coinage, 397
- Customs, 331

Finance—*continued.*Commonwealth—*continued.*

Financial Relation with States, 752

Immigration, 751

Pensions, 720

Postal Business, 403, 406, 771

Referenda, 61

State—

Accounts, 715

Appropriations, Loan, 739

Banking, 716

Commonwealth Relations with, 752

Debts, 743, 745

Accounts—

General, 716

Railways, 716

Appropriations, 739

Loans, 743

Cost of Raising, 746

Old Deficiency, 718

Repayment, 739

Security, 750

Sinking Funds, 739, 748

Stock, 740

Local Issues, 744

Treasury Bills, 740

Expenditure, 715

Business Undertakings, 720

Direction, 719

Education, 164, 172

Governmental, 720

Immigration, 751

Loan, 741

Mining, Prospecting Vote, 224-228

Net, 719

Parliament, 68

Pensions, 720

Per Capita, 720

Police and Prison Services, 492

Railways, 720

System, 715

Undertakings—

Business, 720

Industrial, 720

Funds—

Closer Settlement, 721

Consolidated Revenue, 718

Public Works, 722

Sinking, 748

Special Deposits, 738

Trust, 737

Loans, 824-827

Account, 716-740

Appropriations, 739

Character of Stock, 745-749

Cost of Raising, 746

Date of Maturity, 745

Floatation Expenses, 746

Funded Stock issued locally, 744

General Loan Account, 716

Public Debt, 743

Rates of Interest, 745

Redemptions and Sinking Fund, 739, 748

Finance—*continued.*

- State—*continued.*
 - Security, 750
 - Treasury Bills, 740
 - Local Authorities, 814 (*see also* Boards):
 - Relations with Commonwealth, 752
 - Revenue, 715
 - Taxation, 723
 - Customs, 331
 - Excise, 331
 - Income, 726
 - Land, 720, 724
 - Probate, 461, 723
 - Stamp Duties, 720, 723
- Fineness of Coins, 398
- Fines, Imposed by Courts, 450, 479

Fire—

- Bricks, 282
- Brigades, 830
 - Board, 433
- Clay, 282
- Commissioners, 829
- Finances, 830
- Inquests, 456
- Insurance, 433
- Occurrences, 830

Fires, 830

- Inquests, 456
- Firms, Registration, 419

First Aid, 677

- Mines, 287
- Railways, 804

First Offenders, 480

Fish and Fisheries, 643

- Acclimatisation, 646
- Boats and Gear, 643
- Bounty, 349, 645
- Canning, 382, 645, 863
- Conditions of Industry, 861
- Consumption, 858
- Control, 643
- Crabs, 644
- Crayfish, 644, 858, 863
- Deepsea, 644
- Department, 643
- Distribution, 861, 862
- Dolphins, 645
- Employment, 643
- "Endeavour" (Trawler), 646
- Handling, 861
- Industry, 643
- Inshore, 644
- Investigation, 645
- Licenses, 643
- Marketing, 861
- Markets, 861
- Oysters, 643, 863
- Potentialities, 646
- Prawns, 644
- Preserving, 382, 645, 858
- Prices, 862
- Production, 643
- Resorts, 48, 49, 51
- Royal Commission, 861
- Supply, 644, 858, 861
- Trawling, 646

Fish—*continued.*

- Trout, 52
- Values of Production, 645
- Whaling, 644
- Flannel, 387
- Fleece, 605
- Flock, 391
- Flocks, Sheep, 602
- Flour—
 - Consumption, 858
 - Milling, 382
 - Prices, 886
- Flux—
 - Ironstone, 259
 - Limestone, 281
- Fodder, Green, 566
- Food—
 - Consumption, 857
 - Exports, 868, 880
 - Factories, 386
 - Imports, 341
 - Inspection, 872
 - Manufacture, 380
 - Prices—
 - Retail, 882
 - Wholesale, 875
 - Production, 855
 - Purity, 872
 - Royal Commission, 869
 - Standardisation, 649, 872
 - Supply, 859
 - Bread, 868
 - Fish, 858
 - Fruit, 869
 - Meat, 863
 - Milk, 870
 - Potatoes, 858
- Forage (*see* Fodder)—
- Forces—
 - Cadet, 76
 - Citizen, 77
 - Military, 77
 - Naval, 82
- Forecasts, Weather, 33
- Foreign Countries, Trade with, 336
- Forestry, 637
 - Area of Forested Lands, 637
 - Commercial Timbers, 637
 - Department, 637
 - Employment, 640
 - Grazing Rights, 641
 - Growth of Timber, 638
 - Industries, 640
 - Interstate Conferences, 643
 - Licenses and Permits, 641
 - Nurseries, 339
 - Occupation Permit, 641
 - Plantations, 495, 639
 - Prison Labour, 487, 640
 - Reserves—
 - Forest, 495, 637
 - Timber, 495, 637
 - Revenue, 641
 - Ringbarking, 641
 - Royal Commission, 637
 - Royalties, 641
 - Saw Mills, 377, 640, 641
 - Tanning Bark, 393

- Forestry—*continued*.
 Timber—
 Depot, State, 378
 Licenses, 641
 Physics, 641
 Rate of Growth, 638
 Royalty, 641
 Tree Planting—
 Local Authorities, 642
 State, 640
 Formation, Geological, 223
 Foster Homes, 653, 656
 Foundation of New South Wales, 85
 Foundries, 379
 Fowls, Prices, 876
 Foxes, 621, 623
 Franchise—
 Parliamentary—
 Absent Voting, 65
 Commonwealth, 60
 State, 64
 Shires, 614
 State, 64
 Women's, 60, 64
 Freehold Lands, 530
 Freezing Works, 382
 Freight, 305, 792
 Butter, 305, 634, 792
 Meat, 305, 792
 Minerals, 305
 Produce, 792
 Railways, 792
 Rates, 305, 792
 Wheat, 305, 560
 Wool, 305, 306, 792
 French Mail Service, 760
 Friendly Societies, 686
 Benefits, 687
 Expectation of Life, 695
 Experience—
 Mortality, 695
 Sickness, 692
 Finances, 689
 Funds, 688
 Hazardous Risks, 693
 Infirmity, 692
 Legislation, 686
 Medical Benefits, 694
 Membership, 688
 Miscellaneous Societies, 687, 690
 Mortality, 695
 Reserves, 689
 Sickness, 692
 Societies, 687
 Subventions, State, 691
 Valuations, 687
 Frozen Meat, 330
 Frozen Mutton, 618
 Fruit—
 Area under, 575
 Canning, 381
 Citrus, 575
 Gardens, 575
 Grading, 869
 Imports, 579
 Marketing, 869
 Production, 577
 Supply, 869
 Fuel License, 641
 Used, 368
 Fugitive Offenders, 491
 Fuller's Earth, 283
 Funds—
 Closer Settlement, 721
 Consolidated Revenue, 718
 Public Works, 722
 Trust and Special Deposits, 737
 Furniture and Bedding Factories, 391
 For State Schools, 391
 Furriers, 386
 Furs, 620
 Gabo Island, 18
 Galena, 244
 Gallery, Art, 218
 Galvanised Iron, 379
 Gaols (*see* Prisons), 476
 Gardens—
 Botanic, 47
 Fruit, 575
 Island, 17
 Market, 579
 School, 185
 Suburbs, 706
 Zoological, 48
 Garnets, 279
 Gas—
 Gasworks, 392, 884
 Industry, 924
 Manufacture, 393
 Prices, 888
 Regulation of Industry, 924
 Works, 393
 Gastritis, Deaths, 149
 Gauge of—
 Railways, 796
 Tramways, 799
 Gem Stones, 277
 Diamonds, 277
 Opal, 277
 Other, 278
 General Banking Account of State—
 Cash Balances, 716, 717
 Government Expenses, 734
 Ledger Balances, 716
 Loan Account, 716
 General Insurance, 433
 Geography—
 Anchorage, 16
 Area—Australia, 13
 British Empire, 14
 New South Wales, 13
 Boundaries, 14
 Capes, 15
 Caves, 27, 51
 Cities, 29
 Coast Line, 15
 Currents, 43
 Harbours, 16
 Headlands, 15
 Inlets, 16
 Islands, 18
 Lakes, 26
 Meteorology, 33
 Mineral Springs, 26
 Mountains, 20
 Plains, 19
 Ports, 16

G. ography—*continued.*

- Rainfall, 37
- Rivers, 23
- Seasons, 34
- Surface, 19
- Survey—
 - Magnetic, 15
 - Trigonometrical, 15
- Tides, 43
- Towns, 29
- Trigonometrical Stations, 15
- Volcanoes, Extinct, 22
- Winds, 24
- Geology—
 - Formation, 28, 223
 - Museum, 223
 - Surveys, 223
- George's River, 24, 48
- Glass Works, 375
- Glebe Island Bridge, 850
- Glenbrook, 50
- Glen Innes Experiment Farm, 586
- Glue Pieces, 620, 878
- Gluten, 554
- Goats, 599, 612, 615
- Goethite, 256
- Gold, 239
 - Alluvial, 239, 241
 - Auriferous Reefs, 240
 - Batteries, 229
 - Boring, 230
 - Bullion, 399
 - Chinese Miners, 231
 - Cobar Field, 241
 - Coinage, 398
 - Currency, 397
 - Development, 239
 - Discovery, 223, 239
 - Dredging, 242
 - Early Discoveries, 223, 239
 - Miners, 231
 - Minting, 398
 - Occurrence, 239
 - Output, 240, 243
 - Plant, 242
 - Prices, 238
 - Production, 240
 - Reefs, 240
 - Reserves, 415
- Goods, Carriage—
 - Railway, 777
 - Rates, 792
 - Sea, 329
 - Traffic, 791
 - Tramway, 802
- Goondah—Burrinjuck Railway, 53
- Gosford, 30, 54
 - Farm School, 201
- Gourd Crops, 578
- Government, Commonwealth, 56 (*see also*
 - Australia)
 - Docks, 313
 - Local, 69, 805
 - Acts, 805
 - Areas, 808
 - Balance-sheets, 823-829
 - Boards and Trusts, 829
 - Bridges, 851
 - Certificates of Qualification, 839

Government—*continued.*

- Local—*continued.*
 - Cities, 806
 - City of Sydney, 808
 - Finances, 815, 816
 - Map, 805
 - Councils, 806
 - Country—
 - Municipalities, 819
 - Towns Water Supply, 831, 832
 - Divisions, 807
 - Endowments, 806
 - Municipalities, 811
 - Shires, 806, 827
 - Expenditure, Municipalities, 819—
 - Shires, 828
 - Extension Act, 807
 - Ferries, 850
 - Finances, 814 (*see also* Finance)
 - Franchises, 806, 808
 - Income, 821, 827
 - Incorporation, 807
 - Legislation, 805
 - Lighting, 834, 835
 - Litigation, 470
 - Loans, 824, 827
 - Municipalities, 819
 - Country, 819
 - Loans, 819, 821, 824
 - Markets, 874
 - Population, 808
 - Rating, 812
 - Roads, 847
 - Sewerage, 822
 - Suburban, 819
 - Urban, 808, 819
 - Option, 452
 - Parks, 853
 - Population, 808
 - Rating, 810, 812, 823, 826
 - Referenda, 836
 - Roads, 847
 - Sewerage, 831, 833, 845, 846
 - Shires, 825
 - Suburbs, 819
 - Sydney, 808
 - Finances, 814
 - Greater, 809
 - Harbour Trust, 291, 303, 308, 311
 - Map, 805
 - Progress, 818
 - Taxation, 829
 - Valuations, 811, 813
 - Water—
 - Country Towns, 831, 832
 - Hunter District Water Supply and Sewerage Board, 843
 - Metropolitan Board of Water Supply and Sewerage, 839
- State, 58, 69
 - Administrative Arrangements, 69
 - Aid—
 - Mining, 228, 259, 276
 - Religion, 708
 - Settlers, 590
 - Asylums, 649, 673
 - Banks, 407
 - Brickworks, 282, 376

- Government—*continued*.
 State—*continued*.
 Children's Relief, 653
 Coal Mines, 272
 Constitution, 56
 Convalescent Homes, 649
 Departments, 69
 Expenditure (*see* Finance)
 Ferries, 322
 Forest Nursery, 639
 Hospitals, 649
 Housing Areas, 706
 Infants' Homes, 655
 Labour Bureau, 653
 Litigation, 470
 Pensions, 698
 Quarries, 281
 Railways, 773
 Relief Orders, 678
 Savings Banks, 407
 Shipping Offices, 322
 Tourist Bureau, 46
 Tramways, 773, 799
- Governor—
 General, 58
 State, 58
 Powers, 58
 Succession, 59
- Govett's Leap, 50
- Gradients of Railways, 780
- Grading of Wheat, 559
- Grafton, 31, 55
 Experiment Farm, 585
- Grain and Pulse, 578
- Grammar School, Sydney, 195
- Grand Arch, Jenolan Caves, 51
- Granite, 280
- Grapes, 574
- Graphite, 284
- Grassed Lands, 536
- Grasses, Artificially Sown, 567, 626
- Grazing—
 Areas, 534
 Permits, 641
- Grease Factories, 374
- Great Britain, Trade, 339
- Greater Sydney, 809
- Green Food, 566
- Grindstones, 284
- Grose Valley, 50
- Habitual Criminals, 482
- Hacking, Port, 18, 48
- Hæmorrhage of Brain, Deaths, 144
- Hair, 620, 878
- Hams and Bacon, 632
- Handling of Wheat, 559
- Harbour, 16 (*see* also Ports)
 Coff's, 16
 Lights, 306
 Middle, 47
 Removals, 317
 Dues, 290
 Sydney, 17, 46
 Trust, Revenue, 720
- Hares, 620, 623
- Harness and Saddlery Making, 389
- Hastings River, 23
- Hat and Cap Factories, 388
- Hawkers and Pedlers' Licenses, 455
- Hawkesbury—
 Agricultural College, 186, 585
 Railway Bridge, 850
 River, 24, 53
- Hay—
 Area under, 565
 Irrigation Settlement, 596
 Production, 565
- Hazardous Occupations, 693
- Headlands, Coastal, 15
- Health Board, 649
 Department of Public, 649
 Publicity Department, 650
- Heart Disease, Deaths, 146
- Heat, Light, and Power Works, 393
- Heifers, 600
- Height—
 Mountains, 20
 Trigonometrical Stations, 15
- Hematite, 256
- Herds—
 Dairy, 625
 Testing, 633
- Hides—
 Export, 620
 Tanning, 373
- High—
 Court of Australia, 470
 Schoo's, 179
 Scholarships, 180
- Higher Courts Operations, 468
- Highlands—
 New England, 55
 Southern, 52
- Hills, 20
- History—
 Australian Chronology, 1
 Historical Society, 212
 Industrial Legislation, 959
 Mining, 223
 New South Wales, 1
 Woolgrowing, 601
- Holdings—
 Area, 525, 537
 Classification, 524
 Cultivated, 543
 In Divisions, 524
 Number, 527
 Size, 536
 Suburban, 504
 Tenure, 530
 Use, 534
- Homes—
 Aboriginal, 651
 Cottage, 659
 Farm, 659
 Government, Infants', 649, 654
 Infants', Licensed, 655
 Mothers and Infants, 656
 Nursing Board, 654
 Salvation Army, 711
 Workers, 705
- Homesteads—
 Farms, 503
 Grant, 502
 Selection, 502
- Honey, 636
- Hoofs, 620, 878
- Hops, 384, 579

