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The

Official Year Book

of

New South Wales.

1915.



J. B. TRIVETT.

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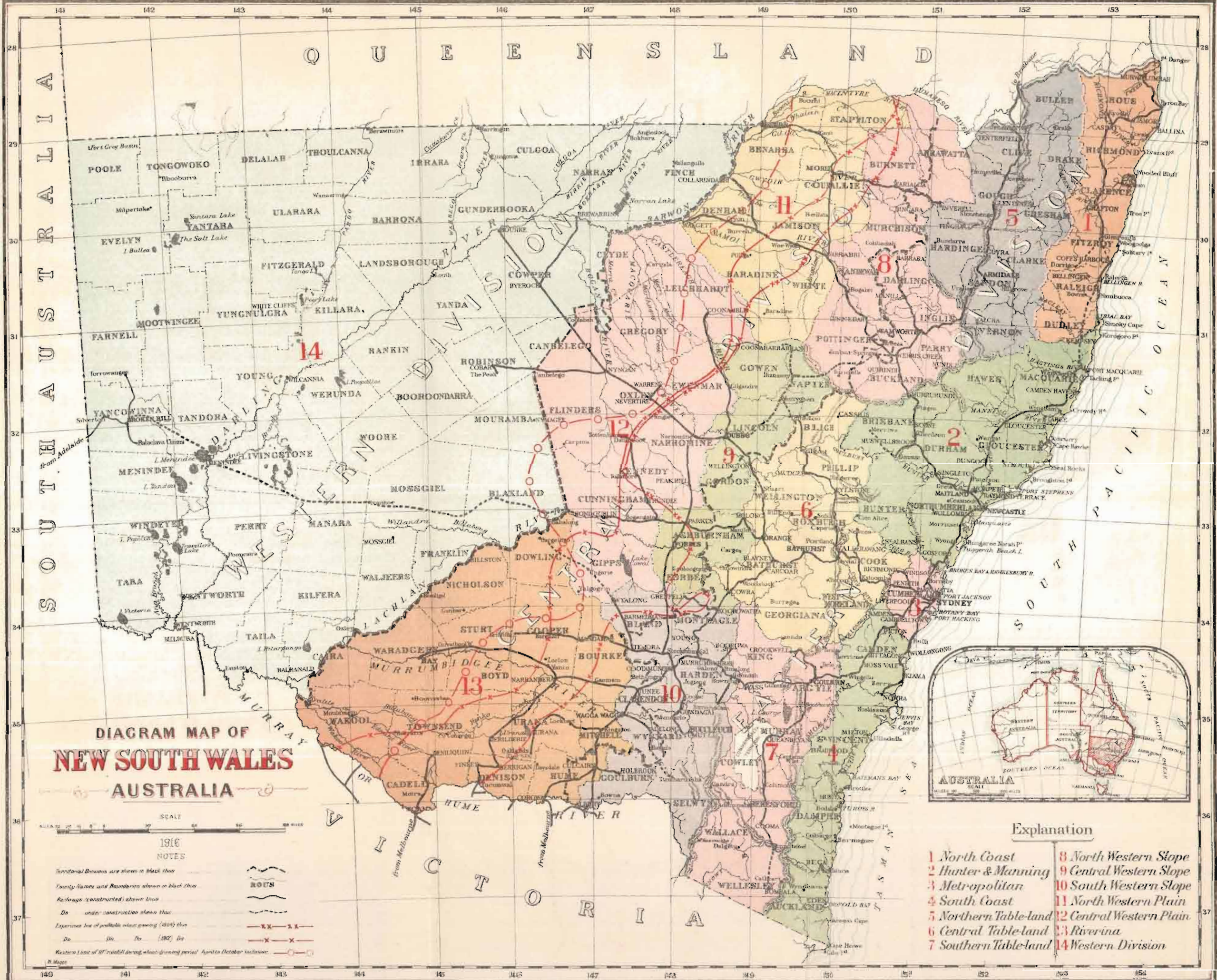
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**DIAGRAM MAP OF  
NEW SOUTH WALES  
AUSTRALIA**

SCALE  
1916

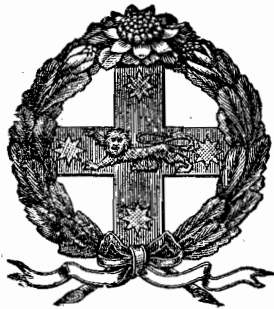
- NOTES
- Territorial Boundaries are shown in black thus
  - County Names and Boundaries shown in black thus
  - Railways (constructed) shown thus
  - Do under construction shown thus
  - Expected line of probable wheat growing (1914) thus
  - Do (in Do (1912) Do
  - Western Limit of 10" rainfall during wheat-growing period April to October inclusive



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



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OF  
NEW SOUTH WALES.  
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JOHN B. TRIVETT, F.R.A.S., F.S.S.,  
GOVERNMENT STATISTICIAN.

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1917.

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## 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.

Much extra work has devolved upon this Bureau on account of the Great War in which New South Wales as part of the British Empire is involved. Although deprived of their services, I am pleased to record that twelve members of the Bureau have enlisted in the Australian Imperial Force.

I have to express my thanks to the responsible officers of the various State and Commonwealth Departments, and to others who have kindly supplied all desired information, often at considerable trouble.

A diagram map of New South Wales is published with the volume to show the railways, county and territorial divisions, and area of the State suitable for profitable cultivation of wheat.

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.

Another edition of "The Statesman's Year Book of New South Wales" has lately been published. An immense volume of information has been presented in the compass of this small book, and the topics chosen are of vital importance to the interests of the State.

JOHN B. TRIVETT,  
Government Statistician.

Bureau of Statistics,  
Sydney, 19th September, 1916.

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## CORRIGENDA.

Page 323.—Commonwealth Bank. For Capital £1,000,000 read  
£10,000,000.

Page 406.—In table year 1914. For £754,677 read £634,021.

Page 727.—Delete last line on the page.

# 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—First Divine Service performed on shore by Rev. Richard Johnson, 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—Immigrants sought 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—Grape vines planted by G. Suttor.
- 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.

CHRONOLOGICAL TABLE.

- 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—Naval stores erected at Circular Quay—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 Berrima 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—Name "Australia," substituted for "New Holland," on recommendation of Flinders—New Zealand proclaimed a dependency of New South Wales.
- 1815 Cox's Road, Emu Plains to Bathurst opened—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 aborigines—Allan Cunningham and Judge-Advocate Wylde 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—Grape vines imported by Macarthur.
- 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 guard boats established—Influenza epidemic—William Charles 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, Legislative 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—Silver medal awarded in London to Gregory Blaxland for wine sent from New South Wales.



NEW SOUTH WALES OFFICIAL YEAR BOOK.

- 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—First Colonial Treasurer, William Balcombe, arrived.
- 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—Major Lockyer established a Settlement at King George's Sound.
- 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—Stirling's expedition to Western Australia.
- 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—General Post-office communication established, and postage rates fixed (minimum 3d.)—Cotton first grown in Sydney Botanical Gardens—Gas first used in Sydney—English Criminal Law adopted—Regular Jewish religious service established—Possession taken of Western Australia by Captain Fremantle—Gold medal awarded in London to Gregory Blaxland for wine sent from New South Wales.
- 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.

- 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—Busby imported grape-vine plants from France and Germany.
- 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 founded—Mitchell's Road over the Blue mountains opened—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—First house built in Melbourne.
- 836 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—Fort-nightly mail, Sydney-Melbourne.
- 1838 Drought; crops failed—Assignment of Convicts system ceased—Speculation general—Governor Gipps arrives—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 hit with gas—Site purchased for first permanent Synagogue—Census, population 116,731—Darlinghurst Gaol opened.
- 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 being 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—Treasury Building, Sydney, completed.
- 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.
- 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—Government 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 after departure of Criminals—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—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, building 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, "Dumming" 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—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 Silvertown—Land Act giving fixity of tenure to pastoral lessees—Geographical Society of Australia inaugurated—Federation Bill rejected—Australian Naval Station elevated from Commodore's 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)—Coalminers 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 Referendum; 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 Free-trade 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

- 1907 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, mechanician, 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—Electorates 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

- 1911  
(*cont.*) 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 (18,642) 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—Antituberculosis 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 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 "Torres"—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—

- 1913  
(cont'd) 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 Government Savings Bank agencies removed from post offices—Lily 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 cable 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—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 co-operate with Imperial forces—Australian Naval Unit transferred to direct Imperial control—Shipping entering ports of Sydney and Newcastle subject to examination—Necessary Commodities Control and Wheat Acquisition Acts—Patriotic Funds inaugurated—Special grant £100,000 to Belgians by Federal Parliament—Sydney Stock Exchange suspended operations for seven weeks—Australian war vessels assist in capture of German Samoa—German possessions in Pacific captured by Australasian naval and military forces—Australian submarine AE 1 lost at sea—Prize Court established—H.M.A.S. "Sydney" destroyed German cruiser "Emden"—German gunboat "Komet" captured and added to Australian navy—Destroyer "Derwent" launched—Australian Expeditionary Forces landed in Egypt—War Pensions Act—Fisheries investigation ship "Endeavour" lost at sea—Coal strike (afternoon shift) Maitland collieries—State Wheat-growing area established—Apostolic Delegate for Australia appointed—Emu Plains Prison Farm established.
- 1915 Australian Expeditionary Forces in action at Dardanelles—Submarine AE 2 lost in operations at Dardanelles—Return of First Expeditionary Force from New Guinea—Tropical Force despatched—Soldiers' Club opened at Sydney—Jervis Bay Naval College opened—Yacht "Adela" acquired for naval training purposes—Special patriotic collections, Belgian Day, 14th May; Australia Day 30th July—Newcastle iron and steel works opened—Norton Griffiths agreement for construction of public works—Conservatorium of Music opened—Policewomen appointed—State Government House case decided by Privy Council in favour of New South Wales Government—Homebush Abattoirs opened—Notification of Births Act proclaimed in Sydney and Newcastle—State trawling scheme in operation—Fodder control board appointed—Meat supply for Imperial Uses Act—Visit of Japanese training ships—War census—H.M.A.S. "Torrens" and "Brisbane" launched.

The following is an alphabetical list of chief events:—

Event.	Year.	Event.	Year.
Act of Parliament, First ...	1824	Courts, Childrens' ...	1905
American Fleet, Visit ...	1908	Civil ...	1814
Artesian Bore, first ...	1879	First Criminal... ..	1788
Assisted Immigration—first ship	1831	First Trial by Jury ...	1824
Revival ...	1905	High ... ..	1903
"Australia," Launch of H.M.A.S.	1911	Supreme ... ..	1812
Australian Coinage ... ..	1910	Customs Duties, First ...	1800
First Gunboat ... ..	1855	Defence, Military—First Volunteer	
Navy—Arrival ... ..	1913	force ... ..	1800
"Australia" Launched ...	1911	Imperial troops withdrawn ...	1870
First war vessels ... ..	1910	Lithgow Small Arms Factory	1912
Operations against German		Universal Training ... ..	1911
Pacific Possessions ...	1914	Navy, Arrival of Australian	1913
Submarines lost ... ..	1914, 1915	Discovery, Coal ... ..	1796, 1797
"Sydney" destroyed		Gold ... ..	1823, 1841
"Emden" ... ..	1914	By Hargraves ... ..	1851
Transfer to British Admi-		Silver, Broken Hill ... ..	1883
ralty ... ..	1914	Divine Service, First ... ..	1788
Notes (Bank) ... ..	1911	Education, Acts ... ..	1866, 1880
War Contingents—		Bursary Endowment... ..	1912
China ... ..	1900	First School ... ..	1796
European ... ..	1914	Free Public ... ..	1906
Maori ... ..	1860	Medical Inspection ... ..	1907
Soudan ... ..	1885	Sydney University ... ..	1852
South Africa ... ..	1899	Engine, first steam ... ..	1815
Banks, Commonwealth ... ..	1912	Export, First—Coal ... ..	1800
First Savings ... ..	1819	Excess of annual ... ..	1844
New South Wales ... ..	1817	Wheat surplus ... ..	1898
Bass Strait navigated ... ..	1796	Wool ... ..	1807
Blankets, first manufacture ...	1801	Federal Capital Territory... ..	1911
Blue Mountains, first crossing ...	1813	Federation of Australian Colonies	1901
"Brisbane," H.M.A.S., launched	1915	Financial Crisis ... ..	1843, 1893
Broken Hill Silver Field discovered	1883	Fisheries—State—Trawling ...	1915
Cable, England ... ..	1872	First Act of Parliament ... ..	1824
New Zealand ... ..	1876	Artesian Bore... ..	1879
Pacific ... ..	1902	Bank (New South Wales) ...	1817
Census, First ... ..	1828	Bank Savings... ..	1819
First Muster ... ..	1801	Blankets, Manufacture ... ..	1801
War ... ..	1915	Blue Mountains, Crossing ...	1813
Childrens' Courts ... ..	1905	Boiling-down of sheep ... ..	1843
China War Contingent ... ..	1900	Book printed ... ..	1802
Civil Courts... ..	1814	Cable ... ..	1872
Coal, Discovery ... ..	1796, 1797	Census ... ..	1828
First Export ... ..	1800	Muster ... ..	1801
Coinage, Australian ... ..	1910	Church ... ..	1793
First Copper ... ..	1801	Coal Export ... ..	1800
Colonies, New South Wales ... ..	1788	Coinage, Copper ... ..	1801
New Zealand ... ..	1841	Constitution ... ..	1823
Queensland ... ..	1859	Representative ... ..	1843
South Australia ... ..	1834, 1836	Criminal Court ... ..	1788
Tasmania ... ..	1825	Trial by Jury ... ..	1824
Victoria ... ..	1851	Customs duties ... ..	1800
Commission, Interstate ... ..	1913	Divine Service ... ..	1788
Commonwealth of Australia ...	1901	Engine, steam ... ..	1815
Constitution, First Act of Parlia-		Export, Coal ... ..	1800
ment ... ..	1824	Excess of annual ... ..	1844
First Australian Legislature	1823	Wool ... ..	1807
First Election... ..	1843	Fleet ... ..	1788
First Representative... ..	1843	Free immigrants ... ..	1793
Responsible Government ...	1855	Friendly Society ... ..	1834
Convicts, Transportation abolished	1840	Harvest ... ..	1789
Revived ... ..	1848	Industries, whaling and sealing	1791
Last ships ... ..	1849	Jury, Criminal trial by ... ..	1824
Cook, Landing of Captain ... ..	1770		
Cotton grown in Sydney ... ..	1828		

Event.	Year.	Event.	Year.
<b>First (continued)</b> —		Government—First Act of Parliament	1824
Land grant to settlers	1791	First Constitution	1823
Loan, public	1841	Representative	1843
Mail, overland—Sydney		Responsible	1855
Adelaide	1847	Government, Local	1907
Sydney-Melbourne	1837	Grape vines	1801, 1817, 1832
Manufacture, blankets	1801	Hargraves, discovery of gold	1851
Linen	1801	Harvest, First	1789
Sugar	1824	High Court of Australia	1903
Tweed	1843	Immigration, assisted, first ship	1831
Military force of volunteers	1800	First free immigrants	1793
Muster, Census	1801	Industries, First	1791
Naval Vessels, Australian	1910	Iron works, Newcastle	1915
Gunboat	1855	Irrigation, Murrumbidgee	1912
New South Wales, settlement	1788	Land Act, free selection before survey	1861
Newspaper	1803	First grant to settlers	1791
Observatory	1783	Real Property (Torrens') Act	1862
Parliament, Act	1824	Landing of Captain Cook	1770
Elective	1856	Law Courts, Children's	1905
Post Office	1809	Civil	1814
Postage Stamps	1837	Criminal, first	1788
Printing Press	1795	High	1903
Railway	1850; 1855	Supreme	1812
Religious Services	1788	First Act of Parliament	1824
Place of worship	1793	First Trial by Jury	1824
Savings Bank	1819	Loan, First Public	1841
School	1796	Local Government	1907
Settlement—New South Wales	1788	Manufactures, first—Blankets	1801
Queensland	1824	Boiling-down	1843
South Australia	1836	Linen	1801
Tasmania	1803	Sugar	1824
Victoria	1803	Tweed	1843
Western Australia	1826; 1829	Maori War, Contingent	1860
Sewerage	1853	Military Defence—First Volunteer Force	1800
Sheep, boiling-down	1843	Imperial troops withdrawn	1870
Wool export	1807	Small Arms Factory	1912
Ship, foreign trading	1792	Universal Training	1911
Immigrant	1831	War Contingents—European	1914
Steam	1831	Maori	1860
Sugar, manufacture	1824	Soudan	1885
Telegraph	1851	South Africa	1899
Wireless station	1911	Mountains, Crossing of Blue	1813
Telephone	1880	Murrumbidgee Irrigation	1912
Long distance	1898	Muster, First Census	1801
Theatre	1796	Navigation of Bass Strait	1796
Town Clock	1798	Round Australia by Flinders	1803
Tramway (horse drawn)	1861	Navy—American Fleet	1903
Electric	1899	Australian—Arrival	1913
Steam	1879	"Australia" launched	1911
Trial by Jury, criminal	1824	First vessels	1910
Tweed manufacture	1843	Operations against German possessions	1914; 1915
Volunteer Defence force	1800	Submarines lost	1914; 1915
Wheat harvested	1789	"Sydney" destroyed	
Surplus	1898	"Emden"	1914
Wireless Telegraph Station	1911	Transfer to British Admiralty	1914
Wool export	1807	Contingent to China War	1860
<b>Flinders, Navigation of Bass Strait</b>	1796	First Australian Gunboat	1855
<b>Circumnavigation of Australia</b>	1803	New South Wales, first settlement	1788
<b>Franchise—Manhood Suffrage</b>	1858	Newspaper, first	1803
<b>Women's</b>	1902		
<b>Friendly Society, First</b>	1834		
<b>Gold discoveries</b>	1823; 1841		
By Hargraves	1851		
First dredge	1899		



Event.	Year.	Event.	Year.
New Zealand separated ... ..	1841	South Australia ... ..	1834, 1836
Norfolk Island discovered ... ..	1774	Steel Works, Newcastle ... ..	1915
Notes, Australian ... ..	1911	Strike, Maritime ... ..	1890
Observatory, First at Dawes Point	1788	Suffrage, Manhood... ..	1858
At Parramatta ... ..	1822	Women's ... ..	1902
Old-age Pensions ... ..	1900	Sugar, first manufacture ... ..	1824
Pacific Cable ... ..	1902	"Sydney" destroyed "Emden"	1914
Parliament—First Act ... ..	1824	Tasmania, First settlement ... ..	1803
First Constitution ... ..	1823	Insularity established ... ..	1798
First Election... ..	1856	Separation ... ..	1825
First Responsible Ministry ... ..	1856	Telegraphs—Cable, England ... ..	1872
Manhood Suffrage ... ..	1858	New Zealand ... ..	1876
Plural voting abolished ... ..	1893	Pacific ... ..	1902
Second Ballot Act ... ..	1910	First ... ..	1851
Triennial ... ..	1874	Wireless, first station ... ..	1911
Vote by ballot ... ..	1858	Telephones established ... ..	1880
Women's Suffrage ... ..	1902	First long-distance ... ..	1898
Pensions, Old-age ... ..	1900	Sydney-Melbourne ... ..	1907
Policewomen appointed ... ..	1915	Theatre, first ... ..	1796
Postal—First office ... ..	1809	"Torrens," H.M.A.S., launched ... ..	1915
First overland Sydney-Ade-		Torrens' Real Property Act ... ..	1861
laide mail ... ..	1847	Trade—First excess annual exports	1844
Sydney-Melbourne ... ..	1837	First export coal ... ..	1800
First stamps ... ..	1837	Wool ... ..	1807
General Post Office opened ... ..	1874	First Foreign ship ... ..	1792
Penny Postage—Australia ... ..	1910	Interstate Commission ... ..	1913
British Empire ... ..	1911	Tramway, First (horse drawn) ... ..	1861
Printing, First Press ... ..	1795	Electric ... ..	1899
Property, Real—Torrens' Act ... ..	1861	Steam ... ..	1879
Publishing, First book printed ... ..	1802	Transportation abolished ... ..	1840
First newspaper ... ..	1803	Attempted revival ... ..	1843
Railway—Brisbane and Adelaide		Last convict ships ... ..	1849
connected ... ..	1889	Trawling, State ... ..	1915
First ... ..	1850, 1855	Tweed, first manufacture... ..	1843
Real Property (Torrens) Act ... ..	1862	Universal defence training ... ..	1911
Religious equality established ... ..	1839	University of Sydney opened ... ..	1852
First Divine Service ... ..	1788	Victoria separated... ..	1851
Place of public worship ... ..	1793	Volunteers, first defence force ... ..	1800
State Aid abolished ... ..	1862	Voting—Manhood Suffrage ... ..	1858
Responsible Government ... ..	1855	Plural abolished ... ..	1893
Robertson's Land Act ... ..	1861	Second ballot... ..	1910
Savings Bank, first ... ..	1819	Vote by Ballot ... ..	1858
School, first ... ..	1796	Women's Suffrage ... ..	1902
Schools, Public—Act ... ..	1866	War Contingents—China ... ..	1900
Bursary Endowment Act ... ..	1912	European ... ..	1914
Fees abolished ... ..	1906	Maori ... ..	1860
Medical inspection ... ..	1907	Soudan ... ..	1885
Public Instruction Act ... ..	1880	South African ... ..	1899
"Serius" lost at Norfolk Island	1790	European—Expeditionary	
Settlement, New South Wales ... ..	1788	Forces, Egypt ... ..	1914
Queensland ... ..	1824	Pacific ... ..	1914
South Australia ... ..	1836	Turkey ... ..	1915
Tasmania ... ..	1803	German Pacific Possessions	
Victoria ... ..	1803	occupied ... ..	1914
Sewerage, First ... ..	1853	Navy transferred to British	
Sheep—First boiling-down ... ..	1843	Admiralty ... ..	1914
Export wool ... ..	1807	Submarines lost ... ..	1914, 1915
Merinos imported ... ..	1797, 1804	"Sydney" destroyed	
Shipping—First foreign trader ... ..	1792	"Emden" ... ..	1914
Steamer ... ..	1831	Western Australia Settlement	1826, 1829
Signal Station, South Head ... ..	1790	Wheat, first surplus ... ..	1898
Silver, Broken Hill discovery ... ..	1883	Wine sent to London ... ..	1823, 1828
Soudan Contingent ... ..	1885	Wireless Telegraphy, first station... ..	1911
South African War Contingents ... ..	1899	Wool, First Export ... ..	1807
		Merino sheep imported	1797, 1804

## GEOGRAPHY AND CLIMATE.

## GEOGRAPHY.

## AREA OF NEW SOUTH WALES.

THE area 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, an area of about 28 square miles at Jervis Bay was surrendered to the Federal Government for naval purposes.

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 distance is 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 ... ..	309,444	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 ... ..	900*	} ·03
„ Area at Jervis Bay ... ..	28	
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; related to the larger States, it is half the size of Queensland and one-third that of Western Australia.

## 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.
<b>Europe—</b>	sq. miles.	<b>Africa—<i>continued.</i></b>	sq. miles,
United Kingdom—		West Africa— <i>continued.</i>	
England and Wales ...	58,340	Sierra Leone and Protectorate.	24,908
Scotland ... ..	30,405	Gambia and Protectorate...	3,619
Ireland ... ..	32,586	<b>Total, West Africa ...</b>	<b>444,842</b>
Isle of Man and Channel Islands.	302	Mauritius and Dependencies...	809
<b>Total, United Kingdom ...</b>	<b>121,633</b>	Seychelles ... ..	156
Gibraltar ... ..	2	Somaliland ... ..	68,000
Malta ... ..	117	East Africa Protectorate ...	247,600
<b>Asia—</b>		Uganda Protectorate ...	121,437
India—British ... ..	1,092,994	Zanzibar and Pemba ...	1,020
Feudatory States ... ..	709,118	Nyasaland ... ..	39,315
<b>Total, India ... ..</b>	<b>1,802,112</b>	Rhodesia ... ..	439,575
Cyprus ... ..	3,584	Swaziland ... ..	6,536
Aden (including Perim and Protectorate), Socotra	10,387	Basutoland ... ..	11,716
Ceylon... ..	25,481	Beechuanaland ... ..	275,000
Straits Settlements ... ..	1,600	Egypt... ..	400,000
Federated Malay States ...	27,506	Anglo-Egyptian Soudan ...	95,000
Other Malay States ... ..	24,600	<b>America—</b>	
Borneo ... ..	31,106	Canada ... ..	3,729,665
Sarawak ... ..	42,000	Newfoundland ... ..	42,754
Hong Kong and New Territories.	404	Labrador ... ..	120,000
Wei-hai-wei ... ..	285	British Honduras ... ..	8,598
<b>Africa—</b>		British Guiana ... ..	90,500
Union of South Africa—		Bermuda ... ..	19
Cape of Good Hope ...	276,995	<b>West Indies—</b>	
Natal ... ..	35,371	Bahamas ... ..	4,404
Transvaal ... ..	110,426	Turks and Caicos Islands...	166
Orange Free State ...	50,392	Jamaica ... ..	4,207
<b>Total Union of South Africa.</b>	<b>473,184</b>	Cayman Islands ... ..	89
Ascension ... ..	34	Windward Islands... ..	672
St. Helena ... ..	47	Leeward Islands ... ..	715
<b>West Africa—</b>		Trinidad and Tobago ...	1,974
Northern Nigeria ... ..	256,200	<b>Total, West Indies ...</b>	<b>12,227</b>
Southern Nigeria and Protectorate.	79,880	Falkland Islands ... ..	7,500
Gold Coast and Protectorate.	80,235	<b>Australia and the Pacific—</b>	
		Australia ... ..	2,974,581
		Papua ... ..	90,540
		Norfolk Island ... ..	10
		New Zealand... ..	104,751
		Fiji ... ..	7,435
		Tonga ... ..	390
		Solomon Islands ... ..	14,800
		Gilbert Islands ... ..	166
		<b>Total, British Empire ...</b>	<b>12,809,004</b>

## 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. The State 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.

#### 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 was given in a 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 ship-masters and to surveyors, and will be given by the 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 a previous issue of this Year Book an account was given of the important geographical features of New South Wales, therefore in this issue only a brief reference is made.

##### *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.

##### *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, whose existence proceeded from 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 principal ports are Port Jackson, the port of Sydney; Port Hunter, or Newcastle Harbour; Jervis Bay; Port Stephens; Broken Bay; and Port Kembla.

#### *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.

#### *Lord Howe Island.*

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 population is 107 persons.

#### *The Surface of New South Wales.*

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.

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.

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.

#### *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 section 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 coastline, and a number of lateral spurs branch off from either side.

A disconnected chain of mountains runs transversely along the Southern Tableland, and four well-defined ranges lie in the coastal district, running, as a rule, parallel to the Tablelands.

Two ranges of moderate elevation lie near the extreme west and north-west of the State, and 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.

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 water courses 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 found in many districts throughout the State.

#### *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.

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.

#### *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 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 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.

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.

#### *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.

A description of the waters of the following springs was given in the previous issue of this Year Book—Mittagong, Ballimore, Rock Flat, Bungonia, Jarvisville, and Yarrangobilly.

#### *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, Belubulá, 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.	
		Tertiary ... ..	Pleistocene; alluvial leads containing gold, tin, and gemstones.	
			Miocene; quartzites with plant remains at Dalton, near Gunning.	
MESOZOIC.	{	Cretaceous ... ..	Eocene; marine limestones and calcareous sandstones of the Lower Darling; plant beds of the New England district.	
		Jurassic ... ..	Upper Cretaceous (Desert Sandstone); contains deposits of precious opal.	
			Middle Cretaceous; auriferous alluvial leads at Mount Brown.	
		Trias-Jura ... ..	Lower Cretaceous; Rolling Downs formation of Queensland.	
			Talbragar fish-bearing shales.	
PALÆOZOIC.	{	Permo-Carboniferous ... ..	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.
			Hawkesbury Series ... ..	Wianamatta Shales; contain fireclays. Hawkesbury Sandstones; building stone. Narrabeen Shales.
		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 Tomogog Coal Measures ... ..	
			4. Upper Marine Series ... ..	
5. Greta Coal Measures ... ..				
6. Lower Marine Series ... ..				
Devonian ... ..	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.		
	Marine beds of Dungog and Clarence Town areas, and New England District, equivalent in part to the Star Beds of Queensland. ... ..			
Silurian ... ..	Upper Devonian ... ..			
	Lower Devonian ... ..			
Ordovician ... ..	Limestones and slates at Yass, Molong, Wellington, Quindong, Portland, &c. ... ..			
	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 Torrangingee.			

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 fluvial deposits constitute the chief sources of alluvial gold, stream tin, and gemstones. 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 Trias-Jura 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.

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. East Maitland and West Maitland are situated on the Hunter River, about 20 miles above Newcastle. Lismore and Grafton are in the North Coast District; Tamworth is on the main Northern Railway; Lithgow, Bathurst, and Orange on the Western; Goulburn, Wagga, and Albury on the Southern.

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.

#### FEDERAL CAPITAL TERRITORY.

The Federal Capital Territory, formerly part of the State of New South Wales, is situated in the upper basin of the Murrumbidgee River, being watered by its tributaries, Molonglo and Cotter. Canberra, the site chosen for the capital city, is  $5\frac{1}{2}$  miles distant from Queanbeyan, with which it is connected by rail. A railway about 123 miles in length will give access to the Federal Port at Jervis Bay. The work of laying out the city is proceeding.

#### CLIMATE.

##### *Meteorological and Astronomical Records.*

The Parliament of the Commonwealth of Australia has power to make laws in regard to astronomical and meteorological observations throughout Australia. Accordingly, with the enactment of the Commonwealth Meteorological Act, 1906, the Commonwealth Meteorologist was authorised 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.

##### *Meteorological Bureau.*

Meteorological observations in New South Wales are directed from Sydney as the centre of a subdivision of Australia, which includes the greater part of New South Wales; a special climatological station is maintained also at Dubbo, and there are many reporting stations throughout the State. Bulletins and weather charts are issued daily by the Meteorological Bureau, and rain maps and isobaric charts are prepared.

Flag signals are displayed in Sydney to give storm warnings, and to indicate fair weather, rain, and cold or heat waves; forecasts are telegraphed daily to towns in country districts, and the city forecasts are published in the early editions of the press.

For the purpose of weather forecasts, 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 area is hot and dry, the rainfall irregular, occurring chiefly in summer, and accompanied by electrical disturbances; in the southern area the climate is generally warm and temperate, with rain falling in winter and spring, 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 main rainfall is 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.

#### SYDNEY OBSERVATORY.

Sydney Observatory, lat.  $33^{\circ} 51' 41.1''$  south, long.  $151^{\circ} 12' 23.1''$  east, established in the year 1856, is a State institution. The immense growth of Sydney has caused such adverse atmospheric conditions that the site is now unfavourable for satisfactory work, and the Government is contemplating its removal from the city.

Daily time-ball services are maintained at Sydney and Newcastle, and arrangements have been made whereby the public may ascertain the correct time directly from the Observatory.

During 1914 observations were taken of 245 clock stars and 44 azimuth stars, and there were 437 determinations of collimation and azimuth. The seismograph worked continuously during the year, 81 tremors being recorded.

#### STANDARD TIME.

The mean time of the 150th meridian of east longitude, or 10 hours east of Greenwich, has been adopted as the standard time throughout New South Wales, except in 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  $120^{\circ}$  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.

#### WEATHER.

The weather is determined chiefly by anticyclones, or areas of high barometric pressure, with their attendant 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 from the Antarctic low pressure belt which lies to the south of Australia, or may result from monsoonal disturbances.



## THE SEASONS.

The seasons 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.

## 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. Southerly winds, which are characteristic of the summer weather on the coast, occur most frequently during the months from September to February, and between 7 p.m. and midnight. These winds, which are deflected sea breezes, cause a rapid fall in temperature, and are sometimes accompanied by thunderstorms.

During winter, the prevailing direction of the wind is westerly. In the southern areas of the State the winds are almost due west, but proceeding northwards there is a southerly tendency, 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 are 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 anti-cyclonic circulations moving contra-clockwise to the southern hemisphere.

## RAINFALL.

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 80 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.

A classification of areas in New South Wales in accordance with the annual rainfall shows the following distribution:—

Annual Rainfall.		Area.	Annual Rainfall.		Area.
Inches.		Sq. Miles.	Inches.		Sq. Miles.
Over 70	...	668	15 to 20	...	57,639
60 to 70	...	1,765	10 ,, 15	...	77,268
50 ,, 60	...	4,329	Under 10	...	44,997
40 ,, 50	...	15,804			
30 ,, 40	...	30,700			
20 ,, 30	...	77,202	Total	...	310,372

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 Antarctic depressions, monsoonal depressions, and anticyclonic systems. Antarctic depressions are the main cause of 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.

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.

The seasonal rain distribution in New South Wales during 1914 was as follows:—In January and February, patchy falls above the average were recorded on the Northern and Central tablelands and slopes, but otherwise these months were characterised by hot weather and general dryness. In March, good excess rains fell over the eastern half and in the Riverina, with some exceptionally heavy falls on the South Coast, but the falls were capricious, and below normal in the north-western quarter. April was below the average, except on the South Coast and far western border. In May fairly good rains fell in the north, and heavy falls on parts of the north-western plains and slopes; June was dry in all parts except the North Coast. July showed patchy areas above the normal in the far north-west, and a general excess over the Central tablelands and the coast south of Port Macquarie, but it was dry all over the south-western and southern districts. August was an extremely dry month, being practically rainless away from the immediate coast line, and September was almost as dry, except for heavy rains along the South Coast. From October to the end of the year monsoonal influences and thunderstorms gradually became general, and caused rains above the average on the coast in October, over the State generally (except the Riverina and extreme north and south highlands) in November, and over the whole State in December. For the year, the rainfall was well above the normal on the eastern slopes generally, and on parts of the north-west and Central slopes and plains, but in the western and southern districts it was much below the average, and at a number of places between the Lachlan and the Murray it was the driest year on record.

The following table shows the variation in rainfall in the inland portions of New South Wales during the period 1905-14. It bears out the statement that a universal shortage of rain is not probable. The Riverina and Southern Highlands usually experience opposite conditions.

Year.	Above the Average.	Below the Average.
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.
1914	East and West Gwydir, Nandewar... New England ... .. Manning, Hunter and Nepean ... Cudgong, Lowlands, Sydney .. Illawarra ... ..	Trans-Darling and Cis-Darling. Upper Bogan, Lower Macquarie. Liverpool Plains, Clarence. Central Plateau, Warrumbungle. South Coast, Upper Murrumbidgee, Snowy Mts. Jugiong, Tumut, Riverina.

## SNOW.

No part of the surface of New South Wales rises to the line of perpetual snow, but heavy snowfalls occur during the winter months on the Muniung Range and in the Kuscusko region, where snowdrifts may be found in sheltered crevices even in summer. On other parts of the Great Dividing Range snowfalls are experienced occasionally.

## 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 half-way between the extreme northern and southern limits of the State, in latitude 33° 51' 41.1" S., longitude 151° 12' 23.1" E. Its mean annual temperature is 63° Fahrenheit. The range is only 17°, calculated over a period of fifty-six years, the mean summer temperature being about 71°, and the mean winter temperature 54°.

The following table shows the average meteorological conditions of Sydney based on the experience of the fifty-six years ended 1914:—

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 ...	29 902	71.6	78.4	64.9	3.518	15.257	0.419	14.2
February..	29 945	71.1	77.3	64.9	4.620	18.556	0.344	14.2
March ...	30.013	69.3	75.4	63.0	5.311	18.700	0.419	15.2
April ...	30.069	64.7	71.1	58.2	5.252	24.492	0.060	13.2
May ...	30.083	58.5	65.0	52.1	5.061	20.868	0.214	15.5
June ...	30.065	54.3	60.5	48.2	5.241	16.296	0.190	13.0
July ...	30.078	52.4	58.9	45.7	4.913	13.208	0.120	12.6
August ...	30.070	54.9	62.3	47.6	3.186	14.886	0.040	11.4
September	30.006	59.0	66.4	51.4	2.863	14.045	0.083	12.2
October ...	29.972	63.5	71.2	55.9	2.841	10.810	0.209	12.7
November	29.937	67.1	74.4	59.7	2.866	9.877	0.193	12.5
December	29.880	70.1	77.3	62.9	2.632	8.469	0.225	12.8

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 thunderstorms 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	43·85
Lismore ... ..	13	52	66·6	75·0	56·3	22·2	116·2	23·0	51·99
Clarence Heads ... ..	0	99	67·9	74·9	59·5	15·1	110·0	36·4	55·51
Grafton ... ..	22	40	67·5	77·1	57·6	26·3	118·0	20·9	35·08
Port Macquarie ... ..	0	44	63·3	70·8	54·9	17·0	105·4	24·8	61·30
Singleton ... ..	40	135	64·1	76·1	52·1	20·3	113·9	22·0	29·50
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	34·25
Port Stephens ... ..	0	30	64·1	72·6	53·1	20·8	111·2	30·2	53·41
Newcastle ... ..	1	112	64·6	72·3	55·4	15·4	110·5	31·0	47·49
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	53·9	13·6	108·5	35·9	48·30
Wollongong ... ..	9	33	63·0	70·1	54·8	17·0	113·4	31·9	45·34
Nowra ... ..	6	30	61·6	71·0	53·4	19·0	109·5	34·5	38·00
Point Perpendicular ... ..	0	257	61·5	68·3	53·7	12·3	105·2	25·5	55·65
Moruya Heads ... ..	0	55	60·9	68·0	52·8	18·8	114·8	26·3	35·39
Bodalla ... ..	7	40	59·9	69·1	50·5	27·7	114·1	18·6	36·89
Bega ... ..	0	50	60·5	69·6	48·9	24·9	115·6	16·6	33·00
Eden ... ..	0	107	60·0	67·7	51·8	14·2	106·0	29·3	34·44

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 Mungion 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	32·60
Inverell .. ...	124	1,980	59·6	71·3	47·2	29·4	110·6	13·4	30·29
Glen Innes ... ..	90	3,518	55·6	66·4	43·8	25·7	107·3	14·4	31·72
Bundarra ... ..	113	2,000	60·8	72·3	48·8	25·2	101·0	17·5	30·00
Armidale ... ..	81	3,333	56·3	67·4	44·0	24·5	105·2	11·2	31·96
Walcha ... ..	83	3,386	54·5	66·3	47·4	23·4	104·1	10·0	30·84
Murrurundi ... ..	94	1,545	60·9	73·7	49·7	19·8	107·3	19·0	31·35
Cassilis ... ..	120	1,500	60·8	73·6	45·3	21·7	111·7	15·8	23·81
Scone ... ..	78	680	62·6	74·3	50·4	29·7	114·4	19·0	23·86
Muswellbrook ... ..	68	475	63·8	75·2	49·4	25·4	117·6	19·0	23·72
Mudgee ... ..	121	1,635	59·2	72·4	46·8	32·1	114·9	15·0	25·34
Bathurst ... ..	96	2,206	57·2	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	50·45
Mount Victoria ... ..	61	3,490	54·4	65·2	42·6	19·6	166·0	11·9	37·26
Katoomba ... ..	53	3,349	53·2	62·5	42·8	15·4	100·0	25·9	56·88
Carcoar ... ..	111	2,380	58·0	71·4	44·2	25·9	105·0	15·4	29·36
Springwood ... ..	42	1,216	61·1	70·8	47·2	17·4	104·8	32·5	41·51
Cowra ... ..	126	987	63·1	78·8	48·5	23·5	116·1	21·0	23·79
Picton ... ..	22	549	61·2	71·8	49·9	27·6	114·0	19·7	30·42
Crookwell ... ..	81	2,000	52·0	64·7	39·4	23·7	160·8	12·1	31·78
Moss Vale ... ..	31	2,205	55·2	65·6	44·4	21·5	106·0	18·9	38·45
Goulburn ... ..	54	2,097	56·1	67·5	44·1	24·1	111·0	13·0	24·83
Yass ... ..	92	1,616	57·0	70·1	44·6	24·3	108·0	21·0	23·53
Queanbeyan ... ..	60	1,899	57·1	67·3	44·2	29·2	109·4	15·8	22·20
Kiandra ... ..	88	4,640	44·1	55·5	32·0	20·6	91·0	<sup>4</sup> below zero	63·44
Cooma ... ..	52	2,617	54·1	65·8	41·9	27·8	112·0	11·0	19·14
Bombala ... ..	37	3,000	53·4	64·4	42·8	24·2	104·1	15·5	22·56

#### 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 men-

soonal 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.
			Mean Annual.	Mean Summer.	Mean Winter.	Mean Daily Range.	Highest.	Lowest.	
	miles.	feet.	°	°	°	°	°	°	inches.
Moree ... ..	204	680	67·3	80·4	53·2	30·2	117·3	18·0	23·47
Warialda ... ..	162	1,106	61·6	74·0	47·9	34·0	117·7	16·0	28·29
Bingara ... ..	153	1,200	64·0	76·2	49·8	29·4	116·6	15·5	31·23
Narrabri ... ..	193	697	66·3	80·7	51·9	28·4	119·9	18·4	26·02
Gunnedah ... ..	156	874	65·4	79·6	51·2	29·1	120·6	16·7	24·49
Coonabarabran ... ..	185	1,710	59·8	72·7	46·3	32·4	111·9	11·4	29·03
Quirindi ... ..	115	1,278	63·9	76·5	48·5	27·1	113·6	17·0	27·50
Dubbo ... ..	177	870	63·5	77·4	49·3	28·0	115·4	16·9	22·30
Forbes ... ..	176	789	63·0	76·8	48·3	24·3	118·4	24·0	19·67
Young ... ..	140	1,416	58·8	72·4	45·8	25·9	113·9	20·3	24·98
Marsden ... ..	187	700	64·8	76·8	49·2	25·0	119·7	19·0	19·54
Murrumburrah ... ..	126	1,268	61·1	72·7	46·9	27·1	114·9	20·0	23·64
Wagga Wagga ... ..	158	612	62·1	75·5	48·6	25·7	119·0	18·4	21·09
Urana ... ..	213	400	62·3	76·2	48·1	22·6	117·0	18·4	16·81
Albury ... ..	175	542	60·7	74·4	47·5	27·4	117·3	19·9	27·43

#### 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. 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° or 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	16·47
Walgett... ..	286	436	67·9	82·0	52·8	25·8	122·2	23·2	18·59
Bourke ... ..	386	361	69·2	83·6	54·0	27·5	127·0	25·0	14·28
Wilcannia ... ..	473	267	66·4	80·2	52·0	26·0	120·8	21·8	10·21
Cobar ... ..	345	803	67·0	80·9	52·3	24·1	118·7	25·0	14·30
Broken Hill ... ..	555	1,030	64·6	77·6	51·0	23·7	115·9	28·5	9·65
Mount Hope ... ..	296	600	64·4	78·6	50·0	22·4	123·6	24·6	15·13
Condobolin ... ..	227	703	64·8	78·2	50·9	27·1	122·2	20·5	17·23
Wentworth ... ..	478	123	64·0	76·7	51·1	26·7	119·0	21·0	12·06
Hay ... ..	309	291	63·2	76·1	50·3	27·6	117·3	22·9	14·10
Buston ... ..	422	188	62·4	74·8	50·0	26·3	124·8	17·1	12·07
Deniliquin ... ..	287	312	61·7	74·2	48·9	24·2	121·1	18·0	16·07

### TIDES.

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 4 <sup>7</sup>/<sub>12</sub> inches, and of spring tides 5 feet 5 <sup>1</sup>/<sub>2</sub> 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.

## SCIENTIFIC EXPEDITIONS TO THE ANTARCTIC.

During recent years there have been five British expeditions to the Antarctic.

The expedition led by Lieutenant Shackleton, who sailed in the "Nimrod" in 1908, 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 that year.

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 Adaire 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 being to land at Weddell Sea, and proceed across the continent. A party under the charge of Captain A. E. Mackintosh, R.N.R., sailed in the "Aurora" from Hobart to land at Ross Sea, and 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 of 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 has been 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.	Southern Highlands.
Illawarra and South Coast districts.	Hawkesbury River.
Blue Mountains and Central Tableland.	Northern Lakes.
Jenolan and other Caves.	New England Highlands.
Kosciusko and the Alpine snowfields.	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 some of 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 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, historic Government House, and the Conservatorium of Arts and Music. 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 ocean and harbour views, is by electric tram from North Sydney, Neutral Bay, Cremorne, or Mosman. There are 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. Excellent fishing and boating are available at Narrabeen Lakes, 6 miles from Manly. In the more populous districts south of the harbour entrance the ocean beaches, Bondi, Coogee, and Maroubra, attract large number 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 and in the neighbouring ocean, the fishing grounds along the coast being 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. 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.

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 33,747 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 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 railway 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, where the Naval College is situated. 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 AND CENTRAL TABLELANDS.

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.

Only a passing reference may be made to the numerous 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.

Near all the railway stations from Glenbrook to Mount Victoria there are numerous attractive views.

After crossing the range the railway line passes through Lithgow to the towns of Bathurst and Orange, which are situated on the Macquarie River, and are renowned for a bracing and salubrious climate.

#### JENOLAN AND OTHER LIMESTONE CAVES.

The limestone caves are situated in the southern tableland, in an extensive limestone belt, which is an old coral reef of Palæozoic age. The best known are the Jenolan (high mountain) 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. 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.

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.

#### *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 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 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. Being distant from the main 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, so 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 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 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 is the wild region 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 tourists. In the winter season ski-running, ice skating, and other Alpine sports attract many visitors, and a series of Alpine carnivals is held annually; trout-fishing, golfing, riding, and motor trips provide diversion in summer.

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 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 River flows through the valley, which contains also the Yerranderie silver field; the road from Picton or Camden passes through wild, magnificent scenery. Thirlmere, 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 is on the eastern boundary. Cooma, 3,000 feet above sea-level, possesses a delightful summer climate. From Mount Gladstone, 3 miles away, a fine comprehensive view includes 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 of 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. He will thus 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. 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. Terrigal is a seaside resort, with a fine 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 Wauchope, 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 government of the settlement; subsequently he was authorised to impose a limited taxation by customs duties, and during the first thirty-five years of the colony's existence was possessed of virtually 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 of a Legislative Council, with a minimum of five and a maximum of seven members, nominated by the Governor. This Council acted as an advisory body to the Governor, with 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; Frederic Goulburn, Colonial Secretary; James Bowman, Principal Surgeon; John Oxley, Surveyor-General.

All law 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 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 (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, conferred 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 make 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. Further amendments were made in 1908 and 1914, 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 functions have been divided 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; 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. Queensland did not join the federal movement until the following year.

The Constitution Bill was subsequently accepted by each of the six States of Australia, and received the Royal Assent, and the formal inauguration of the Commonwealth took place on 1st January, 1901, the first day of the twentieth century. The first Parliament of the Commonwealth of Australia 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.

#### EXECUTIVE GOVERNMENT.

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

#### *Commonwealth Executive Government.*

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. Under the provisions of the Constitution Act the Ministry numbered seven, the maximum amount specified for their salaries was £12,000 per annum, until the enactment of the Ministers of State Act in July, 1915, by which the number of Ministers was increased to eight and the amount appropriated for their salaries to £13,650.



Succession of Governors-General.

In the following tabular statement is shown the succession of Governors-General since the inauguration of the Commonwealth:—

Name.	From—	To—
Rt. Hon. Earl of Hopetoun (afterwards Marquis of Linlithgow), P.C., K.T., G.C.M.G., G.C.V.O.	1 Jan., 1901 ...	9 May, 1902.
Rt. Hon. Hallam Baron Tennyson, G.C.M.G. (Acting Governor-General).	17 July, 1902.	
Rt. Hon. Hallam Baron Tennyson, G.C.M.G.	9 Jan., 1903 ...	21 Jan., 1904.
Rt. Hon. Henry Stafford Northcote, P.C., G.C.M.G., G.C.I.E., C.B.	21 Jan., 1904 ...	8 Sept., 1908.
Rt. Hon. William Humble Earl of Dudley, P.C., G.C.M.G., G.C.V.O., &c.	9 Sept., 1908 ...	31 July, 1911.
Rt. Hon. Thomas Baron Denman, P.C., G.C.M.G., K.C.V.O.	31 July, 1911 ...	16 May, 1914.
Rt. Hon. Sir Ronald Crawford Munro Ferguson, P.C., G.C.M.G.	18 May, 1914 ...	Still in Office.

*The State Executive Government.*

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 members 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

SUCCESSION OF GOVERNORS—*continued.*

	From	To
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, Knt. ... ..	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, when resolutions, to be effective, must 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 deadlock.

*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 Enrolled to whom Ballot Papers were issued.		
	Year.	Males.	Females.	Males.		Females.	Males.	Females.
1901	329,093	...	220,573	...	33,674	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	578,309	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 Enrolled to whom Ballot Papers were issued.		
	Year.	Males.	Females.	Males.		Females.	Males.	Females.
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	8,092	68·11	54·71	61·34
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.

#### FEDERAL REFERENDA.

The Referendum (Constitution Alterations) Act, 1906-10, provides the necessary machinery for the submission to the electors of any proposed law for the alteration of the Constitution.

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 ... ..	159,275	318,412	159,137	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 ... ..	138,237	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	361,044	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 although it had a majority it failed to obtain the minimum number of 80,000 votes in the affirmative as required by the Enabling Act of 1897. 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.

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. In 1915, Bills were introduced into the Commonwealth Parliament embodying similar alterations, and arrangements are being made to submit the proposals to the electors on 11th December.

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.

FEDERAL MINISTRIES.

In the following statement is shown the various Ministries which have held office since the inauguration of the Commonwealth, also the date of occupancy and duration of each Ministry:—

Ministry.		From—	To—	Duration.
Number.	Name.			
1	Barton ... ..	1 Jan., 1901 ...	23 Sept., 1903...	months. days. 32 22
2	Deakin ... ..	23 Sept., 1903...	26 April, 1904...	7 3
3	Watson ... ..	26 April, 1904...	17 Aug., 1904 ...	3 21
4	Reid-McLean ... ..	17 Aug., 1904 ...	4 July, 1905 ...	10 18
5	Deakin ... ..	4 July, 1905 ...	12 Nov., 1908 ...	40 8
6	Fisher ... ..	12 Nov., 1908 ...	2 June, 1909 ...	6 20
7	Deakin ... ..	2 June, 1909 ...	29 April, 1910...	10 27
8	Fisher ... ..	29 April, 1910...	20 June, 1913 ...	37 21
9	Cook ... ..	20 June, 1913 ...	17 Sept., 1914...	14 27
10	Fisher ... ..	17 Sept., 1914...	27 Oct., 1915 ...	13 10
11	Hughes ... ..	27 Oct., 1915 ...	Still in Office.	

## 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, they 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 September, 1915, 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, except in the navy or army. 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 per-

sons 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 "gold-fields" 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 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, under the Liquor Amendment Act, 1905, hotels were closed during the hours of polling. 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 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 following table shows the voting at the elections held in New South Wales since plural voting was abolished; the votes recorded at the first ballots in districts in which second ballots were taken have been excluded:—

Year of Election.	Voters on Roll.	Electors per Member.	Total Members returned.	Members unopposed.	Contested Electorates.				
					Electors on Roll.	Votes recorded.	Per cent. age of Votes recorded.	Informal Votes.	Per cent. age 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 ... ..	316,184	2,769	125	13	270,861	195,359	72·13	1,534	·79
1904 { Males Females	{ 363,062 326,428	{ 7,661	90	2 {	{ 204,396 262,433	{ 226,057 174,538	{ 74·26 66·51	3,973	·59
1907 { Males Females	{ 392,845 353,055	{ 8,288	90	5 {	{ 370,715 336,680	{ 267,301 204,650	{ 72·10 60·78	13,543	2·87
1910 { Males Females	{ 458,626 409,069	{ 9,641	90	3 {	{ 444,242 400,139	{ 322,199 262,154	{ 72·53 65·52	10,393	1·78
1913 { Males Females	{ 553,633 484,363	{ 11,533	90	3 {	{ 534,379 468,437	{ 385,833 302,389	{ 72·20 64·55	14,439	2·10

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 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.	Yrs.	Mths.	Dys.	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.			.....	.....	.....	.....	

## STATE 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:—

Number.	Ministry.			From—	To—	Duration.	
	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	61	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 Holman Ministry, which is in office, consists of the following members:—

Premier, and Colonial Treasurer ... ..	Hon. W. A. HOLMAN.
Minister for Public Works ... ..	Hon. J. H. CANN.
Minister for Education, with charge of Local Government	Hon. A. GRIFFITH.
Attorney-General and Minister of Justice ... ..	Hon. D. R. HALL.
Colonial Secretary and Minister of Public Health ...	Hon. G. BLACK.
Secretary for Lands ... ..	Hon. W. G. ASHFORD.
Secretary for Mines and Minister for Labour & Industry	Hon. J. ESTELL.
Minister for Agriculture ... ..	Hon. W. C. GRAHAME.
Vice-President of the Executive Council and Representative of the Government in Legislative Council.	Hon. J. D. FITZGERALD, M.L.C.
Member of the Executive Council (without portfolio) ...	Hon. H. C. HOYLE.

Under the provisions of the Ministers' Salaries Act of 1908, the following annual payments from the Consolidated Revenue Fund are authorised:—

	£
The Premier in addition to his salary as Minister of the Crown...	500
The Attorney-General...	1,520
Six Ministers of the Crown, £1,370 each ... ..	8,220
The Vice-President of the Executive Council	800
Total... ..	£11,040

The Constitution Act of 1902 authorises the payment of £1,000 per annum as salary for the office of Solicitor-General.

COST OF PARLIAMENT—NEW SOUTH WALES.

The following statement shows the cost of Parliamentary Government in New South Wales during the five financial years 1911–1915.

Head of Expenditure.	1911.	1912.	1913.	1914.	1915.
<b>Governor—</b>	£	£	£	£	£
Governor's salary ... ..	5,000	5,000	5,000	5,000	5,000
Official Secretary ... ..	335	375	400	400	400
Private Secretary ... ..	350	350	350	350	350
Aide-de-Camp ... ..	350	350	350	350	350
Orderlies ... ..	728	730	803	883	912
Additions, Repairs and maintenance of					
Residences ... ..	8,183	1,144	1,180	1,266	4,845
Miscellaneous ... ..	1,231	1,114	1,263	2,285	1,053
<b>Total ... ..</b>	<b>£ 16,177</b>	<b>9,063</b>	<b>9,346</b>	<b>10,534</b>	<b>12,910</b>
<b>Executive Council—</b>					
Salaries of Officers ... ..	279	257	108	...	...
Other Expenses ... ..	25	25	...	...	...
<b>Total ... ..</b>	<b>£ 304</b>	<b>282</b>	<b>108</b>	<b>...</b>	<b>...</b>
<b>Ministry—</b>					
Salaries of Ministers ... ..	11,040	10,969	11,040	11,040	11,038
Other expenses ... ..	1,445	1,471	2,777	1,150	1,219
<b>Total ... ..</b>	<b>£ 12,485</b>	<b>12,440</b>	<b>13,817</b>	<b>12,190</b>	<b>12,257</b>
<b>Parliament—</b>					
<b>The Legislative Council—</b>					
Railway passes ... ..	5,810	5,472	5,855	5,883	5,903
<b>The Legislative Assembly—</b>					
Allowances to Members ... ..	22,423	24,205	38,887	37,354	40,541
Railway passes ... ..	10,860	11,006	9,699	10,382	10,723
Other expenses (Postage Stamps, &c.)	1,583	1,651	1,816	1,732	2,539
<b>Total ... ..</b>	<b>£ 34,866</b>	<b>36,862</b>	<b>50,402</b>	<b>49,468</b>	<b>53,803</b>
<b>Miscellaneous—</b>					
Fees and expenses of Parliamentary					
Standing Committee on Public Works	5,529	6,095	5,980	3,310	6,894
Salaries of Officers and Staff ... ..	18,903	21,263	21,882	22,652	22,073
Printing ... ..	7,687	7,398	10,823	12,008	9,646
Hansard (including Salaries) ... ..	5,668	5,958	7,378	6,775	6,540
Library ... ..	795	670	684	567	675
Refreshment Rooms ... ..	465	299	106	208	329
Water, power, light, and heat ... ..	504	766	682	561	740
Postage, stores, and stationery ... ..	887	1,174	696	1,002	340
Miscellaneous ... ..	564	694	2,005	2,461	2,756
<b>Total ... ..</b>	<b>£ 41,002</b>	<b>44,317</b>	<b>50,236</b>	<b>49,544</b>	<b>49,993</b>
<b>Total Parliament</b>	<b>£ 81,678</b>	<b>86,651</b>	<b>106,493</b>	<b>104,895</b>	<b>109,999</b>
<b>Electoral Office and Elections—</b>					
Salaries ... ..	788	918	995	813	875
Elections, Printing of Electoral Rolls, expenses of Electoral Registrars, and contingencies ... ..	35,291	23,939	34,867	53,040	24,112
<b>Total ... ..</b>	<b>£ 36,079</b>	<b>24,907</b>	<b>35,862</b>	<b>53,853</b>	<b>24,987</b>
<b>Royal Commissions and Select Committees—</b>					
Fees, &c. ... ..	2,627	6,721	3,492	4,578	4,231
Miscellaneous ... ..	1,165	4,197	2,170	840	1,275
<b>Total ... ..</b>	<b>£ 3,792</b>	<b>10,918</b>	<b>5,662</b>	<b>5,418</b>	<b>5,506</b>
<b>GRAND TOTAL ... ..</b>	<b>£ 150,515</b>	<b>144,261</b>	<b>171,288</b>	<b>186,890</b>	<b>165,359</b>

## ACTS OF PARLIAMENT, 1914-15.

The Public Acts passed by the Parliament of New South Wales during the Sessions of 1914-15 were as follow :—

## 1914.

- |  |  |
|--|--|
| 1. Parliamentary Committees Election Enabling.         | 18. Necessary Commodities Control.                         |
| 2. Supply.   | 19. National Relief Fund.                                  |
| 3. Stamp Duties (Amendment).                           | 20. Supply (No. 3).  |
| 4. Appropriation.                                      | 21. Supply (No. 4).  |
| 5. Loan.   | 22. Local Government (Shires Loans).                       |
| 6. Savings Banks Amalgamation.                         | 23. Loans (Interest).                                      |
| 7. Closer Settlement (Amendment).                      | 24. Local Government Validation and Enabling Act.          |
| 8. Income Tax (Amendment).                             | 25. Main Southern Railway Deviation (Picton to Mittagong). |
| 9. Income Tax Management (Amendment)                   | 26. Appropriation (No. 2).                                 |
| 10. Crown Lands and Irrigation (Amendment).            | 27. Wheat Acquisition.                                     |
| 11. State Debt and Sinking Fund (Amendment).           | 28. Newcastle Trades Hall Site Vesting.                    |
| 12. Sydney Harbour Trust (Wharfage and Harbour Rates). | 29. Newcastle Market Reserve.                              |
| 13. Daceyville Extension.                              | 30. Inscribed Stock (Renewals) Amendment.                  |
| 14. Boorabil Commission.                               | 31. Loan (No. 2).  |
| 15. Supply (No. 2).                                    | 32. Income Tax Management (Further Amendment)              |
| 16. Postponement of Debts.                             | 33. Constitution Amendment.                                |
| 17. Government Savings Banks Amendment.                | 34. Motor Tax Management.                                  |
|  | 35. Finance (Taxation).                                    |

## 1915.

- |  |   |
|--|---|
| 1. White Phosphorous Matches Prohibition.        | 13. Newcastle Pasturage Reserve (Railways) Resumption.                        |
| 2. Aborigines Protection Amending.               | 14. Loan (Railways).  |
| 3. Randwick Loan Act.                            | 15. Inflammable Liquid.   |
| 4. Notification of Births.                       | 16. Goulburn Sewerage.  |
| 5. Newcastle District Abattoir and Sale-yards.   | 17. Wardell-road to Darling Island Railway Deviation (Rozelle Bay to Pymont). |
| 6. Meat Supply for Imperial uses.                | 18. Supply.   |
| 7. Public Health (Amendment).                    | 19. Bowenfels to Diwana Railway Deviation.                                    |
| 8. River Murray Waters.                          | 20. Maitland Hospital (Isolation Wards) Enabling.                             |
| 9. Seat of Government Surrender.                 | 21. Illawarra Railway Deviation (Otford to Clifton).                          |
| 10. Weights and Measures.                        |   |
| 11. Motor Traffic Amendment.                     |   |
| 12. Crown Lands Purchases and Leases Validation. |   |

## 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.

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 9th June, 1915, shows that the total expenditure proposed by the Government was £68,460,776, and the expenditure recommended by the Committee was £39,803,089.

#### 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 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; protection of aborigines; Police Department; Department of Audit; Board of Fire Commissioners; Bureau of Statistics; Registry of Friendly Societies and Trade Unions; Parliamentary elections; State Fisheries; Departmental business connected with Lord Howe Island Board of Control; licensing of racecourses; licensing of places of public entertainment; and all matters not expressly assigned to any other Minister.

##### **The Minister for Public Health :—**

Department of Public Health; Master-in-Lunacy's Office; Inspector-General of the Insane; Bureau of microbiology; hospitals; licensing of private hospitals, &c.; registration of medical practitioners; appointment of Government medical officers and public vaccinators; Dental Board; institutions for the care and treatment of inebriates; State charities; charitable institutions aided from Consolidated Revenue; Meat Industry and Abattoir's Board; 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, imposts, 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, and Clerk of the Peace; Statute Law Consolidation; Court Reporting; the Public Service Board; the Necessary Commodities Control Commission; 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, Public Trustee, 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 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 Education :—**

Matters relating to education generally; technical education; kindergarten schools; State scholarships and bursaries; the University and affiliated colleges; Conservatorium of Music; Public Library; Observatory; Australian Museum; National Art Gallery; scholastic, literary, and scientific institutions and charitable schools aided from Consolidated Revenue; State Children Relief Board; shelters, industrial schools, and homes for children; medical inspection of schools and pupils; the administration of Acts relating to Local Government.