- Horns, 620, 878
- Horse—
- Brands, 613
 - Breeding, Military, 74
 - Certificates, 611
 - Classes, 609
 - Exports, 610
 - Imports, 610
 - In Districts, 600
 - In Various Countries, 612
 - Prices, 615
 - Stallions, 611
 - Veterinary Examination, 610
- Hosiery and Knitting Factories, 387
- Hospitals, 666
- Asylum, 673
 - Babies, 649
 - Clinics, 210
 - Coast, 649
 - David Berry, 649
 - Deaths, 670
 - Dental, 210
 - Expenditure (State), 650
 - Finance, 668
 - Gaol, 674
 - Tuberculosis Ward, 674
 - Government—
 - Coast, 649
 - Expenditure, 650
 - Infirm, 649
 - Insane, 679
 - Lady Edeline, 649
 - Mental, 679, 684
 - Waterfall, 649
 - Private, 649, 667
 - Public Subsidised, 666
 - Accommodation, 667
 - Beds, 667
 - Country, 667
 - Diseases treated, 671
 - Duration of Treatment, 672
 - Expenditure, 668
 - Fatality Rates, 670, 672
 - Finance, 668
 - Funds, 669
 - Medical Staff, 670
 - Metropolitan, 666
 - Nursing Staff, 670
 - Outdoor Relief, 667, 670
 - Patients, 667, 670
 - Revenue and Expenditure, 668
 - Saturday Fund, 679
 - Sickness, 671
 - Staffs, 670
 - State Expenditure, 650
 - Subsidies, 668
 - Saturday Fund, 679
 - Subsidies, 668
 - Waterfall Consumptives, 649
- Hotels—
- Licenses, 452
 - Number, 452
 - Regulation, 452
- Hours of Work—
- Award Regulation, 939
 - Early Closing Shops, 939
 - Universal Half Holiday, 940
- House of Representatives—
- Constitution, 60
 - Elections, 61
- House Rents, 705
- Housing, 703
- Board, 706
 - Building Materials, 704
 - Building Societies, 422
 - Dacey Garden Suburb, 706
 - Government Areas, 706
 - Municipal Areas, 707
 - New Buildings, 704
 - Occupied Dwellings, 708
 - Rental Values, 705
 - Rooms, 703
 - State Advances, 707
- Howlong Viticultural Station, 574, 586
- Hubnerite, 260
- Hunter District Water Supply and Sewerage Board, 843
- Hunter River, 23
- Hunter River Water Scheme, 595
- Hydraulic—
- Lifts, 949
 - Power, 393
 - Sluicing (see Dredging)
- Hydrographic Survey, 330
- Hygiene—
- Board of Health, 649
 - Child, 191, 652
 - Commission, Royal on Food and Drugs, 859
 - Dairy Supervision, 649
 - Diseases—
 - Contagious, 489
 - Notifiable, Infectious, 199
 - Prevention, 649
 - Quarantinable, 318
 - Drugs—
 - Sale, 222
 - Standardisation, 872
 - Food, Inspection, 872
 - Health, Department, 649
 - Infant Life Protection, 652, 654
 - Legislation, 649
 - Medical Inspection of Children, 191
 - Milk Supply, 870
 - Quarantine, 318
 - Vaccination, 135
- Ice and Refrigerating Works, 381
- Ice Sports, 52
- Illawarra District, 48
- Lake, 26, 49
- Illegitimacy, 118
- Deaths of Mothers, 122
 - Deaths of Children, 128, 156
 - Legitimation, 119
- Illiteracy—
- Census, 160
 - Marriage, Mark Signatures, 112
- Illness (see Sickness)
- Immigration, 89, 90, 903
- Accommodation, 909
 - Agencies—
 - State Government, 905
 - Aliens, 102
 - Assisted, 91, 903, 906
 - British, 905
 - Commonwealth, 903

Immigration—continued

- Contract, 904
- Co-operation of States, 908
- Encouragement, 905
- Expenditure, 751, 905
 - Expenditure, 751, 905
 - General Regulation, 903
- Labour Shortage, 903
- Land, 90
- Legislation, 903
- Nomination, 906
- Occupations, 907
- Reception, 909
- Restriction, 102
- Sea, 90
- Selection, 906
- State Policy, 905
- Subsidised, 908
- Uniform Passage Rates, 908

Imperial—

- Legislation, 56
- Navy, 80
- Trade, 336

Implements (see Machinery)

- Dairying, 635
- Fisheries, 643
- Pastoral, 635

Imports—

- Annual Averages, 334
- Articles, 341
- British Produce, 342
- Classification, 341
- Country of—
 - Origin, 335
 - Shipment, 335
- Customs Duties, 331
- Foreign Produce, 335
 - Vessels, 316
- From British Possessions, 337, 343
 - Foreign Countries, 337
 - United Kingdom, 337
- Fruit, 579
- Horses, 610
- Plants, 579
- Vegetables, 579

Imprisonment—

- for Debt, 480
- in lieu of Fine, 479
- Sentences, 490

Improvement, Lands—

- Leases, 506
- Purchases, 501

Incomes, 446, 726, 727

Income Tax, 720, 723, 726

Incorporation—

- Companies, 420
- Local Government Areas, 807

Independency, 894

Index—

- Mortality, 132
 - Prices, 880
- Individual Industries, 372

Industry—

- Accident and Disease, 948, 950
- Factories, 948
- Lifts and Scaffolding, 949
- Mines, 285, 950, 957
- Railways, 773
- Tramways, 799

Industry—continued.

- Agreements, 931
 - Arbitration, 457, 893, 920, 923
 - Assurance, 426
 - Awards, 931
 - Boards, 923
 - Commerce, 329
 - Communication, 753
 - Conciliation, 922, 933
 - Court, 459
 - Diseases, 950
 - Dislocations, 943
 - Disputes, 921
 - Employment, 893
 - Individual, 372
 - Industries, 925
 - Inspection, 934
 - Intervention, 934
 - Investigation, 457, 934
 - Jurisdiction, 925
 - Legislation, 917, 959
 - Local Production, 855
 - Lockouts, 943
 - Magistrates, 457
 - Manufacturing, 347
 - Mining, 223
 - Population, 893
 - Production, 855
 - Registrar, 457
 - Rural, 539
 - Schedules, 925
 - Schools, 201, 660
 - Seasonal Slackness, 943
 - Shipping, 289
 - Strikes, 943
 - Undertakings, Governmental, 720
 - Unions, 909
 - Wages Boards, 921
- Inebriates, 484**
- Habitual, 484
 - Institutions, 486
 - Treatment, 484
- Infantile Mortality, 124, 154**
- Paralysis, 139
- Infants (see Children)**
- Infectious Diseases, 674**
- Infirm Asylums, 649**
- Influenza, Deaths, 139**
- Injuries in Mines, 285**
- Ink Making, 391**
- Inlets, 16**
- Inquests—**
- Deaths, 456
 - Fires, 456
- Insanity—**
- Admissions, 680
 - Ages, 681
 - Birthplaces, 681
 - Causes, 682
 - Cost of Maintenance, 683
 - Deaths, 145, 681
 - Discharges, 680
 - Duration, 683
 - Hospitals, 679
 - In Gaols, 484
 - Institutions, 679
 - Master in Lunacy, 679
 - Medical Staff, 679
 - Mental Hospitals, 679

Insanity—*continued.*

- Nursing Staff, 679
- Patients, 679
- Reception Houses, 680, 684
- Recoveries, 681
- Royal Commission, 684
- Treatment—
 - Cost, 683
 - Duration, 683
- Insolvency, 434
- Inspection—
 - Bakehouses, 475
 - Children—
 - Dental, 665
 - Medical, 191, 663
 - Exports, 329
 - Factory, 348, 934
 - Industrial, 934
 - Lifts and Scaffolding, 949
 - Meat, 330
 - Mines, 227
 - Schools—
 - Primary, 191
 - Secondary, 191
 - Shops, 475
 - Stock, 613
- Instruction (*see* Education)
- Instruments, Musical, Manufacture, 389
 - Surgical and Scientific, 392
- Insurance—
 - Accident, 433
 - Fire, 433
 - General, 433
 - Invalidity, 433
 - Marine, 433
 - Workmens, 956
- Intercensal Records—
 - Occupation Variations, 893, 899
 - Population Estimates, 87
- Interest—
 - Bank Rates, 417
 - Rates on Local Debt, 824
 - Rates on Public Debt, 720, 745
- Intermediate Certificate, 160, 199
- Intermittency, Employment, 943
- Intervention, Industrial, 934
- Intestacy, Estates, 461
- Intoxicants, Consumption, 858
- Intoxication (*see* Drunkenness), 484
- Invalidity—
 - Assurance, 433
 - Pensions, 700
- Investigation—
 - Cost of Living, 891
 - Industrial, 457, 934
 - Office, 457
 - Industrial, 457
- Investment—
 - Companies, 421
 - Societies, 422
- Iridium, 263
- Iron—
 - Bounties on Products, 259, 349
 - Commercial Ores, 256
 - Flux, 259
 - Manufacturers Encouragement Act, 349
 - Newcastle Works, 258

Iron—*continued.*

- Ores, 256
 - Supplies, 257
- Oxide, 259
- Pipes, 380
- Production, 235
- Royal Commission, 258
- Supplies, 257
- Works, 379
- Ironstone Flux, 259
- Irrigation, 591
 - Artesian, 597
 - Districts, 591
 - Farms, 504, 584
 - Hay, Area, 596
 - Murrumbidgee Scheme, 591
 - River Schemes, 591
 - Settlements, 596
 - Water Charges, 593
 - Wentworth Area, 596
- Islands, 18
 - Bird, 18
 - Broughton, 18
 - Gabo, 18
 - Lord Howe, 18
 - Montague, 18
 - Norfolk, 19
 - Solitary, 18
- Jackson, Port, 17, 46
- Jam, Pickle, and Sauce Factories, 383
- Jam, Prices, 887
- Jamesonite, 261
- Jamieson Valley, 50
- Jarvisville Mineral Spring, 27
- Jenolan Caves, 51
- Jervis Bay, 18, 49
- Jewellery, Manufacture, 392
- Jewish Religion, 711
- Joinery Works, 377
 - State, 378
- Judges, 457
 - Pensions, 699
- Judicature (*see* Courts)
- Judicial Separation, 463
- Junior Cadets, 76
- Junior Examination, 197
- Jurisdiction—
 - Appellate, 469
 - Arbitration, 925
 - Bankruptcy, 462
 - Civil, 459
 - Common Law, 465
 - Criminal, 467
 - Divorce and Matrimonial Causes, 463
 - Equity, 460
 - Original, 447
 - Probate, 460
- Justice, Public (*see* Courts and Legislation)
- Juveniles—
 - Apprenticeship, 660
 - Certification for Employment, 360
 - in Manufacturing Industries, 357, 358
 - Labour, 357, 358
 - Offenders Act, 652
 - Smoking, 652
- Kangaroo Rats, 623
- Kangaroo Valley, 20, 49
- Kangara Silver Mine, 250

- Kanimb'a Valley, 50
 Kaolin, 283
 Karuah River, 23, 54
 Katoomba, 32, 50
 Keira, Mount, 49
 Kerosene—
 Bounties, 349
 Production, 276, 393
 Kiama, 31, 49
 Bowhole, 49
 Kiandra, 52
 Kindergarten, 177, 196
 Knitting and Hosiery Factories, 337
 Kosciusko, Lake, 26
 Mount, 22, 52
 Ku-ring-gai Chase, 54, 854
 Kurnell, 48, 854
 Laboratory, Chemical, 224
 Labour, (*see also* Employment and Unionism)
 Agricultural, 579
 Arbitration Systems, 893, 920, 923
 Bureau, State, 953
 Children, 359
 Conditions in Mining, 227
 Cost of Living, 891
 Depôt, Randwick, 955
 Employers' Liability, 956
 Factories and Shops, 356
 Farm, 579
 Federation, 916
 Females, 357, 895
 Force, 893
 Adequacy, 903
 Age, 893, 897, 899
 Class and Status, 895
 Hours, 939
 Importation, 904, 906
 Industries, Classification, 925
 Juveniles in Factories, 357
 Mines, 232
 Legislation, 919, 920, 959
 Mines, 230, 902
 Organisations, 913, 915
 Outworkers, 942
 Permits to Work, 360
 Prices, 935
 Rents, 361
 Rural Industries, 579
 Seasonal Changes, 943
 Settlements, 509
 Shipping Office, 322
 Shortage, Local, 903
 Slackness, 943
 Trade Unions, 909
 Unemployment, 895, 950
 Unions—
 Industrial, 909
 Trade, 909
 Wages, 935
 Boards, 921
 Minimum, 938
 Women Workers, 915
 Workmen's Compensation, 956
 Lachlan River Water Scheme, 595
 Lady Edeline Home, 649, 654
 Lakes—
 Bathurst, 26
 George, 26
 Lakes—*continued.*
 Illawarra, 26, 49
 Macquarie, 18, 26, 54
 Myall, 26, 54
 Northern, 54
 Smith's, 54
 Terrigal, 54
 Tour, Great, 54
 Tuggerah, 26, 54
 Wallis, 54
 Wamberal, 54
 Lambs, 603
 Slaughtering, 617
 Wool, 605
 Land—
 Acquisition, 498
 Acts, 493, 496
 Advances to Settlers, 590
 Agricultural, 535
 Alienation, 494
 Extent, 531
 Progress, 514, 520, 532
 Resumption, 503
 Annual Leases, 504
 Annulment of Applications, 509
 Appeal Court, 469
 Areas—
 Available for Settlement, 518, 520
 Holdings, 524
 Leased, 518
 Auction Sales, 501
 Auriferous, 239
 Church and School, 494
 Classification—
 Crown Lands, 538
 Holdings, 525, 537
 Closer Settlement, 509, 528
 Conditional—
 Conversion Rights, 501
 Leases, 505
 Purchase, 499
 Purchase Leases, 504
 Conversion of Tenures, 501
 Crown—
 Alienation, 494
 Grazing Permits, 641
 Leases—
 Homestead, 507
 Mining, 225
 Legislation, 496
 Cultivation (*see* Agriculture)
 Extent, 535
 Dedication of Land, 513
 Defence, 73, 79
 Divisions of the State, 497, 524 (*see* Map).
 Coastal, 524
 Map (Title Page)
 Plains, 526
 Riverina, 526
 Slopes, 526
 Tablelands, 525
 Western Division, 527
 Early Settlement, 494
 Effects of Legislation, 521
 Enclosed, 534
 Exchange, 502
 Extent of Cultivation, 535
 Factories, 361

Land—*continued.*

- Farms—
 - Homestead, 503
 - Irrigation, 503
- Federal Capital, 13, 32, 62
- Forest Reserves, 495
- Freehold, 530
- Grants—
 - Crown Lands, 494
 - Free, 502
 - Homestead, 502
 - Grassed, 536
- Holdings—
 - Area, 524
 - Classification, 524
 - Purposes for which used, 534
 - Suburban, 504
- Homestead—
 - Farms, 503
 - Grants, 502
 - Leases, 518
 - Selection, 502
- Improvement Leases, 506
 - Purchases, 501
- Inferior Lands, 504
- Irrigation Farms, 504
- Leases, 518
 - Annual, 504-518
 - Area, 518
 - Conditional, 505
 - Purchase, 504
 - Conversion Rights, 501, 515
 - Crown, 507
 - Improvement, 506
 - Inferior Lands, 504
 - Mining, 225
 - Occupation, 504
 - Pastoral, 506
 - Residential, 506
 - Scrub, 506
 - Settlement, 507
 - Snow, 507
 - Special, 506
- Legislation, 493
- Licenses—
 - Grazing, 641
 - Occupation, 506
 - Ringbarking, 641
- Loans to Settlers, 590
- Maps—
 - City of Sydney, 405
 - Land Divisions, *fronting Title-page*
 - Minerals, 223
 - Railways, 773
- Miners' Rights, 224
- Mining Leases, 225
 - Licenses, 224
 - Reserves, 495
- Mortgages, 439
- Non-competitive Sales, 501
- Occupation (*see also Leases*)
 - Crown Lands, 498
 - Licenses, 506
 - Methods, 498
 - Pastoral Lands, 495
 - Private Rented, 530
- Purchases—
 - After Auction, 501
 - Auction, 501

Land—*continued.*

- Purchases—*continued.*
 - Conditional, 499
 - Conversion, 501, 515
 - Improvement, 501
 - Purpose for which used, 534
 - Real Estate, 436
 - Recreation Reserves, 495
 - Reservations, 495
 - Reserves, 495
 - Resumptions, 503
 - Revenue, 517, 720-730
 - Ringbarked, 536
 - Riverina, Settlement in, 526
 - Rural Settlements, 525
 - Area of Holdings, 525-537
 - Classification of Holdings, 534
 - Crown Lands, 538
 - Holdings, 525
 - In Divisions, 524
 - Coastal Division, 524
 - Tablelands, 525
 - Western Division, 527
 - Western Plains and Riverina, 526
 - Western Slopes, 526
 - Sales, 501
 - Scrub and Inferior, 506
 - Selection, Homestead, 502
 - Settlement, Closer, 509-528
 - Acquisition of Estates for Sub-division, 511
 - Administration, 509
 - Area for, 511
 - Fund, 721
 - Holdings, 511
 - Labour, 509
 - Land, 512
 - Leases, 507
 - Promotion, 512
 - Rural, 525
 - Snow Leases, 507
 - Special Leases, 506
 - Sales, 501
 - Suburban Holdings, 504
 - Taxation, 720-725
 - Federal, 724-729
 - State, 720-723
 - Tenant Farmers, 542
 - Tenures—
 - Conversion, 501-515
 - Limitation, 495
 - Travelling Stock Reserves, 495
 - Volunteer Land Orders, 502
 - Western Land Board, 598
- Landed Property—
 - Factory, 361
 - Taxation, 720, 725, 729
 - Lane Cove River, 47
 - Lard, 620, 632, 877
 - Latitude—
 - Islands, 18
 - New South Wales, 14
 - Sydney, 39
 - Trigonometrical Stations, 15
 - Law Courts, 447
 - Lawson, 50
 - Lazaret, Leper, 674

- Lead, 244
 - Mills, 379
 - Poisoning, 287
 - Prices, 238, 879
 - Production, 246
- Leases—Land (*see* Land)
- Mining (*see* Mining)
- Leather Manufacture, 395
- Leaving Certificate, 160, 199
- Legal—
 - Procedure, 447
 - Profession, 222
 - Tender, 397
- Legislation—
 - Aborigines, 651
 - Aliens, 102
 - Apprenticeship, 941
 - Arbitration, Industrial, 893, 920, 923
 - Artesian Waters, 597
 - Assurance, 424
 - Banking, 406, 407-410
 - Clerical Workers, 924
 - Commercial, 329
 - Commonwealth (*see* Australia)
 - Criminals, 467, 469, 482, 491
 - Defence, 73
 - Exports, 329
 - Factory, 348
 - Hygiene, Public, 649
 - Immigration, 903
 - Imperial, 56
 - Industrial, 959
 - Land, 493
 - Legal Processes, 447
 - Local Government, 805
 - Mediatory, 919
 - Mining, 224
 - Shipping, 289
 - Statute Law, 69
- Legislative—
 - Assembly, 63
 - Allowances, 63
 - Election, 64
 - Franchise, 64
 - Council, 63
 - Distribution of Electorates, 63
 - Referendum, 61
- Legitimation Act, 119
- Lemons, 577
- Length,—
 - Coast-line, 14
 - Residence of Persons in Australia, 91
 - Rivers, 23
- Lepidoptera, 674
- Lettergrams, 765
- Letters—
 - Administration, 460
 - Cards, 754
 - Posted, 756
 - Dead, 756
 - Rates, 757
 - Registration, 755
 - Telegrams, 765
- Leura, 32, 50
- Libraries, 214
 - Mitchell, 217
 - Municipal, 216
 - Music, 221
 - Parliamentary, 218
- Libraries—*continued.*
 - Prison, 478
 - Public, 216
 - Reference, 216
 - Schools of Art, 218
 - Sydney Municipal, 216
- Licenses—
 - Abattoirs, 865
 - Additional Bar, 454
 - Auctioneers, 454
 - Billiard and Bagatelle, 454
 - Boats, 454, 643
 - Booth or Stand, 454
 - Brewers', 454
 - Business, 224
 - Children—
 - Trading, and Theatre, 653
 - Working in Factories, 357-360
 - Clergy for Marriages, 714
 - Club, 454
 - Dwellings for Children, 656
 - Fees (*see* Revenue)
 - Fishermen's, 643
 - Forestry, 641
 - Grazing on Crown Lands, 641
 - Halls, 854
 - Hawkers and Peddlers, 455
 - Hotel, 452, 453
 - Institutions for Children, 655-656
 - Mining, 224
 - Motor Vehicles, 474
 - Packet, 454
 - Pawnbrokers, 455
 - Quarries, 281
 - Racecourses, 854
 - Railway Refreshment Rooms, 454
 - Reduction, 452
 - Revenue, 720-723
 - Ringbarking, 641
 - Sawmill, 641
 - Shipping, 302
 - Spirit Merchants, 454
 - Theatres, 854
 - Timber, 641
 - Vehicles, 474
 - Wine, 454
- Licensing Courts, 452
- Liens—
 - Crops, 439
 - Live Stock, 439
 - Wool, 439
- Life—
 - Assurance, 424-431
 - Saving—
 - Police, 472
 - Royal Life Saving Society, 677
 - Shipping Appliances, 399
 - Sentences, 490
- Lifts and Scaffolding, 949
- Light, Heat, and Power Works, 393
- Lighthouses and Lights, 306
- Lime, 281
 - Brickworks, 376
 - Production, 235
 - Works, 376
 - State, 282, 376
- Limestone, 281
- Limestone Caves, 27, 51
- Lime-works, State, 282, 376

- Limited Companies, 421
 Limonite, 256
 Linnæan Society, 212
 Liquor—
 Act, 452
 Consumption (*see* Beverages)
 Trade Regulation, 452
 Lismore, 31, 55
 Literary Fund, Commonwealth, 700
 Lithgow Ironworks, 379
 Litigation, Government Business, 470
 Liver, Cirrhosis, Deaths, 150
 Livestock, 599, 866
 Camels, 599, 612
 Cattle, 599, 607
 Diseases, 318
 Donkeys, 599, 612
 Freights, 792
 Goats, 599, 612
 Horses, 599, 609
 in Principal Countries, 612
 Mortgages, 439
 Mules, 599, 612
 Ostriches, 600, 612
 Pigs, 615
 Prices, 613, 866
 Prices, 613-866
 Railway Traffic, 788
 Saleyards, 864
 Sheep, 614
 Slaughtering, 617
 Small Stock, 875
 Stock Routes, 495
 Swine, 615
 Value, 616
 Watering Places, Public, 613
 Living, Cost, 889
 Wage, 936
 Lloyd Copper Mine, 251
 Loans (*see* Finance)
 Local Government, 69 (*see* Government)
 Endowments, 720
 Local Option, 452
 Lockouts and Strikes, 943
 London, Retail Prices, 881
 Longitude (*see* also Latitude)—
 Islands, 18
 New South Wales, 14
 Sydney, 39
 Trigonometrical Stations, 15
 Lord Howe Island, 13, 18
 Population, 92
 Lower Courts, 447
 Lucerne, 566
 Lunacy (*see* Insanity)
 Lying-in Homes, 656
 Machinery—
 Manufacture, 378
 Power, 350, 363
 Use—
 Agriculture, 579
 Dairying, 635
 Farm, 579
 Manufacturing, 350, 363, 378
 Mining, 237
 Pastoral, 617
 Value, 350, 363
 Macleay River, 23
 Macquarie Lake, 18, 26, 54
 Lighthouse, 47
 Pass, 53
 Port, 16, 55
 River Water Scheme, 595
 Magistrates Courts, 447
 Magnesite, 284
 Magnetic Observation, 15
 Survey, 15
 Magnetite, 256
 Mail—
 Contracts, 759
 Ocean, 758, 759
 Routes, 758
 Services, Inland, 758
 Subsidies, 303, 760
 Main Roads, 847
 Maize, 562
 Prices, 876, 877
 Malt, 381
 Barley, 564
 Managers, Factory, 361
 Mandarins, 577
 Manganese, 262
 Mangel-wurzel, 569
 Manly, 47
 Manning River, 23, 55
 Manufactures—
 Employment, 902
 Encouragement, 349
 Industry, 347, 901 (*see* Factories)
 Production, 855
 Manures—
 Application as Fertilizers, 581
 Artificial, 391
 Production, 391
 Rock Phosphates, Bounty, 349
 Maps—
 City of Sydney, 805
 Land Divisions, fronting Title-page.
 Minerals of the State, 223
 Railways of the State, 773
 Marble, 280, 375
 Margarine Factories, 382
 Marine Inquiry Courts, 320, 466
 Insurance, 433
 Market—
 Farm Produce, 875
 Fish, 861, 874
 Fruit, 869, 874
 Gardens, 578
 Inspection, 632
 Labour,
 Live Stock, 864
 Meat, 865
 Municipal, 874
 Poultry, 874
 Produce, 874
 Sydney, 874
 Vegetable, 874
 Wheat, 559
 Marketing, 873
 Markets—
 Municipal, 874
 Sydney, 874
 Maroubra, 48
 Marriages, 110
 Act, 108
 Ages of Parties, 114