**Minister for Labour and Industry :—**

The administration of Acts relating to Industrial Arbitration, Workmen's Compensation, Factories and Shops, Apprenticeship, Gas, &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.
- Meat Industry and Abattoirs Board.

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

## ROYAL COMMISSIONS AND INQUIRIES.

The important Royal Commissions and Commissions of Inquiry which have been reported since the year 1856 have been shown in the previous issues of this Year Book.

The following Royal Commissions and Commissions of Inquiry were appointed from 1st January, 1914, to 30th September, 1915.

- 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 foot-wear industry.
- Inquiry into the prices of necessary commodities, &c., under the Necessary Commodities Control Act, 1914.
- Inquiry into contracts, agreements, &c., in regard to wheat acquisition.
- Inquiry into the general administration of the Murrumbidgee Irrigation Areas.
- Inquiry into certain allegations regarding the administration of the Dental Board of New South Wales and the conduct of its Registrar.

## 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, required for 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 505 officers, and 8,833 men in the ranks—practically the whole establishment consisting of militia or partially paid and of volunteer forces.

Upon the inauguration of the Commonwealth the duty of providing for the defence of Australia devolved upon the Federal Government.

#### *Defence Legislation.*

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 and subsequent years, particular provision in regard to naval defence being contained in the Naval Agreement Act, 1903–1912, and in the Naval Defence Act, 1910–1912. 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; 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, and penalties were fixed 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 Defence Acts of 1914 and 1915 provide for the organisation of permanent Aviation and Survey Corps, and various amendments of the principal Act were made in view of the special conditions arising from the state of war and the despatch of expeditionary forces for active service abroad. These amending Acts prescribe that trainees may not be imprisoned for offences

against universal training provisions, but instead may be committed to the custody of a prescribed authority. Offences against the Defence Act committed by cadets under 17 years of age must be tried, as far as practicable, in Children's Courts.

#### MILITARY ORGANISATION.

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 ...	2	6	14
6th—Tasmania ... ..	1	4	11
Commonwealth ... ..	23	92	216

Permanent military forces are organised for Administrative and Instructional Staffs, also for Expeditionary Forces in time of war. The Active Citizen Military Forces consist of militia and volunteers, trainees from 18 to 26 years of age, and officers on the unattached list; the Military Reserve Forces include officers on Reserve of Officers' list, members of Rifle Clubs who are allotted to the Military Reserve Forces, and all persons liable to serve in the Commonwealth in time of war who are not included in the active forces.

The military forces are not liable to serve beyond the Commonwealth unless they voluntarily agree to do so. The Citizen Forces may be called out for active service in time of war or for the protection of a State from domestic violence, but may not be utilised in connection with an industrial dispute.

#### LIABILITY FOR SERVICE IN TIME OF WAR.

The Defence Acts, 1903–1915, 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.

Although service in the military forces beyond Commonwealth territory is not obligatory, 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. Large expeditionary forces have been despatched from Australia to participate in the present European war.

UNIVERSAL TRAINING.

Universal training, as established by the Defence Act, came into operation 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.
Junior Cadets ... ..	years. 12-14	years. 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.

Members of Senior Cadets and Citizen Forces who have not attained a required standard of efficiency during each annual training must do an extra year's training for each year in which they failed to qualify as efficient.

Exemptions from training in time of peace include persons medically unfit, school-teachers who have qualified as instructors or officers of the Junior or Senior Cadets, members of Permanent Naval or Military Forces, or of Police or Prison Services and persons whose *bona fide* residence is not within 5 miles of the nearest training place. Persons not substantially of European origin are exempt except from duties of a non-combatant nature. Exemptions may be granted to persons whose attendance at the prescribed training would impose great hardship upon them, or their parents or dependents; also to persons employed in a factory established in pursuance of the Defence Act or in a civil capacity in connection with the Defence Forces.

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.

Junior Cadets are not required to register, but are examined medically. Particulars regarding the medical examinations during the year ended 30th June, 1915, are given in the subjoined table :—

Military District.	Boys medically examined.			Percentage of total examined.	
	Total.	Medically fit.	Unfit and temporarily unfit.	Medically fit.	Unfit and temporarily unfit
1st—Queensland ... ..	9,674	9,301	373	96·1	3·9
2nd—New South Wales ... ..	25,948	25,143	805	96·9	3·1
3rd—Victoria ... ..	21,464	21,145	319	98·5	1·5
4th—South Australia ... ..	5,868	5,738	130	97·8	2·2
5th—Western Australia ... ..	5,096	4,938	158	96·9	3·1
6th—Tasmania ... ..	2,242	2,178	64	97·0	3·0
Commonwealth ... ..	70,292	68,443	1,849	97·3	2·7

#### *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 registrations and medical examinations of Senior Cadets during the year ended 30th June, 1915; the registrations include those born in 1901, but not liable for training until 1st July, 1915 :—

Military District.	Total Registrations, Quota 1897-1901.	Medically examined.	Medically fit.		Exemptions granted.*	Number actually in training, as at 30th June, 1915.
			Number.	Percentage of medically examined.		
1st—Queensland ... ..	27,934	17,553	14,757	84·1	12,437	11,659
2nd—New South Wales ... ..	60,347	44,843	40,179	89·6	18,814	30,670
3rd—Victoria ... ..	52,147	38,689	34,050	88·0	16,427	26,859
4th—South Australia ... ..	16,266	12,151	10,710	88·1	5,097	8,472
5th—Western Australia ... ..	9,768	6,887	6,177	89·3	3,412	4,739
6th—Tasmania ... ..	7,187	4,487	3,818	85·1	3,162	2,904
Commonwealth ... ..	173,649	124,610	109,691	88·0	59,349	85,303

\* Chiefly on account of distance from training places.

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; 5,533 were transferred in New South Wales district in 1914. 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 ... ..	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.

The registrations for training in the Citizen Forces for the year ended 30th June, 1915, numbered 150,064, including the 1897 quota who were not liable for training till 1st July, 1915:—

Military District.	Total Registration in Training Areas.					Exemptions granted.	Number liable for training at 30 June, 1915.
	1894 Quota.	1895 Quota.	1896 Quota.	1897 Quota.	Total.		
1st—Queensland ....	5,645	6,326	6,321	6,475	24,767	11,495	6,797
2nd—New South Wales ...	12,588	13,467	13,363	13,620	53,038	19,519	19,899
3rd—Victoria ... ..	10,718	11,310	11,435	11,288	44,751	18,031	15,432
4th—South Australia ...	3,393	3,730	3,687	3,428	14,238	4,573	6,237
5th—Western Australia ...	1,529	1,733	1,773	1,800	6,835	2,740	2,295
6th—Tasmania ... ..	1,511	1,629	1,649	1,646	6,435	2,181	2,608
Commonwealth ... ..	35,384	38,195	38,228	38,257	150,064	58,539	53,268



*Rifle Clubs.*

Members of Rifle Clubs constitute the reserves for the militia. 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 30th June, 1915, there were 386 rifle clubs in New South Wales, with 30,460 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 forces in New South Wales on 31st December of each year since 1912; the figures represent the number attached to the Second Military District of the Commonwealth:—

Classification.	1912.	1913.	1914.	Classification.	1912.	1913.	1914.
<b>Permanent—</b>				<b>Volunteer—</b>			
Headquarters Staff ...	22	33	35	Automobile Corps ...	10	9	9
Artillery ... ..	355	371	401	Army Nursing Service	26	26	26
Engineers ... ..	71	89	81	<b>Total Volunteer ...</b>	<b>36</b>	<b>35</b>	<b>35</b>
Army Service Corps ..	41	49	58	<b>Total Permanent,</b>			
Army Medical Corps	11	11	16	Militia, and			
Ordnance Department	57	78	79	Volunteer ...	12,517	17,067	21,399
Instructional Staff ...	157	179	181				
Other ... ..	31	53	61				
<b>Total Permanent...</b>	<b>745</b>	<b>863</b>	<b>912</b>				
				Area Officers ... ..	72	72	72
				Area Medical Officers...	20	21	20
<b>Militia—</b>				Engineer and Railway			
Staff ... ..	2	...	...	Staff Corps ... ..	10	10	9
Light Horse ... ..	1,753	1,900	2,297	Chaplains ... ..	45	45	59
Artillery ... ..	1,049	1,170	1,460	Cadets, Senior (Uni-			
Engineers ... ..	507	732	965	versal Training) ..	32,519	31,780	33,304
Infantry ... ..	7,877	11,556	14,486	Rifle Clubs ... ..	12,894	14,060	16,451
Intelligence Corps ...	15	12	15	Unattached List of			
Army Service Corps...	181	276	450	Officers ... ..	72	66	69
Army Medical Corps	345	516	776	Reserve of Officers ...	246	221	208
Army Veterinary Corps ..	7	7	8	Medical Corps Reserve	...	57	73
<b>Total Militia ...</b>	<b>11,736</b>	<b>16,169</b>	<b>20,452</b>	<b>Grand Total ...</b>	<b>58,395</b>	<b>63,399</b>	<b>71,664</b>

Figures for each military district in Australia are given in the following return for the year ended 30th June, 1915 :—

Classification.	1st. Queens-land.	2nd. New South Wales.	3rd. Victoria.	4th. South Aus-tralia.	5th. Western Aus-tralia.	6th. Tas-mania.	Total.
Permanently employed ...	417	912	898	207	248	166	3,170*
Citizen Soldiers ...	7,460	20,452	18,646	6,136	2,576	2,589	57,859
Engineer and Railway Staff Corps ...	10	9	10	5	10	5	55†
Volunteers ...	38	35	44	17	6	13	153
Area Officers ...	31	72	65	23	14	11	216
Rifle Clubs ...	10,662	16,451	14,126	4,706	4,916	3,771	54,632
Senior Cadets ...	12,193	33,304	28,622	8,830	5,042	2,943	90,934
Unattached List of Officers ...	42	69	90	15	25	15	256
Reserve of Officers ...	158	208	205	75	57	29	732
Chaplains ...	38	59	56	22	13	11	199
Total ...	31,049	71,571	62,762	20,036	12,907	9,553	208,206‡

\* Includes 322 attached to the Central Administration, and cadets at Duntroon Military College.

† " 6 " " "

‡ " 328 " " "

#### INSPECTION OF MILITARY FORCES.

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.

#### Royal Military College.

The Royal Military College of Australia was opened at Duntroon in the Federal Capital Territory. Admission to the College is by open, competitive examination, the vacancies being allotted to the States on the basis of population; the age of admission is from 16 to 19 years except for members of the citizen forces who, in accordance with a provision of the Defence Act, may be admitted when over 19 years of age. No fees are charged for maintenance and instruction, and each cadet receives an allowance of 5s. 6d. per day while in residence. Ten cadets from New Zealand are admitted to the College in each year, an annual fee of £200 being paid for each cadet by the Dominion Government.

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 are continuous during the whole four years. The graduates of the College, after a short period of duty with the Imperial Forces in England or India, will be appointed to the permanent forces.

Owing to the war the usual course of instruction has been modified, a large number of cadets have joined the Australian Expeditionary Forces for active service, and special schools for the instruction of officers for these contingents are now held at the College. In May, 1915, there were 118 cadets in residence.

#### *Schools of Instruction.*

Militia officers and non-commissioned officers are instructed at schools and classes of instruction for the various arms held periodically in each military district. An aviation school has been established for the training of officers and mechanics.

#### 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. The "Derwent" was launched in 1914, and the "Torrens" and "Brisbane" in 1915. An oil supply steamer and a submarine depôt ship are being built in Great Britain. 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 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.

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.	Measured mile speed.	Armament.
	tons.	ft. in.	feet.	ft. in.		knots.	
Battle Cruiser—Australia	19,200	26 6	578	80 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	5,800	21 0	355	56 0	12,500	18	11 6-in. B.L., 9 12-pr., 2 18-in. Torpedo tubes.
Pioneer	2,300	13 0	305	37 0	7,000	18	8 4-in. B.L., 11 3-pr., 2 Torpedo tubes.
Torpedo-boat Destroyers—Parramatta	700	8 6	245	24 3	9,500	27	1 4-in. B.L., 3 12-pr. Q.F., 3 18-in. Torpedo tubes.
Yarra	"	"	"	"	"	"	" " "
Warrego	"	"	"	"	"	"	" " "
Derwent*	"	"	"	"	"	"	" " "
Torrens*	"	"	"	"	"	"	" " "
Swan*	"	"	"	"	"	"	" " "
Gunboats—Protector	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.
Gayundah	360	..	115	25 0	460	10·5	1 4-in. B.L., 2 12-pr. Q.F.
Torpedo Boats—Countess of Hopton	75	..	..	..	..	..	3 Torpedo tubes
Childers	47	..	..	..	..	..	2 Torpedo tubes
Fleet Auxiliaries—Kurumba*	3,000	..	..	..	..	..	Oil Supply Steamer.
Platypus*	3,100	..	..	..	..	..	Submarine Depot Ship.
Training Ship—Tingira	1,800	..	..	..	..	..	.....

\* In course of construction.

In addition to the vessels described in the statement above, the gunboat "Una" (late "Komet") captured in German New Guinea, has been attached to the Australian Navy.

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.

In July, 1915, an additional Federal Minister was appointed to administer the Department of the Navy.

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.

#### *Australian Naval Station.*

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.

#### *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 four years is shown below :—

Classification.	1912.	1913.	1914.	1915.
Permanent Forces—Administra- tive and Instructional ...	16	23	35	33
Naval Reserve (M) ...	280	177	167	163
Naval Reserve (O)—Adults ...	192	333	511	600
Cadets ...	911	896	940	1,683
Total ... ..	1,399	1,479	1,653	2,879

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 207 in 1913, and 121 in 1914.

The number of naval trainees in New South Wales at 30th June, 1912-15 is shown below :—

Year.	Sydney.		Newcastle.	
	Adults.	Cadets.	Adults.	Cadets.
1912	158	780	37	204
1913	322	693	77	241
1914	399	692	112	257
1915	460	795	140	298

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," which lasts about a year, the trainees are drafted into the permanent naval forces. The age of entry is 14½ to 16 years, and trainees engage to serve until they reach the age of 25 years. In July, 1915, the trainees numbered 270.

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 was opened in February, 1915. Boys who are the sons of natural born or naturalised British subjects, are eligible to compete at the entrance examination held in the year in which their thirteenth birthday occurs. In July, 1915, there were 90 cadet midshipmen under training. The steam yacht "Adele," 288 tons, has been purchased for service as a tender to the Naval College.

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 1903, 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, 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. An annual grant from the Government of New South Wales is devoted to maintaining the House during the absence of the Fleet from Sydney. It is now used by the petty officers and men of the Australian Navy.

#### SOLDIERS' CLUB.

The first Soldiers' Club to be established in the State was opened on 3rd June, 1915, at Sydney, in a large building centrally situated in the city.

The rooms are now freely used by soldiers of the Australian Expeditionary Forces, the building being maintained by public subscriptions.

#### EXPENDITURE BY COMMONWEALTH 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 of the Commonwealth Defence Department during the five years ended 30th June, 1915, is shown below :—

Branch or Department.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
	£	£	£	£	£
Central Administration .. .. .	45,182	64,304	74,480	86,250	88,212
Royal Military College .. .. .	11,665	23,186	39,713	49,056	48,039
Factories (Defence requisites) working expenses .. .. .	13,887	97,651	90,478	82,554	58,792
Naval Agreement .. .. .	200,000	200,000	166,600	.....	.....
Naval Forces .. .. .	86,140	248,731	624,150	967,583	2,279,547
Military Forces .. .. .	945,536	1,258,871	1,427,252	1,538,544	15,009,118
Interest, &c., on transferred properties .. .. .	.....	162,132	122,561	94,858	177,740
Additions, New Works, &c.—					
Fleet Unit .. .. .	1,135,000	1,108,171	585,342	753,537	581,084
Other .. .. .	475,228	845,028	1,148,276	1,047,890	950,200
Miscellaneous .. .. .	93,388	68,774	67,453	132,463	239,417
<b>Total.. .. .</b>	<b>3,006,026</b>	<b>4,081,548</b>	<b>4,346,305</b>	<b>4,752,735</b>	<b>19,432,149</b>

The Draft Estimates, including expenditure from Loans, for 1915-16, are as under :—

War Pensions .. .. .	£ 500,000	New Works :	£
Defence Department :		Defence, lands purchase .. .. .	98,069
Ordinary Services—		Under control of Defence .. .. .	1,353,610
Naval .. .. .	1,467,185	Construction of Fleet .. .. .	600,000
Military .. .. .	2,442,405		
Special War Expenditure—		<b>Total .. .. .</b>	<b>52,210,719</b>
Naval .. .. .	7,289,450		
Military .. .. .	33,460,000		

EUROPEAN WAR.

Upon the outbreak of war in August, 1914, the control of the Australian Navy was transferred to the British Admiralty, and an offer to despatch and maintain a fully equipped expeditionary force for service abroad was accepted by the Imperial Government, the local forces being immediately mobilised for home defence.

The first expedition, consisting of military and naval forces, sailed from Australia on 19th August, 1914, to seize and occupy German possessions in the Pacific; German New Guinea and neighbouring islands were occupied and have since been garrisoned by a special force organised for service in the tropics.

The Australian Imperial Expeditionary Forces were despatched to Egypt where the first convoy landed in December, 1914; in February of the following year the Australians assisted in the defence of Egypt against the Turkish invasion, and since April have been in action at the Dardanelles. Australian forces of Army Service and Medical Corps have been sent to England.

Immediately after the declaration of war the Australian war vessels were actively employed in the destruction of German Pacific wireless stations and in search for enemy warships known to be cruising in the Pacific. The search was suspended in order to assist in the convoy of the New Zealand Expedition to Samoa and to take part in the Australian expedition against German New Guinea: During the latter operations the submarine AE1 was lost whilst engaged on patrol work; the cause of the disaster being unknown. The German gunboat "Komet," and the Government yacht "Nusa," with other prizes were captured; the "Komet," having been renamed "Una," is now attached to the Australian navy.

Whilst the Australian war vessels were escorting the first Australian and New Zealand Imperial Expeditionary Forces to Egypt, news was received of the presence of the German cruiser "Emden" at Cocos Island; the H.M.A.S "Sydney" proceeded to Cocos Island, and after a short engagement, on the 9th November, 1914, completely disabled the "Emden," which was driven ashore on North Keeling Island and became a total wreck.

The submarine AE2 was lost in May, 1915, whilst operating in the Sea of Marmora.

The War Pensions Act of 1914 authorised the payment of pensions to soldiers enlisted for active service abroad or men employed on ships of war. Details will be supplied in a subsequent chapter of this volume, also information regarding the various funds subscribed for patriotic purposes in connection with the war.

From the commencement of the war to 6th August, 1915, twelve months after, the number of troops despatched from Australia for active service abroad was 76,566, consisting of the following units:—

Unit.	Number.	Unit.	Number.
Infantry ... ..	50,374	Flying Corps ... ..	45
Light Horse ... ..	10,976	Veterinary Sections ... ..	302
Divisional Ammunition Column	814	Bridging Train ... ..	320
Artillery ... ..	3,453	Army Pay Corps ... ..	77
Engineers ... ..	1,288		
Army Service Corps ... ..	3,576		
Army Medical Corps ... ..	5,241		
			76,566



These figures include the naval and military forces despatched for service in German New Guinea, consisting of 438 naval reserve and 1,084 infantry.

In addition to the foregoing, 40,000 troops were in training for service abroad at 6th August, 1915.

The enlistments in Australia from the commencement of the war to 10th November, 1915, numbered 171,449. Of this number 100,949 had actually been sent to the front, and 70,500 were in training. The casualties up to 20th November were:—Deaths, 5,736; wounded, 13,659; missing, 1,478; sick, 10,441; prisoners of war, 53; unknown cases, 270; total, 31,637. It is not possible to obtain accurate information showing the recruits from each State as the boundaries of the military districts do not coincide with those of the States, and the nearest recruiting centres for men from the more populous border districts of New South Wales are situated in adjoining States.

## 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 populations shown below are those for the Colony of New South Wales within the boundaries existing at the time of taking the census:—

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

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, at the census of 1911, numbered 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, 1914. 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.	Increase since previous census.
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
1914	967,033	894,995	1,862,028	213,282

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
1914	531	12.94	3.30	6.02

In 1861 the number of persons per square mile was 1.1, in 1891 it was 3.6, and in 1914 it was 6.0.

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, 1914, 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, 1914.	Proportion in each State.		Average Annual Rate of Increase since census, 1911.
			1911.	1914.	
			per cent.	per cent.	per cent.
New South Wales	1,646,734	1,860,016	36·96	37·66	3·30
Victoria	1,315,551	1,430,667	29·53	28·96	2·26
Queensland	605,813	676,707	13·60	13·70	3·00
South Australia	408,558	441,690	9·17	8·94	2·11
Western Australia	282,114	323,018	6·33	6·54	3·68
Tasmania	191,211	201,416	4·29	4·08	1·38
Northern Territory	3,310	3,973	·08	·08	4·99
Federal Capital Territory	1,714	1,959	·04	·04	3·63
Commonwealth	4,455,005	4,939,446	100·00	100·00	2·80

The average annual increase of the Commonwealth since the census of 1911 has been 2·80 per cent. The rate was highest in Western Australia, 3·68 per cent., and New South Wales ranks next with 3·30 per cent.; Tasmania showed the lowest rate, 1·38 per cent. The population of New South Wales in 1914, represented 37·66 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.

The estimated population of New South Wales, including aborigines, at the end of each of the last ten years, 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.	
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
1914	967,033	894,995	1,862,028	29,572	1·59	1,853,400

#### 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	247,865	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
1914	34,838	(—) 5,266	29,572	1·90	(—) ·29	1·61

(—) Denotes an excess of Emigration.

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 high rate was not maintained in 1913, but in 1914 the rate was much above the previous decennium.

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. The excess of emigrants in 1914 is due to the despatch of troops to the European war and to the shrinkage in the number of immigrants.

## MIGRATION.

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

Year.	Arrivals.			Departures.		
	By Sea.	By Land.	Total.	By Sea.	By Land.	Total.
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	93,521	150,027	243,548
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	125,184	234,914	360,098
1914	143,143	257,016	400,159	145,937	259,488	405,425

The large movement of population each year can hardly be described as immigration or emigration in the popular sense in which those terms are used, as it is due largely 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 ten years is shown in the following table:—

Year.	Australian States.	New Zealand.	United Kingdom.	India.	Other British Possessions.	Foreign Countries.	Total.
1905	1,724	2,346	(-) 837	.....	(-) 940	1,418	3,711
1906	2,673	531	852	.....	(-) 842	269	3,483
1907	2,610	387	3,288	.....	1,119	182	7,586
1908	(-) 1,465	(-) 1,529	3,070	.....	1,715	(-) 180	1,611
1909	(-) 4,547	5,228	8,291	(-) 98	(-) 1,368	1,224	8,730
1910	(-) 1,394	5,163	8,703	92	(-) 1,015	644	12,193
1911	5,710	8,415	15,380	191	(-) 844	2,890	31,742
1912	13,034	7,005	25,278	187	(-) 2,071	3,686	47,119
1913	2,094	2,517	17,316	186	(-) 2,390	1,369	21,092
1914	1,528	2,077	4,510	40	(-) 873	(-) 12,548	(-) 5,266

(-) Signifies Loss.

Since the revival of the assisted immigration policy in 1905 there has been a steadily increasing excess of arrivals from the United Kingdom, 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, while during 1914, in consequence of the war, the addition to the population from this source numbered only 4,510.

## 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.

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	3,039	2,017	5,056	1,406	1,530	2,936
1911	5,880	4,042	9,922	3,647	3,279	6,926
1912	8,361	6,595	14,956	5,205	5,477	10,682
1913	4,181	5,682	9,863	3,336	4,999	8,335
1914	2,463	3,161	5,624	1,574	2,440	4,014

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.			
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	3,112	8,066
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	789,036	1,646,734

The rise and fall of immigration, as noted previously, 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, 1914, 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, 1914.		
		Total.	Proportion in each Division.	
	sq. miles.		per cent.	per sq. mile.
Sydney ... ..	5	110,700	5·9	22,140·0
Suburbs ... ..	180	641,800	34·5	3,565·6
Metropolis ... ..	185	752,500	40·4	4,067·5
Country Municipalities... ..	2,853	457,150	24·6	160·2
*Shires ... ..	180,531	635,750	34·1	3·5
Western Division (Part unincorporated).	125,893	16,521	·9	·1
Lord Howe Island ... ..	5	107	·0	21·4
Total, New South Wales ... ..	309,467	1,862,028	100·0	6·0

\* The Ku-ring-gai Shire, area 36 sq. miles, population 13,280, 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 over 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, 1914, the estimated population was 1,959.

## POPULATION OF 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, 1914, 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., 1914.		Census, April, 1911.	Estimated 31st Dec., 1914.
City of Sydney* ...	119,771	110,700	Manly ...	10,465	13,590
Alexandria ...	10,123	11,460	Marrickville ...	30,653	36,830
Annandale ...	11,240	12,510	Mascot ...	5,836	8,230
Ashfield ...	20,431	26,870	Mosman ...	13,243	16,720
Balmain ...	32,038	33,710	Newtown ...	26,498	28,130
Bexley ...	6,517	9,830	North Sydney ...	34,646	40,680
Botany ...	4,409	5,610	Paddington ...	24,317	26,290
Burwood ...	9,380	12,040	Petersham ...	21,712	24,080
Canterbury ...	11,335	22,420	Randwick ...	19,463	30,560
Concord ...	4,076	5,960	Redfern ...	24,427	25,410
Darlington ...	3,816	3,920	Rockdale ...	14,095	19,120
Drummoyne ...	8,678	12,890	Ryde ...	5,281	8,350
Eastwood ...	968	1,310	St. Peter's ...	8,410	10,510
Enfield ...	3,444	5,260	Strathfield ...	4,046	5,330
Erskineville ...	7,299	7,800	Vaucluse ...	1,672	2,280
Glebe ...	21,943	23,080	Waterloo ...	10,072	11,280
Homebush ...	676	1,010	Waverley ...	19,831	26,510
Hunter's Hill ...	5,013	5,500	Willoughby ...	13,036	19,660
Hurstville ...	6,533	9,920	Woollahra ...	16,989	19,870
Kogarah ...	6,953	11,660	Ku-ring-gai Shire	9,458	13,290
Lane Cove ...	3,306	4,600	Total ...	636,353	752,500
Leichhardt ...	24,254	27,720			

\* Includes shipping and islands of Port Jackson.

The metropolitan population is unevenly distributed. At the Census of 1911 two-fifths of the inhabitants resided within an area of less than 7,000 acres, having a density from 30 to 90 per acre, while one-third occupied about 24,000 acres, with an average density of 10, and the remainder were scattered over about 88,000 acres, having a density of a little over 1 per acre.

The population of the metropolis at census periods and the estimated population on 31st December, 1914, are shown in the following table, where the increasing proportion which the metropolitan population bears to that of the whole State will be observed :—

Year.	Census Population.			Males per 100 Females.	Percentage of Population of Whole State.
	Males.	Females.	Total.		
1871	68,266	70,913	139,179	96·21	27·62
1881	114,936	112,230	227,166	102·41	30·23
1891	197,550	189,884	387,434	104·04	34·22
1901	241,700	246,232	487,932	98·16	35·90
1911	312,074	324,279	636,353	96·24	38·55
1914	.....	.....	*752,500	.....	40·41

\* Estimated, 31st December.

## 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., 1914.
	Males.	Females.	Total.	
Sydney ... ..	305,728	323,775	629,503	752,500
Melbourne ... ..	277,956	311,015	588,971	674,000
Brisbane ... ..	67,628	71,852	139,480	154,011
Adelaide ... ..	90,578	99,068	189,646	205,443
Perth ... ..	53,231	53,561	106,792	125,000
Hobart ... ..	18,487	21,450	39,937	39,914

The Census populations given above are exclusive of shipping, and for this reason the total population of Sydney 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	7,252,963	Moscow ... ..	1913	1,694,900
Liverpool ... ..	1914	767,992	Constantinople ...	1909	1,200,000
Manchester ... ..	1914	973,513	Budapest ... ..	1914	950,784
Birmingham ... ..	1914	868,430	Brussels ... ..	1914	780,852
Glasgow ... ..	1914	1,047,000	Amsterdam ... ..	1914	597,883
Edinburgh ... ..	1914	321,900	Madrid ... ..	1910	571,539
Dublin (Registration Area) ...	1914	406,000	Copenhagen ... ..	1911	559,398
Belfast ... ..	1914	399,000	Rome ... ..	1914	591,943
Montreal ... ..	1913	600,000	Tokio ... ..	1912	2,099,181
Calcutta ... ..	1911	1,222,313	Pekin ... ..	1912	692,500
Paris ... ..	1912	2,847,229	New York ... ..	1914	5,583,871
Berlin ... ..	1912	2,083,931	Chicago ... ..	1914	2,393,325
Vienna ... ..	1914	2,149,834	Buenos Aires ... ..	1913	1,487,642
Petrograd ... ..	1912	2,018,596	Rio de Janeiro ...	1914	983,259

## 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 1914 being 58,650. 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, 1914, the population of the principal country municipalities of New South Wales:—

Municipalities.	Census, 1911.	Estimated Dec., 1914.	Municipalities.	Census, 1911.	Estimated Dec., 1914.
Albury ... ..	6,309	6,750	Lithgow ... ..	8,196	8,900
Armidale ... ..	4,738	5,250	Liverpool ... ..	3,938	3,950
Ballina ... ..	2,061	2,800	Maitland ... ..	11,313	11,850
Bathurst ... ..	8,575	8,650	Moree ... ..	2,931	3,150
Bega ... ..	1,969	2,100	Mudgee ... ..	2,942	3,050
Broken Hill... ..	30,972	30,500	Murrumburrah ... ..	2,136	2,300
Casino ... ..	3,420	4,250	Murwillumbah ... ..	2,206	2,950
Cobar... ..	4,430	3,200	Narrabri ... ..	3,320	2,550
Cooma ... ..	2,063	2,100	Narrandera ... ..	2,374	2,800
Coonamble ... ..	2,262	2,500	Newcastle ... ..	55,380	58,650
Cootamundra ... ..	2,967	3,200	Orange ... ..	6,721	7,200
Corowa ... ..	2,063	2,250	Parkes ... ..	2,935	3,250
Cowra ... ..	3,271	3,800	Parramatta ... ..	12,465	12,600
Deniliquin ... ..	2,494	2,600	Penrith ... ..	3,682	3,800
Dubbo' ... ..	4,452	4,700	Quirindi ... ..	2,240	2,450
Forbes ... ..	4,436	5,200	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	7,000
Hay ... ..	2,461	2,600	Wellington ... ..	3,958	4,200
Inverell ... ..	4,549	5,050	Windsor ... ..	3,466	3,500
Junee... ..	2,531	2,700	Wollongong ... ..	4,660	5,200
Katoomba ... ..	4,923	6,100	Yass ... ..	2,136	2,200
Kempsey ... ..	2,862	3,200	Young ... ..	3,139	3,400
Lismore ... ..	7,381	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 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
1914*	51·93	48·07	108

\* 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 1914 it is estimated that there were 108 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.
<b>Australasia—</b>						
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	7,296	6,667	13,963
	546,311	543,432	1,089,743	699,032	692,150	1,391,182
<b>Europe—</b>						
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	433	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	66,906	240,535	136,553	87,612	224,165

Birthplace.	1901.			1911.		
	Males.	Females.	Total.	Males.	Females.	Total.
<b>Asia—</b>						
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
<b>Africa—</b>						
*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
<b>America—</b>						
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
<b>Polynesia—</b>						
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
<b>At Sea ... ..</b>	1,100	867	1,967	817	662	1,479
<b>Unspecified ... ..</b>	909	529	1,438	6,036	4,782	10,818
<b>Total ... ..</b>	<b>710,005</b>	<b>644,841</b>	<b>1,354,846</b>	<b>857,698</b>	<b>789,036</b>	<b>1,646,734</b>

\*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.
<b>British—</b>					
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
<b>Foreign—</b>					
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
<b>At Sea ... ..</b>	.18	.15	.10	.09	.09
<b>Total (excluding unspecified) ...</b>	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
<b>Total, Australian-born</b>	<b>1,378,719</b>	<b>1,108,945</b>	<b>446,695</b>	<b>351,766</b>	<b>209,050</b>	<b>172,497</b>	<b>3,667,672</b>

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	85·01
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 represented 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.