- Marriages—continued**
 Clergy for Celebration, 112, 714
 Conjugal Condition prior, 113
 Divorce, 463
 Mark Signatures, 112
 Matrimonial Agencies, 112
 Minors, 115
 Nullity Decrees, 463
 Rates, 110
 Registrations, 108
 Religions, 112
- Marulan, 53**
- Massage, Training, 208**
- Maternity—**
 Allowances, 115, 655
 Hospitals, 667
- Matrimonial Causes—**
 Divorces, 463
 Jurisdiction, 463
- Matting, 395**
- Meales, Deaths, 137**
- Meat—**
 Abattoirs, 650-865
 Condemned, 617
 Consumption, 858-864
 Control of Trade, 865
 Distribution, 865
 Export, 617, 867
 Freezing, 618
 Freights, 792
 Grading, 865
 Industry Board, 737
 Inspection, 330, 617
 Preserving, 382
 Prices—
 London, 619
 Retail, 867, 882
 Sydney, 866, 867, 872
 Wholesale, 866
 Production, 863
 Slaughtering, 864
 Stock Saleyards, 864
 Supply, 617, 863
 Supply for Imperial Uses Act, 885
 Transport and Handling of Stock,
 864
- Mechanics' Institute, 220**
 Railway Institute, 197
- Mediation, Industrial, 919**
- Medicine—**
 Clinics, 210
 Examination—
 School Children, 191, 663
 Manufacture, 391
 Profession, 221
 School, University of Sydney, 210
 Standardisation, 872
- Medlow, 50**
- Megalong Valley, 50**
- Melbourne, Sydney Telephone, 768**
- Melons, 578**
- Meningitis, Deaths, 144**
- Mental Hospitals, 679, 684**
- Mentally Defectives, 659**
- Mercury, 264**
- Merino Sheep, 603**
 Wool, 605
- Metallic Reserves Banks, 415**
- Metals, 239**
- Metals—continued.**
 Manufacture, 378
 Metallic Ores, 239
 Copper, 238, 250
 Gold, 239
 Gold-copper, 241
 Iron, 256
 Output, 239
 Prices, 238
 Production, 233
 Reserves, Bank, 415
 Silver, 244
 Tin, 253
 Tungsten, 260
 Prices, 238, 879
 Quarries, 281
 State, 281
- Meteorology—**
 Bureau, 44, 213
 Coast, 39
 Sydney, 39
 Tablelands, 40
 Western Plains, 42
 Western Slopes, 41
- Methodist Church, 710**
- Metropolis (see Sydney)**
 Area, 92
 Births, 117
 Deaths, 124, 133
 Illegitimacy, 118
 Infantile Mortality, 124
 Infectious Diseases, 139
 Population, 92
- Metropolitan—**
 Factories, 351, 362
 Hospital's Advisory Board, 649
 Sewerage Supplied, 845
 Traffic Act, 474
 Water Supply 839
 Daily Supply, 842
 Finances, 842
 Houses Supplied, 842
 Population supplied, 842
 Sewerage, 845
- Mica, 284**
- Microbiology Bureau, 650**
- Middle Harbour, 47**
 Head, 47
- Migration, 89 (see also Emigration and Immigration)**
- Military (see Defence)**
- Militia, 77**
- Milk—**
 Butter and Cheese Produce, 625
 Butter-fat, 627
 Concentrated and Condensed, Fac-
 tories, 381, 631
 Consumption, 858, 870
 Dairy Cattle, 600, 608
 Distribution, 871
 Factories, 381
 Fresh, 858
 Grading, 871
 Pasteurisation, 628, 871
 Preserved, 858
 Prices, 871, 876
 Production, 625, 871, 978
 Separating, 628
 Supply, 870

Milk—*continued.*

- Treated, 628
- Value, 635
- Yield, 627
- Miller's Point, 47
- Millet, 565
- Milling—
 - Flour, Grain, 382
 - Qualities N.S.W. Wheat, 554
 - Saw, 377
 - Sugar, 384
 - Woolen and Tweed, 388
- Mineral Hill Silver Mine, 250
- Mineral Leases, 228
 - Map, 223
 - Oil, 395
- Mineral Springs, 26
 - Ballimore, 27
 - Bungonia, 27, 52
 - Jarvisville, 27
 - Mittagong, 27, 53
 - Rock Flat, 27
 - Thirlmere, 53
 - Yarrangobilly, 27, 51
- Minerals (*see* Mines)
- Miners' Accident Relief Fund, 287
- Mines and Mining (*see* Map), 223
 - Abrasives, 284
 - Accidents, 285, 960, 967
 - Relief Fund, 287, 967
 - Advances, Prospecting Vote, 228
 - Alluvial, 231
 - Aluminium, 265
 - Alunite, 265, 279
 - Ambulance Classes, 287
 - Antimony, 261
 - Areas in Occupation, 228
 - Arsenic, 279
 - Asbestos, 284
 - Auriferous, 238
 - Barytes, 283
 - Batteries, 239
 - Bauxite, 268, 266
 - Beryls, 279
 - Bismuth, 260, 262
 - Blue Metal Quarries, 381
 - Boring Plants, 230
 - Broken Hill Field, 247, 267
 - Bronze, 400
 - Cairngorm, 279
 - Cassiterite, 260
 - Cerrusite, 244
 - Chromium, 263
 - Cinnabar, 264
 - Clays, 282
 - Coal and Shale, 265
 - Cobalt, 264
 - Coke, 273
 - Collieries, 270
 - Companies, No-*Liability*, 420
 - Concentrates, 248
 - Copper, 238, 250
 - Corundum, 278
 - Cyanide Works, 380
 - Diamonds, 277
 - Dredging, 226, 248, 255
 - Earths—
 - Diatomaceous, 294
 - Fuller's, 283

Mines and Mining—*continued.*

- Education, 182
- Emeralds, 278
- Employment, 230, 902
- Fireclay, 282
- Freight, 792
- Garnets, 279
- Gems and Gemstones, 277
- Gold, 239
- Granite, 280
- Graphite, 284
- Industry, 223
- Iridium, 263
- Iron, 256
 - Oxide, 259
- Kaolin, 283
- Kerosene, 276
- Labour Conditions, 227
- Lands—
 - Crown, 225
 - Private, 226
- Lead, 244
- Leases, 225, 228
- Legislation, 224
- Licenses, 224, 281
- Limestone, 261
- Limonite, 256
- Magnesite, 284
- Magnetite, 256
- Manganese, 262
- Map, 223
- Marble, 280
- Mercury, 264
- Metalliferous, 239
- Mica, 284
- Mineral Oils, 274
- Miners—
 - Accident Relief Fund, 287
 - Employment, 230
 - Licenses, 224
 - Rights, 224
 - Minting, 398
 - Molybdenum, 260, 262
 - Nickel, 264
 - No-*Liability* Companies, 420
 - Non-metals, 265
 - Ochre, 283
 - Oil Shale, 275
 - Opal, 277
 - Osmiridium, 263
 - Osmium, 263
 - Petroleum, 277
 - Pigment Clays, 283
 - Platinoid Metals, 263
 - Platinum, 263
 - Plumbago, 284
 - Pottery Clays, 283
 - Prices, 238
 - Production Value, 233, 955
 - Prospecting Vote, 224, 228
 - Quicksilver, 264
 - Radium, 264
 - Relief, 287, 967
 - Royalties, 226
 - Rubies, 279
 - Sapphires, 277
 - Schelite, 260
 - Schools, 182
 - Shales, 274

Mines and Mining—*continued.*

Silver, 244
 States, 284
 Sluicing, Hydraulic, 242
 Smelting, 265
 Spelter, 246
 State Aid, 228
 Steatite, 283
 Stone, 280
 Blue Metal, 281
 Supervision and Regulation, 224
 Surveys, 223
 Syenite, 280
 Tellurium, 264
 Tin, 253
 Topaz, 278
 Tungsten, 260
 Turquoise, 279
 Uranium, 264
 Wages, 232, 937
 Warden's Courts, 224
 Wolfram, 260
 Zinc, 244
 Zircon, 277

Minimum Wage, 938
 School Attendance, 169

Ministers—
 Cabinet, 67
 of Religion, 709, 714

Ministries—
 Cabinet, Succession, 67

Minne-ha-ba Falls, 50

Minor Crops, 375
 Minor Root Crops, 569

Minors Married, 115

Mints, 398 (*see also* Currency)

Mirrool Irrigation, 591

Miscellaneous Receipts, 720, 733

Mitchell Library, 47

Mittagong, 52
 Cottage Homes, 659
 Mineral Springs, 27, 53

Modelling, 375

Mohair, 612

Molasses, 385

Molybdenum, 260, 262

Monaro District, 20, 53

Money—
 Orders, 403
 Paper, 401

Monopolies, Federal Referenda, 61

McIntagu Island, 18

Montessori Methods, 177

Mortality (*see also* Deaths), 123
 Ages, 129
 Causes, 132
 Index, 123
 Infant, 124
 Prison, 488

Mortgages, 438
 Consideration, 439
 Crops, 439
 Discharges, 440
 Land, 438
 Live-stock, 439
 Personal Chattels, 440
 Real Estate, 438
 Ships, 440
 Wool, 439

38433—B

Moss Vale, 32, 53

Mothers—

Ages, 129
 Deaths in Childbirth, 151

Motor—

Boats, 315
 Certificates and Licenses, 474
 Revenue, 474
 Traffic Act, 474
 Vehicles, 390

Mountains and Hills, 20

Mountains, Blue, 21, 49

Mount Keira, 49

Kosciusko, 22, 52
 Victoria, 50
 Warrung, 55
 Wingen, 21, 55
 York, 20, 50

Mules, 599, 612

Prices, 615

Municipalities—

Acts, 805
 Administrative Expenses, 819
 Area, 808
 Assets, 823
 Balance Sheet, 823
 Bridges, 847, 849
 Cold Storage Works, 875
 Electricity Works, 835
 Endowments, 811
 Expenditure, 819
 Finances, 819-821
 Gas Works, 834
 General Fund, 819, 821
 Health, 819-821
 Housing, 707
 Improved Value, 813
 Income, 821
 Interest Paid, 824
 Liabilities, 823
 Loans, 819, 821, 824
 Local Funds, 819
 Markets, 874
 Municipal Property, 819, 821
 Population, 92, 95, 808
 Public Services, 819, 821
 Works, 819, 820
 Rates, 819, 821
 Rating, 812
 Referenda, 836
 Reserves—Renewals Account, 819,
 821
 Sewerage Works, 822
 Sinking Funds, 824
 Special and Local Funds, 819, 821
 Stock Yards, 875
 Trading Accounts, 819, 821
 Transfers, 819, 821
 Unimproved Value, 813
 Valuations, 813
 Water Works, 822, 832

Murray River, 24
 Irrigation, 594
 Navigation, 301

Murrumbidgee Irrigation, 46, 53, 591
 Burrinjuck Reservoir, 32, 53

Museums, 214
 Agricultural, 216
 Australian (Sydney), 214, 223

Museums—continued.

- Forestry, 216
- Geological, 215, 223
- Herbarium, 214
- Mining, 215, 223
- Technological, 214
- University, 216
- Music—**
 - Conservatorium, 221
 - Library, 221
- Musical Instruments, 389**
- Mutton—**
 - Consumption, 853
 - Export, 602, 618
 - Freezing, 382
 - London Prices, 619
 - Preserving, 389
 - Prices, 619, 866, 867, 878
 - Production, 863
- Myall Lakes, 26, 54**
 - River, 54
- Nails, 379**
- Narara Viticultural Station, 574, 586**
- Narrabeen Lake, 48**
- Narrow Neck, 50**
- National—**
 - Art Gallery, 48, 218
 - Bridges, 851
 - Debt (*see* Finances)
 - Defence, 73
 - Ferries, 851
 - Park, 48, 854
 - Parks, 853
 - Pass, 50
 - Relief Fund, 687
- Nationality—**
 - Naturalisation, 106
 - Non-European Races, 102
 - Population, 98
 - Vessels, 295
- Native Dogs, 621, 623**
- Natural Increase, 89, 121**
- Naturalisation, 106**
- Naval and Navy (*see* Defence)**
- Navigation—**
 - Act, 289
 - Bill, Federal, 289
 - Certificates, 302
 - Department, 289
 - Jurisdiction, 289
 - Legislation, 289
 - Licenses, 302
- Necessary Commodities Control Commission, 884**
- Nectarines, 577**
- Neglected Children, 652, 656**
- Nepean River, 24, 50, 53**
- Nephritis, Deaths, 150**
- New Caledonia Cable, 763**
- Newcastle, 30**
 - Docks, 312
 - Dredging, 311
 - Infectious Diseases, 139
 - Iron and Steel Works, 258
 - Mines, 269
 - Population, 94
 - Shipping, 295
 - Ships, 312
 - Vessels Registered, 315

- New England Highlands, 55**
- Newport, 54**
- New South Wales (*see* Government)**
 - Foundation, 85
 - Maps—
 - Land Divisions, fronting Title-page
 - Minera's,
 - Railways,
 - Population Enumerations, 85
 - Subdivisions, 86
- Newspapers—**
 - Posted, 756
 - Rates, 757
- New Zealand Cable, 763**
- Nickel, 264**
- Nobby's, 16, 23**
- No-License, 452**
- Nominated Immigrants, 906**
- Non-European Races, Census, 102**
- Non-meta's, 265**
- Norfolk Island, 19**
 - Cable, 763
- North Coast, Dairying, 625**
 - District, 39, 55
 - Railway, 784
- Northern Lakes, 54**
- North Shore Bridge, 851**
- Notes—**
 - Australian, 402
 - Bank, 401
 - Circulation, 402
 - Postal, 403
 - Reserves, 403
- Notifiable Infectious Diseases, 139**
- Nowra, 49**
- Noxious Animals, 620**
 - Trades, 649
- Nullity, Marriage, 463**
- Nurseries—**
 - Children's Day, 677
 - Sylvicultural, 640
- Nurses—**
 - Associations, 222, 677
 - Bush, 677
 - Hospital Staffs, 670
 - Massage Training, 208
- Nyngan Demonstration Farm, 586**
- Oatmeal, 381**
 - Consumption, 858
 - Prices, 882
- Oats, 564**
- Observatories, 44, 213**
 - Hill Resumed Area, 707
 - Meteorological Bureau, 213
- Occupation (*see* Land, also Labour)**
 - Hazardous, 693
 - Licenses, 504
 - Records, 895, 897
- Ocean Mail Routes, 759**
 - Services, 759
- Ochre, 283**
- Offences, 449**
 - Children's Courts, 451
- Offenders—**
 - Convictions, &c., 448
 - First, 480
 - Fugitive, 491
 - Habitual, 482