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. The number shown in the following table for the census of 1911 represents only those who were in the employ of whites, or were living 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 a later chapter of this Year Book.

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.
<b>States—</b>						
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
<b>Territories—</b>						
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 of Australia.

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. Consequent on the war many of the abovementioned privileges were suspended.

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 of the Commonwealth during the last ten years is shown below:—

State.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.
New South Wales	544	475	458	396	644	665	565	565	603	1,327
Victoria ... ..	213	301	214	243	507	329	491	295	434	1,202
Queensland ... ..	150	177	193	377	378	333	469	464	525	625
South Australia ...	34	45	27	45	600	299	282	343	355	552
Western Australia	166	150	134	152	221	187	248	243	342	520
Tasmania ... ..	11	39	16	28	81	36	22	35	30	43
Northern Territory	...	...	...	...	...	...	...	...	2	3
Total ... ..	1,118	1,187	1,042	1,241	2,431	1,849	2,077	1,945	2,291	4,272

Since 1849 certificates have been granted in New South Wales to 16,433 persons. Germans numbered 6,626; Swedes, 1,622; Russians, 1,045; Danes, 1,014; Italians, 919; and French, 747. 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.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.
Austria ... ..	40	18	13	15	22	16	21	19	38	66
Denmark ... ..	23	31	31	24	39	50	38	39	50	71
France ... ..	36	14	27	17	37	57	35	26	24	52
Germany ... ..	170	154	163	140	217	213	190	160	177	594
Greece ... ..	33	27	19	15	34	37	24	30	23	46
Italy ... ..	58	44	51	38	66	53	40	40	32	57
Norway ... ..	32	28	20	13	34	39	23	28	45	68
Russia ... ..	11	18	10	40	62	50	42	44	77	147
Sweden ... ..	58	69	54	56	55	81	60	87	67	113
Switzerland... ..	11	6	15	8	11	14	7	14	13	23
Other European ... ..	36	18	11	22	27	28	23	20	36	61
United States of America..	10	20	16	8	24	24	26	23	17	25
Syria ... ..	...	...	3	...	...	...	...	...	1	...
Other Countries ... ..	26	28	25	...	16	3	36	35	3	4
Total ... ..	544	475	458	396	644	665	565	565	603	1,327

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	293	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 212 District Registrars, of whom 76 are private persons, 12 Postmasters, 82 Clerks of Petty Sessions, 30 Crown Lands Agents and Clerks of Petty Sessions, 11 Police Officers, and 1 Departmental Officer.

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	26·93	2·43	63·52	31·75	4·73
1891	69·78	27·41	2·78	62·87	32·11	5·00
1901	68·49	28·67	2·75	62·43	32·00	5·46
1911	65·00	32·18	2·68	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 unmarried 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	5,864	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.								
Under 15	100.00	100.00	.00	.00	...	...	...	...
15-19	99.52	95.25	.48	4.73	.00	.02	...	.00
20-24	85.86	67.05	14.02	32.66	.11	.24	.01	.05
25-29	57.15	39.29	42.20	59.59	.57	.92	.08	.20
30-34	37.61	26.55	60.97	71.15	1.19	2.02	.23	.28
35-39	28.76	19.93	68.93	75.73	2.01	3.02	.30	.42
40-44	24.69	15.85	71.89	77.00	3.06	6.66	.36	.49
45-49	22.01	12.14	73.24	76.48	4.33	10.93	.42	.45
50-54	20.59	10.22	72.40	73.58	6.54	15.80	.47	.40
55-59	18.90	8.48	71.16	67.83	9.53	23.48	.41	.21
60-64	19.28	7.93	67.09	58.33	13.28	33.57	.35	.17
65-69	18.28	7.27	63.11	47.49	18.32	45.09	.29	.15
70-74	21.44	5.88	54.79	37.19	23.58	56.85	.19	.08
75-79	21.01	4.95	48.37	26.15	30.52	68.75	.10	.15
80-84	19.58	4.55	40.30	17.90	39.90	77.55	.22	...
85 and over	21.90	5.54	29.53	10.33	48.17	84.04	.40	.09
All Ages...	65.00	59.30	32.18	35.03	2.67	5.52	.15	.15

## MARRIAGES.

The number of marriages celebrated in New South Wales during 1914 was 17,353, corresponding to a rate of 9·36 per 1,000 of the population. The number was the highest recorded in any year, and the rate was exceeded in 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	1905-09	12,080	7·97
1875-79	4,987	7·88	1910	14,294	8·85
1880-84	6,738	8·39	1911	15,267	9·17
1885-89	7,679	7·67	1912	16,664	9·58
1890-94	7,954	6·80	1913	16,311	9·01
1895-99	8,700	6·74	1914	17,353	9·36
1900-04	10,240	7·37			

Until the year 1891 the increase in the number of marriages was remarkably steady, but in 1892 there was a 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 1914 disclosed an advance of over 17 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  $4\frac{1}{4}$  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	79·11	74·96
1886	65·08	82·81	1912	79·33	78·17
1891	57·85	71·28	1913	75·24	73·81
1896	54·65	58·13	1914	78·59	76·38

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. There was an improvement in both rates in 1914, and compared with the 1906 figures the male and female rates were 20 and 21 per cent. higher respectively.

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.	1909-1913.	1914.	Country.	1908-1912.	1913.
<i>New South Wales</i> ...	8·99	9·36	Roumania ...	9·3	9·2
South Australia ...	9·32	9·11	Hungary ...	8·9	...
Queensland ...	8·42	8·73	Prussia ...	7·9	...
New Zealand ...	8·48	8·51	France ...	7·9	7·5
Victoria ...	8·09	8·31	England and Wales ...	7·6	7·8
Western Australia ...	8·09	8·20	Italy ...	7·8	...
Tasmania ...	7·90	7·62	Netherlands ...	7·2	7·8
			Austria ...	7·5	...
			Denmark ...	7·3	7·2
			Spain ...	7·1	6·8
			Scotland... ..	6·6	7·1
			Norway ...	6·2	6·3
			Sweden ...	6·0	5·9
			Ireland ...	5·2	5·1

In 1914 in all the States except Tasmania and South Australia the rates showed an improvement as compared with the experience of the quinquennium 1909-13.

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 1914 was 162, equal to 4·67 per 1,000 persons married.

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 1914 show that during that year 16,964 marriages were performed by Ministers of Religion, and 389 by District Registrars, giving the proportions of 97·76 per cent. and 2·24 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 following table shows the number and proportion per cent. of marriages registered by the several denominations during 1914, in comparison with the preceding five years:—

Denomination.	1909-13.		1914.	
	Marriages.	Proportion per cent.	Marriages.	Proportion per cent.
Church of England ...	31,277	41·38	7,438	42·86
Roman Catholic ...	13,604	18·00	3,071	17·70
Presbyterian ...	10,459	13·84	2,337	13·47
Methodist ...	9,864	13·05	2,619	15·09
Congregational ...	4,350	5·75	564	3·25
Baptist ...	1,237	1·64	369	2·13
Hebrew ...	224	·30	46	·27
All other Sects ...	3,031	4·01	520	2·99
District Registrars ...	1,538	2·03	389	2·24
Total Marriages ...	75,584	100·00	17,353	100·00

#### CONDITION BEFORE MARRIAGE.

During the year 1914, of the males married, 16,366 were bachelors, 867 were widowers, and 120 were divorced. Of the females, 16,343 were spinsters, 854 were widows, and 156 were divorced. The proportion of males re-married was 5·69 per cent., and of females 5·82 per cent.

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

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
1914	9,431	569	9,418	582

AGE AT MARRIAGE.

Of the 17,353 couples married in 1914, the ages of 17,349 bridegrooms and of 17,348 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 9·9 per cent. the ages of the contracting parties were the same; while in the remaining 18·8 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 1914 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 ..	15	7	7	5	3	..	..	..	..	..	..	..	37
18 years.. ..	32	31	12	10	12	1	..	..	..	..	..	..	98
„ „ .. ..	49	46	38	22	45	3	..	1	..	..	..	..	204
20 „ „ .. ..	63	63	73	60	105	13	..	2	..	..	..	..	379
21—24 .. ..	309	439	561	504	2,568	691	87	18	5	1	..	..	5,268
25—29 .. ..	138	163	292	389	2,600	2,102	422	93	16	7	3	..	6,234
30—34 .. ..	31	47	62	90	713	949	543	179	34	9	..	..	2,657
35—39 .. ..	10	14	38	18	209	339	283	186	54	23	5	..	1,164
40—44 .. ..	3	3	5	4	54	104	143	110	66	19	9	..	520
45—49 .. ..	2	3	1	..	24	51	59	74	60	53	25	1	353
50 and over ..	1	1	..	1	15	26	48	52	72	76	142	..	434
Not stated ..	..	..	..	..	1	..	..	..	..	..	..	4	5
Total .. ..	653	817	1,074	1,193	6,353	4,279	1,585	715	307	188	184	5	17,353

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 now 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.
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
1909	29·11	25·30	1914	28·77	25·53

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 1914 were, of bachelors 27·94 years, and of spinsters 24·95 years, being about ten months lower in the case of bridegrooms and seven months lower in the case of brides.

## MARRIAGE OF MINORS.

The number of persons under 21 years of age married during 1914 was 4,455, or 12·8 per cent. of the total. The proportion of bridegrooms who were minors was 4·1 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	4·30	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
1914	718	3,737	4·14	21·53

Compared with the early years it will be seen from this table that the proportion of minors marrying has increased among bridegrooms, and decreased amongst brides.

## BIRTHS.

The number of births during 1914 was 53,615, equal to a rate of 28·93 per 1,000 of the total population. The actual number of births was the highest ever recorded in this State, and the rate was 2·3 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 a later chapter 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	1905-09	41,788	27·56
1875-79	24,388	38·51	1910	45,533	28·17
1880-84	30,417	37·89	1911	47,677	28·64
1885-89	36,877	36·85	1912	51,903	29·99
1890-94	39,550	33·90	1913	52,134	28·81
1895-99	37,042	28·68	1914	53,615	28·93
1900-04	37,498	26·99			

## BIRTH RATES.

The rates shown in the previous table 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.	1909-13.	1914.	Country.	1908-12.	1913.
Tasmania ... ..	29·44	30·33	Roumania ... ..	41·3	42·1
Queensland ... ..	28·49	29·46	Hungary ... ..	36·6	...
South Australia ... ..	27·46	29·33	Spain ... ..	32·9	30·4
<i>New South Wales</i> ... ..	<i>28·68</i>	<i>28·93</i>	Italy ... ..	32·7	...
Western Australia ... ..	28·69	28·40	Austria ... ..	32·4	...
New Zealand ... ..	26·40	25·99	Prussia ... ..	30·6	...
Victoria ... ..	25·24	25·45	Netherlands ... ..	28·7	28·1
			Denmark ... ..	27·5	25·6
			Scotland ... ..	26·6	25·5
			Norway ... ..	26·1	25·2
			England and Wales ... ..	25·2	23·9
			Sweden ... ..	24·7	23·1
			Ireland ... ..	23·2	22·8
			France ... ..	19·4	19·0

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 the rates in 1914 generally 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 1914, in the former, 20,821 births, and in the latter 32,794, corresponding to rates of 28·09 and 29·49 per 1,000 of population respectively. From 1893 to 1914 the country showed a higher rate than the metropolis, with the exception of year 1913, when 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	28·05	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	27·88	29·11	28·64
1912	20,140	31,853	51,993	29·80	29·97	29·90
1913	20,535	31,599	52,134	28·92	28·74	28·81
1914	20,821	32,794	53,615	28·09	29·49	28·93

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 53,615 children born during the year (exclusive of children still-born), 27,460 were males and 26,155 were females, the proportion being 105 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	1905-09	21,406	20,382	41,788
1875-79	12,477	11,911	24,388	1910	23,443	22,090	45,533
1880-84	15,567	14,850	30,417	1911	24,508	23,169	47,677
1885-89	18,898	17,979	36,877	1912	26,628	25,365	51,993
1890-94	20,324	19,226	39,550	1913	26,600	25,534	52,134
1895-99	18,979	18,063	37,042	1914	27,460	26,155	53,615
1900-04	19,134	18,364	37,498				

The excess of males over females born during the past fifty-five 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-five years:—

Year.	Legitimate Births.	Illegitimate Births.	All Births.	Year.	Legitimate Births.	Illegitimate Births.	All Births.
1870-74	104·3	101·0	104·1	1905-09	105·0	104·9	105·0
1875-79	104·6	108·8	104·8	1910	106·3	103·8	106·1
1880-84	104·9	103·9	104·8	1911	106·0	102·1	105·8
1885-89	105·4	98·8	105·1	1912	104·8	107·6	105·0
1890-94	105·7	105·4	105·7	1913	104·3	101·6	104·2
1895-99	105·0	105·4	105·1	1914	104·7	110·4	105·0
1900-04	104·3	102·8	104·2				

## ILLEGITIMACY.

The number of illegitimate births in 1914 was 2,778, equal to 5·18 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
1910	1,530	1,370	2,900	9·44	4·67	6·37
1911	1,680	1,269	2,949	9·42	4·25	6·18
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
1914	1,448	1,330	2,778	6·95	4·06	5·18

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	13·57	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, such decrease amounting 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 3,233<sup>a</sup> 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	247	1914	393
1908	238		

## PLURAL BIRTHS.

During the year 1914 there were 574 cases of plural births, consisting of 1,147 children, four still-births not being included; there were 571 cases of twins, comprising 569 of each sex, and three cases of triplets—three males and six females. Of these 574 cases of plural births, 541 were legitimate and 33 illegitimate. The number of children born at plural births formed 2·14 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-two years 1893–1914, excluding those still-born, and distinguishing legitimate and illegitimate :—

Cases of—	Legitimate.	Illegitimate.	Total.
Twins ... ..	8,881	452	9,333
Triplets ... ..	80	6	86
Quadruplets ...	4	...	4

The total number of confinements recorded during the twenty-two years was 902,398. It follows, therefore, that the rates per million confinements were 10,342 cases of twins, 95 of triplets, and 4 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 132 confinements recorded, whereas under 20 years the proportion is 1 to 202.

The results of the observations for the twenty-two years 1893–1914 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 ... ..	34,125	169	4·95
20–24 ... ..	195,974	1,299	6·63
25–29 ... ..	242,547	2,433	10·03
30–34 ... ..	188,305	2,502	13·27
35–39 ... ..	127,392	1,916	15·04
40–44 ... ..	49,761	606	12·18
45 and over ... ..	5,290	40	7·56

It is a remarkable fact that of 8,965 plural births, 5,064 occurred to mothers whose ages were 30 years or upwards; this gives a proportion of 56 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 31,838 in 1914, and was 7.5 per cent. above 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.	
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	17,689	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
1914	13,218	21,620	16,433	18,405	34,838	1.90

The natural increase is now 1.90 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 1914, the number of females added to the community by excess of births exceeded the males by 16,232, 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 1914 and in the other countries for 1913 :—

Country.	Birth-rate.	Death-rate.	Natural Increase.	Country.	Birth-rate.	Death-rate.	Natural Increase.
Tasmania ...	30.3	9.7	20.6	Finland (1912) ...	29.1	16.3	12.8
Queensland ...	29.5	10.0	19.5	Japan ...	33.9	21.1	12.8
Western Australia ...	28.4	9.4	19.0	Norway ...	25.2	13.2	12.0
<i>New South Wales</i> ...	28.9	10.1	18.8	Austria (1912) ...	31.3	20.5	10.8
South Australia ...	29.3	10.7	18.6	Ceylon ...	38.6	28.4	10.2
Servia (1912) ...	38.0	21.1	16.9	England and Wales.	23.9	13.7	10.2
New Zealand ...	26.0	9.3	16.7	Scotland ...	25.5	15.5	10.0
Roumania ...	42.1	25.9	16.2	Switzerland (1912)...	24.1	14.1	10.0
Netherlands ...	28.1	12.3	15.8	Sweden ...	23.1	13.6	9.5
Italy (1912) ...	32.4	18.2	14.2	Chile (1912) ...	38.7	29.7	9.0
Victoria ...	25.5	11.6	13.9	Spain ...	30.4	22.1	8.3
Prussia (1912) ...	28.9	15.5	13.4	Belgium (1912) ...	22.9	16.4	6.5
Denmark ...	25.6	12.5	13.1	Ireland ...	22.8	17.1	5.7
Hungary (1912) ...	36.3	23.3	13.0	France ...	19.0	17.7	1.3

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.

AGES OF MOTHERS.

During the twenty-two years 1893-1914 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 11,556 mothers under 18 years of age, 5,767 were unmarried. The total number of married women who gave birth to children during the twenty-two years was 843,454, the ages of whom were as follow. 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	49,701	589
14	25	...	26	50,357	597
15	183	2	27	48,805	579
16	1,237	15	28	48,757	578
17	4,342	51	29	44,927	533
18	10,156	120	30-34	188,305	2,233
19	18,180	216	35-39	127,392	1,510
20	24,287	288	40-44	49,761	590
21	34,212	406	45 and over	5,290	63
22	41,284	489	Not stated	60	1
23	46,911	556			
24	49,280	584	Total	843,454	10,060

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-two years 1893-1914. 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	1,926	327
12	2	...	28	1,776	301
13	31	5	29	1,497	254
14	154	26	30	1,442	245
15	626	106	31	872	148
16	1,693	287	32	1,048	178
17	3,260	553	33	883	150
18	4,813	817	34	861	146
19	5,706	968	35	809	137
20	5,535	939	36	734	125
21	5,355	908	37	561	95
22	4,549	772	38	616	104
23	4,006	680	39	517	88
24	3,288	558	40 and over.	1,163	197
25	2,751	467	Not stated	155	26
26	2,314	393	Total	58,944	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 1914 numbered 18,777, equal to a rate of 10·13 per 1,000 of the population, which is the lowest since 1910. This total includes 11,027 males and 7,750 females, so that amongst males the rate was 11·36, and amongst females 8·78 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	4,301	2,948	7,339	15·58	12·32	13·93
1875-79	6,199	4,360	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	14·49
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
1914	11,027	7,750	18,777	11·36	8·78	10·13

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.

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.	1909-1913.	1914.	Country.	1908-1912.	1913.
Victoria ... ..	11·50	11·59	Roumania ... ..	25·5	25·9
South Australia ... ..	10·16	10·71	Spain ... ..	23·2	22·1
New South Wales ... ..	10·45	10·13	France ... ..	18·6	17·7
Queensland ... ..	10·30	9·97	Ireland ... ..	16·9	17·1
Tasmania ... ..	10·49	9·67	Scotland ... ..	15·6	15·5
Western Australia ... ..	10·20	9·39	England and Wales ... ..	14·2	13·7
New Zealand ... ..	9·33	9·31	Sweden ... ..	14·1	13·6
			Denmark ... ..	13·4	12·5
			Netherlands ... ..	13·8	12·3
			Hungary ... ..	24·7	...
			Austria ... ..	21·8	...
			Prussia ... ..	16·7	...
			Norway ... ..	13·6	13·2

The comparatively favourable conditions of Australasia will be manifest from an inspection of these rates. New South Wales occupies the third place on the list for 1914, with a rate of 10·13, compared with 10·91 for the year 1913.

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, conduces 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 7,603 deaths in the metropolis during 1914, and 11,174 in the country, corresponding to the rates of 10·26 and 10·05 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.	Ratio per 1,000 living.	Average Number of Deaths.	Ratio per 1,000 living.	Average Number of Deaths.	Ratio per 1,000 living.
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
1914	7,603	10·26	11,174	10·05	18,777	10·13

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 10·3 per 1,000 in 1914, or 47 per cent. The rate in country districts declined from 12·2 to 10·1, or 17 per cent., and for the whole State from 14·5 to 10·1, or 30 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 1914 was 3,738, equal to a rate of 69·7 per 1,000 births. The rate is, with the exception of the year 1911, the lowest on record, and is 8 per cent. below the average of the last ten years, which included several years of exceptionally low infantile mortality. Male infants died at the rate of 75·5 per 1,000 births, and female infants at the rate of 63·7 per 1,000 births. To the total the metropolis contributed 1,452 deaths, or 69·7 per 1,000 births, and the country 2,286, or 69·7 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
1914	1,452	69·7	2,286	69·7	3,738	69·7

The improvement in the infantile mortality rate in the metropolis is partly due to the preventive measures instituted with the object of reducing the death rate from preventable diseases. These measures were initiated by the Sydney Municipal Council in 1903, when instructional pamphlets were circulated for the guidance of mothers regarding the care and feeding of young children. In the following year trained women inspectors were appointed to visit mothers in the populous parts of the city and surrounding suburbs. Further efforts to reduce the infantile mortality led to the establishment of Baby Clinics in Sydney and Newcastle in 1914, and the Notification of Births Act, 1915, will enable the health authorities to obtain an early notification of the birth of a child and to bring infants under their supervision immediately after birth, when preventive measures are likely to be most effective. Details regarding the Baby Clinics will be found in a later chapter.

Of the total number of deaths of infants under 1 year of age, one-third die within a week of birth; by the end of the first month the proportion is nearly one-half; 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 1914, 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 1914, illegitimate children are distinguished from legitimate for the State as a whole.

Age.	Metropolis.		Country.		New South Wales.			
	1909-13.	1914.	1909-13.	1914.	1909-13.	1914.		
						Legiti- mate.	Illegiti- mate.	Total
Under 1 week ... ..	23·1	22·9	21·1	23·9	21·8	22·5	41 0	23·5
1 week ... ..	4·5	4·1	3·9	4·2	4·2	4·0	7·6	4·2
2 weeks ... ..	2·7	2·3	2·9	2·7	2·8	2·4	5·0	2·5
3 „ ... ..	2·4	2·2	2·4	2·0	2·4	2·0	4·3	2·1
<b>Total under 1 month</b>	<b>32·7</b>	<b>31·5</b>	<b>30·3</b>	<b>32·8</b>	<b>31·2</b>	<b>30·9</b>	<b>57·9</b>	<b>32·3</b>
1 month ... ..	7·1	6·0	6·6	5·7	6·8	5·3	15·5	5·8
2 months ... ..	5·4	4·4	4·9	4·3	5·1	3·8	14 0	4·3
3 „ ... ..	5·7	5·1	4·8	3·6	5·2	3·6	15·5	4·2
4 „ ... ..	4·9	3·5	4·6	4·3	4·7	3·6	12·6	4·0
5 „ ... ..	4·1	3·5	3·7	3·3	3·8	3·2	7·2	3·4
6 „ ... ..	3·6	3·0	3·6	3·0	3·6	2·8	6·8	3·0
7 „ ... ..	3·5	3·1	3·0	2·8	3·2	2·7	7·2	2·9
8 „ ... ..	2·8	2·7	2·7	2·8	2·7	2·5	6·5	2·7
9 „ ... ..	2·8	2·5	2·7	2·6	2·7	2·5	3·6	2·6
10 „ ... ..	2·5	2·3	2·1	2·3	2·3	2·3	2·2	2·3
11 „ ... ..	2·5	2·1	2·2	2·2	2·3	2·0	3·6	2·2
<b>Total under 1 year ...</b>	<b>77·6</b>	<b>69·7</b>	<b>71·2</b>	<b>69·7</b>	<b>73·6</b>	<b>65·2</b>	<b>152·6</b>	<b>69·7</b>

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 1914 the rate per 1,000 births was 69·7 in the case of both the metropolitan and country districts, while during the previous five years the metropolitan rate was more than 10 per cent. higher than the country.

The table shows the great waste of life among illegitimate children, the mortality under 1 year being 152·6 per 1,000, as compared with 65·2 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 82 per cent., there-  
after it increased until in the second month the excess was 330 per cent., after this it dropped irregularly until in the tenth month the rates were almost 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.	1912.	1913.	1914.	Country.	1911.	1912.	1913.
Victoria ... ..	74·5	70·5	78·3	Ceylon ... ..	218	215	189
South Australia ...	61·6	70·1	76·0	Hungary ... ..	207	186	...
<i>New South Wales</i> ...	71·3	78·3	69·7	Roumania ... ..	197	186	...
Tasmania ... ..	66·6	70·1	68·6	Austria ... ..	207	180	...
Western Australia ...	82·1	70·0	68·2	Prussia ... ..	188	146	...
Queensland ... ..	71·4	63·3	63·9	Ontario, Canada ...	117	110	117
New Zealand ... ..	51·2	59·2	51·4	Finland ... ..	114	109	...
				England and Wales...	130	95	108
				Ireland ... ..	94	86	97
				Denmark ... ..	106	93	94
				Netherlands ... ..	137	87	91
				France ... ..	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 7 per cent. in excess.

The following table shows 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
1914	1,892	22·47	3,043	20·92	4,935	21·49

The improvement in the metropolis has been greater than in the country; in the former the rate has decreased by 54 per cent. since 1890, and in the latter by 35 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. During the year 1914 there was a saving of the lives of 26 in every 1,000 children under 5 years of age in the metropolis and 11 in every 1,000 in the country, as compared with the mortality rate of twenty years ago.

The table appended gives, for 1914, 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—						
1909-1913	15,325	67·62	2,427	167·79	17,752	73·63
1914	3,314	65·19	424	152·63	3,738	69·72
Under 5 years—						
1909-1913	20,866	21·76	2,853	48·99	23,719	23·32
1914	4,454	20·44	481	40·97	4,935	21·49

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 1914 more than one-seventh 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 nine years 1906-14, the year 1906 being the first for which the details are available; it appears that out of 10,000 boys born, 1,057 will die before reaching 5 years of age, and out of 10,000 girls, 911 will die. Of the number who fail to survive five years, 246 boys and 195 girls die within the first week of birth, and 325 boys and 257 girls within the first month. At the end of the first year there will be 9,185 boys and 9,320 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 ...	9,326	9,448	9,385
1 ,, ...	9,754	9,805	9,779	8 ,, ...	9,291	9,418	9,353
2 weeks ...	9,707	9,769	9,737	9 ,, ...	9,261	9,392	9,325
3 ,, ...	9,675	9,743	9,708	10 ,, ...	9,233	9,364	9,297
				11 ,, ...	9,209	9,341	9,273
1 month ...	9,648	9,722	9,684				
2 months ...	9,573	9,660	9,615	1 year ...	9,185	9,320	9,251
3 ,, ...	9,513	9,613	9,561	2 years ...	9,037	9,181	9,108
4 ,, ...	9,460	9,563	9,510	3 ,, ...	8,981	9,125	9,051
5 ,, ...	9,410	9,517	9,462	4 ,, ...	8,943	9,089	9,014
6 ,, ...	9,367	9,480	9,422				

## DEATHS IN QUINQUENNIAL AGE GROUPS.

In the year 1914 the deaths of persons in quinquennial age groups were as follow :—

Age Group.	Males.	Females.	Total.	Age Group.	Males.	Females.	Total.
Years. 0—4	2,710	2,225	4,935	Years. 65—69	767	461	1,228
5—9	206	160	366	70—74	822	482	1,304
10—14	116	86	202	75—79	757	538	1,295
15—19	202	138	340	80—84	528	414	942
20—24	300	257	557	85—89	281	213	494
25—29	369	356	725	90—94	69	74	143
30—34	377	305	682	95—99	10	16	26
35—39	418	329	747	100—110	1	4	5
40—44	452	305	757	Age not stated } (adults) }	9	2	11
45—49	567	321	888				
50—54	643	325	968	All ages ...	11,027	7,750	18,777
55—59	696	364	1,060				
60—64	727	375	1,102				

## DEATHS OF CENTENARIANS.

The following return shows, for the years 1905—14, the number of deaths in New South Wales of persons aged 100 years and upwards :—

Year.	Males.	Females.	Total.	Year.	Males.	Females.	Total.
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
1909	2	6	8	1914	1	4	5

## 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—19 ...	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. 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	66	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	105	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 1914 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 ...	10.11	10.13	Sydney ...	10.14	10.26
Victoria ...	11.00	11.59	Melbourne ...	12.24	12.99
Queensland ...	9.81	9.97	Brisbane ...	12.30	12.67
South Australia ...	10.17	10.71	Adelaide ...	12.41	13.74
Western Australia ...	10.22	9.39	Perth ...	*	*
Tasmania ...	9.59	9.67	Hobart ...	14.64	14.58

\* Not available.

Sydney has the most favourable index of mortality of all the capitals, and New South Wales is third 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.





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, 1914.	Average Number, 1909-13.	Causes of Death.	Number, 1914.	Average Number, 1909-13.
Diarrhoea and Enteritis— under 2 years ... ..	1,308	1,357	Typhoid Fever ... ..	250	273
Diarrhoea and Enteritis over 2 years ... ..	339	346	Meningitis ... ..	185	181
Organic Diseases of the Heart ... ..	1,512	1,757	Intestinal Obstruction ...	178	160
Endocarditis ... ..	94	105	Congenital Malformations	178	150
Cancer ... ..	1,390	1,372	Diabetes ... ..	174	170
Senility ... ..	1,241	1,205	Convulsions of Infants ...	169	178
Tuberculosis—Lungs ...	1,178	1,241	Whooping Cough ... ..	155	179
Accident ... ..	1,119	1,104	Appendicitis ... ..	143	149
Pneumonia ... ..	1,084	1,084	Cirrhosis of the Liver ...	127	136
Premature Birth ... ..	901	866	Gastritis ... ..	120	124
Bright's Disease ... ..	866	845	Embolism and Thrombosis	104	110
Hæmorrhage, &c., of the Brain ... ..	742	803	Influenza ... ..	87	143
Bronchitis ... ..	530	582	Alcoholism ... ..	84	65
Congenital Debility ...	440	454	Acute Rheumatism ... ..	82	98
Puerperal Condition ...	296	315	Epilepsy ... ..	76	80
Suicide ... ..	268	241	Syphilis ... ..	45	63
Diphtheria and Croup ...	259	275	Other ... ..	3,053	3,153
			All Causes ... ..	18,777	19,364

It will be seen that the number of deaths during 1914 was 587, or 3 per cent. less than shown in the experience of the previous five years.