- Offices—
 - Post, 754, 755
 - Telegraph, 762
 - Wireless Stations, 767
- Oils—
 - Animal and Vegetable, 374
 - Bounty, 276, 349
 - Citronella, 392
 - Copra, 374
 - Essential, 392
 - Eucalyptus, 392
 - Fats, Factories Treating, 374
 - Fuel, 395
 - Kerosene, 393
 - Mineral, 393
 - Production, 275
 - Shale, 275
- Old-Age Pensions, 701
 - Claims, 701
 - Pensioners, 701
- Olives, 579
- Onions, 569
 - Prices, 870
- Onyx, 279
- Opal, 277
- Option, Local, 452
- Oranges, 576
- Orchards, 575
 - Demonstration, 586
- Ordinance, Seat of Government, 62
- Organisation—
 - Industrial, 913
 - Shipping, 325
 - Women's Trades, 915
- Orient Co. Mail Contract, 760, 761
- Ormond House Dépôt, 657
- Orphanages, &c., 661
- Osmium, 263
- Ostriches, 600
 - Farming, 612
- Outworkers, 942
- Overdraft, Rates, 417
- Oversea Mails, 761
- Overseers, 361
 - Local Govt. Certificates, 839
- Overtime, 939
- Oxide, Purple, 283
- Oysters, 863
 - Culture, 643, 647
 - Employment, 648
 - Gear, 648
 - Leases, 643
 - Production, 645
- Pacific, Cable, 763
 - Islands Mail Service, 762
- Packet—
 - Licenses, 455
 - Post, 750
- Paddymelons, 623
- Paints, 391
- Palm Beach, 54
- Panama, 305
- Paper—
 - Currency, 401
 - Imports, 341
 - Manufacture, 389
- Paraffin Wax, 276, 374
 - Bounty, 349
- Paralysis, Infantile, 139
- Parcels Post, 754, 756
- Parents and Citizens' Associations, 191
- Parks, 853
 - Ku-ring-gai Chase, 54
 - National, 48, 854
 - Stanwell, 49
- Parliament—
 - Acts, 69 (*see* Legislation)
 - Allowances to Members, 60, 63, 720
 - Commonwealth, 59
 - Cost, 68
 - State, 63
 - Assembly, 63
 - Council, 63
 - Cost of Government, 68
 - Duration, 66
 - Elections, 60, 64
 - Library, 218
 - Ministries, 67
 - Representation, 65
 - Standing Committee, 69
- Parramatta, 29, 50
 - River, 47
- Pass, Bulli, 49
 - Cambewarra, 49
 - Federal, 50
 - Macquarie, 53
 - National, 50
- Passengers—
 - Fares, Railway, 790
 - Tramway, 800
 - Lift, 949
 - Railway, 789
 - Tramway, 801
- Passion Fruit, 577
- Pasteurisation of Milk, 871
- Pastoral Industry, 599
 - By-products, 620
 - Camels, 599, 612
 - Cattle, 599, 607
 - Dogs, 620
 - Donkeys, 599, 612, 615
 - Employment, 902
 - Factories, 372
 - Goats, 599, 612, 615
 - Holdings, 525
 - Horses, 599, 609
 - Implements, 617
 - Lease, Pastoral, 506
 - Live Stock, 599
 - Other Countries, 612
 - Machinery, 617
 - Meat Trade, 617
 - Mules, 599, 612-615
 - Noxious Animals, 620
 - Occupation, 495
 - Ostriches, 600, 612
 - Pastures Protection, 613
 - Pigs, 599, 631
 - Prices, 613, 878
 - Production, 616, 855
 - Sheep, 599, 601
 - Wool, 604
- Pastures—
 - Districts, 613
 - Fencing, 622
 - Noxious Animals, 622
 - Protection, 613
- Patents, 471

Patients—

- Hospital Consumptive, 676
- General, 667, 670
- Gaol, 674
- Mental, 679
- Pawnbrokers' Licenses, 455
- Peaches, 577
- Peas and Beans, 578
- Pedlers' Licenses, 455
- Peninsular and Oriental Mail Service, 760, 761
- Penny Savings Banks, 408
- Penrith, 39, 50
- Pensions and Gratuities—
 - Accident, 700
 - Expenditure, 699, 720
 - Invalid, 700
 - Literary (Men of Letters), 700
 - Old-Age, 701
 - Police, 472, 698
 - Public Service, 698
 - Railway, 698
 - War, 699
- Pera Bore Irrigation Orchard, 586
- Permanent Building Societies, 423
- Permits (*see* Licenses)
 - to work, Juveniles, 360
- Persimmons, 577
- Petroleum, 277
- Petty Sessions Court, 447
- Pharmacy Board, 222
 - Pharmacists Registered, 222
- Phosphate Rock, 284
 - Bounty, 349
- Photo-engraving, 389
- Phthisis (*see* Tuberculosis), 140
- Phylloxera, 574
- Physical and Military Training, 192, 663
- Pickles, Manufacture, 383
- Picton, 52
- Pig-iron Bounty, 349
- Pigments, 283
- Pigs, 599, 631
 - Bacon and Hams, 631
 - Breeding, 631
 - Inspection, 632
 - In various Countries, 612
 - Prices, 615
 - Production, 631
 - Slaughtered, 617
- Pilots, 308
 - Certificates, 308
 - Rates, 290
 - Stations and Vessels, 308
 - Steamers, 308
- Pipes, Cast Iron, 380
 - Earthenware, 375, 377
- Pitt Town Training Farm, 587, 954
- Pitt Water, 54
- Plantations (*see* Forestry)
- Plants—Imports and Exports, 579
- Plated Ware, 392
- Platinum, 263
- Playgrounds, 173
- Plumbago, 284
- Plums, 577
- Pneumonia, Deaths, 147
 - Hospital Cases, 671
- Point Clare, 54
 - Piper, 47

Poisons—

- Industrial, 950
- Sale, 222
- Police, 472
 - Ambulance and Life Saving, 472
 - Arrests, 448
 - Costs of Services, 492
 - Duties, 472
 - Expenditure, 492
 - Force, 473
 - Life-Saving, 472
 - Retirement, 472
 - Superannuation, 472, 698
 - Traffic Branch, 473
 - Water Police, 473
 - Weights and Measures, 473, 475
- Policies, Assurance, 425
- Polishers, 391
- Pollard, 383
- Polls, Ratepayers, 836
- Population, 85
 - Aborigines, 104
 - Ages, 96
 - Annual Increase, 85
 - Arrivals, 90
 - Australian-born, 98
 - Australian Capitals, 94
 - States, 87
 - Birthplaces, 98
 - Births, 115
 - Blind, 685
 - Capital Cities, 94
 - Census Records, 85
 - Children surviving at 5 years, 128
 - Chinese, 104
 - Coloured Aliens, 102
 - Conjugal Condition, 109
 - Country Districts, 92, 94
 - Deaf and Dumb, 684
 - Deaths, 123
 - Density, 92
 - Departures, 90
 - Distribution, 92
 - Early Enumeration, 85
 - Education, 160
 - Emigration, 89, 90
 - Estimates, Intercensal, 87
 - Gain from various Countries, 90
 - Immigration, 89, 90
 - Assisted, 91
 - Index of Mortality, 123
 - Industrial, 893
 - Labour, 893
 - Length of Residence in Australia, 91
 - Local Government Areas, 92, 94, 95
 - Lord Howe Island, 92
 - Marriages, 110
 - Minors, 115
 - Religions, 112
 - Mean, 88
 - Method of Estimating, 87
 - Metropolis, 92
 - Migration, 89
 - Municipalities, 92, 95
 - Musters, 85
 - Natural Increase, 89, 121
 - Naturalisation, 106
 - Non-European Races, 102
 - Occupations, 894, 900

- Population—continued.**
 Race and Nationality, 98
 Religions and Marriages, 112
 Sex Distribution, 95
 Shires, 94
 Sources of Increase, 89
 States, 87
 Sydney, 92
 United Kingdom (Cities), 94
Pork, 631
 Consumption, 858
Portland Cement, 281
 Production, 235
Ports, 16
 Customs Revenue, 333
 Distances from Sydney, 324
 Dredging, 310
 Dues, 290
 Ferries, 322
 Hacking, 18, 48
 Hunter (Newcastle), 17
 Improvements, 310, 311
 Jackson (Sydney), 17, 46, 294
 Jervis Bay, 18, 49
 Lights, 308
 Macquarie, 16, 55
 Shipping, 301
 Stephens, 16, 54
 Trade, 333
Postal and Telegraphic, 753
 Automatic Telephones, 769
 Buildings, 754
 Cable Services, 763
 Canadian-Pacific Mail, 760
 Contracts, 759
 Dead Letters, 756
 Department, 754
 Development, 753
 Employees, 755
 Expenditure, 755
 Facilities, 754
 Financial Results, 755, 770
 French Mail Service, 760
 German Mail Service, 760
 Letters, 756
 Cards, 754
 Dead, 756
 Registered, 755
 Telegrams, 765
 Mail—
 Routes, 758
 Ocean, 759
 San Francisco, 759
 Suez Canal, 760
 Vancouver, 760
 Services, 759
 Canadian Pacific, 760
 French, 760
 German, 760
 Inland, 758
 Orient Contract, 760, 761
 Oversea, 761
 Pacific Islands, 762
 P. & O. Coy., 760, 761
 Subsidies, 760
 Money Orders, 403
 Newspapers, 756
 Notes, 403
 Postage, 757
Postal and Telegraphic—continued.
 Poundage, 406
 Ocean Mail Services, 759
 Offices, 754, 755
 Parcels, 754
 Value-payable Post, 755
 Post Cards, 754
 Offices, 754, 755
 Postage Stamps, 758
 Rates—
 Cable, 765
 Postage, 757
 Telegraphic, 765
 Telephone, 769
 Wireless Telegraphy, 767
 Postal Notes, 403
 Poundage, 406
 Press Cables, 766
 Radio-telegraphy, 766
 Registered Articles, 755
 Revenue, 755
 Routes, 758
 San Francisco Route, 759
 Stamps, 758
 Subsidies, 760, 766
 Suez Canal Route, 760
 Telegraphs, 762
 Wireless, 766
 Telephones, 768
 Value-payable Parcels, 755
 Vancouver Mail Service, 760
 Week-end Cable Letters, 766
 Wireless Telegraphy, 766
Potatoes, 568
 Area, 568
 Consumption, 858
 Marketing, 870
 Prices, 569, 870, 876, 877, 878, 882
 Production, 568
 Supply, 568, 858
 Sweet, 569
Pottery—
 Clays, 283
 Manufactures, 375, 377
Poultry—
 Egg-laying Competitions, 635
 Eggs, 876, 882
 Farming, 635
 Prices, 876
 Production, 635
Power, Machinery, 350, 363
 Works, 393
Prawns, 643
Precious Stones, 277
Preference to Unionists, 935
Pre-maternity, Baby Clinics, and Home Nursing Board, 649
Premiers, Succession, 67
Presbyterian Church, 710
Preserving—
 Fish, 382
 Fruit, 383
 Meat, 382
Prevailing Winds, 34
Prices—
 Agricultural Produce, 876
 Bacon, 882
 Beef, 618, 866, 867, 878, 882

Prices—*continued.*

Beer, 888
 Bran, 876, 877
 Bread, 882, 886
 Butter, 634, 876, 877, 882, 887
 Cattle, 866
 Cheese, 876, 877, 882
 Coffee, 882
 Commodities, 882
 Control during War, 884
 Copper, 879
 Dairy Produce, 876, 877
 Eggs, 876, 877, 882
 Export, 868, 880
 Farm Produce, 876
 Fat Stock, 866
 Fish, 862
 Flour, 876, 877, 886
 Fodder, 876, 877
 Food Commodities, 882
 Frozen Mutton, 619, 866, 867, 878
 Groceries, 882
 Hair, 878
 Hay, 876, 877
 Hides, 878
 Honey, 876
 Hoofs, 878
 Horns, 878
 Jam, 882, 887
 Kerosene, 882
 Lard, 877
 Leather, 878
 Live-stock, 613, 866
 London, 881
 Meat, 866, 867, 882
 Metals, 238, 880
 Milk, 871, 876, 882
 Mutton, 619, 866, 867, 868
 Oatmeal, 882, 887
 Oats, 876, 877
 Onions, 870, 876, 883
 Pastoral Products, 616
 Pollard, 876
 Potatoes, 569, 876, 877, 878, 882
 Poultry, 876
 Retail, 881
 Rice, 882
 Root Crops, 878
 Sago, 882
 Soap, 882
 Starch, 882
 Sugar, 882, 887
 Sydney, 882
 Tea, 882
 Tobacco, 888
 Turkeys, 876
 Wheat, 569, 876, 877, 886
 Wholesale—
 Alcoholic Liquors, 888
 Bacon, 876, 877
 Barley, 876
 Beef, 886, 887
 Beeswax, 876
 Bones, 878
 Butter, 876, 877, 887
 Chaff, 876
 Cheese, 876, 877
 Eggs, 876
 Farm Produce, 876

Prices—*continued.*Wholesale—*continued.*

Fat Stock, 866
 Fish, 862
 Flour, 876, 877, 886
 Fodder, 876, 877
 Hair, 878
 Hides, 878
 Honey, 876
 Hoofs, 878
 Horns, 878
 Lard, 877
 Leather, 878
 London, 879
 Lucerne, 876
 Meat, 866, 867
 Milk, 872, 876
 Mutton, 866, 867
 Oats, 876, 877
 Onions, 870, 876
 Pastoral Produce, 878
 Potatoes, 870, 876, 877, 878
 Poultry, 876
 Sheepskins, 878
 Sydney, 875
 Tallow, 878
 United Kingdom, 879
 Vegetables, 869
 Wheat, 569, 876, 877, 886
 Wool, 606, 878
 Prickly Pear Destruction, 493
 Primary Industries, 901
 Producers, 878, 880, 894
 Printing and Bookbinding Factories,
 389
 Prisons and Prisoners, 476
 Afforestation, 487
 Ages of Prisoners, 476
 Agriculture, 487
 Aid Associations, 491
 Association Restricted, 478
 Birthplaces of Prisoners, 476
 Borstal System, 481
 Classification, 478
 Compendium Newspaper, 492
 Contagious Diseases, 489
 Convictions, 448, 450
 Cost, 492
 Criminal—
 Appeal Courts, 469
 Influx Prevention, 491
 Jurisdiction, 467
 Debtors, 480
 Dietary, 478
 Education, 481
 Employment, 487
 Establishments, 477
 Gaol Hospital, 488, 674
 Grading, 477
 Industrial Activity, 487
 Insanity, 488
 Legislation, 478
 Libraries, 478
 Licensing, 490
 Morbidity, 488
 Mortality, 488
 Nationalities, 476
 Newspaper, 492