Of the most numerous causes an increase is shown in cancer and senility, with decreases in organic diseases of the heart and tuberculosis of the lungs.

As regards diseases ordinarily fatal to infants, there were decreases in convulsions, diarrhoea and enteritis, and increases in premature birth and congenital malformations.

#### SMALLPOX.

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 during 1913 was 1,070, of which one proved fatal. During 1914 the notifications numbered 628, and 3 deaths 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 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.

In 1914 and 1915 all members of the Expeditionary Forces from this State, as well as those from other States of the Commonwealth, were subjected to vaccination.

**TYPHOID FEVER.**

The number of deaths from typhoid fever during 1914 was 250, equivalent to 1·35 per 10,000 living, which is 18 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 since 1884.

The number of deaths and rates since 1884 are 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
1914	169	1·74	81	·92	250	1·35

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-one 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.

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	54	·84	130	1·27
1912	59	·87	177	1·67
1913	70	·99	166	1·51
1914	80	1·08	170	1·53

Most deaths occur in the summer and autumn. In 1914 there were 79 deaths in the summer months, December, January, February, and 94 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, and soldiers proceeding on active service during 1914 and 1915 were in all cases inoculated.

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 almost 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 1914 of 19 deaths, equal to a rate of .10 per 10,000 living. The rate for males was .05, and for females .16. 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
1914	5	.05	14	.16	19	.10

The rate in 1914 shows a decrease of over 80 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 19 deaths in the year, 1914, 17 were of children under 5, and 5 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 1914 the number of deaths from this disease was 21, equivalent to a rate of .11 per 10,000 of the population. The number of deaths in the metropolis was 15, and in the remainder of the State 6, the rate in the metropolis being 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	.26	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
1914	5	.05	16	.18	21	.11

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.

#### WHOOPIING-COUGH.

Whooping-cough is another of the diseases which chiefly affect children. During 1914 the deaths numbered 155, of which 67 were of boys and 88 of girls. The rate was .84 per 10,000 living, and was slightly lower than the average of the previous five years. 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
1914	67	.69	88	1.00	155	.84

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 1914, 107 were under 1 year of age and 151 under 5.

#### DIPHTHERIA AND CROUP.

Diphtheria, with which is included membranous croup, was the cause of 247 deaths in 1914, while croup, so defined, caused 12. The rate was 1.39 per 10,000 living, being 5 per cent. below the rate for the previous five years. In the metropolis the number of deaths was 86, and in the remainder of the State 173, corresponding to rates of 1.16 and 1.56 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	930	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	1.43
1912	129	1.42	137	1.65	266	1.53
1913	144	1.52	179	2.08	323	1.78
1914	121	1.24	138	1.57	259	1.39

Nearly 93 per cent. of the persons who died from diphtheria during 1914 were under 10, and about 64 per cent. under 5 years of age.

## INFLUENZA.

There were 87 deaths attributed to influenza during the year, equal to a rate of .47 per 10,000. The rate for males was .47, and for females .46 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 disease, 1,358, or 7.2 per cent. of the total deaths in New South Wales during 1914 are attributable, equivalent to 7.33 per 10,000 living.

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	.53
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 1,178 deaths during the year. The rate was 6.36 per 10,000 living; amongst males 7.75, and amongst females 4.83 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 1914 was about 2 per cent. below the average for the five years 1909-13.

The table below shows the deaths from tuberculosis of the lungs 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	6·68	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	6·59
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
1914	752	7·75	426	4·83	1,178	6·36

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 the operation of these Acts and their amendments. 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 a later chapter 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 43 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
1914	432	5·83	746	6·71

Within the City of Sydney, pulmonary tuberculosis is a notifiable disease. The observance of the health regulations, 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 432 in 1914.

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	10.68	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.

Of the 1,178 persons who died from tuberculosis of lungs or phthisis in 1914, 798 were born in Australia, and of the remainder, 98 had been resident in the Commonwealth less than five years, 56 from five to twenty years, and 197 for more than twenty years; in 29 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.	
	1908-12.	1913.		1908-12.	1913.
Ireland ... ..	1.78	1.68	Victoria ... ..	.86	.78
Norway ... ..	1.77	.....	South Australia ...	.79	.77
Switzerland ... ..	1.58	.....	Western Australia ...	.72	.68
Spain ... ..	1.27	1.20	New South Wales ...	.65	.67
Scotland ... ..	1.20	1.08	Tasmania ... ..	.63	.58
Netherlands ... ..	1.18	1.06	Queensland ... ..	.57	.55
England and Wales ...	1.07	1.00	New Zealand ... ..	.57	.56
Belgium ... ..	.99	.....			

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 77 deaths during 1914, which is equal to a rate of .42 per 10,000 living. Nearly all were children, 49 or 6.4 per cent., being under the age of 5 years.

*Abdominal Tuberculosis.*

Included under this heading are deaths from tabes mesenterica. There were 41 deaths in 1914, of these 19 or 46 per cent. were of children under 5 years of age.

*Other Tuberculous Diseases.*

Tuberculous diseases, other than those referred to above, caused 62 deaths, being at the rate of .33 per 10,000 living.

**CANCER.**

There were 1,390 deaths from cancer in 1914, equal to a rate of 7.50 per 10,000 living. The deaths during the year included 732 males and 658 females, the rates being 7.54 and 7.46 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
1914	732	7.54	658	7.46	1,390	7.50

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 1914 ranged from 4 months to 99 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	5.69	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.	
	1908-1912.	1913.		1908-1912.	1913.
Switzerland ... ..	1·26	...	New Zealand ... ..	·75	·80
Netherlands ... ..	1·06	1·09	<i>New South Wales</i> ...	·73	·74
Scotland ... ..	1·03	1·09	Belgium ... ..	·66	...
Norway ... ..	·93	...	Italy ... ..	·65	...
England and Wales ...	·98	1·05	Tasmania ... ..	·64	·71
Victoria ... ..	·83	·79	Queensland ... ..	·63	·65
Ireland ... ..	·81	·89	Western Australia ...	·59	·57
Austria ... ..	·80	...	Spain ... ..	·52	·55
Prussia ... ..	·78	...	Hungary ... ..	·46	...
South Australia ... ..	·76	·83	Jamaica ... ..	·18	·18

#### DIABETES.

The deaths attributed to diabetes in 1914 numbered 174, equal to a rate of ·94 per 10,000 living, which is above the average for the preceding five years. The rate for males was ·82 and for females 1·07 per 10,000 living of each sex, most of the deaths occurring after middle life, 125 being of persons over 45 years of age.

#### MENINGITIS.

Inflammation of the brain or its membranes caused 185 deaths, equal to a rate of 1·00 per 10,000 living. The disease is principally one of childhood. Of those who died during the year, 107, or 58 per cent., were under 5 years of age.

#### HÆMORRHAGE OF THE BRAIN.

To cerebral hæmorrhage and apoplexy were due 642 deaths, of which 345 were males and 297 females. The rate is 3·44 per 10,000 living, 3·55 for males and 3·37 for females.

The following table shows the number of deaths and rates in sexes of the diseases of cerebral hæmorrhage and apoplexy 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	1,043	2.79	710	2.39	1,653	2.60
1899-1903	1,050	2.92	788	2.42	1,838	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	266	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
1914	345	3.55	297	3.37	642	3.46

#### CONVULSIONS OF CHILDREN.

Convulsions of children (under 5 years) caused 169 deaths during 1914, or .91 per 10,000 living at all ages, which is 5 per cent. below the average for the previous five years. The rate for males was .95 per 10,000 living and for females .87.

Appended is a table showing the deaths and rates in sexes for quinquennial years since 1875:—

Year.	Males.		Females.		Total.	
	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.	Deaths.	Rate per 10,000.
1875	297	9.34	205	7.69	502	8.59
1880	388	9.75	297	8.98	685	9.40
1885	428	8.38	392	9.41	820	8.84
1890	328	5.47	274	5.45	602	5.46
1895	280	4.19	243	4.17	523	4.18
1900	203	2.84	168	2.63	371	2.74
1905	119	1.57	92	1.32	211	1.45
1910	103	1.23	71	.91	174	1.08
1911	79	.91	67	.84	146	.88
1912	95	1.04	68	.82	163	.94
1913	89	.94	60	.70	149	.82
1914	92	.95	77	.87	169	.91

## INSANITY.

Insanity is classed as a distinct disease of the nervous system; but of the total number of deaths of insane persons in 1914, only 150 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 1·09 in the case of males, and ·50 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 1914 there were 6,906 persons under official control and receiving treatment. This is equal to 3·73 insane persons per 1,000 of population.

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.
		per cent.		per cent.		per cent.
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	8·26
1912	335	9·01	166	6·87	501	8·17
1913	340	9·03	153	6·09	493	7·85
1914	301	7·72	168	6·44	469	7·21

## DISEASES OF THE HEART.

Diseases of the heart were the cause of 1,670 deaths, equivalent to a rate of 9·01 per 10,000 living. Of the total, 988 were males and 682 females, the rates being 10·18 and 7·73 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	9·28	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
1914	988	10·18	682	7·73	1,670	9·01

The ages of the persons who died during 1914 ranged up to 93 years; and, as might be expected, the great majority of deaths occurred after middle age had been passed, 1,362 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 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.												
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	28.72	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.

#### BRONCHITIS.

Bronchitis caused 530 deaths in 1914, equivalent to 2.86 per 10,000 living. The rate for males was 2.97 and for females 2.74 per 10,000; of the total deaths 208 were stated to be due to acute and 322 to chronic bronchitis. This disease chiefly affects the extremes of life. In 1914, of those who died, 125, or 24 per cent., were under 5, and 336, or 63 per cent., over 65 years of age.

#### PNEUMONIA.

The total deaths from pneumonia were 1,084, equal to a rate of 5.85 per 10,000 living. Included in the total are 356 deaths which were ascribed to broncho-pneumonia. Among males the rate was 6.59, and among females

5.03 per 10,000 living of each sex respectively. 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
1914	640	6.59	444	5.03	1,084	5.85

Most deaths from pneumonia occur in the cold weather. In 1914 there were 526 deaths, or 49 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 rate 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	1.62	.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	22.32	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

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 2,534, equivalent to 13.67 per 10,000 living, the rates for males and females being 14.37 and 12.91. Deaths in this system were ascribed mainly to diarrhoea and enteritis, which with appendicitis and cirrhosis of the liver are discussed hereunder. Gastritis caused 120 deaths, 45 being of children under 5 years of age; and 41 deaths were ascribed to gastric ulcer.

## DIARRHOEA AND ENTERITIS.

In 1914 there were ascribed to these two causes 1,647 deaths, or 8.89 per 10,000 living, the rates for males being 9.18 and females 8.56 respectively. 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
1914	891	9.18	756	8.56	1,647	8.89

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 1,308, or 79 per cent. of the total, and in the second 339.

Of the total deaths from diarrhoea and enteritis, 583, or 35 per cent., occurred in the three summer months, January, November, and December; and 654, or 40 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 143 deaths were ascribed in 1914, the rate being .77 per 10,000 living. This disease is much more fatal to males than to females. The rate for the males in 1914 being .83, and for the females .71 per 10,000 living.

## CIRRHOSIS OF THE LIVER.

In 1914 deaths from cirrhosis of the liver numbered 127, the rate being .69 per 10,000 living. This disease is more prevalent among males than females—the rate for the former in 1914 being .94, and for the latter .41 per 10,000 living in each sex.



## BRIGHT'S DISEASE.

Of the 1,177 deaths due to diseases of the urinary system, 866 were caused by chronic nephritis or Bright's disease, and 91 by acute nephritis. Taking these two diseases together, the rate was 5·16 per 10,000 living; for males 6·28, and for females 3·93. The changes in the rates of Bright's disease and of acute 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
1914	610	6·28	347	3·93	957	5·16

During the whole period covered by the table the rate, both for males and females, has been more than 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 1914 being: under 35, 12·0; and over 35, 88·0.

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

## DEATHS IN CHILD-BIRTH.

The number of deaths of women in child-birth in 1914 was 296, corresponding to a rate of 5·5 per 1,000 births. Of these, 100 were due to puerperal septicæmia, 43 to accidents of pregnancy, and 153 to other puerperal accidents. The deaths resulting from various diseases and casualties incident to child-birth are about 5·5 per 1,000 births, or 1 death to every 181 births. During the twenty-two years ended 1914, the deaths were as follow :—

Cause of Death.	1893-1896	1897-1900	1901-1904	1905-1908	1909-13.	1914.	1893-1914.	
							Total Deaths.	Proportion due to each cause.
Accidents of Pregnancy	132	197	176	280	170	34	989	per cent. 16·37
Puerperal Hæmorrhage	142	159	135	106	147	42	731	12·10
Puerperal Septicæmia ...	369	362	378	295	580	100	2,084	34·50
Albuminuria & Eclampsia	100	126	113	141	242	53	775	12·83
Other Casualties of Child-birth ... ..	272	279	256	301	287	67	1,462	24·00
Total ... ..	1,015	1,123	1,058	1,123	1,426	296	6,041	100·00

Owing to the changes in classification of causes of death, the figures for the last ten years are not quite on the same basis as those for previous years, but the differences are only slight.

During the twenty-two years, 1893-1914, of the 6,041 women who died from diseases of child-birth, 5,441 were married, and 600 single, and as there were during this period 843,454 legitimate and 58,944 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 155, and amongst single women 10·2 per 1,000, or 1 in 98.

## VIOLENCE.

Of 18,777 persons who died during the year, 1,507, or 8·03 per cent., met with violent deaths, the rate per 10,000 living being 8·13. The mortality rate from violence amongst males is nearly four times as great as for females, since of the deaths of this kind, 1,208, equal to 12·44 per 10,000 living, were of males, and 299, equal to 3·39 per 10,000, were of females.

## ACCIDENT.

The number of fatal accidents during the year was 1,119, viz., 903 of males and 216 of females, equal to rates of 9·30 and 2·45 per 10,000 living of each sex. The general rate was 6·04 per 10,000 living. Accidental deaths have always been numerous in the country. Of those registered during 1914, the deaths from accident in the metropolis numbered 351, and in the country districts, 768. 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
1914	903	9·30	216	2·45	1,119	6·04

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. 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 169 are due to vehicles and horses, 153 to drowning, 128 to burns or scalds, 121 to falls, 102 to railways and tramways, 45 to mines and quarries, and 39 to weather agencies. Among males the greatest number are due to vehicles and horses, and among females to burns or scalds.

#### SUICIDE.

The number of deaths due to this cause during 1914 was 268, equal to a rate of 1·45 per 10,000 living, which is about 12 per cent. above the average of the previous five years. The number of males was 210, equal to a rate of 2·16 per 10,000 living, and of females 58, equal to ·66 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
1914	210	2·16	58	·66	268	1·45

The means usually adopted by men for self-destruction are shooting, poisoning, cutting, 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, 33 were by poisoning, 28 by shooting, 16 by cutting, 13 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 self-destruction in the first and last quarter of the year. For the ten years ended 1914, the proportion of male suicides per 1,000 during the first quarter of the year was 264; second, 224; third, 253; and fourth, 259. 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, 262 per 1,000; second, 241; third, 260; and fourth, 237.

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 in decennial periods 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 ...	2.05	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	7.80	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, 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 twelve years 1903-14, 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.	Diarrhœa, Enteritis, and Dysentery.	Bright's Disease.
January ...	139	40	57	96	79	51	47	148	76
February ..	144	21	67	73	72	45	43	130	73
March ...	147	19	79	65	74	47	43	114	68
April ...	128	33	110	85	82	61	59	110	76
May ...	107	46	121	80	85	77	79	72	84
June ...	71	84	125	66	85	101	115	40	90
July ...	40	113	162	78	90	118	139	29	98
August ...	29	171	86	84	92	134	147	24	96
September.	28	183	78	84	91	124	126	25	91
October ...	25	141	57	92	89	95	84	46	82
November.	45	93	61	87	82	81	67	114	84
December..	97	56	57	110	79	66	51	148	82
	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 diarrhœa 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 ten years 1904-13. 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. In 1914 the rate 69·7 was 5 per cent. below that of the previous quinquennium.

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 1914 and in the five years 1909-13, 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.	
	1909-1913.	1914.	1909-1913.	1914.	1909-1913.	1914.	1909-1913.	1914.	1909-1913.	1914.	1909-1913.	1914.
Measles .. .. .	·5	·0	·4	·1	·5	·1	·6	·0	·3	·1	·4	·1
Scarlet Fever .. .. .	·0	·0	·0	·0	·0	·1	·1	·1	·1	·0	·1	·0
Whooping-cough .. .. .	2·2	1·5	2·1	2·3	2·2	2·0	·9	·5	·7	·8	·8	·7
Diphtheria and Croup .. .. .	·4	·4	·3	·4	·3	·4	·7	·8	·8	·7	·7	·7
Tuberculosis—Meninges.. .. .	·6	·4	·2	·2	·4	·3	·5	·3	·1	·2	·3	·2
"    Peritoneum .. .. .	·3	·2	·4	·1	·4	·2	·1	·1	·2	·1	·1	·1
"    Other Organs .. .. .	·1	·2	·2	·1	·1	·1	·1	·1	·1	·1	·1	·1
Syphilis .. .. .	1·3	·9	·4	·1	·7	·4	·4	·2	·1	·0	·2	·1
Meningitis .. .. .	1·0	·8	1·1	·8	1·1	·8	·5	·6	·5	·4	·5	·5
Convulsions .. .. .	2·1	1·9	3·0	3·1	2·7	2·6	·7	·6	·9	·8	·3	·7
Bronchitis .. .. .	2·2	1·1	2·8	2·2	2·5	1·8	·7	·4	·8	·7	·7	·6
Broncho-pneumonia .. .. .	3·2	3·2	3·0	2·3	3·0	2·6	1·3	1·3	1·0	·9	1·1	1·0
Pneumonia .. .. .	1·4	1·5	1·7	2·0	1·6	1·8	·3	·8	·7	·8	·7	·8
Diarrhœa and Enteritis .. .. .	24·5	21·5	19·0	18·8	21·0	19·8	7·7	6·6	5·5	5·6	6·3	6·0
Congenital Malformations .. .. .	2·6	3·5	2·5	2·7	2·5	3·8	·7	·9	·6	·6	·7	·7
Infantile Debility .. .. .	8·2	12·7	10·4	11·3	9·6	11·8	2·1	3·1	2·4	2·5	2·3	2·3
Premature Birth .. .. .	18·3	16·1	15·1	17·3	16·3	16·8	4·7	4·0	3·4	3·9	3·9	3·9
All other .. .. .	8·7	3·8	8·7	5·9	8·7	5·1	3·5	2·1	3·6	2·7	3·6	2·5
Total .. .. .	77·6	69·7	71·3	69·7	73·6	69·7	26·1	22·5	21·8	20·9	23·3	21·5

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 1914 were equal to 31·6 per 1,000 births, or 45 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 83 per cent. of this mortality was due in 1914 to deaths from congenital debility or defects.

Of the deaths of children under one year, diarrhœa and enteritis were responsible to the extent of 19·8 per 1,000 births, and whooping-cough caused 2·0 per 1,000 births. Respiratory diseases are rather fatal to children; bronchitis, in 1914, caused 1·8, broncho-pneumonia 2·6, and pneumonia 1·8 per 1,000 births. The rates for these respiratory diseases showed decreases in 1914. Convulsions had a death-rate of 2·6, tuberculosis diseases ·6, and meningitis (not tuberculous) ·8 per 1,000 births.

Turning to the second part of the table, dealing with children under 5, it will be found that the most fatal causes are diarrhœa and enteritis, congenital debility, pneumonia, and whooping cough.

*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 1914:—

Causes of Death.	Deaths under 1 per 1,000 Births.		
	Legitimate.	Illegitimate.	Total.
Measles ... ..	·1	·0	·1
Scarlet Fever ... ..	·1	·9	·1
Whooping-cough ... ..	2·0	1·8	2·0
Diphtheria and Croup ... ..	·4	·4	·4
Tuberculosis—Meninges ... ..	·3	·4	·3
"    Peritoneum ... ..	·2	·0	·2
"    Other Organs ... ..	·1	·0	·1
Syphilis ... ..	·3	2·5	·4
Meningitis ... ..	·8	·7	·8
Convulsions... ..	2·6	3·9	2·6
Bronchitis ... ..	1·7	2·2	1·8
Broncho-pneumonia ... ..	2·5	4·7	2·6
Pneumonia ... ..	1·7	2·9	1·8
Diarrhoea and Enteritis ... ..	17·6	61·2	19·8
Congenital Malformations ... ..	3·1	2·1	3·0
Infantile Debility ... ..	11·0	28·6	11·8
Premature Birth ... ..	16·0	31·7	16·8
All other ... ..	4·7	11·5	5·1
<b>Total... ..</b>	<b>65·2</b>	<b>152·6</b>	<b>69·7</b>

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 60·4 per 1,000 births as against the legitimate rate, 30·1. Diarrhoea and enteritis were 61·2 as compared with 17·6; respiratory diseases, bronchitis, broncho-pneumonia, and pneumonia, 9·8 as compared with 5·9; and syphilis 2·5 as compared with ·3.

## 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 no-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, lead, 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 was issued in 1915, in addition to detail maps of special areas.

The location of the principal minerals may be seen 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. The Australian Museum at Sydney includes amongst its exhibits also a fine collection of minerals and fossils, additions to the number of 1,153 being made during 1914. These Museums are open to the public free of charge.

### CHEMICAL LABORATORY.

During the year 1914 the numbered samples received totalled 4,565, and the determinations for various metals, &c., were 5,941. There were 298 analyses, in addition to fireclay tests, sizing tests, and porosity tests on sandstone.



Assays for gold and silver numbered 3,541; for tin, 675; tungstic acid, 398; and copper, 303.

The analyses included two meteorites—one found at Delegate, and one at Molong.

#### 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.

#### *Wardens' Courts.*

The Mining Act, 1906, provides for the establishment of Wardens' Courts, and at the end of the year 1914 there were 172 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. 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 or private 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.

Regulations prescribe the areas which may be held as prospecting areas or claims, and the contingent labour conditions; sites for dams or machinery; 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, constructing railways or tramways, 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 the Minister upon the report of the examining boards to managers, under-managers, engine-drivers, and electricians.

The following statement shows the number of certificates, &c., issued during the last three years. In 1914, consequent on the outbreak of war, the annual examinations of mine managers were postponed.

Class of Certificate.	1912.	1913.	1914.	Class of Certificate.	1912.	1913.	1914.
Coal Mines Regulation Act :—				Mines Inspection Act (continued)—			
First-class (Manager) ...	6	6	1	Permits to act as Managers, Section 54 ... ..	14	21	...
Second-class (Under-Manager) ... ..	6	7	3	Engine-drivers—			
Mine Electrician ...	6	10	5	Competency ... ..	204	269	262
Mines Inspection Act:—				Service ... ..	20	25	11
Manager—				Approved under			
Competency ... ..	10	12	...	Section 16 ... ..	67	71	44
Service ... ..	1	...	...	Licenses to test and examine boilers, Section 46 ... ..	5	10	4
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.

AREA UNDER MINING OCCUPATION.

The area under mining occupation in New South Wales at 31st December, 1914, was approximately 295,749 acres, made up as follows:—

	Acres.
Crown Lands under lease ... ..	231,526
“ “ “ application for lease ... ..	10,690
“ “ “ races, machine sites, &c. ... ..	215
Reserved Lands under authority to mine ... ..	2,390
Private Lands under application for lease ... ..	665
“ “ “ races, machine sites, &c. ... ..	79
“ “ “ authority to enter ... ..	14,506
“ “ “ agreement, Mining on Private Lands Act ... ..	13,326
“ “ “ agreement, Mining Laws Amendment Act ... ..	4
“ “ “ agreement, Mining Act, 1906 ... ..	7,938
“ “ “ permit to remove minerals ... ..	21,268
“ “ “ permit to remove minerals ... ..	2,874
Dredging Lands under application for lease ... ..	3,027
Miners' Right and Business License ... ..	8,296
Authority to Prospect ... ..	10
Under application for Authority to Prospect ... ..	203
<b>Total ... ..</b>	<b>295,749</b>

The aggregate number of applications received during 1914 by the Department of Mines for leases and authorities to prospect was 1,704, relating to 99,502 acres. Of these, 788 applications, covering 59,449 acres, referred to Crown lands, and 916 applications, relating to 40,053 acres, referred to private lands.

The applications approved during 1914 under the Mining Act, 1906, were as follows:—

Classification.	Applica- tions.	Aggregate Area.	Classification.	Appli- cations.	Aggregate Area.
<b>Crown &amp; Reserved Lands—</b>	<b>No.</b>	<b>Acres.</b>	<b>Private Lands—</b>	<b>No.</b>	<b>Acres.</b>
Gold Leases ... ..	254	2,170	Leases to Mine for gold and other minerals, excepting coal and shale ... ..	140	3,261
Mineral Leases (coal and shale) ... ..	41	19,154	Leases to Mine for coal and shale ... ..	16	4,650
Other ... ..	290	7,436	Leases for Dam sites, machinery areas, &c	11	69
Sites for Dams, &c., mining purposes ...	26	802			
Other than coal & shale	12	134			
	<b>623</b>	<b>29,696</b>		<b>167</b>	<b>7,980</b>
<b>Crown, Private, and Re- served Lands—</b>			<b>Total ... ..</b>	<b>841</b>	<b>39,553</b>
Dredging Leases ...	21	1,877			

#### PROSPECTING.

In 1878 the Legislature voted a sum of £7,000 to be expended as subsidies to encourage prospecting for gold. In subsequent years further small sums were voted and expended, till in 1887, by resolution of Parliament, an annual vote was established; and in 1889 the conditions of the vote were so amended as to embrace all minerals. The original annual vote was £20,000. For the year 1892, however, it was fixed at £40,000; but thereafter, until 1902, the maximum sum available was £25,000. For the year 1902-3 the amount voted was reduced to £20,000, and further decreased to £15,000 until the year 1914, when £10,000 was available. Since the year 1878 a total sum of £455,180 has been spent in the encouragement of prospecting.

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 pro-

cure 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 1914 the total amount expended from the prospecting vote was £16,394. Of 438 applications for aid dealt with during the year, 189 were considered as satisfactory.

The following statement summarises the prospecting votes and the amount of the grants made therefrom for the various minerals:—

Period.	Amounts granted to Prospectors for—						
	Gold.	Silver and Lead.	Copper.	Tin.	Coal.	Other Minerals.	Total.
	£	£	£	£	£	£	£
1887-1889	26,332	886	138	34	338	283	28,011
1890-1894	111,878	7,254	1,367	1,261	3,752	3,283	128,795
1895-1900	107,581	4,886	7,762	3,389	.....	4,021	127,639
1901-1905	80,636	5,108	10,136	7,828	40	1,430	105,178
1906-1910	38,822	7,986	20,765	3,146	310	871	71,900
1911	8,470	1,280	2,635	543	.....	451	13,379
1912	7,040	2,429	1,929	1,854	.....	382	13,634
1913	12,405	1,738	1,541	1,194	.. ..	1,006	17,884
1914	12,057	1,205	995	1,250	.....	614	16,121
1915	10,237	905	1,839	1,029	.....	2,384	16,394

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 1914 twenty-four bores were sunk, the total footage bored being 3,320, the greatest, 1,218 feet, being reached at National Park.

## 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 the last ten years.

Year ended 30th June.	Metalliferous.						Coal and Shale.	Total number of men employed.
	Gold.	Silver, Lead, and Zinc.	Copper.	Tin.	Other.	Total.		
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	2,456	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	1,809	19,369	18,044	37,413
1911	4,650	8,495	2,151	2,225	1,839	19,360	17,657	37,017
1912	3,898	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
1914	3,443	8,242	1,357	2,168	2,283	17,493	19,977	37,470

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 the last three years:—

Period.	Annual Average Number Employed.							Coal and Shale.	Total all Mines.
	Metalliferous.								
	Gold.	Silver, Lead, and Zinc.	Copper.	Tin.	Other.	Total Metallif- erous.			
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	3,898	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	
1914	3,443	8,242	1,357	2,168	2,283	17,493	19,977	37,470	

*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:—

Gold Miners.					Gold Miners.				
Year.	Alluvial.		Quartz.	Total Persons Employed.	Year.	Alluvial.		Quartz.	Total Persons Employed.
	European.	Chinese.				European.	Chinese.		
	1905	4,786				305	5,218		
1906	3,948	397	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
1909	2,176	208	3,201	5,585	1914	1,250	63	2,130	3,443

In tin-mining, while the employment of Europeans remains steady, the number of Chinese engaged has decreased, as the following statement of the persons employed during the last ten years will show:—

Year.	Tin Miners.			Year.	Tin Miners.		
	European.	Chinese.	Total.		European.	Chinese.	Total.
1905	2,212	672	2,884	1910	1,868	160	2,028
1906	3,157	638	3,795	1911	2,040	185	2,225
1907	2,739	434	3,173	1912	2,418	228	2,646
1908	2,076	380	2,456	1913	2,255	107	2,362
1909	1,688	349	2,037	1914	2,038	130	2,168

*Effect of the War on Employment.*

The disorganisation of the world's metal markets was reflected immediately in the employment at metal mines. At Broken Hill, the difficulty of converting concentrates into metals, and of finding a market for the metals when produced, displaced upwards of 4,000 men, and placed almost as many on half-time employment.

Following closely on the low prices prevailing for copper, the war was responsible for the closing of all the copper-mines of importance in this State. Similarly 90 per cent. of the tin miners were displaced.

In the gold mines, practically all the payable mines continued as usual, but those in a prospecting stage curtailed operations.

*Coal and Shale Mines.*

Coal and shale mines are subject to supervision under the Coal Mines Regulation Act, and during the year 1914 there were 107 coal mines and 4 shale mines, a total of 111 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.		
		Below ground.	Surface.		Below ground.	Surface.		Below ground.	Surface.		Below ground.	Surface.	Total.
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	2,563	724	24	988	266	120	13,923	4,161	18,084
1909	81	10,102	3,186	19	2,996	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	4,558	18,044
1911	88	8,800	3,533	22	2,995	894	25	1,068	308	135	12,872	4,785	17,657
1912	78	9,298	3,617	18	3,030	923	27	950	233	123	13,278	4,773	18,051
1913	76	9,936	3,523	17	3,299	957	22	971	230	115	14,256	4,710	18,966
1914	76	10,591	3,644	16	3,652	938	19	937	215	111	15,180	4,797	19,977



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.
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
1914	326	282	79	47	19	14	424	343	767

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 1914:—

District,	Collieries Recording.	Days Worked.	Average days worked per Colliery.
Northern ... ..	48	10,999	229
Southern ... ..	12	2,952	246
Western ... ..	9	2,169	241
Total ... ..	69	16,120	234

Compared with 1913, the figures show an increase of six days' work in each colliery.

#### WAGES.

Details regarding wages fixed by Boards under the Industrial Arbitration Act, 1912, 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.		1912.		1913.		1914.	
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 2½	to 4 2	2 2½	to 4 2
Whealers .. per day	7 0	„ 8 6	6 6	„ 9 0	7 0	„ 9 6	8 0	„ 9 6	8 0	„ 10 0	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	10 0	„ 12 0	10 0	„ 12 0
Labourers .. ..	6 6	„ 7 6	6 6	„ 7 6	7 0	„ 8 0	8 0	„ 8 0	8 0	„ 9 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		11 0		11 0		11 0		11 0	
Truckers .. ..	7 6		7 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		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 during the last five years:—

Minerals.	Value.				
	1910.	1911.	1912.	1913.	1914.
<i>Metals</i>	£	£	£	£	£
Gold—domestic ores ... ..	802,211	759,353	702,129	635,708	528,873
Silver*—Silver Ingots and Matte ... ..	175,775	177,095	251,652	244,321	307,198
Lead Ore, Concentrates, &c.	1,685,704	2,265,669	3,229,614	3,563,804	2,934,065
Lead*—pig, &c. ... ..	248,561	209,784	264,530	365,742	370,106
Zinc*—Spelter and Concentrates ... ..	1,289,634	1,414,980	1,766,242	1,547,987	1,020,711
Copper*—Ingots, Matte, and Ore ... ..	486,257	590,102	579,791	598,733	274,671
Tin*—Ingots and ore ... ..	228,156	307,089	338,074	421,292	267,130
Iron—					
Pig-iron ... ..	161,948	145,416	130,708	186,252	254,257
Iron oxide* ... ..	714	2,377	4,763	3,568	5,584
Ironstone flux ... ..	1,321	861	761	.....	.....
Tungsten—					
Wolfram* ... ..	16,258	29,991	16,584	13,037	14,438
Scheelite* ... ..	15,747	11,342	4,963	4,457	5,852
Platinum ... ..	1,418	2,999	3,880	3,135	2,129
Molybdenite* ... ..	5,667	2,591	3,706	6,802	11,451
Antimony* Metal and Ore ... ..	1,450	2,010	355	407	464
Bismuth Metal and Ore* ... ..	2,004	1,800	1,210	1,202	2,837
Chrome* ... ..	.....	300	60	500	649
Cobalt* ... ..	55	.....	.....	.....	.....
<i>Non-metals.</i>					
Fuels—					
Coal ... ..	3,009,657	3,167,165	3,660,015	3,770,375	3,737,761
Coke ... ..	189,069	184,337	162,454	208,989	213,069
Shale (oil) ... ..	33,896	36,980	34,770	7,339	27,372
Structural Materials—					
Limestone—flux ... ..	16,946	12,541	11,066	10,686	11,674
Stone, building* ... ..	2,792	2,417	559	1,156	404
Marble ... ..	2,134	1,610	1,340	991	2,180
Chemical material—					
Alunite* ... ..	2,840	3,795	13,700	8,940	12,160
Gem Stones—					
Noble Opal ... ..	66,200	57,300	35,008	29,493	26,534
Diamonds ... ..	2,881	4,064	2,001	5,141	1,440
Abrasives—Grindstones* ... ..	325	191	176	170	148
Other Minerals and Ores* ... ..	5,550	5,360	8,556	11,189	4,863
Total ... ..	£ 8,455,170	9,409,519	11,228,677	11,651,406	10,038,020
Portland Cement ... ..	251,110	315,569	368,280	402,249	415,000
Lime ... ..	39,189	32,918	44,478	41,428	46,700

\* 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 1913-14:—

Minerals.	1913.		1914.	
	Quantity.	Value.	Quantity.	Value.
<i>Metals.</i>				
	oz. fine.	£	oz. fine.	£
Gold—domestic ores ... ..	149,657	635,703	124,507	528,873
Silver*—	oz.		oz.	
Silver Ingots and Matte ... ..	2,193,871	244,321	2,871,559	307,198
	tons.		tons.	
Lead ore, Concentrates, &c. ... ..	391,262	3,563,804	337,019	2,934,065
Lead*—pig, &c. ... ..	23,554	365,742	25,989	370,106
Zinc*—Spelter and Concentrates	566,661	1,547,987	359,310	1,020,711
Copper*—Ingots, Matte, and Ore	9,461	598,733	6,607	274,671
Tin*—Ingots and Ore ... ..	3,021	421,292	2,317	267,130
Iron—				
Pig-iron ... ..	46,563	186,252	75,150	254,257
Iron oxide* ... ..	3,204	3,563	3,144	5,584
Tungsten—				
Wolfram* ... ..	126	13,037	139	14,438
Scheelite* ... ..	44	4,457	57	5,852
	oz.		oz.	
Platinum ... ..	442	3,135	244	2,129
	tons.		tons.	
Molybdenite* ... ..	79	6,802	61	11,451
Antimony*—Metal and Ore ... ..	18	407	36	464
Bismuth*—Metal and Ore ... ..	9	1,202	15	2,837
Chrome* ... ..	500	500	649	649
<i>Non-metals.</i>				
<i>Fuels—</i>				
Coal ... ..	10,414,165	3,770,375	10,390,622	3,737,761
Coke ... ..	298,612	208,989	304,800	213,069
Shale (oil) ... ..	16,985	7,339	50,049	27,372
<i>Structural Materials—</i>				
Limestone—flux ... ..	42,663	10,686	51,852	11,674
Stone, building* ... ..	.....	1,156	.....	404
Marble ... ..	.....	991	.....	2,180
Chemical Material—Alunite* ... ..	2,235	8,940	3,040	12,160
<i>Gem Stones—</i>				
Noble Opal ... ..	.....	29,493	.....	26,534
Diamonds ... ..	5,573	5,141	1,580	1,440
	cts.		cts.	
Abrasives—Grindstones* ... ..	.....	170	.....	148
Other Minerals and Ores* ... ..	.....	11,189	.....	4,863
Total value ... ..	.....	11,651,406	.....	10,038,020
<i>Other—</i>				
Portland Cement ... ..	.....	402,249	.....	415,000
Lime ... ..	tons.		tons.	
	33,272	41,428	36,207	46,700

\* Exports only.

The value of the mineral production, exclusive of Portland cement and lime, during 1914 falls short of that of the year 1913 by £1,613,386. The most notable decreases are in concentrates, copper and tin, and they can be directly attributed to the effects of the European war.

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	1896-1900	26,159,491
1861-65	9,980,397	1901-05	29,880,914
1866-70	7,001,454	1906-10	42,450,535
1871-75	10,768,230	1911	9,409,519
1876-80	9,184,015	1912	11,228,677
1881-85	12,381,842	1913	11,651,406
1886-90	18,681,548	1914	10,038,020
1891-95	26,324,780		

To the end of 1914 the aggregate value of the mineral output of the State exceeded £252,000,000. The following statement shows the aggregate quantity and value to the end of 1914 for each of the minerals.

Minerals.	Production to end of 1914.	
	Quantity.	Value.
<i>Metals.</i>		
Gold ... ..	oz. fine	£
Silver*—		
Ingots and matte ... ..	oz.	65,270,377
Concentrates and ore ... ..	tons	
Sulphide and silver-lead ... ..	"	
Lead*—		
Pig, &c. ... ..	"	2,736,759
Zinc*—		
Spelter and Concentrates ... ..	"	10,108,611
Copper*—		
Ingots and Matte ... ..	"	12,657,506
Ore ... ..	"	
Tin*—		
Ingots ... ..	"	10,016,031
Ore ... ..	"	
Iron—		
Pig-iron—from domestic ore ... ..	"	1,138,265
Iron oxide* ... ..	"	39,895
Ironstone flux ... ..	"	81,618
Tungsten ores—		
Wolfram* ... ..	"	159,992
Scheelite* ... ..	"	111,157
Platinum ... ..	oz.	34,274
Molybdenite* ... ..	tons	54,289
Antimony* ... ..	"	306,095
Bismuth* ... ..	"	132,576
Chrome* ... ..	"	102,617
Cobalt* ... ..	"	8,065
Manganese* ... ..	"	1,662
Quicksilver ... ..	lb.	126

\* Export only.

Minerals.	Production to end of 1914.	
	Quantity.	Value.
<i>Non-metals.</i>		
Coal ... .. tons	202,400,767	£ 76,595,824
Coke ... .. "	3,615,496	2,560,725
Shale (Oil) ... .. "	1,718,468	2,357,543
Limestone flux ... .. "	1,219,186	725,174
Stone (Building)* ... .. "	.....	25,736
Marble† ... .. "	.....	26,235
Slates* ... .. "	.....	1,140
Alunite* ... .. tons	44,310	140,643
Noble Opal ... .. "	.....	1,386,234
Diamonds ... .. cts.	186,123	126,989
Grindstones* ... .. "	.....	3,160
Other Minerals and Ores* ... .. "	.....	137,886
Total (excl. Iron made from Scrap, Portland Cement, and Lime) £	.....	247,674,755
<i>Other.</i>		
Iron made from Scrap ... .. "	.....	1,416,030
Portland Cement ... .. "	.....	2,656,933
Lime ... .. tons	377,032	366,055

\* 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 silver and gold.

#### Value of Production per Miner.

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.
	£	£	£	£	£
1910	153	425	213	113	171
1911	165	479	275	138	182
1912	180	608	243	128	206
1913	178	612	228	178	200
1914	153	562	202	123	199

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 1912 to 1914:—

Classification.	1912.	1913.	1914.
	£	£	£
Coal and Shale ... ..	2,890,000	3,209,000	3,409,000
Gold ... ..	639,459	608,912	653,363
Silver, Lead, and Zinc ... ..	1,912,754	1,990,230	2,045,439
Copper ... ..	666,384	762,216	705,654
Tin ... ..	189,845	170,817	206,666
Other Minerals ... ..	436,376	488,143	524,004
Total ... ..	6,734,818	7,229,318	7,544,126

## 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 the latest annual return of quarries:—

Description of Quarry.	Quantity of Stone raised.	Value of Stone raised.
<b>Building Stone—</b>	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
<b>Macadam, Ballast, &amp;c.—</b>		
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
<b>Clays—</b>		
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 <sup>5</sup>/<sub>16</sub>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 <sup>1</sup>/<sub>8</sub>d. per oz., in 1912 it was 28 <sup>1</sup>/<sub>8</sub>d., and in 1913 the average was 27 <sup>2</sup>/<sub>8</sub>d.

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. In 1914, consequent on the war conditions, there was a stagnation in the metal markets and a decline in prices.

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 prices, however, were not maintained during 1914.

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. s. d.	per ton. £ s. d.	per ton. £ s. d.	per ton. £ s. d.	per ton. £ s. d.
1905	2 3 $\frac{5}{8}$	12 13 4	25 7 8	66 18 4	141 0 0
1906	2 6 $\frac{3}{4}$	16 10 0	27 1 4	85 10 0	178 18 4
1907	2 6 $\frac{3}{4}$	18 10 0	25 15 9	85 1 8	170 10 0
1908	2 0 $\frac{5}{8}$	13 1 8	20 3 5	57 18 4	131 5 0
1909	1 11 $\frac{1}{2}$	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 0 $\frac{3}{4}$	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 3 $\frac{5}{8}$	18 15 0	22 13 6	68 13 4	202 5 0
1914	2 1 $\frac{1}{4}$	19 1 8	21 0 0	60 10 8	153 0 0

In regard to coal, average prices are quoted in connection with the values of production elsewhere in this chapter.

#### 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 four years. New South Wales gold which was received at the Sydney Mint for coinage in 1914 amounted to 107,918 oz., of the gross value of £367,879, the average price being £3 8s. 2d. per oz.:—

Period.	Quantity.	Equivalent in	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
1914	148,934	124,507	528,873



The value recorded for this State for 1914 is the lowest since 1890, when the output was valued at £460,285. 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 nine 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.
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
1909	55,435	182,612	238,047	1914	36,828	112,106	148,934

As before stated, the value of the gold of domestic production received at the Sydney Mint during 1914 was £367,879, representing rather more than half the gold won in the State. The following return shows the gross weight of the gold received at the Sydney Mint from the more important mining districts during 1914:—

Mining District.	Quantity.	Mining District.	Quantity.
	oz.		oz.
Bathurst ... ..	4,869	Southern ... ..	13,985
Cobar ... ..	40,977	Tambaroora and Turon ... ..	4,217
Lachlan ... ..	12,837	Tumut and Adelong ... ..	14,035
Mudgee ... ..	9,292	Other... ..	1,263
Peel and Uralla ... ..	6,443		
		Total ... ..	107,918

Of the aggregate production of domestic ores during 1914, 48,997 oz., valued at £206,084, were 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.	£
Albert ... ..	41	.....	2,282	2,323	9,820
Bathurst ... ..	819	.....	4,327	5,146	17,079
Clarence and Richmond	119	.....	658	777	2,416
Cobar ... ..	.....	.....	48,997	48,997	206,084
Hunter and Macleay ... ..	0	.....	221	230	880
Lachlan ... ..	247	3,283	9,162	12,692	46,579
Mudgee ... ..	708	.....	6,401	7,109	22,562
New England ... ..	247	.....	155	402	1,202
Peel and Uralla... ..	519	577	6,180	7,276	26,235
Southern... ..	835	12,647	3,931	17,413	65,644
Tambaroora and Turon	639	1,764	2,569	4,972	19,449
Tumut and Adelong ... ..	624	7,019	6,732	14,375	55,204

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	271,692
1902	26,956	90,209	1909	73,206	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	69,690	283,751
1906	68,685	224,052	1913	70,526	290,761
			1914	48,997	206,084

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. The decreased production in 1914 was caused by the war and the cessation of production by the Great Cobar mine from the month of April was due to the same factor. 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.

#### GOLD AND TIN 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 1914 the total area held for dredging purposes was 10,145 acres.

#### *Dredging Plants.*

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.				Gold.		Tin.		
	Bucket.	Pump.	Bucket.	Pump.			Bucket.	Pump.	Bucket.	Pump.	
					£					£	
1905	24	9	1	15	264,934	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
1909	18	13	2	33	309,833	1914	18	8	5	38	339,571

#### *Output of Dredges.*

The records of eighteen "bucket" dredges working for gold in 1914 shows that 4,315,962 cubic yards of material were treated, the gold won amounting to 21,940 oz., valued at £84,936, or an average of 2.46 grains, worth 4.72d. for every cubic yard. The records of eight "pump" dredges show that 280,418 cubic yards of material treated yielded 2,855 oz. of gold, valued at £10,909, or an average of 4.88 grains, worth 9.33d. per cubic yard.

Dredging for tin, five bucket dredges treated 376,764 cubic yards of material, recovering 90 tons of ore, valued at £9,743, the average yield being .53 lb., valued at 6.23d. per cubic yard treated. The records of thirty-eight pump dredges show that 2,064,660 cubic yards of material treated yielded 1,115 tons of ore, valued at £109,424, the average being 1.21 lb., valued at 12.71d. 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:—

Period.	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	33,660	.....	.....
1901-5	52,852	144,028	129,850	551,568	1,254	109,026
1906-10	75,900	185,140	168,566	716,025	7,570	732,134
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
1914	10,145	25,247	22,974	97,589	1,205	119,167

## 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 Burragarang 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, carbonate, chloride, 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 zones, and in the lower portion, of argentiferous sulphide 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 New South Wales as one of the principal producers of spelter in the future.

*Production of Silver Lead and Zinc.*

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 1914 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	6,942,596
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	86,065	9,592,856	9,862,519
1901-1905	4,154,020	445,051	1,877,515	108,353	8,910,586	9,355,637
1906-1910	8,310,962	892,414	1,709,173	42,578	11,561,794	12,454,208
1911	1,767,496	177,095	338,469	.....	2,265,669	2,442,764
1912	2,389,195	251,652	345,307	.....	3,229,614	3,481,266
1913	2,194,871	244,321	391,262	.....	3,563,804	3,808,125
1914	2,871,559	307,198	337,019	.....	2,934,065	3,241,263

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.	Lead—Pig in matte, &c.		Period.	Lead—Pig in matte, &c.	
	Quantity.	Value.		Quantity.	Value.
	tons.	£		tons.	£
1889-1890	648	8,298	1911	17,276	209,784
1891-1895	738	7,413	1912	17,251	264,530
1896-1900	13,293	258,874	1913	23,554	365,742
1901-1905	17,550	255,366	1914	25,989	370,106
1906-1910	71,434	996,646			

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.	Zinc (Spelter and Concentrates).		Period.	Zinc (Spelter and Concentrates).	
	Quantity.	Value.		Quantity.	Value.
	tons.	£		tons.	£
1889-1890	307	3,366	1911	516,378	1,414,980
1891-1895	663	7,677	1912	520,518	1,766,242
1896-1900	137,931	146,023	1913	506,661	1,547,987
1901-1905	133,782	440,402	1914	359,310	1,020,711
1906-1910	1,460,138	3,761,223			

A general 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.
	£	£	£	£
1905	2,494,052	2,657	221,155	2,717,864
1906	2,862,973	1,084	292,806	3,156,863
1907	3,915,046	374,182	536,620	4,826,748
1908	2,160,195	186,746	600,883	2,947,824
1909	1,653,615	186,073	1,041,280	2,880,968
1910	1,861,479	248,561	1,289,634	3,399,674
1911	2,442,764	203,784	1,414,980	4,061,528
1912	3,481,266	264,530	1,766,242	5,512,038
1913	3,808,125	365,742	1,547,987	5,721,854
1914	3,241,263	370,106	1,020,711	4,632,080

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 settled industrial conditions which prevailed throughout the year. The rate of production was not maintained in 1914, consequent on the stoppage of exportation of the large amount of concentrates treated on the Continent in former years prior to the inception of war conditions.

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 in the case of silver, &c., the zinc output suffered considerably owing to the war.

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. 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 overseas 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.	£	£	
1905	6,804,934	93,182	544	2,131,317	270,474	3,480,561	69,044	30,637	1,181,720	3,313,037	
1906	5,575,410	79,925	1,008	2,112,977	165,151	3,111,013	58,633	33,427	1,876,834	3,989,811	
1907	5,021,457	79,870	984	2,228,420	337,823	6,228,225	111,830	76,045	3,574,775	5,803,195	
1908	6,484,288	103,371	1,065	2,008,410	330,812	5,499,381	69,501	113,853	2,400,997	4,409,407	
1909	3,717,016	64,821	..	1,176,394	409,438	6,867,775	90,307	144,018	2,707,690	3,884,074	
1910	5,196,323	94,818	489	1,755,220	506,959	7,608,336	85,035	184,408	3,180,850	4,936,070	
1911	5,731,468	94,966	1,703	1,949,271	559,591	8,797,677	111,795	158,669	3,259,246	5,208,517	
1912	5,320,588	101,811	2,545	2,477,442	537,733	8,293,711	97,736	194,214	3,692,352	6,169,794	
1913	5,938,633	106,432	4,121	2,709,867	547,388	8,506,251	117,903	184,149	3,759,691	6,469,553	
1914	5,481,286	99,925	5,014	2,592,322	431,965	7,879,240	88,173	146,400	3,004,248	5,556,570	

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 1914 amounted to 320,707,491 oz. fine, valued at £47,828,986:—

	oz. fine.	£
Metal obtained in Commonwealth ...	146,740,429	21,401,403
Contained in concentrates, &c., exported ...	173,967,062	26,427,583
Total ...	<u>320,707,491</u>	<u>47,828,986</u>

#### *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.
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	38,241	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
1914	92,970	1,348,996	1,441,966

The decrease in production is due to the suspension of operations by some mines and the adoption of half-time by others, consequent on the war.

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.
1905	103,532	1910	468,627
1906	102,664	1911	516,378
1907	236,251	1912	520,518
1908	275,932	1913	506,661
1909	373,905	1914	359,310

In the enormous deposits of sulphide ores at Broken Hill, zinc-blende is a principal constituent.

In the utilisation of tailings two companies were actively engaged during 1914, 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 1914 was estimated at £4,221,179, as compared with £4,967,659 in 1913. In addi-



tion, the treatment of zinc tailings in 1914 yielded an output valued at £518,000, and returned to shareholders £141,982, bringing the total production of the Broken Hill field to £4,739,179 for the year, and the distribution to shareholders to £764,832.

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 1913 and 1914:—

Name of Company.	Value of Output.		Dividends paid.	
	1913.	1914.	1913.	1914.
	£	£	£	£
Proprietary ... ..	1,301,144*	1,410,534*	216,000	166,100
Block 14 ... ..	75,812	78,372	23,000	3,000
British ... ..	296,502	227,559	114,450	45,000
Block 10 ... ..	166,545	75,147	50,000	22,500
Sulphide Corporation ... ..	1,063,485	1,039,230	192,500	96,250
South ... ..	634,000	497,900	300,000	140,000
North ... ..	794,308	567,907	240,000	150,000
Junction ... ..	71,043	10,332	.....	.....
Junction North ... ..	295,709	89,149	.....	.....
Zinc Corporation Mining Department (formerly South Blocks) ... ..	267,938	225,049	†	†
Barrier South (late South Extended) ... ..	1,173	.....	.....	.....
<b>Total ... ..</b>	<b>4,967,659</b>	<b>4,221,179</b>	<b>1,135,950</b>	<b>622,850</b>

\*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 1914 the value of production by the mines on the Broken Hill field from the inception of operations was in excess of 78½ millions sterling, and the dividends and bonuses paid amounted to £19,359,168.

The value of the machinery and plant on the Broken Hill field in 1914 was estimated at £1,992,451.

The average number of men employed in and about the silver-lead mines on the Broken Hill field during 1914 was 7,830—3,777 surface and 4,053 underground. Compared with the previous year there was a decrease of 958 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	952	174	86,017	125	11,000
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	439	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	749,264	1,654	99,374
1910	7,338	1,309	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	475,866	1,458	77,546
1914	4,644	1,061	520,880	1,269	82,053

On an average about 200 miners were employed in the division during last year, and the machinery on the field was 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 254 tons of ore were raised in 1914. The metallic contents were estimated as follows:—Silver, 3,953 oz.; gold, 35 oz.; lead, 44 tons; and copper, 9 tons. The gross value of the ore was £1,914.

In the Condobolin Division during 1914 the Iodide (Mineral Hill) Company raised 202 tons of ore, estimated to contain, gold 5 oz.; silver, 7,946 oz.; and lead, 40 tons, the total value being given as £1,598.

The Cobar copper mines, of which details are given in connection with copper mining, yield large quantities of silver and lead.

#### 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 cupriferos deposits; red and black oxides; grey and yellow sulphides; green and blue carbonates.

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 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 sterling at December, 1914.

*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	15,160	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	308	598,733
1914	5,081	1,526	274,671

For the year 1914 the total value, £274,671, represents £258,845, value of ingots, matte, and regulus, and £15,826, 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 nine months of the year 1914 owing to the European crisis.

In 1914 the Cadia Copper Mine produced 1,103 tons of copper matte, valued at £40,859, while the output from the Lloyd Mine, Burruga, declined from £92,070 to £29,912.

Upon reference to the return of the smelting and refining works it will be seen that during 1914 the metals produced at the works of the Electrolytic Refining and Smelting Company, Port Kembla, included 17,570 tons of copper valued at £1,074,400, obtained, however, principally from mattes and ores imported from other States, chiefly from Queensland. From domestic ores, 944 tons of copper, valued at £57,112 were obtained. At Waratah, 1,817 tons of purchased ores mined in this State yielded 313 tons of copper.

*Cobar Field.*

The Cobar mines constitute the chief centre of the copper-mining industry, contributing over 60 per cent. of the State'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.	£	£	£	£	£
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	...	505,936
1910	61,328	114,467	6,270	37	260,506	8,710	282,348	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
1914	48,965	24,612	1,959	509	206,056	2,515	116,460	1,336	326,367

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	984,934	22,432	1913	334,187	5,985
1910	293,324	6,248	1914	69,690	1,410

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.

#### 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 Euriovie; near Bombala, in the Monaro district; at Gundle, near Kempsey; at Jingellie 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 Mr. William Charles 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.

The value of ore and concentrates from Ardlethan in 1913 amounted to £42,536. In consequence of war conditions and a very dry season the output for 1914 was smaller than that of the previous year; and, at a lower metal value, amount to £25,332. Several storage dams have been provided, and a considerable amount of new machinery installed at the mines so that the prospects are bright for a much improved output.

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 sixth place, after coal, silver, gold, copper, and zinc.

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
1914	650	1,667	267,130

The figures for 1914 show value of ingots £101,400, and ore £165,730, making the total as above, £267,130.

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 rose steadily, and as a result the value of the output increased. In 1914, however, owing to the disturbance of the metal market, the price fell, and there was a diminution in the supply, the value of production being £267,130, as compared with £421,292 in the previous year.

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 15,211 tons of tin, valued at £1,632,193, have been recovered by dredges. In the winning of stream tin there were, during 1914, five bucket dredges and thirty-eight pumping plants employed, and dredging plants furnished a yield of 1,205 tons, valued at £119,167. 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 1914 the plants operating in the Emmaville Division obtained 509 tons of stream tin, valued at £49,659, as the result of the year's work. In the Tingha Division the dredges recovered 478 tons of stream tin valued at £47,973. There were also several smaller plants operating in the Bendemeer, Glen Innes, and Deepwater Divisions.

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.
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	741	101,943	223,813	45·5
1913	1,341,977	820	106,444	239,958	44·4
1914	798,902	509	49,659	119,167	41·7

#### *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 ... ..	tons. 700,000
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 have been constructed 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 and value of ironstone flux raised during the years 1905 to 1912 was 34,778 tons, valued at £25,568.

Owing to suitable ores being obtained, the requirements of the smelting companies have decreased steadily, and during 1913 and 1914 no iron-stone flux 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.	£
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
1909	4,900	4,948	1914	3,144	5,584

The total recorded output to the end of 1914 was 30,044 tons, valued at £39,894.

*Production of Iron and Steel, and Bounty paid.*

Under the Manufactures Encouragement Act, 1908, the Commonwealth Government 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 was payable at the rate of 12s. per ton produced, and the maximum amount payable in any year was £30,000. This bounty rate was extended until 30th June, 1915, but was subsequently replaced by a bounty of 8s. per ton on pig-iron manufactured between 30th June, 1914, and 31st December, 1915. The following table shows the production and bounty paid during the years 1909-14:—

Year.	Pig-iron.		Puddled Bar-iron.		Steel.	
	Production.	Bounty Paid.	Production.	Bounty Paid.	Production.	Bounty Paid.
	tons.	£	tons.	£	tons.	£
1909	23,180	13,908	1,939	1,163	1,855	1,113
1910	40,326	24,196	3,384	2,036	3,410	2,046
1911	24,658	14,795	1,789	1,073	2,633	1,580
1912	31,104	18,663	549	329	.....	.....
1913	40,490	24,294	.....	.....	1,088	653
1914	58,528	35,117	.....	.....	14,929	8,957

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.	£
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
1909	29,762	106,357	1914	75,150	254,257

The recorded output of pig-iron, &c., to the end of 1914, was 459,158 tons, valued at £2,554,295. 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	34,500	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	58,206	45,178	23,921	36,354	145,416	4,838
1912	55,170	51,102	20,399	32,677	130,708	.....
1913	71,577	60,854	26,251	46,563	186,252	13,608
1914	135,316	97,224	45,938	75,150	254,257	24,420

For the last five 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 1914 mining for wolfram was also carried on in the Frogmore, Burrowa, Tenterfield, and Deepwater Divisions.

#### *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.	£
1905	138	10,122	87	7,361
1906	110	7,647	132	9,057
1907	196	23,781	207	26,235
1908	154	11,082	86	6,742
1909	193	14,618	127	11,249
1910	151	15,747	166	16,258
1911	108	11,342	283	29,991
1912	56	4,963	172	16,584
1913	44	4,457	126	13,037
1914	57	5,852	139	14,438

Since the year 1903 the exports of scheelite and wolfram from New South Wales were as follow:—Scheelite, 1,232 tons, value £111,157; wolfram, 1,622 tons, value £159,992.

#### 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 1880-82 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.	£
1905	388	5,221	1910	97	1,450
1906	2,451	52,645	1911	166	2,010
1907	1,752	46,278	1912	63	355
1908	117	1,141	1913	18	407
1909	96	711	1914	36	464

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 1914 is estimated at 16,708 tons, valued at £306,095.

#### 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 1914, 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.	£
1905	55	20,763	1910	6	2,604
1906	25	5,700	1911	8	1,800
1907	16	5,268	1912	6	1,210
1908	9	2,017	1913	9	1,202
1909	9	1,624	1914	15	2,837

The total value of bismuth, the product of New South Wales, exported up to the end of 1914 was £132,576, representing 565 tons of metal and ore. At Jingera Mine, 60 tons of bismuth ore raised and treated in 1914 yielded 2½ tons of concentrates, valued at £201.

## 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 molybdenite, associated with other minerals, was discovered 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.	£
1905	20	2,507	1910	48	5,667
1906	33	4,798	1911	21	2,591
1907	22	3,564	1912	57	3,703
1908	9	929	1913	79	6,802
1909	28	3,249	1914	61	11,451

The total quantity of molybdenite exported since 1902 was 444 tons, valued at £54,289.

## 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.	£
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
1909	440	1,720	1914	244	2,129

The quantity of platinum produced to the end of 1914 was 13,676 oz., valued at £31,274.

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 1914 the output was 649 tons, valued at £649. The whole of the production came from the Barraba Division, and it is probable that the supply in this direction is now exhausted. The total production to the end of 1914 was 31,984 tons, valued at £102,617.

## 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 four years no ore was raised, and the value of the total production to the end of 1914 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.

During 1914 about 700 tons of ore were treated at Pulganbar, but to the end of the year the condensers had not been cleared up, consequently returns as to quantity and value of production cannot be given.

From Ewengar Cinnabar Mine 170 tons of ore were sent for treatment, and, according to the assays, should yield about 3 per cent., or, 5 tons of mercury, worth about £1,000.

#### 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 in association with bismuth, while Tantalum has also been located in the State.

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.
Paleozoic—Permo-Carboniferous.	13,000	Northern, Southern, and Western Coal-fields.	Suitable for gas-making, steam-raising, and household use.
Paleozoic—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 conducing 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 northward 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 Wingen; 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 one-third of the total output of New South Wales coal in 1914.

#### *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 1914 amounted to 10,390,622 tons, valued at £3,737,761. The average price secured at the pit's mouth in 1914 was 7s. 2d. 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 1914 the total production being 202,400,767 tons, valued at £76,595,824.