- Prisons and Prisoners—*continued.*
 Offenders—
 First, 480
 Habitual, 482
 Youthful, 481
 Poor Prisoner's Defence, 468
 Population, 476
 Preventive Detention, 482
 Prisoners, 476
 Probation, 480
 Re-convictions, 481
 Regulations, 479
 Segregation, 478
 Sentences, 490
 Intermediate, 482
 Sickness, 488
 Special Treatment, 480
 Unemployed, 488
 Women, 481
 Youthful Offenders, 481
- Private—
 Finance, 397
 Hospitals, 649
 Railways, 795
 Schools, 165
 Ages of Scholars, 169
 Attendance, 166
 Denominational, 170
 Enrolment, 166
 Kindergarten, 196
 Teachers, 165
 Tramways, 799, 803
 Privy Council Appeals, 470
 Probate, 723
 Jurisdiction, 460
 Letters of Administration, 460
 Probationary System—
 Children, 662
- Production—
 Aggregate, 855
 Agriculture, 543, 855
 Bee-farming, 636
 Dairying, 635, 855
 Factory, 367, 855
 Fisheries, 645, 855
 Foods, 855
 Forestry, 637, 855
 Local, 855
 Manufacturing, 367, 855
 Mining, 233, 855
 Pastoral, 616
 Per head, 856
 Poultry-farming, 635
 Primary, 856, 877, 880
- Professions, Training, 220
- Property (*see also* Local Government)
 Absentee, 445
 Deceased Persons, 442, 444
 Distribution, 441
 Value, 812
- Proprietors, 895
- Prospecting—
 Board, 225, 229
 Vote, 224, 228
- Protection—
 Aborigines, 104, 651
 Children, 653, 656
 Food, 872
- Protection—*continued.*
 Infant Life, 652, 654
 Pastures, 613, 622
- Prunes, 577
- Public—
 Accounts, 715
 Charitable Collections, 678
 Debt, 743
 Examinations, 197
 Finance, 715
 Halls, 854
 Health, 649
 Hospitals, 649
 Houses, 453
 Instruction, 157
 Libraries, 216
 Parks Act, 854
 Royal Commissions, 72
 Schools, 165
 Boards, 158
 Sites, 173
 Services, 720
 Telephones, 768, 769
 Trust Office, 461
 Watering Places, 624
 Works Account, 722
 Committee, 63, 69
- Publications, Statistical (*see back of cover*)
 Pulse, 578
 Pumpkins and Melons, 579
 Pupil Teachers, 188
 Pure Foods, 872
 Pymont Bridge, 849
- Qualifying Certificates, 160, 198
 Quarantinable Diseases, 318
 Quarantine, 318, 649
 Stock, 608
 Quarries, 237
 Quarter Sessions, 467
 Quartz Mining, 231
 Queanbeyan, 32
 Quicksilver, 264
 Quinces, 577
- Rabbits and Hares, 620, 621, 623
 Export, 623
 Freezing Works, 382
 Pastures Protection, 622
 Rabbit-proof Fencing, 622
- Racecourse Licenses, 854
- Radio-telegraphy, 766
- Radium, 264
- Ragged Schools, 202
- Railways, Government, 796
 (*see Map*, 773
 Accidents, 794
 Compensation, 795
 In other Countries, 795
 Administration, 773
 Ambulance, 804
 Border, 779
 Bridges, Hawkesbury River, 850
 Burrinjuck Line, 777
 Camp Schools, 177
 Capital Cost, 773, 784
 City Underground, 780
 Coaching Traffic, 788
 Commonwealth Lines, 777

Railways, Government—*continued.*

Compensation, 795
 Construction, 773, 782
 Control, 773
 Cost—
 Capital, 782
 Working, 785
 Decentralisation, 778
 Development, 774
 Duplication of Lines, 775
 Earnings, 775, 785
 Electrification, 780
 Employment, 804
 Expenditure, 720
 Expenses, 785
 Fares, 790
 First-aid, 804
 Freights, 79
 Furniture, 789
 Gauges, 796
 Goods Lines, 777, 783
 Goods and Live Stock Traffic, 788, 791
 Gradients, 781
 Institute, 197, 804
 Interest Charges, 766
 Lines, Length, 774
 Litigation, 471
 Loan Account, 740
 Machinery, 784
 Maintenance of Permanent Way, 793
 Map, 773
 Miteage opened, 774
 Narrow-gauge, 797
 Net Earnings, 786
 Passengers, 779, 789
 Permanent Way, 793
 Private, 795
 Refreshment Licenses, 454
 Revenue, 720, 785, 789, 791
 Coaching, 785, 789
 Goods, 785, 791
 Rolling-stock, 784, 793
 Safety Appliances, 793
 Signalling, 793
 Staff, 804
 State, 773
 Suburban, 779
 Sydney, 779
 Superannuation, 698, 804
 Systems, 775
 Traffic, 788, 792
 Coaching, 788, 789
 Goods, 788
 Suburban Passengers, 779
 Transcontinental, 799
 Underground, 780
 Unification of Gauges, 796
 Wages, 804
 War Council, 79
 Western Lines, 776, 782
 Working Expenses and Earnings, 785
 Workshops, 379, 785
 Rainfall, 37
 Raisins, 575
 Randwick Labour Depot, 955
 Ratepayers' Polls, 836

Rates—

Accident, 151
 Bank Exchange, 417
 Birth, 115, 118
 Cable, 765
 Death, 129
 Fares, 790, 800
 Freights, 792
 Interest, 417
 Marriage, 110
 Municipalities, 819, 821
 Postal, 757
 Radio-telegraphic, 766
 Railway, 790, 792
 Shires, 825, 826
 Taxation—
 Fire Commissioners, 830
 Local Government, 829
 Water and Sewerage, 829
 Telegraphic, 765
 Telephone, 769
 Tramway, 800
 Wages, 936
 Wireless, 767
 Raw Materials, Factories, 370
 Raymond Terrace Viticultural Station, 586
 Real Estate—
 Conveyances, 437
 Mortgagees, 438
 Property Act, 436
 Transactions, 436
 Receiving Offices, Postal, 755
 Reception Houses, 680
 Recreation, Parks and Reserves, 495, 853
 Redemptions of Loans, 748
 Re-exports, 343
 Referenda—
 Commonwealth, 61
 Constitution Alteration, 61
 Financial Agreements, 752
 Municipal, 836
 State of N.S.W., 61
 Votes, 61
 Refineries—
 Metal, 379
 Refining and Smelting Works, 265
 Sugar, 385
 Tallow, 372
 Reformatories, 201, 660
 Refrigerating, 382, 619
 Refunds, Customs, 331, 719
 Registration—
 Births, 108
 Building Societies, 422
 Clergy for Celebration of Marriage, 714
 Companies, 420
 Co-operative Societies, 422
 Deaths, 108
 Dogs, 455
 Employment Offices, 322
 Factories, 382
 Firms, 419
 Friendly Societies, 686
 Letters, 755
 Marriages, 108
 Schools, 194
 Shipping, 315

- Registration—*continued*,
 Trade Unions, 909
 Vessels, 315
 Registry Offices, 954
 Shipping Offices, 322
 State Labour Bureau, 954
 Relief—
 Accidents, Industrial—
 Compensation, 956, 959
 Miners, 287
 Pensions, 698
 Charitable, 650
 Cost, 650
 Destitution, 650
 Fund, National, 678
 Orders, 678
 Public (*see* Benevolence)
 Religion—
 Census Records, 712
 Churches, Constitution, 708
 Instruction in State Schools, 172
 Marriages, 112
 Ministers for Celebration of Mar-
 riage, 714
 School Children, 169
 State Aid, 708
 Removal Dues, Vessels, 290
 Rents—
 Factory, Buildings, 361
 House, 705
 Representation, Government, 56
 Representatives, House, 60
 Reserves—
 Aborigines, 651
 Bank, 411
 Forestry, 637
 Gold, 415
 Land, 495
 Metallic, 414
 Naval, 82
 Public, 637, 853
 Recreation, 853
 Timber, 637
 Travelling Stock, 495
 Reservoirs—
 Burrinjuck, 591
 County Cumberland, 839
 Hunter District, 843
 Residence, in Australia—
 Census Records, 91
 on Leased Lands, 506
 Qualification for Old-Age Pension,
 702
 Resident Taxpayers, 729
 Residential Leases, 506
 Resin, 374
 Resorts—
 Alpine, 52
 Fishing, 48, 49, 51
 Seaside, 46, 48, 54, 55
 Shooting, 49, 51, 53
 Tourist, 46
 Trout Fishing, 52
 Responsible Government, 56
 Resumption of Land, 503
 Retail Prices—
 Commodities, 882
 London, 881
 Sydney, 882
 Revenue, Public (*see* Finance), 715
 Rhodonite, 262
 Rice—
 Consumption, 858
 Prices, 882
 Richmond, 30, 54
 River, 23, 55
 Rifle Clubs, 78
 Ringbarking, 542
 Permits, 641
 Riverina, 20
 Settlement, 526
 Rivers, 23
 Brunswick, 55
 Clarence, 23, 55
 Darling, 24
 George's, 24, 48
 Hastings, 23, 55
 Hawkesbury, 24, 53
 Hunter, 23
 Karuan, 23, 54
 Lachlan, 25
 Lane Cove, 47
 Lengths, 23
 Macleay, 23
 Macquarie, 25
 Manning, 23, 55
 Murray, 779
 Bridges and Railways, 779
 Irrigation, 594
 Navigation, 24
 Myall, 54
 Nepean, 24, 50, 53
 Richmond, 23, 55
 Shoalhaven, 24, 49
 Systems, 23
 Coastal, 23
 Inland, 25
 Traffic, 301
 Tweed, 16, 23, 55
 Water Conservation, 591
 Wyong, 54
 Roads, 847
 Construction, 852
 Control, 848
 Cost, 853
 Expenditure, 852
 Length, 849
 Main, 847
 Metal, 281
 Stock Routes, 495
 Traffic Routes, Sydney and Suburbs,
 847
 Trusts, 805
 Rocket Stations, 308
 Rock Flat Mineral Spring, 27
 Rock Phosphate, 284
 Bounty, 349
 Rolling Stock, 375
 Root Crops, 568, 878
 Rope, 386
 Rose Bay, 47
 Routes—
 Mail, 758
 Ocean, 759
 San Francisco, 759
 Shipping, 304
 Stock, 495

- Routes—continued.**
 Suez Canal, 760
 Vancouver, 760
Royal Commissions of Inquiry, 72, 258
 (see also Commissions)
 Humane and Shipwreck Relief Society, 321
 Life Saving Society, 677
 Military College, 53, 79
Naval—
 House, 83
 Reserve, 82
 Society, 212
Royalties—
 Mining, 226
 Timber, 641
Rubber Goods, Manufacture, 395
Rubies, 279
Rules of Court, 459
Rural Industries (see Production)
 Settlement, 524
Rushcutters Bay, 47
Rye, 565
 Hay, 566
Saddlery and Harness-making, 389
Safety Lamps in Coal Mines, 287
Sailing Vessels (see Shipping), 299
Sailmaking, 386
Salaries (see also Wages)—
 Factories, 364
 Taxation, 724
Sale—
 Bills of, 440
 Crown Lands, 501
 Yards, 864, 875
Salt, 858
Salvation Army, 711
Sanatoria (see Hospita's)
 Consumptive, 676
Sand-lime Bricks, State, 376
Sandstone, 280
 Quarry, State, 280
San Francisco, Mail Route, 759
Sapphires, 277
Sauces, Manufacture, 383
Sausage-skin Making, 372
Savings Banks, 407
 Balances, Classification, 409
 Commonwealth, 410
 Depositors, 409
 Penny, 408
 School, 197, 408
 State, 407
Sawmills, 377, 641
Scaffolding and Lifts, 949
Scarf Factories, 386
Scarlet Fever, 139
Schedules, Industrial, 925
Scheelite, 260
Scholarships—
 Agricultural, 186
 Educational, 193
 Farrer, 588
 Technical, 195
 University, 209
School Children—
 Anthropometric Survey, 666
 Dental Inspection, 665
 School Children—*continued.*
 Medical Inspection, 663
 Vision, 665
Schools (see Education)
 of Art, 220
Scientific Expeditions—
 Antarctic Expeditions, 44
Scientific Societies, 212
Scouts, Boy, 76
Scrub Leases, 506
Sea Carriage of Goods, 329
Seamen—
 Compensation, 328, 959
 Wages, 325
Seaside Resorts, 46, 48, 54, 55
Seasonal Occurrence of Deaths, 153—
 Slackness, Employment, 943
Seasons, 34
Seat of Federal Government, 62
Seaweed Industry, 647
Secret Commissions, 330
Seed Wheat, 553
Seismology, 44
Selenium, 265
Senate—
 Commonwealth, 59
 Elections, 60
 University, 203
Senior Cadets, 76
Senior Examination, 197
Separations, Judicial, 463
Separating Cream, 620
Sequestrations, 434
Services Rendered—
 Receipts, 720, 732
Sessions—
 Court—
 Petty, 447
 Quarter, 467
 Supreme, 466
Settlement, 518 (see Land)
Settlements—
 Bank, 419
 Labour, 509, 947
Settlers, Advances, 590
Sewerage—
 Country Districts, 831, 833
 Hunter District (Newcastle), 846
 Sydney (Metropolitan), 845
Sex
 Distribution, 95
 In Factories, 357
 of Children, 118
Shale, 274
 Bounty, 276
 Mines, 274
 Oil, 275, 395
 Bounty, 349
Share-farming, 545
 Dairying, 626
 Wheat, 549
Shearers' Accommodation, 942
Shearing, 605
Sheep, 599, 601
 Brands, 613
 Breeds, 603
 Depasturing, 601
 Districts, 600
 Dogs, 620
 Fleeces, 604