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	11,036,723	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	9,885,815	3,660,015	7 5
1913	10,414,165	3,770,375	7 3
1914	10,390,622	3,737,761	7 2

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 nine years:—

Year.	Consumed within Commonwealth.			Exported Oversea.	Total Production.
	Domestic Consumption	Sent to other Australian States.	Total.		
	tons.	tons.	tons.	tons.	tons.
1906	2,664,822	1,902,712	4,567,534	3,058,828	7,626,362
1907	2,914,417	2,019,959	4,934,376	3,723,548	8,657,924
1908	3,048,349	2,267,218	5,315,567	3,831,458	9,147,025
1909	2,626,276	1,814,705	4,440,981	2,578,898	7,019,879
1910	3,483,075	2,098,742	5,581,817	2,591,691	8,173,508
1911	3,667,524	2,149,630	5,817,154	2,874,450	8,691,604
1912	3,832,697	2,514,970	6,347,667	3,538,148	9,885,815
1913	4,182,441	2,762,186	6,944,627	3,469,538	10,414,165
1914	4,522,589	2,719,677	7,242,266	3,148,356	10,390,622

The variation in the proportion of the total production used for domestic consumption is shown in the following percentages:—

Year.	Proportion of Output.		
	Used for Domestic Consumption.	Sent to other Australian States.	Exported Oversea.
	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
1914	43·53	26·17	30·30

#### *Coal-cutting by Machinery.*

The machine-cut coal in 1914 represented 27 per cent. of the total output. Of the machines in use, 160 were driven by electricity, and 83 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.
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
1914	160	83	243	2,264,010	511,911	2,775,921

#### *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 1914 was 70 per cent., and the overseas exports amounted to 30 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 since the year 1909 is shown below; only the coal taken as cargo has been included:—

Country.	1909.	1910.	1911.	1912.	1913.	* 1914.
	tons.	tons.	tons.	tons.	tons.	tons.
New Zealand ... ..	240,345	228,023	211,160	387,391	477,605	252,052
Fiji ... ..	31,623	36,267	32,453	30,256	35,386	15,442
Straits Settlements ... ..	150,380	140,620	131,029	113,376	155,393	132,174
India ... ..	68,027	67,763	38,165	123,330	63,324	17,033
Hong Kong ... ..	40,277	9,584	.....	294	.....	3,000
Mauritius ... ..	3,475	5,020	.....	3,243	416	753
Union of South Africa ... ..	1	947	.....	.....	.....	.....
Canada ... ..	1,841	.....	.....	53	16,538	.....
United Kingdom ... ..	29	.....	.....	30	81	21
Papua ... ..	691	404	.....	1,185	2,709	1,237
Ocean Island ... ..	.....	621	4,631	5,906	6,211	2,463
Other British Possessions	69	.....	1,530	7,141	.....	6,607
<b>Total, British Possessions</b>	<b>536,753</b>	<b>489,249</b>	<b>419,968</b>	<b>672,205</b>	<b>757,663</b>	<b>430,782</b>
Chile ... ..	469,420	553,302	619,806	850,017	688,578	320,674
United States of America	106,777	202,474	180,769	103,609	93,755	68,441
Philippine Islands	224,651	199,509	156,280	104,570	49,502	32,940
Hawaiian Islands... ..	65,769	64,016	53,201	61,979	87,518	41,952
Peru ... ..	41,450	41,795	64,559	65,447	53,926	20,476
Java ... ..	64,160	92,343	134,742	211,316	267,382	188,505
Mexico ... ..	18,522	20,202	22,659	20,858	44,629	27,559
New Caledonia ... ..	6,228	7,712	16,683	21,706	12,329	7,307
South Sea Islands... ..	6,019	1,825	870	1,273	13,623	3,556
Ecuador ... ..	12,734	6,927	4,235	9,876	8,433	12,362
China ... ..	15,608	2,165	6,125	788	1,553	421
Other Foreign Countries...	12,468	18,724	6,585	26,956	18,206	7,562
<b>Total, Foreign Countries</b>	<b>1,043,806</b>	<b>1,210,935</b>	<b>1,266,514</b>	<b>1,478,395</b>	<b>1,339,434</b>	<b>731,755</b>
<b>Total, Export Oversea</b>	<b>1,580,564</b>	<b>1,700,184</b>	<b>1,686,482</b>	<b>2,150,600</b>	<b>2,097,097</b>	<b>1,162,537</b>

\* Half-year ended 30th June.

The largest exports are to Chile, New Zealand, Java, the Straits Settlements, United States of America, and the Hawaiian Islands, 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.

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.

Including the Sydney Harbour Colliery, 76 collieries were in operation in the Northern district during 1914, the quantity of coal raised being 7,113,991 tons, and the value £2,734,872.

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.	£
1905	10,505	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	9,632	6,058,560	625	2,231,901	7 4	230
1908	13,228	10,064	6,511,002	647	2,625,446	8 1	261
1909	13,286	10,102	4,801,361	475	1,990,217	8 3	197
1910	12,626	9,404	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
1914	14,046	10,435	7,113,991	682	2,734,872	7 8	262

*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, 16 mines being in operation during 1914:—

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.	£
1905	3,050	2,397	1,556,678	649	421,768	5 5	176
1906	3,249	2,540	1,783,395	702	494,871	5 7	195
1907	3,410	2,671	1,835,425	687	515,786	5 7	193
1908	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	690	636,163	6 2	212
1912	3,953	3,030	2,172,800	717	661,512	6 1	218
1913	4,256	3,299	2,081,472	631	638,425	6 1	194
1914	4,590	3,652	2,362,741	647	749,395	6 4	205

*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 located.

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. During 1914 there were 19 mines in operation in this District, and in the following table is shown the growth of coal production during the last ten years.

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.	£
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	598,843	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	199,739	5 0	241
1913	1,118	906	930,066	1,026	239,694	5 2	265
1914	1,122	920	913,890	993	253,494	5 6	276

#### Summary—New South Wales.

In New South Wales, calculated on the total value of the production during the decade, the average quantity of 657 tons extracted yearly by each person employed underground represents a value of £232. In 1914 the average value of production was £250 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.	£
1905	14,019	11,054	6,632,138	600	2,003,461	6 1	181
1906	14,929	11,588	7,626,362	658	2,337,227	6 2	202
1907	17,080	13,369	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	3,009,657	7 4	226
1911	17,375	12,679	8,691,604	685	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
1914	19,758	15,007	10,390,622	692	3,737,761	7 2	250

#### 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 1914 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.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Northern ...	6 4	6 5	7 4	8 0	8 3	8 1	8 0	8 1	7 10	7 8
Southern ...	5 5	5 7	5 7	5 11	6 0	6 2	6 2	6 1	6 1	6 4
Western ...	5 0	4 11	4 7	4 6	4 9	5 6	5 1	5 0	5 2	5 6
New South Wales	6 1	6 2	6 9	7 4	7 5	7 4	7 3	7 5	7 3	7 2

*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.

The following is a synopsis of the recommendations of the Committee:—Where coal dust is carried from the surface by the intake air, the exhaust system by means of pipes and fans was recommended as the most efficient.



The value of watering full coal tubs as a means of prevention was recognised, but the use of stone or incombustible dust was considered as superior.

To minimise the deposit of coal dust on underground roads, colliery managers were advised to keep the coal tubs in repair.

After their reliability and efficiency have been established, electric safety lamps should be used. Ordinary safety lamps should be used by officials for the purpose of detecting inflammable gas, and regular searches should be made to prevent prohibited articles such as matches, tobacco, &c., being taken into the mines.

Special provisions were laid down regarding blasting and shot firers, and to prevent the use of explosives which may have been subjected to chemical changes, the erection of a Government Testing Station was recommended.

It was also recommended that electricity, as a motor power, should be prohibited at, or near, the working faces or in the return airways of collieries where firedamp is given off in such quantity as to be indicative of danger.

### 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.	£
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	153,443	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
1914	28,264	252,409	24,127	304,800	213,069

The various districts contributed as follows to the total value of coke manufactured during the year 1914:—Northern, £23,825; Southern, £170,820; Western, £18,424.

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.
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	13 0	1906	11 11	1913	14 0
1900	17 4	1907	12 6	1914	13 11
1901	16 5	1908	14 1		

In 1914 the average values per ton at the ovens were—Northern, 16s. 10d.; Southern, 13s. 6d.; Western, 15s. 3d.

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 1914:—

District.	Coke Ovens.			Persons engaged in manufacture of coke.
	Working.	Built, but not Working.	Total Number.	
Northern ...	137	104	241	107
Southern ...	448	74	522	285
Western ...	140	102	242	50
Total ...	725	280	1,005	442

During the year 1914, in consequence of the depressed metal market and the European war, the coke trade was in a very unsettled condition.

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. The Illawarra Coke Company erected 40 ovens during the year, and should augment future production.

In the northern district forty-eight by-product ovens of the "Coppée" and "Otto" principle, the first in New South Wales, have been erected, and the Broken Hill Proprietary, Ltd., are erecting 66 "Semet-Solvay" By-Product Ovens at Port Waratah.

In the western district the ovens, in connection with the Lithgow iron-works, operated only in the early 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 1865 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 1914, 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	1914	50,049	27,372	0 10 11
1905-09	213,024	131,456	0 12 4				

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, while only a small quantity of shale was raised from their Temi Mine at Murrurundi. Of the total production in 1914, the mine of the British Australian Oil Coy. accounted for 46,315 tons, the remainder, 3,734 tons being obtained from the Commonwealth Oil Corporation's Mine.

The Shale Oils Bounties Act, passed by the Commonwealth Government during 1910, made 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	£ 16,000	} 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. 482,050	gals. 118,236	£ 1,491	£ 4,017	£ 985
Refined Paraffin Wax ... ..	cwt. 6,256	cwt. 6,760	cwt. 6,480	782	848	809

The Shale Oils Bounties Act expired on 30th June, 1913, and was not renewed. Consequently no bounties were paid during 1914.

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.

The following table, compiled from the available information, is believed to understate considerably the actual output of diamonds in New South Wales. 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	1914	1,580	1,440

## 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 1914:—

Period.	Value.	Period.	Value.
	£		£
1890	15,600	1911	57,300
1891-1895	25,999	1912	35,098
1896-1900	415,000	1913	29,493
1901-1905	476,000	1914	26,534
1906-1910	305,300		

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 1914 from the Lightning Ridge field was valued at £21,636, and from White Cliffs £4,898.

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 tinstone; 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; 3,040 tons, valued at £12,160, were exported during 1914. The quantity and value of alunite, the produce of this State, exported to the end of 1914, is shown in the following statement:—

Period.	Quantity.	Value.	Period.	Quantity.	Value.
	tons.	£		tons.	£
1890-4	3,891	16,756	1911	1,006	3,795
1895-9	6,791	21,202	1912	3,425	13,700
1900-4	11,559	33,252	1913	2,235	8,940
1905-9	11,227	27,998	1914	3,040	12,160
1910	1,136	2,840			

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 44,311 tons, value £140,643. 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 three 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 the annual return of quarries given on a previous page contains information as to the quantity and value of building stone raised.

#### 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 1914 marble valued at £2,180 was obtained 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 1914, amounted only to £26,235.

## 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 Permo-Carboniferous coal measures at Morpeth and elsewhere north of Sydney.

*State Sandstone Quarry.*

A State freestone quarry has been established at Maroubra, near Sydney, where there is a deposit of good "yellow block" stone suitable for the construction of large public buildings.

*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 1914-15 in the production of 120,000 tons of broken stone, 70 per cent. of which was despatched by steamer, and the balance by rail, to the



Metropolitan and Newcastle areas. About 100 men are employed at this quarry, and two colliers of 300 and 370 tons carrying capacity are engaged, their operations employing another 57 men.

The plant at this quarry has been considerably increased by the introduction of the latest English and American patents, and the process is cheapened by the installation of a steam tramway from the quarry to the wharf.

At Port Kembla, 45 miles from Sydney, a large quarry is being worked by the State partly to obtain blocks of stone from 3 tons upwards for break-water construction, and partly for crushed stone for road-making and concrete purposes. Of the latter, 53,000 tons were produced, but further additions to plant, and improvements, will double this output.

At the close of the year about 45 men were employed in the stone-crushing operations at Port Kembla, the whole of the metal being sent by rail.

The operations of the State Metal Quarries for the year resulted in a considerable profit after allowing for depreciation and interest on capital.

#### *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 Torrawangee, 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.
	tons.	£		tons.	£
1905	14,941	9,519	1910	56,938	16,946
1906	12,788	7,463	1911	46,237	12,541
1907	41,667	16,162	1912	33,186	11,066
1908	53,668	14,779	1913	42,664	10,686
1909	45,078	13,851	1914	51,852	11,674

The total value of the limestone raised for flux to the end of 1914 was £725,173, representing 1,219,187 tons, and the production of lime was 377,032 tons, valued at £366,055.

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 £2,656,933 has been manufactured to the end of the year 1914. 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 1914 150 tons of fireclay valued at £150 were raised in the Bathurst division. In the Wollongong division 12,700 tons of fireclay were raised, valued at £1,990.

At Morangaroo 2,000 tons of silica were raised for silica-brick making, the estimated value being £500.

*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.

The output of kaolin from the Mudgee, Cootamundra, Parkes, and Goulburn divisions for 1914 was 413 tons, valued at £364.

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. Owing to war conditions, there was no demand for ochre in 1914, and consequently no production.

*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 and 1914.

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, and 80 tons, valued at £80, in 1914. 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. Owing to the want of a market, operations were practically at a standstill in 1914.

#### *Barytes.*

The quantity of barytes raised in the State during the year 1914 was 158 tons of the value of £276, all of which came from the Mudgee division.

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. Similarly, in 1914, 2,000 tons were raised, but 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. 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. At Chatsbury, in the Goulburn district, some 40,000 slates of various sizes and valued at £250 were produced, and a new company is prospecting for a suitable quarry site.

#### *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 Silvertown district, and elsewhere in the Barrier Ranges.

## ABRASIVES.

*Grindstones.*

The output of grindstones for 1914 was valued at £148, making a total output value to date of £3,160, 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 1914, 25 tons, valued at £94, were raised at Bunyan, in the Cooma Division. To encourage this industry witnesses before the Inter-State Commission have asked for an import duty, also for higher duty on boiler covering composition.

*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. During 1914, 700 tons of phosphate rock to the value of £1,055 were obtained. Portion of this was used as a flux for the Lithgow ironworks, and portion for phosphatic manures, while some was sent to Japan for experimental purposes as a fertiliser.

## 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>								
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
1914	6	16	3	1	...	26	17	43
<i>Per 1,000 Employees.</i>								
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
1914	1·74	1·94	2·21	·46	...	1·49	·85	1·15

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 1914 there were seventeen fatalities in coal and shale mines, the result of seventeen separate accidents. In proportion to the number of persons employed the rates were highest in copper and silver-lead 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.					Total Metalliferous	Coal and Shale Mines.	Total.
	Gold.	Silver, Lead and Zinc.	Copper.	Tin.	Other.			

*Number of Persons Seriously Injured.*

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
1914	3	34	1	...	1	39	112	151

*Per 1,000 Employees.*

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
1914	.97	4.13	.74	...	.44	2.23	5.61	4.03

In 1914 the coal and shale mines show the highest rates of serious accidents, being 5.61 per 1,000; the rate in silver, lead, and zinc mines was 4.13 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) ... ..	4	3	1	...
„ (alluvial) ... ..	...	...	1	...
Silver and Lead ... ..	13	23	3	11
Copper ... ..	3	1	...	...
Tin ... ..	...	...	1	...
Other ... ..	...	...	...	1
Total ... ..	20	27	6	12

During 1914 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.
1905	24	68	589	208	277,932	98,094
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	82,823
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
1914	17	112	1,175	178	614,157	93,220

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 1897-1914, 123 classes were enrolled, the minimum membership being ten. The classes formed during 1914 numbered seven.

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 last ten years:—

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 1914.

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.
1905	11	7,407	1910	...	6,915
1906	16	8,457	1911	...	7,704
1907	3	8,923	1912	3	8,219
1908	1	6,869	1913	1	8,788
1909	1	5,265	1914	...	7,855

## 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 1914 was 198, and at the end of the year, 157, compared with 190 at the end of the previous year. The decrease is directly attributable to the effects of the war on metal mining. The deaths reported as the result of fatal accidents numbered 53, and the disablements 5,557. The allowances to beneficiaries during 1914 were:—Funeral allowances, £638; relief to relatives of deceased persons, £18,587; and to persons disabled, £34,296; the total amount being £53,521.

The beneficiaries on the fund, at 31st December, 1914, in respect of fatal accidents, were 421 adults and 550 children, and in respect of non-fatal accidents, 299 persons permanently disabled, and 266 children.

The allowances payable at 31st December, 1914, in respect of fatal accidents and cases of permanent disablement were at the rate of £33,306 per annum.

A detailed account of the Miners' Accident Relief Fund may be found in another chapter of this Year Book.

## EDUCATION.

### 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
<b>Total ... ..</b>	<b>857,698</b>	<b>789,036</b>	<b>1,646,734</b>

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
<b>Total ... ..</b>	<b>134,215</b>	<b>123,808</b>	<b>258,023</b>

Persons of the age of 5 years and over 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 aborigines), 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.				
<b>MALES.</b>							
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
<b>FEMALES.</b>							
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 and under 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 In- struction... ..	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 and under 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 and under 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	335	4,703	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.

#### 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; 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, 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.

#### *Public Schools Act, 1866.*

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 local supervision; four hours per school-day were reserved for secular instruction exclusively, and a maximum period of one hour per school-day was 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.

#### *Public Instruction Act, 1880.*

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, 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, also other features of that Act, such as the 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 enacts that instruction in primary and superior public schools shall be free. 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.

#### *Development of Public School System.*

In the period 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 to which superior departments have been added as occasion arose, while high schools were established in the more populous districts of Sydney, Newcastle, and Maitland.

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 inquire 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 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 in the 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 extensive areas; and the increase of high school facilities expresses a desire to provide a higher standard of education.

The secondary school system was extended greatly and a new syllabus, introduced in 1911, has been adopted in State High Schools, and in all the private schools registered under the Bursary Endowment Act. A system of examinations has been established to mark the completion of each stage of school work, and an Employment Bureau has been opened in the Department of Education for boys who continue their education beyond the primary stage.

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 below.

The years 1913 and 1914 were 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 expansion of secondary education in the State Schools. During 1915 the syllabus of each type of school was revised, and new courses were commenced in the schools at the beginning of 1916.

#### 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 since that year 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.
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	5
1913	357,135	1,518,863	1,875,998	20	6
1914	258,836	1,640,679	1,899,515	20	5

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. The following statement gives in more detail the expenditure for 1914; the largest item relates to the Public Schools of the State:—

Object.	Expenditure.	
	Capital.	Annual.
Education Department, Schools, &c. ... ..	£ 234,636	£ 1,533,662
Educational Institutions, Schools of Arts, &c. ... ..	981	9,735
University, and Affiliated Colleges ... ..	5,000	47,671
Sydney Grammar School ... ..	.....	1,500
Industrial Schools ... ..	5,830	9,595
Public Library ... ..	5	11,294
Australian Museum ... ..	.....	10,699
Conservatorium of Music ... ..	8,384	.....
National Art Gallery ... ..	.....	6,826
Observatory ... ..	.....	3,193
Zoological Gardens, Taronga Park ... ..	4,000	1,600
Grants and Subsidies to Various Societies ... ..	.....	5,504
<b>Totals ... ..</b>	<b>£258,836</b>	<b>1,640,679</b>

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 Education, industrial schools, public library, &c. The University of Sydney, though a publicly endowed institution, was free from any measure of Governmental supervision until 1912, when the University Amendment Act was passed, under which the Government is represented on the Senate. Grants and subsidies to institutions, schools, and societies represent annual payments conditioned 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.
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
1914	3,258	717	3,975	7,404	3,674	11,078

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 1905 there was, on the average, one school to 391 persons; in 1914 there was one school to 473 persons in the population of the State. Since 1905 there has been an increase of 357, equivalent to 12 per cent., in the number of public schools, and a decrease of 136, or 16 per cent., in the number of private schools. 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 early years 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, but during the last seven years an advance is apparent, due mainly to the extension of small schools in scattered districts.

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.

## 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 relate 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.
				per cent.	per cent.
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
1914	252,697	64,577	317,274	79·6	20·4

During the first half of the period under review the total enrolment increased very slowly. Latterly, however, there is an appreciable advance, so that the figures for 1914 are 20 per cent. above 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 79·6 in 1914 in the case of the former, and from 22·1 in 1906 to 20·4 in 1914 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, &c.

#### 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 two years (1905-6) and on the average daily attendance during the whole year for the remaining years of the period reviewed:—

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.
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	213,709	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
1914	258,562	190,194	73·6	64,577	55,431	85·8

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.

The weekly roll is clearly a better test, inasmuch as it more 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 may be seen in the following statement which 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 and under 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.
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
1914	278,200	46,356	324,556	245,625	75·7

The figures in this table are exclusive of Technical schools, Sydney Grammar School, charitable schools, and shorthand and business schools and colleges, &c.

AGE DISTRIBUTION OF PUPILS.

The age-distribution of pupils enrolled at schools during the last ten years is shown in the following table. The figures represent the December quarter enrolment:—

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.
1905	7,316	179,655	19,039	206,010*	4,848	44,269	8,737	57,854
1906	8,284	179,844	19,170	207,298*	4,972	44,784	8,951	58,707
1907	8,535	181,104	19,590	209,229	4,859	43,180	9,401	57,440
1908	8,839	185,789	19,867	214,495	4,839	43,549	8,723	57,111
1909	9,312	185,166	19,261	213,739	5,007	44,293	9,061	58,361
1910	9,965	185,519	19,292	214,776	5,180	44,652	9,415	59,247
1911	10,603	192,740	18,467	221,810	5,247	46,193	9,523	60,963
1912	10,002	200,260	18,267	228,529	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
1914	11,165	221,046	20,486	252,697	5,344	49,872	9,361	64,577

\* Exclusive of Children at Subsidised 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 hereunder, 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 :—

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.
1905	263,864	108,333	29,935	24,070	23,603	15,019	3,954	41,268	12,632
1906	266,005	108,497	30,636	24,207	23,866	15,092	3,922	42,106	12,679
1907	266,669	109,306	31,436	24,453	23,954	15,080	3,434	42,005	12,001
1908	271,606	112,728	32,209	24,913	23,581	15,064	3,415	42,295	11,401
1909	272,100	113,019	31,190	24,941	23,582	15,007	3,308	43,615	11,433
1910	274,023	114,677	30,937	25,021	23,640	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
1914	317,274	136,812	33,628	29,783	35,678	16,756	3,644	50,434	10,499

Taking the total enrolment as 100, following are the proportionate values under each head of the table given above :—

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.
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	11·23	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	9·33	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
1914	43·12	10·60	9·39	11·24	5·29	1·15	15·90	3·31

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.

As to the children of the Church of England, its constituent percentages of the total children enrolled in the State were :—

Year.	Ratio to Total Children Enrolled in all Schools.		
	Church of England Children in Public Schools.	Children in Church of England Schools.	Total.
	%	%	%
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
1914	43·12	1·15	44·27

The percentage of Church of England children in public schools increased from 41·06 in 1905 to 43·12 in 1914, and the proportion in the denominational schools has been very constant during the whole period. Of the Church of England children attending school, less than 3 per cent. attend their own denominational schools.

As to the Roman Catholic children, the figures appear as follows :—

Year.	Ratio to Total Children Enrolled in all Schools.		
	Roman Catholic Children in Public Schools.	Children in Roman Catholic Schools.	Total.
	%	%	%
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
1914	10·60	15·90	26·50

In the percentage attending public schools, the rates showed a tendency to decline; the proportion in the denominational schools remained fairly constant at about 16 per cent. 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 lessons in special religious instruction during the past five years:—

Denomination.	Number of Lessons.				
	1910.	1911.	1912.	1913.	1914.
Church of England ... ..	25,209	26,101	27,229	30,958	35,373
Roman Catholic ... ..	840	711	887	833	1,086
Presbyterian ... ..	7,132	7,452	8,074	7,922	8,313
Methodist ... ..	8,430	8,800	9,956	10,914	12,455
Other Denominations ... ..	5,094	5,536	6,737	6,694	7,472
Total ... ..	46,705	48,600	52,883	57,321	64,699

## THE STATE SCHOOLS.

*Annual Expenditure.*

The following statement shows the expenditure by the Department of Education 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.				Sites, Buildings, and 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	63,817	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	1,191,743	93,666	1,304,284	285,702	65,433	17,466
1913	22,880	1,211,920	106,405	1,341,205	344,950	53,932	63,803
1914	24,462	1,269,835	179,979	1,474,276	247,165	57,308	2,681

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 £2,500 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 expenditure on land and buildings in the Technical Education branch for the year 1913, included the cost of resumption of land adjoining the Central College.

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 Education 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 relative cost per child enrolled is shown in the following table for a series of years, also the cost per head of population :—

Year.	Net School Expenditure.		
	Per Child.		Per head of Population.
	Mean Quarterly Enrolment.	Average Attendance.	
	£ s. d.	£ s. d.	s. d.
1905	3 12 6	4 19 9	10 5
1910	5 8 9	7 10 10	14 8
1911	5 11 2	7 14 7	14 11
1912*	6 14 10	9 5 11	18 3
1913	6 17 2	9 9 5	18 7
1914	6 13 2	9 1 0	18 7

\*Includes increased salaries paid to the teachers for previous year.

#### *Distribution of Expenditure.*

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 Education in 1913 and 1914 :—

	1913.	1914.
	£	£
Sites, buildings, additions, &c. ... ..	281,670	221,348
Maintenance of Schools—		
Rent, Furniture, and Repairs, &c. ...	58,597	78,175
Salaries and allowances :		
Primary Schools ... ..	1,051,457	1,081,427
High Schools ... ..	43,784	54,064
Evening Continuation Schools ... ..	9,464	8,312
Other expenses :		
Primary Schools ... ..	94,368	102,974
High Schools ... ..	987	3,079
Evening Continuation Schools ... ..	3,008	2,015
Bursaries and Scholarships ... ..	11,683	25,160
Boarding allowance and conveyance to Central Schools.	6,917	8,402
Training of teachers ... ..	34,040	35,292
School inspection ... ..	32,059	32,538
School medical inspection ... ..	3,471	9,826
Ministerial office administration ... ..	34,004	36,909
	1,665,509	1,699,521

#### SCHOOL ACCOMMODATION, SITES, AND PLAYGROUNDS.

There was accommodation in the schools at the end of 1911 for 228,253 children, and at the end of 1914 for 255,711; a 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, the minimum apportionment of space inside a public school building,

is 100 cubic feet for each child ordinarily in attendance. In recent 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 148 works in progress at the end of the year 1914 for new schools, residences, additions, and alterations. Omitting the value of the sites, the total cost of these buildings under construction is estimated at £216,776.

During 1914, 131 sites for public schools were vested in the Department. Of these 65 were grants of Government lands, 32 were resumed, 26 purchased, 3 conveyed as gifts, and 5 were secured under perpetual leasehold within the Murrumbidgee Irrigation Area.

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."

#### ADMINISTRATIVE OFFICES.

An Act was passed in April, 1912, authorising the construction of new administration buildings for the Department of Education on a site adjacent to the building then in use which had been constructed as far back as 1814.

The new offices, which are practically fireproof, are built of local freestone, with steel frames and concrete floors. The foundation stone was laid in September, 1912, and the building was completed in August, 1915.

#### SCHOOL FURNITURE AND EQUIPMENT.

In April, 1913, a furniture factory in Drummoyne was purchased by the Department of Education at a cost of £14,500; this establishment replaces workshops at Cockatoo Island which had been resumed by the Commonwealth Government. The factory provides practically the whole of the furniture required in the schools; the output includes portable class-rooms, also various articles of furniture for the Departmental offices.

School books and other materials for use at school are issued free of charge to pupils of State schools.

#### STATE PRIMARY AND SECONDARY SCHOOLS.

The number of State schools open at the end of each of the last ten years is shown in the following statement:—

Year.	High.	Public.	Provisional and Half-time.	House-to-house.	Subsidised.	Evening.		Industrial and Reformatory.	Total Schools open at end of year.
						Primary.	Continuation.		
1905	4	1,923	767	12	160	32	...	3	2,901
1906	5	1,903	750	10	195	34	...	3	2,885
1907	5	1,927	721	9	220	33	...	3	2,918
1908	5	1,941	727	9	284	33	...	3	3,002
1909	5	1,949	729	12	344	33	...	3	3,075
1910	5	1,950	740	9	362	36	...	3	3,105
1911	8	1,915	746	6	414	16	18	2	3,125
1912	12	1,942	739	6	489	3	41	2	3,234
1913	15	1,975	709	7	529	1	47	2	3,285
1914	16	1,997	669	4	523	1	46	2	3,258

The number of schools open at any time during the year does not 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 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 of State schools in operation in 1881, the first full year in which the Department of Education was under immediate ministerial control, and the numbers open at later periods; the figures represent the gross number of schools in operation during the year:—

Type of School.	Schools in operation during year.					
	1881.	1891.	1901.	1911.	1913.	1914.
High ... ..	...	5	4	8	15	16
Public, Primary and Superior Day	1,100	1,697	2,049	1,945	1,993	2,003
Provisional ... ..	246	349	428	514	541	520
Half-time ... ..	93	300	276	303	278	273
House-to-house ... ..	...	92	20	6	7	7
Subsidised ... ..	...	...	...	494	660	664
Evening, Primary ... ..	57	14	41	24	1	1
Continuation ... ..	...	...	...	18	50	51
Industrial and Reformatory ...	2	3	4	3	2	2
Total ... ..	1,498	2,460	2,822	3,315	3,547	3,537

#### *Consolidation of Small Schools.*

In 1904 the consolidation of small schools was initiated, the Department of Education 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 the last ten years:—

Year.	Schools.	Cost of Conveyance. £	Year.	Schools.	Cost of Conveyance. £
1905	13	959	1910	63	3,967
1906	17	1,802	1911	80	4,650
1907	38	2,812	1912	111	5,859
1908	47	3,280	1913	162	6,719
1909	51	3,713	1914	190	7,844

#### PRIMARY SCHOOLS.

Primary work in its various stages is undertaken in schools classified 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.



*Classification of Primary Schools.*

Public primary 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, each pair of Half-time schools being counted as one :—

Class.	Average Attendance.	Schools.				
		1911.	1912.	1913.	1914.	1915.
I	600 and over	65	70	73	74	79
II	400-599	42	35	31	34	32
III	200-399	85	86	93	91	98
IV	50-199	370	375	388	412	418
V	30-49	593	599	578	555	559
VI	20-29	416	429	510	533	540
VII	Under 20	978	931	879	861	828

*Evening Primary Schools.*

For some years Evening Primary Schools for boys had been open in localities where there was a definite demand for such schools, to enable students to make good deficiencies in early education. In 1913 and 1914 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. Following is the record of Evening Primary Schools for the last five years :—

Year.	Schools.	Teachers.	Students.		Average Age, Years.
			Average Quarterly Enrolment.	Average Quarterly Attendance.	
1910	36	36	981	539	17
1911	16	16	639	343	17
1912	3	3	110	60	17
1913	1	1	23	19	17
1914	1	1	22	16	17

*Subsidised Schools.*

For the education of children resident in places remote from any State schools, the Subsidised School was instituted in 1903. 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 1914 was £18,620.