Sheep—*continued.*

- Flocks, 602
- Food Consumption, 602
- In various Countries, 612
- Losses, 621
- Marks, 613
- Merino and coarse-woolled, 603
- Prices, 614
- Production of Wool, 604
- Reproduction, 602
- Shorn, 605
- Size of Flocks, 602
- Slaughtered, 617
- Wool—
 - Production, 604
 - Washing, 372
- Sheepskins, Prices, 878
- Shellharbour, 49
- Sheriff's Office, 459
- Ship and Boat-building, 314
- Shipping, 289
 - Berthing Charges, 291
 - Boat Building, 390
 - Building, 314, 390
 - Cargoes, 300
 - Certificates, 302
 - Charts, 310
 - Clearances, 291
 - Coast—
 - Lights, 306
 - Trade, 333
 - Comparisons—
 - Ports, 294
 - States, 291
 - Courts of Marine Inquiry, 320
 - Crews, Coastal, 302
 - Direction of Trade, 297
 - Distances of Ports from Sydney, 324
 - Docks and Ships, 312
 - Entries, 291
 - Fares, 323
 - Freights, 305
 - Harbour Lights, 306
 - Rates, 290
 - Removals, 317
 - Sydney Trust, 289
 - Imports of Vessels, 316
 - In ballast, 300
 - Industrial Organisations, 325
 - Interstate, 291
 - Legislation, 289
 - Licenses, 302
 - Life-saving Appliances, 309
 - Lighthouses, 306
 - Lights—
 - Coastal, 306
 - Harbour, 306
 - Mail Subsidies, 303, 760
 - Mortgages, 440
 - Nationalities of Vessels, 295
 - Navigation Department, 289
 - Certificates, 302
 - Jurisdiction, 289
 - Licenses, 302
 - Navy, 80
 - Offices, Government, 322
 - Organisations, 325
 - Oversea, 291

Shipping—*continued.*

- Pilot—
 - Rates, 290
 - Stations, 308
 - Vessels, 309
- Population Census, 85
- Ports, 301
- Quarantine, 318
 - Rates—
 - Fares, 323
 - Freights, 305
 - Registers, 315
 - River Traffic, 301
 - Routes, 304
 - Safety Equipment, 309
 - Sailing Vessels, 299
 - Shipwreck, 320
 - Relief, 321
 - Steamers, 299
 - Stores, 344
 - Subsidies, 303
 - Sydney Harbour Trust, 303
 - Trade, 297
 - Transshipment Rates, 291
 - Tugs, 317
 - Vessels of War, 80
 - in Ballast, 300
 - Wages, 325
 - Wireless Telegraphy, 767
 - Wrecks—
 - Casualties, 320
 - Relief, 321
- Shires, 825
 - Act, 806
 - Administrative Expenses, 828
 - Area, 808
 - Assets, 829
 - Balance-sheet, 829
 - Bridges, 847, 849
 - Clerks' Certificates, 839
 - Endowment, 806, 827
 - Expenditure, 828
 - Finances, 814
 - General Fund, 827
 - Health Administration, 827
 - Income, 827
 - Liabilities, 829
 - Loans, 827
 - Local Rates, 826
 - Population, 94, 808
 - Powers, 806
 - Public Services, 827, 828
 - Works, 827, 828
 - Rating, 825, 826
 - Roads, 849
 - Shire Property, 827, 828
 - Valuations, 813, 823
 - Voting, 836
- Shirt-making, 386
- Shoalhaven River, 24, 49
- Shoe and Boot Factories, 388
- Shooting Resorts, 49, 51, 53
- Shops and Factories (*see* Factories)
- Shortage of Labour, 903
- Shorthand Schools, 196
- Shows—
 - Agricultural, 589
 - Horse, 610

- Sickness—
 Friendly Societies, 672
 Notifiable Infectious Diseases, 139
 Public Hospitals, 671
- Signalling—
 Coastal, 306
 Railway, 793
- Silica, 282
- Silver, 244
 Broken Hill Field, 247
 Coinage, 400
 Australian, 400
 British, 409
 Discovery, 244
 Mining, 244
 Native, 244
 Occurrence, 244
 Ores, 244
 Prices, 238, 879
 Production, 245
 Standard, 398
 Tailings, 248
- Sinking Funds, 748
- Ski-running, 52
- Skins and Hides—
 Exports, 620, 623
 Prices, 878
 Tanning, 373
- Slackness, Seasonal, Employment, 943
- Slates, 284, 375
- Slaughtering of Live Stock, 617, 649, 864
- Slips and Docks, 312, 390
- Slow Workers, 939
- Sludge Abatement, 227
- Small Arms Factory, 83, 389
 Debts Court, 451
- Smallpox, 134, 675
- Small-stock Saleyards, 864
- Smelting and Refining, 265
 Works, 379
- Smith's Lake, 54
- Snow—
 Alpine Fields, 52
 Falls, 40
 Leases, 507
- Soap and Candle Factories, 374
- Social Condition (*see also Hygiene*), 649
 Services, 649
 Welfare, 649
- Societies—
 Agricultural, 213, 589
 Benevolent, 676
 Building and Investment, 423
 Co-operative—
 Building, 422
 Trading, 422
 Friendly, 686 (*see also Friendly*)
 Investment, 422
 Scientific, 212
 Starr-Bowkett, 423
- Soda Crystals, 374
- Solicitors, 222, 471
- Solitary Island, 18
- South Coast—
 Dairying, 625
 District, 48
 Railway, 784
- Southern Highland, 52
- South Head, 47
- Sown Grasses, 541, 626
- Spathic Ore, 256
- Special Leases, 505
 Leases, 501
 Sales, 501
- Species—
 Circulation, 397
- Spelter, 246
- Spices, 381
- Spirits—
 Consumption, 858
 Distillation, 384
 Licenses—
 Hotel, 452
 Merchants, 454
- Spokes, 390
- Sponges, 647
- Springs, Mineral, 26
 Ballimore, 27
 Bungonia, 27
 Jarvisville, 27
 Mittagong, 27, 53
 Rock Flat, 27
 Thirlmere, 53
 Yarrangobilly, 27, 54
- Staff Hospital, 670
- Stallions, 610
- Stamps—
 Duties, 720, 723
 Postage, 758
- Standards,—
 Coinage, 397
 Food and Drugs, 872
 Gold, 398
 Hours of Work, 939
 Railway Gauges, 796
 Silver, 398
 Time, 44
 Wages, 935
 Wheat, F.A.Q., 559
- Stannite, 256
- Stannwell Park, 49
- Starr-Bowkett Societies, 423
- State (*see Government*)
 Advance to Settlers, 590
 Aid to Hospitals, 668
 Asylums, 649
 Bakery, 383
 Batteries, 229
 Brickworks, 232, 376
 Building Construction, 396
 Children Apprenticeship, 660
 Children Relief Act, 652
 Clothing Factory, 388
 Coal-mines, 272
 Concrete Works, 379
 Debts, 738
 Dockyard, 391
 Electric Power Supply, 394
 Forest Nurseries, 639
 Hospitals, 649
 Expenditure, 650
 Housing Acts, 706
 Industrial Undertakings, 720
 Joinery Works, 378
 Labour Bureau, 953
 Lime Works, 282, 376
 Metal Quarries, 281

- State—*continued*.
 Monier Pipe Works, 379
 Nursery, 639, 854
 Pensions, 698
 Railways, 773
 Sand-lime Brickworks, 376
 Sandstone Quarry, 280
 School Furniture Factory, 391
 System, 157
 Timber Works, 378
 Tramways, 773, 779
 Water Power Schemes, 394
- Stations—
 Pilot and Rocket, 308
 Trigonometrical, 15
- Statisticians' Conferences, 88
- Statute Law (*see* Legislation)
- Steatite, 283
- Steel—
 Bounty, 348
 Production, 379
 Royal Commission, 258
- Stephens, Port, 16, 54
- St. George's Basin, 49
- St. John Ambulance, 677
- Stereotyping, 389
- Stibnite, 261
- Stock—
 In Bond, 345
 Inspection, 610
 Issues, 740
 Live (*see also* Live-stock), 599
 Mortgages, 439
 Prices, 613
 Routes, 495
 Saleyards, 864
 Watering Places, 613
 Quotations, 748
- Stone, Clay, Glass, &c.—
 Building, 280
 Factories, 375
 Quarries 237, 280
- Stores, Ship, 344
- Storms, Forecasts and Signals, 33
- Stoves, 378
- Street Trading—
 Children, 653, 662
 Hawkers and Pedlars, 455
- Strikes (*see also* Employment), 943
- Submarine Cables, 763
- Subsidies—
 Agricultural Societies, 589
 Cables, 766
 Mail and Steamships, 303, 760
 Pensions, 698
 Press Cable, 766
 Prospecting Vote, 224, 228
- Suburban Holdings, 504
 Ratings, 812
- Subventions, Friendly Societies, 691
- Succession Dues, 460
- Suez Canal, 760
- Sugar—
 Bounty on Production, 349
 Cane, 570
 Labour, Black, 572
 Mills, 384
 Refineries, 385
- Sugar—*continued*.
 Consumption, 858
 Prices, 882, 887
 Royal Commission, Federal, 572
- Suicide, 152, 456
- Sultanas, 575
- Summer Schools, 185
- Summons Cases, 448
- Superannuation, 698
- Supplies, Food, 859
 Bread, 868
 Fish, 858
 Fruit, 869
 Meat, 863
 Milk, 870
 Potatoes, 858
- Supreme Court, 457
 Moneys, 738
- Surface of N.S.W., 19
- Surfing Beaches, 47, 49, 54
- Surgery—
 Instrument Manufacture, 392
 Practice, 221
 Training, 210
- Surveys—
 Coastal, 310
 Geological, 223
 Magnetic, 15
 Mining, 224
 Trigonometrical, 15
- Sweet Potatoes, 569
- Swine, 599, 631
- Sydney, 808
 Annual Value, 818
 Area, 92
 Art Gallery, 214, 218
 Assets, 817, 818
 Births and Birthrates, 117
 Capital Value, 818
 Cattle Saleyards Fund, 818
 Chamber of Commerce, 346
 City Fund, 818
 City Underground Railway, 780
 Climatological Data, 33
 Communication with North Sydney,
 851
 Corporation Act, 808
 Cost of Living, 891
 Day Nursing Association, 677
 Deaths and Death rates, 124, 133
 Disbursements, 816
 Diseases Notifiable, 139
 Distances of Ports, 324
 Docks, 312
 Electricity Works Fund, 816, 818
 Ferries, 322
 Food Supply and Prices, 859
 Grammar School, 195
 Greater, 809
 Births, 117
 Deaths, 124, 133
 Population, 92
 Harbour, 17, 46
 Dredging, 310
 Ferries, 322
 Licenses, 303
 Lights, 308
 Removals, 317
 Trust, 289, 720

Sydney—*continued.*

- Housing, 703
- Incorporation, 805
- Latitude, 39
- Liabilities, 817, 818
- Loans, 817, 818
- Longitude, 39
- Map of City, 805
- Markets Fund, 818
- Meteorology, 39
- Municipal Council—
 - Assets, 823
 - Finances, 819
 - Library, 216
 - Loans, 817, 818
 - Markets, 874
 - Stock Yards, 875
- Museums, 214
- Passenger Services, 779
- Population, 92, 818
- Port Traffic, 295
- Progress, 818
- Radio-telegraph Station, 767
- Rainfall, 39
- Ratings, 810
- Receipts, 815
- Retail Prices, 881, 882
- Saleyards Fund, 818
- Sewerage, 845
- Shipping, 295
 - Licenses, 303
- Sinking Fund, 318
- Slips, 312
- Surroundings, 47
- Telephones, 772
- Temperature, 39
- Traffic—
 - Railways and Tramways, 778, 792, 801
 - Routes, 851
 - University, 202
 - Valuations, 811
 - Vessels Registered, 315
 - Water Supply, 839
 - Wharfage, 290
 - Wholesale Prices, 866, 875, 877
 - Wool Sales, 605
- Syente, 280
- Sylviculture, Nurseries, 640
- Syphons, 383
- Systems of Accounts, 715
- Tablelands, 19
 - Meteorology, 40
 - Settlement, 525
- Tailoring, 386
- Tallow, 620
 - Prices, 878
 - Refining, 372
- Tanneries, 372
- Tanning Bark, 393
- Tar, 395
- Tariff (*see* Commerce)
- Tasmanian Cable, 764
- Taxation, 446, 723
 - Aggregate, 723
 - Commonwealth—
 - Customs, 331, 724
 - Excise, 331, 724
 - Land, 720, 725

Taxation—*continued.*

- Direct, 724
- Indirect, 724
- Local, 829
- State—
 - Income, 446, 720, 723, 726
 - Land, 720, 723, 726
 - Probate, 460
 - Stamp, 720, 723
 - Taxpayers, 724, 725
- Tea Consumption, 858
 - Prices, 882
- Teachers—
 - Private Schools, 165, 195
 - State Schools,—
 - Classification, 189, 190
 - Salaries, 189
 - Supervision, 191
 - Training, 187
 - University, 207
- Technical Education, 181
 - Classes, 184
 - Colleges, 181
 - Continuation Schools, 178
 - Enrolment, 184
 - High School, 179
 - Scholarships, 195
 - Trade Schools, 184
- Technological Museums, 214
- Teeth, School Children, 665
- Telegraphy (*see* also Postal)
 - Cables received, 763, 765
 - Deferred, 766
 - Letter-Telegrams, 765
 - Radio-telegrams, 767
 - Rates, 767
 - Revenue, 771
 - Stations, 762
 - Telegrams, 762
 - Week-end Cable Letters, 766
 - Wireless, 766
 - Licenses, 766
 - Messages, 768
 - Rates, 767
 - Stations, 767
- Telephones, 768
 - Automatic, 769
 - Calls, 769
 - Connections, 768
 - Cost, 769
 - Exchanges, 768
 - Finances, 771
 - Public, 768, 769
 - Rates, 769
 - Subscribers, 768
 - Sydney-Melbourne, 768
 - Sydney Network, 772
 - Trunk Lines, 770
- Tellurium, 264
- Temperature, 34, 39
- Tenant Occupancy, 542
- Tents, Tarpaulins, 386
- Tenure, Limited, 495
- Terra-lignum Blocks, 377
- Terrigal, 54
- Territory, Federal, 13, 32, 53
 - Area, 13
 - Population, 87
- Tetrahedrite, 261

- Theatres and Public Halls, 854
 Licenses, for Children, 653, 656
 Revenue,
 The Creel, 52
 The Spit, 47
 Thirlmere Hospital, 676
 Thirroul, 49
 Tia Falls, 55
 Tick, Cattle, 624
 Tides and Winds, 43
 Ties, 386
 Tiles and Pipes, Manufacture, 375
 Timber (*see* Forestry and Trees)
 Conservation, 495
 Industry, 640
 Licenses, 641
 Physics, 641
 Sawmills, 378
 State, 378
 Time, 44
 Timepieces, Jewellery, &c., Factories, 39,
 Tin and Tin-mining, 253
 Chinese Miners, 231
 Discovery, 254
 Dredging, 255
 Employment, 230
 Location, 253
 Occurrence, 253
 Ores, 253
 Output, 254
 Prices, 238, 879
 Tingira, H.M.A.T.S., 83
 Tobacco—
 Bounty, 570
 Consumption, 859
 Cultivation, 569
 Excise, 333
 Factories, 385
 Prices, 888
 Tomatoes, 578
 Tonnage (*see* Shipping)
 Topaz, 278
 Toronto, 54
 "Torrens" Act, 436
 Tourist Attractions, 46
 Bureau, 46
 Districts, 46
 Resorts, 46
 Towns, 29
 Coastal, 29
 Population (*see* Population)
 Toy-making, 395
 Trachyte, 280
 Trade (*see* also Commerce)
 Banks, 410
 Coast, 333
 Companies, 421
 Descriptions, 329
 Distribution, 334
 Exports, 343
 Imports, 341
 Marks, 471
 Oversea, 334
 Ports, 333
 Re-exports, 343
 Revenue, Customs, &c., 331
 Schools, 184
 Shipping, 289
 Societies, Co-operative, 421
 Trade—*continued.*
 State Business Concerns, 736
 Total, 335
 Unhealthful, 950
 Unions, 909
 Consolidation, 915
 Dissolution, 910
 Employees, 911
 Employers, 911
 Federation, 916
 Funds, 911
 Incorporation, 910
 Membership, 911
 Unemployment Records, 950
 Women Workers, 915
 Traffic—
 Act, 474
 Coaching, 788, 789
 Goods, 788, 791
 Metropolitan, 474
 Motor, 474
 Rail, 788
 Routes, 851
 Suburban, 779
 Tram, 801
 Training—
 Defence, 75, 82
 Farm, 559
 Professional, 220
 Teachers, 188
 Universal, 75
 Vocational, 178
 Tramways, 773, 799
 Private, 799, 803
 State, 773, 799
 Accidents, 803
 Ambulance, 804
 Capital Cost, 773, 800
 Carriage of Goods, 802
 Compensation, 803
 Cost, 801
 Earnings, 801, 802
 Electric Power, 394, 801
 Employment, 804
 Fares, 800
 Finances, 801
 First Aid, 804
 Gauge, 799
 Mileage, 802
 Passengers, 801, 802
 Power Works, 394
 Revenue, 801
 Rolling-stock, 800
 Staff, 804
 Steam, 801
 Traffic, 801
 Wages, 804
 Working, 801
 Workshops, 379
 Transcontinental Railways, 799
 Transfers, Land, 437
 Transhipment Rates, 291
 Transport and Communication, 894
 (*See* Railways, Tramways, Shipping)
 Travelling Hospitals, 666
 Schools, 177
 Stock, 613
 Reserves, 495
 Trawling, 646

- Treasury—
 Bills, 740
 Department, 70
 Treating Raw Materials, 372
 Trees—
 Nurseries, 640
 Plantations, 639
 Street Planting, 854
 Trial Bay, 16, 55
 Tribunals, Industrial (*see* Arbitration)
 Trigonometrical Stations, 15
 Survey, 15
 Triplets, 120
 Trout, 52, 646
 Trustee, Public, 461
 Trustees Audit Act, 739
 Trusts—
 Administrative, 72
 (*See* also Boards), 829
 Funds, 737
 Tuberculosis, 140
 Advisory Board, 141, 649, 675
 Deaths, 140
 Dispensaries, 676
 Homes, 676
 Hospitals, 649, 676
 Notification, 141, 675
 Queen Victoria Homes, 676
 Sanatoria, 676
 Treatment, 676
 Tuggerah Lakes, 26, 54
 Waterfall Hospital, 649, 676
 Tugs, 317
 Tungsten, 260
 Turnips, 569
 Turquoises, 279
 Tweed—
 Heads, 16, 55
 Mills, 386
 River, 16, 23, 55
 Twins, 120
 Typhoid Fever—
 Deaths, 135
 Hospital Cases, 139
 Umbrellas, Manufacture, 395
 Underground City Railway, 780
 Undertakings—
 Business, Corporate, 720
 Industrial, Governmental, 720
 Unemployment—
 Census Records, 895
 Relief, 953
 Trade Unions, 950
 Unhealthy Trades, 950
 Unification, Railway Gauges, 796
 Unincorporated Areas, 807
 Unionism, Industrial (*see* also Employment)—
 Arbitration, 893, 920, 923
 Commonwealth, 916
 Courts, 457
 Employers' Liability, 956
 Industrial Boards, 923
 Legislation, 959
 Limitation of Hours, 939
 Preference, 935
 Wages, 935
 Workmen's Compensation, 956
 Unionists, Preference, 935
 United Charities Fund, 679
 United Kingdom, Trade with, 339
 Universal Half-holiday, 940
 Universal Training, 75
 University of Sydney, 202
 Benefaction, 204
 Buildings, 211
 Bursaries, 209
 Clinics, 210
 Colleges, 211
 Cost of Graduation, 206
 Degrees, 208
 Departments, 206
 Diplomas, 208
 Endowment, 203
 Examinations, Public, 197
 Extension Lectures, 211
 Faculties, 206
 Fellowships, 209
 Finances, 205
 Graduation, 208
 Lectures and Lectureships, 207
 Legislation, 202
 Matriculation, 207
 Professors, 207
 Receipts and Expenditure, 205
 Reciprocity, 212
 Scholarships, 209
 Senate, 203
 Senior Examination, 197
 Students, 208
 Teaching Staff, 207
 Undergraduates, 208
 Upholstery, 391
 Uranium, 264
 Vaccination, 135
 Vagrancy, 490
 Valleys—
 Burraborang, 20, 52
 Grose, 50
 Jamieson, 50
 Kangaroo, 20, 49
 Kanimbla, 50
 Megalong, 50
 Valuations—
 Friendly Societies, 687
 Local Government, 811, 813
 Vancouver Mail Service, 760
 Variation of Industrial Awards, 931
 Varnishes, 391
 Vaucluse Bay, 47
 Vegetables—
 Imports and Exports, 579
 Market Gardens, 578
 Marketing, 874
 Prices, 869
 Vehicles—
 License, 474
 Manufacture, 389
 Power driven, 316, 474
 Vessels Imported, 316
 Nationalities, 295
 Naval (*see* Defence)
 Safety Equipment, 309
 Steam and Sailing, 299
 Veterinary—
 Conference, 611
 Examination, 610

- Veterinary—continued.**
 Science, University, 203, 206, 611
 Testing—
 Dairy Herds, 633
 Stallions, 610
Victoria, Mount, 50
Vinegar, Manufacture, 381
Vineyards, 574
Violence—
 Accidents, 151
 Deaths, 151
 Negligence, 152
 Suicide, 152
Vision of School Children, 192
Vital Statistics, 108 (see also Population)
Viticulture, 574
Vocational Training, 178
Volcanoes, Extinct, 22
Volunteer—
 Fire Brigades, 830
 Forces, 73
 Land Order Grants, 502
Voting—
 Local Government, 836
 Option, 452
 Parliamentary—
 Commonwealth, 60
 State, 64
 Referenda, 61
 Women's, 60, 64
Wad, 262
Wages—
 Australian Shipping Trade, 325
 Award Rates, 931
 Boards, 921
 Factories, 348, 364
 Hours of Work, 939
 Living, 936
 Miners, 232, 937
 Minimum, 938
 Principal Industries, 936
 Railways, 804
 Regulation, 938
 Seamen, 325
 Shipping Master's Office, 322
 Subnormal Workers, 939
 Tramways, 804
 Variation, 931
Wagga Experiment Farm, 585
Wagon-building, 389
Wallabies, 623
Wallis Lake, 54
War—
 Pensions, 699
 Railway Council, 79
 Vesse's (see also Defence)
 Austrian, 81
 Imperial, 80
Warden's Courts 224
Wards of State Children's Relief Board, 657
Warehousemen's Benefit Association, 955
Warning, Mount, 55
Water—
 Aerated, 383
 Artesian Bores, 597
 Commissioner, 591
 Conservation, 591, 624
 Consumption, 842, 844
Water—continued.
 Country Towns, 831, 832
 Darling River, 595
 Hay Irrigation Area, 596
 Power Schemes, 394
 Supply—
 Country Towns, 831, 832
 Hunter District, 595, 843
 Lachlan District, 595
 Macquarie District, 595
 Rights, 596
 Sydney (Metropolitan), 720, 839
 Trusts, 597
 Waterfall Consumptive Home, 649, 676
 Watering Places, 613
 Watermen's Licenses, 303
 Waterproof, 386
 Waters, Aerated, 383
 Waterside Workers, 328
 Watson's Bay, 17, 47
 Wax—
 Beeswax, 636, 876
 Paraffin, 349, 374
 Wealth, Diffusion, 442
 Weather (see Climate)
 Forecasts, 33
 Weights and Measures, 475
 of Coins, 397
 Welfare, Social, 649
 Wellington Caves, 51
 Wells—
 Artesian, 597
 Public Watering Places, Stock, 613
Wentworth—
 Falls, 50
 Irrigation Area, 596
Western—
 Division, Area, 808
 Holdings, 508
 Lands Board, 508
 Plains and Riverina, 20
 Settlement, 526
 Slopes, 20
 Settlement, 526
Whaling, 644
Wharfage Rates, 290
Wheat—
 Acquisition Act, 885
 Acreage, 546, 550
 Area under, 550
 Area suitable for, 551
 Breeding, 553
 Bulk handling, 560
 Costs of Growing and Export, 558
 Cultivation, 547
 Divisions, 547
 Dry Farming, 553
 Estimate, 550
 Experiment, 553
 Exporting, 558
 Extension, 549
 Fallowing, 556
 Farming, Government, 586
 F.A.Q. Standard, 559
 Farrer—
 Scholarships, 588
 Wheats, 553
 Freight, 559
 Grading, 559

Wheat—continued.

- Handling, 559
- Hay, 556
- Holdings, 543
- Lines (*see* Land Map)
- Marketing, 559
- Meal, &c., 383
- Milling Quantities, 554
- Prices, 557, 876, 877, 886
- Principal Countries Growing, 551
- Production, 548
- Rates of Freight, 559
- Seed, 554
- Share-farming, 549
- Standard, 559
- Transport, 560
- Value of Production, 543
- Varieties, 553
- Yield, 548, 550, 555
- Whips, Manufacture, 390**
- White Lead, Prices, 887**
- Wholesale Prices, 875**
 - United Kingdom, 879
- Whooping Cough, Deaths, 138**
- Wickerware, Manufacture, 395**
- Wilberforce Labour Settlement, 509**
- Window Blinds, Manufacture, 391**
- Winds—**
 - Prevailing, 24
 - and Tides, 43
- Windsor, 54**
- Wine—**
 - Consumption, 859
 - Distilleries, &c., 384
 - Licenses, 454
 - Production, 574
- Wingen, Mount, 21, 55**
- Winter School, Farmers, 187**
- Wire, Bounty, 349**
 - Working, 379
- Wireless Telegraphy, 766**
 - Financial Results, 768, 771
 - Licenses, 766
 - Macquarie Island, 45
 - Messages, 768
 - Rates, 767
 - Stations, 767
 - Sydney, 767
- Withdrawals, Coins, 400**
- Wives and Widows' Allowances, 658**
- Wolfram, 260**
- Wollongbar Experiment Farm, 585**
- Wollongong, 31, 49**
- Wombats, 623**
- Wombeyan Caves, 51**
- Women—**
 - Employment, 357, 954
 - Franchise, 60, 64

Women—continued.

- Prisoners, 481
- Workers, 915
- Wood-pulp, Bounty, 349**
- Woodworking Factories, 377**
- Wool, 604**
 - Clip, 604
 - Combing, 373
 - Bounty, 349
 - Exports, 604
 - Fellmongering, 372
 - Fleeces, 605
 - Freights, 792
 - History, 601
 - Lambs, 605
 - Liens, 439
 - Manufacture, 372
 - Federal Bounties, 349
 - Merino, 605
 - Mills, 386
 - Offered for Sale, 605
 - Prices, 878
 - Production, 604
 - Sales, 605
 - Scouring, 372, 605
 - Shearing, 605
 - Tops, 331
 - Used Locally, 604
 - Value, 604
- Work (*see* Employment), 939**
- Workers (*see* also Compensation)**
 - Dwellings, 705, 955
 - Slow, 939
- Working Proprietors, 361**
- Workmen's Compensation, 956**
 - Dwellings, 955
 - Insurance, 956
 - Commonwealth, 959
 - State, 956
- Woy Woy, 54**
- Wrecks, 320**
- Wyong River, 54**
- Yanco Irrigation Farms, 575, 592**
- Yarrangobilly Caves, 51**
 - Mineral Spring, 27, 51
- Yass-Canberra—**
 - Area, 13
 - Population, 87
- Yerranderie Silver-field, 52, 249**
- York, Mount, 50**
- Zinc, 244**
 - Output, 245
 - Prices, 238
- Zinc-blende, 244**
- Zircon, 277**
- Zones, 13**
 - Climatic, 38
- Zoological Gardens, 48**
 - Society, Royal, 212