Particulars relating to Subsidised Schools for December Quarter of the last ten years are shown hereunder :—

Year.	Teachers.			Pupils.						Attendance per cent. of Enrolment.
				Quarterly Enrolment.			Average Attendance.			
	Males.	Females.	Total.	Boys.	Girls.	Total.	Boys.	Girls.	Total.	
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	38	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	2,368	2,213	4,581	1,940	1,853	3,793	82·8
1914	59	464	523	2,368	2,299	4,667	1,921	1,886	3,807	81·5

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.*

In order to supply means of education for families so isolated that even two could not readily combine to form a Subsidised School, Travelling Schools have been established. The first commenced operations in the Narrabri district in 1908; the teacher was provided with a vehicle to carry school requisites, and a tent for use as a schoolroom, in which to teach 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.

#### *Railway Camp Schools.*

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. These schools are conducted in tents with specially-designed furniture, and are moved with the railway camps from place to place.

#### SCHOOLS IN FEDERAL CAPITAL TERRITORY.

An arrangement has been made by the Commonwealth and State Governments, by which the Department of Education continues to administer the Public Schools in the Federal Capital Territory. Buildings are erected, equipped, and maintained, and the general provisions of the Public Instruction Act of New South Wales are enforced. Teachers are subject to classification, status, and transfer on an equal footing with 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.	Schools.	Teachers.			Gross Enrolment.			Expenditure.
		M.	F.	Total.	Boys.	Girls.	Total.	
1911	14	10	4	14	178	179	348	£ 1,593
1912	12	9	3	12	177	164	341	2,473
1913	11	9	2	11	168	149	317	1,914
1914	14	11	3	14	213	207	420	2,238

#### SECONDARY EDUCATION IN STATE SCHOOLS.

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. The number of pupils who received secondary education in 1913 and 1914 is shown below; the figures are exclusive of those in the schools of the Technical Education Branch, which are discussed on a later page:—

Schools.	1913.			1914.		
	Schools.	Total Enrolment.	Average Attendance.	Schools.	Total Enrolment.	Average Attendance.
High ... ..	15	3,580	2,832	16	4,096	3,332
Intermediate High ... ..	5	1,134	788	5	1,124	826
District ... ..	22	1,678	1,092	22	1,802	1,213
Superior Public (Day Continuation)—						
Commercial ... ..	32	1,724	833	30	1,808	943
Junior Technical ... ..	20	804	416	20	945	499
Domestic ... ..	52	1,601	778	43	1,836	934
<b>Total... ..</b>	<b>146</b>	<b>10,521</b>	<b>6,739</b>	<b>136</b>	<b>11,611</b>	<b>7,747</b>

In addition to the above Superior Public (Day Continuation) Schools established in 1912, there are other Public Schools in which the course of study for certain subjects is the same as for the first and second year's course in the High School Syllabus, but no statistics of enrolment nor of attendance are available.

#### *Superior and Day Continuation Schools.*

Any Public School may be declared a Superior School if there is in one department a minimum attendance of 20 pupils who have completed the primary course.

Until 1912 the Superior Schools continued the work of the primary syllabus with such additional subjects as would enable pupils to compete at public examinations, but it was found desirable to reorganise these schools upon a vocational basis, and many of them have been converted into Day Continuation Schools.

In the Day Continuation Schools a two-years course is provided for pupils who do not remain at school long enough to complete the High School course, but who desire special instruction to fit them for industrial or commercial pursuits. The schools are organised as (1) Junior Technical (boys), which supply preliminary groundwork for industrial career, the course of study being fundamental to that of the Trades Schools of the Technical

Education system ; (2) Commercial for boys and girls, where the curriculum includes shorthand, book-keeping, business principles, &c. ; (3) Domestic for girls, the special subjects being those relating to home management.

In the Superior Schools which have not been organised as Day Continuation, the course of instruction is similar to that of the first and second year of the High School. A proposal is under consideration to consolidate many of the Day Continuation Schools in the metropolitan and Newcastle districts by the establishment of central schools.

*Evening Continuation Schools.*

Prior to the year 1910 Evening Schools were maintained, to afford instruction to those who had not had the full advantage of primary education. But in order to satisfy the imperative demand for an Evening-School system for pupils who had completed their primary school work, and were engaged in wage-earning processes during the day, it became necessary to modify and adjust the Evening-School organisation. Consequently, the Evening Schools now supply two distinct types of training—(a) the Primary Schools, to complete elementary education, (b) the Continuation Schools, 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 1911, Evening Continuation Schools were organised, and Evening Primary Schools, with one exception, were converted into Continuation Schools.

The latter schools are classified as Junior Technical, Commercial, or Domestic ; for those pupils who are not qualified to enter upon the two years' courses, preparatory courses of one year's instruction in primary school subjects may be established in each school.

The fee charged is 6d. per week ; but on completion of a satisfactory attendance in each year, the amount paid may be returned to the student. The average age of pupils attending the Preparatory Schools was 16 years, and for the other Evening Continuation Schools, 18 years.

The following is the record of these Evening Continuation Schools for the years 1913 and 1914 :—

Classification.	1913.			1914.		
	Schools.	Pupils.		Schools.	Pupils.	
		Average Quarterly Enrolment.	Average Quarterly Attendance.		Average Quarterly Enrolment.	Average Quarterly Attendance.
Junior Technical (boys) ...	18	1,073	659	18	1,137	816
Commercial (boys) ...	19	1,593	975	19	1,350	1,013
Preparatory ...	2	42	28	2	57	29
Domestic (girls) ...	8	513	325	8	709	395
<b>Total</b> ...	<b>47</b>	<b>3,221</b>	<b>1,987</b>	<b>47</b>	<b>4,053</b>	<b>2,253</b>

In connection with the Continuation School system the question of compulsory attendance has been the subject of much discussion.

HIGH SCHOOLS.

The High Schools provide four years' course of advanced education for pupils who have completed the primary course. No fees are charged, but

pupils provide text books and materials for individual use. To gain admission pupils must complete the primary course, and the parents are required to give an undertaking that the pupils will remain at school till the completion of the whole course. A new syllabus was introduced into the High Schools at the beginning of 1911; in addition to a general course leading to professional studies at higher institutions, the Technical High School gives preparation for engineering and building professions, and the Agricultural High School accommodates students for pastoral pursuits and for admission to the Agricultural College. The Intermediate Certificate which marks the completion of the first two years' course in these schools, must be obtained before the pupil is allowed to proceed with the work of the third year; the Leaving Certificate is awarded at the termination of the course. At the Intermediate High Schools an abbreviated course of advanced study leading to the Intermediate Certificate is provided.

The following particulars relate to High Schools during the last ten years:—

Year.	High Schools.	Teachers.			Pupils.			Holders of—		Fees received.	Cost per head of enrolment.
		M.	F.	Total.	Enrolment.		Attendance. Daily average.	Bursaries.	Scholarships.		
					Total.	Average Quarterly.					
1905	4	14	12	26	693	563	524	127	148	£ 3,481	£ s. d. 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	50	33	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
1914	21*	159	112	271	5,220	4,685	4,170	552	1,029	...	15 11 0

\* Includes 5 Intermediate High Schools.

Since the reorganisation of the secondary course the number of High Schools has increased from 5 in 1910 to 21, including 5 Intermediate in 1914; the average quarterly enrolment has risen from 894 to 4,685; the number of pupils holding bursaries and scholarships from 408 to 1,581, and the cost per scholar has been doubled. This development may be attributed to the abolition of fees, dating from 1st January, 1911, and to the extension of scholarships and bursaries, as described below.

#### 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 have special staffs, and the higher classes undertake the secondary course of instruction as followed in High Schools. At the close of 1914, twenty-two of these schools were in operation, the average weekly enrolment of secondary pupils being 776 boys and 586 girls, and the average attendance was 688 boys and 524 girls.

## STATE SCHOOL 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, 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 Education, 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, practically untrained, entered the service as teachers of small schools in outlying districts, and became eligible for classification.

As this system proved inadequate for maintaining an efficient and well-trained body of teachers, it was decided in 1905 to make proper provision for the training of teachers. The training schools at Hurlstone and Fort-street were closed, and a general training college was established in connection with Blackfriars Public School. The admission of pupil teachers was continued until the supply of trained teachers became sufficient to meet requirements, but at the end of 1910 they had been entirely replaced.

The ordinary course at the Training College extends over two years, and qualifies for teaching in the various classes of primary and infant schools, and on its completion students may qualify for second-class certificates. Those who elect to withdraw at the end of the first year are eligible for third-class certificates. A period of practical work must be accomplished satisfactorily before classification is awarded. Third-year and special courses are arranged with reference to the departmental requirements and capabilities of individual students.

The first-year courses include terms in the ordinary College, in the University, for matriculated students who take also the professional parts of the ordinary College course, and professional work for students who have graduated before entering the College. The second-year courses are (1) the ordinary College, (2) Kindergarten and Infants'-school, to meet the requirements of teachers of young children, (3) Domestic Science, (4) University for students who have matriculated in their first and second College year, (5) Hawkesbury College for students preparing for work in rural schools. The last-mentioned students reside at the Hawkesbury Agricultural College and use the Public School at Richmond as a practice school; during the winter vacation they attend short terms of lectures at the Teachers' College. Evening Extension Courses in Kindergarten and Infant Teaching are provided, and these require attendance at the College on three evenings each week.

To obviate the necessity of admitting untrained teachers into the Service, short courses of training have been established for rural school teachers and assistants at Hereford House School, which was opened in 1911 as an adjunct to the Training College. This training extends over six months, and about 200 teachers attend in each year, but it is considered advisable to extend the period to twelve months if possible.

The fees for training courses are as follows: Six months, £7 10s.; one, two, and three year courses, £15 per annum for those taking both general and professional subjects; fees are returned to students who enter the service of the Department of Education. For Evening Courses the fee is £3.

Professional training is conducted at three Demonstration Schools—Blackfriars, North Newtown, and Darlington—and departments have been secured in several other schools for practical work in connection with the Training College.

The minimum age of admission to the College is 17 years, so that intending students must remain at school for three years beyond the primary school age, and provision has been made for their admission as probationary students to a preparatory course in District or High Schools in the principal centres throughout the State.

In addition to the teachers trained by the Department of Education qualified teachers are admitted from outside the service; those appointed to primary schools are placed on probation for six months, and those appointed to secondary schools, if requiring additional professional training, must take the University course leading to the Diploma in Education.

A portion of land within the Sydney University having been acquired as a site for the Teachers' Training College, the erection of the building was commenced in 1914. When the new College is completed, it will provide training for teachers for private secondary and primary schools, as well as for the State service.

In 1914, 682 students were enrolled at the Teachers' Training College:—

Students.	Malcs.	Females.	Total.	Number holding Scholarships.
First year ... ..	39	137	176	173
Second year ... ..	47	95	142	142
Third year ... ..	7	9	16	16
Fourth year ... ..	3	3	6	6
Short course ... ..	119	174	293	293
Special travelling ... ..	2	...	2	2
Evening students ... ..	...	47	47	...
Total ... ..	217	465	682	632

Particulars of scholarships tenable by students of the Training College are shown on a later page.

The staff of the Training College consists of a Principal, Vice-Principal, 28 lecturers, 7 visiting lecturers, and 6 supervisors of Practice teaching, a warden of women students, and 4 clerical and library assistants. Members of the teaching staff are afforded opportunities to study abroad, and leave of absence, on full pay, may be granted for this purpose.

#### *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 arrangements have been made by which the teachers' promotion depends, not only on the progression 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.

The salaries paid to High School teachers are as follows:—

Teachers.		Men.		Women.	
<b>Principal—</b>		£	£	£	£
Boys' or Girls' School	... ..	400	to 600	300	to 450
Mixed school	... ..	350	„ 450	.....	
Master and Mistress of Department	... ..	300	„ 400	200	to 300
Assistant	... ..	200	„ 300	180	„ 250
Junior staff	... ..	168	to 228	144	„ 180

The deputy headmaster receives from £25 to £40, and the deputy head-mistress from £15 to £30, in addition to other salary:

The following statement shows the range of salaries paid to teachers at Primary schools having an average attendance of 200 and over:—

Class of School.	Required Average Attendance.	Principal Teachers.		Mistress.				First Assistant.			
				Girls' Department.		Infants' Department.		Men.		Women.	
		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	216	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	192	2A	216	...	...
		2A	306	...	...	2A	192	2B	198	...	...

If the average attendance in a boys' department exceed 500, the principal receives £500, and the first assistant £312; if over 400, the salaries are £475 and £300 respectively; and if the average exceed 300, the principal teacher receives £465. Similarly, if a girls' department exceed 400, the mistress receives £312, and the first assistant (1B) £222, or (2A) £192. Headmasters of practice schools (Primary) receive £475 per annum.

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						



*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 Intermediate, High, District and Evening Continuation schools and to teachers of special subjects, such as Science, Manual Training, Cookery, &c. Married teachers in charge of schools are granted residences at an assessed rental, and extra allowances may be granted to teachers stationed in remote localities, where the cost of living is high. Teachers of half-time schools and 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 is allowed after twenty years' 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, and consideration is given for meritorious service.

A comparative statement of the teaching staff of the State schools for the years 1910 and 1914 is shown below; those in the Technical Education Branch are not included:—

Teachers.	1910.			1914.		
	Men.	Women.	Total.	Men.	Women.	Total.
Teachers and Assistants—						
First Class ... ..	257	71	328	272	100	372
Second Class ... ..	713	545	1,258	964	670	1,634
Third Class ... ..	1,310	698	2,008	1,308	834	2,142
Unclassified ... ..	791	1,019	1,810	692	1,250	1,942
Training Students ... ..	154	149	303	102	249	351
Pupil Teachers ... ..	8	28	36	...	...	...
Cookery Teachers ... ..	...	...	...	...	62	62
Sewing Mistresses... ..	...	109	109	...	107	107
High School Teachers ... ..	29	19	48	159	112	271
Subsidised School Teachers ... ..	38	324	362	59	464	523
Total ... ..	3,300	2,962	6,262	3,556	3,848	7,404

There is a high number unclassified because there are included in this category ex-students of the Training College whose classification is deferred until they have proved their practical skill during a period of service as assistants. Included under this heading in 1914 were 193 men and 381 women who had completed the short-course of training at Hereford House, and 99 men and 217 women who had completed one or two years training at the Teachers' College, besides a number of ex-students who had taken longer courses.

Associations are established in the inspection 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, also summer schools and schools of instruction are held regularly.

During 1914, 304 teachers were enrolled as students in the University of Sydney, 213 attending in the evening; 209 were attending the Arts, and 24 the 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 Public Schools; and in 1914 the inspectors for primary and superior schools numbered 40, together with an Inspector of Secondary Schools, and an Inspector of Evening Continuation Schools. Under the Bursary Endowment Act, inspection is provided for such private secondary schools as apply for registration.

Methods of inspection were radically altered in 1904. Detailed examination of school-pupils was replaced by a more general inspection of the work and management of the school, to enable the Inspector to devote his attention to the improvement of the condition of the school and of the efficiency of the teachers. 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.

Although the whole 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 to support the teachers, or to check misconduct. These Boards are restricted in supervision to the schools in their respective districts, which are defined by proclamation.

During recent years a number of Parents and Citizens' Associations have been formed and their growth testifies to a widespread desire to aid in educational work. These associations have no authority in the internal management of the schools nor in the expenditure of public moneys.

#### PRIVATE SCHOOLS.

Until the recent reorganisation of the State secondary-school system there were only five Public High Schools with an average quarterly enrolment of less than 900 pupils, so that instruction beyond the primary stage of the Public Superior Schools was supplied to a large extent by private establishments. The majority of the private schools are conducted under the auspices of the religious denominations, and none are subsidised except the Sydney Grammar School.

The fees vary in accordance with the type of school, many of the secondary schools being residential, and in the denominational primary schools the payment of fees is to a large extent voluntary. Scholarships and bursaries have been provided by private subscription for the assistance of deserving students. The Department of Education exercises no supervision over the private schools except those registered under the Bursary Endowment Act, which are inspected by the Inspector of Secondary Schools.

A comparative statement relating to the private schools is shown below. Sufficient data cannot be obtained to permit the classification of these schools according to the standard of instruction supplied:—

Classification.	1905.				1914.			
	Schools.	Teachers.	Enrolment.	Average Attendance.	Schools.	Teachers.	Enrolment.	Average Attendance.
Undenominational ...	421	1,252	11,131	9,153	247	1,081	9,516	8,107
Roman Catholic ...	361	1,835	41,268	32,908	406	2,159	50,434	43,220
Church of England ...	69	295	3,954	3,121	54	334	3,514	3,180
Presbyterian ...	4	44	318	250	4	44	328	312
Methodist ...	2	34	287	261	2	40	369	333
Lutheran ...	1	2	44	41	1	1	36	33
Seventh Day Adventist	3	14	239	222	3	15	250	241
Hebrew ...	1	6	613	519	...	...	...	...
Total ...	853	3,482	57,854	46,480	717	3,674	64,577	55,431

Included in the number of teachers as shown in the table are those who visit the schools to give tuition in special subjects only, the figures for 1914 being 2,702 permanently attached to the teaching staffs of the schools and 972 visiting teachers as compared with 2,639 staff teachers and 843 visiting teachers in 1905.

*Sydney Grammar School.*

The Sydney Grammar School was incorporated by an Act of Parliament in 1854, and opened in 1857; 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.	8 and under 14 years.	Over 14 years.
1910	17	8	25	639	572	536	133	414
1911	18	8	26	636	534	553	153	431
1912	17	8	25	665	551	522	143	379
1913	18	8	26	695	606	566	132	463
1914	18	8	26	686	571	537	63	437

The income of the Sydney Grammar School for the year 1914 amounted to £13,040, including statutory endowment £1,500 and school fees £10,615; the expenditure amounted to £13,630.

## 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 Education; technical education is now administered by a superintendent, with financial and general procedure independent of other branches of the State primary and secondary education system.

Accommodation for the classes was provided by the erection of the Technical (Central) College, at Ultimo, which was opened for the reception of students in January, 1892, and has been subjected to extensive additions and alterations.

Eight branch Colleges were established in suburban and country centres and classes were instituted in numerous other places; technical classes at Public schools were also under the direction of the Technical College teachers until 1912, when they were dissociated and manual work became part of the ordinary Public School course.

Although Technical education was steadily extended throughout the State it became evident that the system failed to attain its main objective, viz., the training of competent tradesmen and of persons capable of directing the work of the artisans; this failure was attributed mainly to lack of co-ordination between the work of the College and that of the employers' workshops and to the want of preparatory knowledge on the part of the students. It was decided therefore to reorganise the Technical system, and with the co-operation of representative industrial employers and employees a new scheme was evolved in 1913 and put into operation at the beginning of the following year.

Two main causes of instruction have been established—(a) trades courses concurrent with the period of apprenticeship; (b) higher courses embracing the technology of the various trades and technical professions. Important features of the new scheme are: (1) that intending students are required to furnish evidence that they possess sufficient preparatory knowledge to take profitable advantage of the training; (2) that no student is admitted to a course unless actually engaged in the specific trade to which the course relates. Special provision is made that journeymen who desire to improve their knowledge may be admitted without preliminary test to any part of the courses relating to their trades.

The Trades courses are divided into two parts, viz., the lower courses covering a period of three years in the Trades Schools, and the higher which last for two years, in the Technical Colleges. The day classes in the workshops of the College have been abolished and students are expected to attend on three evenings per week to receive instruction in trade mathematics and drawing and trade exercises which include trade principles and practical work likely to be missed by the apprentice at his daily work.

An Advisory Committee consisting of representatives of both employers and employees has been appointed for each trade or group of trades to give advice and assistance regarding practical courses, equipment and teaching. These committees are specially valuable in giving publicity to the aims of the Technical Department, and thereby stimulating interest in this important branch of education.

The instruction of apprentices in the trades courses is strictly supplemental to their workshop training, and in granting certificates of trade competency, the experience and training of each apprentice in the workshop of his employer is taken into account as well as the results of his studies at the trades schools. By this method the trade certificate awarded on the satisfactory completion of the course is a guarantee of proper training at actual work as well as in the courses of technical instruction.

The reorganisation of the higher technical, or diploma course, was not completed till the end of the year 1914; the qualifications as to preparatory knowledge and trade occupation are prescribed as in the case of the trades courses except that the Diploma Course in Science is open to students irrespective of occupation. Holders of trade or high school leaving Certificates, or of similar Certificates of recognised educational institutions, may be admitted without further examination to the Diploma Courses, which are given only in the Central Technical College in Sydney.

Students who pass successfully through the Diploma Courses in science and engineering may be exempted from attendance during the first year's courses leading to a degree in the science and mechanical engineering at the Sydney University. A comprehensive scheme of scholarships has been established to encourage students from the primary schools to pass through the study courses of the technical system and thence to the University.

Instruction is given under the technical education system in Domestic Science, which includes cookery and laundry work, window-dressing, and tailor's cutting; these subjects are not included in the trade or diploma classes.

The following table shows the number of classes and teachers and the enrolments at the Technical College and schools during the last ten years; the figures do not include the technical classes in Public schools:—

Year.	Classes.	Lecturers and Teachers.	Total Enrolments.*	Individual Students.	Average Weekly Attendance.	Fees Received.
1905	449	244	10,347	7,282	7,287	£ 9,861
1906	482	249	11,339	8,169	7,606	11,007
1907	565	273	13,533	10,106	8,616	13,046
1908	667	280	16,075	12,451	9,503	14,176
1909	736	292	18,206	12,434	10,924	15,475
1910	777	331	19,695	12,712	12,172	15,873
1911	816	343	22,021	14,147	14,560	16,395
1912	732	340	26,469	14,805	17,204	15,846
1913	582	236	16,218	11,620	12,214	13,760
1914	513	239	13,687	9,032	11,523	10,779

\* Includes students who have joined more than one class.

The immediate effect of the reorganisation of the Technical system was to reduce the enrolments, a number of classes with no direct bearing upon any trade being discontinued; the entrance tests and the regulations as to occupation also caused a reduction in the number of students.

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 classification of teachers in the Technical Education branch in the last six years :—

Year.	Lecturers in charge.	Resident Masters.	Salaried Teachers.		Salaried Assistants.		Teachers (Paid by fees.)		Total.	
	Males.	Males.	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
1914	10	6	141	11	69	8	16	28	242	47

#### KINDERGARTEN.

Kindergarten methods have been adopted as far as practicable in the Infant Schools under the Department of Education, and in various parts of Sydney and suburbs Kindergarten classes are conducted for the purpose of bringing young children under refining influences. During the year 1914 classes were in operation in 60 Public Schools; 11 were separate Infant Schools, and the remainder were Primary Schools with Kindergarten departments attached; the number of pupils enrolled for Kindergarten instruction was 3,539, the average attendance being 2,635.

These classes were conducted under Froebelian methods until 1912, when the Montessori system also was introduced. Shortly after the publication of the Montessori methods a series of experiments was commenced at the Kindergarten Practising School at Blackfriars, Sydney, and so great was the success that it was decided to send the mistress of this school to Rome to study the system at first hand. On her return the mistress, who is also the lecturer in Kindergarten at the Teachers' Training College, reported that the methods were satisfactory not only as an aid to Kindergarten teaching but also in the training of much older children, so that Montessori teaching materials have since been introduced with very satisfactory results into many of the Infant Schools. The underlying principle of the system is individual liberty, and its main benefits are independent work, more rapid progress, and a pleasure in work for both teacher and children.

#### *Park Kindergartens.*

A scheme for the establishment of Park Kindergartens or Playgrounds for children under school age in recreation areas controlled by Municipal Councils was initiated in November, 1913, when the first was opened 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, under the supervision of a trained Kindergarten teacher appointed by the Department of Education. The scheme is being extended throughout the metropolitan area.

#### *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 in 1913-14 to £1,200. In 1914 there were 11 Free Kindergartens.

schools with 57 teachers, 8 being in the metropolitan area, and 3 at Newcastle. The number of scholars on the roll during the December quarter was 691, of whom 667 were under 6 years of age, and 24 between 6 and 14 years. The average daily attendance was 478, and the gross enrolment for the year, 1,029.

At some of the ordinary private schools there are departments for Kindergarten work.

In connection with Kindergarten teaching a private institution provides training in Froebelian methods, and the Free Kindergartens provide observation and practice schools.

#### COMMERCIAL EDUCATION.

Preparatory education for commercial life has been provided in the State primary schools, where the course of instruction, especially in the Commercial Continuation Schools, includes elementary training in many commercial subjects; economics and business principles and practice are included in the curriculum of the High Schools. Many private schools and colleges also afford facilities for commercial training, both by day and evening classes.

A complete return of the number of pupils taught in these special subjects is not available, but statistics of the State Commercial Continuation Schools have been shown on a previous page, and the following statement shows particulars of Business and Shorthand Schools under private management in which many persons who have passed the school age receive instruction. 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	4,657	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	35	2,492	2,638	5,130	1,316	1,184	2,500	17,159
1911	19	63	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
1913	17	72	35	2,112	4,526	6,638	1,105	2,096	3,201	25,104
1914	18	58	40	2,511	4,068	6,579	1,152	1,423	2,575	25,389

In addition to the above, there are many students to whom instruction is being imparted by means of correspondence.

Evening classes are conducted by various institutions, such as the Young Men's Christian Association, and the Railway Institute.

At the latter institution, 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.

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 converted in 1913 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.

#### DOMESTIC TRAINING.

In the reorganisation of 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 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 care of infants 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 1914 sixty-six schools for practical cookery were in operation, the enrolment being 3,400; in addition, demonstrations in cooking were given to 5,229 pupils of fifth-classes. The Technical College provides more advanced courses.

#### 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 many State schools, and 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 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 1914 a camp school was held at Morpeth in the autumn, 593 boys and 47 masters, drawn from 52 schools, attended. Over 100 farms were visited. The cost to each metropolitan boy was 8s. 6d., to each Newcastle boy 7s. 6d., and to the Education Department for organisation, transport, &c., was 8s. 3d. per boy.

The spring session was not held, as the operations of the rural camp school were suspended on account of the war.

A special Agricultural High School is established at Hurlstone. 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 1914 there were ninety-nine students on the roll, of whom forty-one were in residence, and at the end of 1914 there were four bursars, and thirteen scholarship holders in residence. 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.

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; one-year practical courses are provided at a charge of £5 per half-year. These schools are conducted in connection with Experiment and Demonstration Farms at Cowra (mixed farming), Glen Innes (mixed), Dural (orchard), Grafton and Wollongbar (dairying).

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 Yanco.

During recent years lads have been received for short courses of agricultural training at the Agricultural Training Farm at Pitt Town. Since 1910 the establishment, converted into the Government Agricultural Training Farm, has been devoted primarily 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, 1915, forty-five lads were in residence.

Instruction in general farm work is given at the Farm Schools at Gosford and Mittagong, conducted by the State Children's Relief Department. Details will be shown in a later chapter.

Hawkesbury Agricultural College provides higher agricultural education. The farm covers 3,430 acres, and the average number of students in attendance during the year 1914, was 185. The Diploma course at the College covers three years' work, but certificates may be 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 following statement shows the attendance during the last five years at the agricultural training establishments:—

Establishment.	1910.	1911.	1912.	1913.	1914.
Hawkesbury Agricultural College ...	221	217	201	203	185
Experiment Farm Schools—					
Wagga ... ..	69	77	75	79	63
Bathurst ... ..	48	49	51	51	31
Yanco ... ..	...	20	23	18	14
Farm Apprentice Schools—					
Wollongbar ... ..	23	11	2	6	41
Cowra ... ..	...	19	20	29	46
Glen Innes... ..	...	...	12	33	38
Grafton ... ..	...	...	14	21	29
Dural Demonstration Orchard ... ..	3	5	3	3	13
Hurlstone Agricultural High School ...	58	56	61	67	99
Government Agricultural Training Farm...	88	177	399	366	252
<b>Total ... ..</b>	<b>510</b>	<b>631</b>	<b>861</b>	<b>876</b>	<b>811</b>

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 the Agricultural Bureau, agricultural societies, &c., in regard to which particulars 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. In 1915 a Winter School for farmers at the Hawkesbury Agricultural College was attended by 60 students; the number in the previous year was 117, the decrease being due to the war.

Schools at various centres for Cream Graders and Testers in 1915 were attended by 98 students as compared with 14 in the previous year.

#### PHYSICAL AND MILITARY TRAINING.

In accordance with the provisions of the Defence Acts the military training of cadets is conducted by the school teachers. Previous to the inauguration of the Commonwealth universal training system in 1911, cadet corps had been organised in connection with a large number of State schools, and in the larger private institutions.

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.

On 1st July, 1911, the State organisation of cadets was superseded by that of the Commonwealth, the first half of the year having been devoted to the preparation of candidates for posts as non-commissioned officers in the forces.

To complete their year's training, junior cadets prior to 1912 served for 120 hours, in periods of  $2\frac{3}{4}$  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.

During the twelve months ended 30th June, 1914, 17,494 Junior Cadets were trained at 1,308 schools, and 16,254 were passed as efficient.

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 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 includes physical training, drill, shooting, swimming, first aid, &c. In order that the scheme of physical training may be extended to school girls the Defence Department arranges also special courses of instruction for women teachers. Eight schools of instruction were held in 1914, and were attended by 243 teachers; several schools, including two for women teachers, were held in Sydney during the Christmas vacations 1914-15.

*Games and Sports.*

Organised games and sports are encouraged in the schools, and wherever facilities exist, swimming is included in the ordinary curriculum. In the State schools, one afternoon per week in the season may be devoted to the art of swimming, and instruction in life-saving is given.

Public School Athletic Associations in Sydney and in the country districts organise school displays, and competitions in games.

## SCHOOL SAVINGS BANKS.

A system of school savings banks in connection with the public schools of the State was initiated in the year 1887, and by this means £498,250 have been received in deposits, and £114,544 transferred to other banks as Children's Individual Accounts. The object of these banks is to inculcate principles of thrift during the impressionable ages.

In 1914 these banks numbered 707; the estimated number of depositors was 60,000. The deposits amounted to £32,985, and withdrawals, £31,885; £6,260, representing individual sums of £1 and upwards, were transferred to the Government Savings Bank, leaving £12,962, as credit balances in the school banks.

## DELINQUENT, DEFECTIVE AND DEPENDENT CHILDREN.

Special provision has been made for delinquent, defective and dependent children in several reformatories and industrial schools maintained by the State and in private charitable institutions.

The State Institutions are the Girls' Industrial School and Training Home at Parramatta and the Gosford Farm Home for Boys, and the Cottage Homes established by the State Children's Relief Board; particulars regarding their operations will be shown in a later chapter of this Year Book.

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 1914, the sum of £5,029 was received from legacies and subscriptions, and the total income of the institution was £9,660. The expenditure for the year was £7,494, including £6,412 for maintenance, salaries and wages, and £688 for buildings and repairs. The number of teachers employed was 21, of whom 9 were men. The gross enrolment during the year was 98 boys and 57 girls; the average daily attendance was 135. The December enrolment was 143, and of these, 65 were under and 78 were over 14 years of age. The admissions during the year were 23.

Ragged Schools have been conducted since 1860 in Sydney, to provide education and attention for neglected children, meals and clothing being supplied when necessary. The operations of these schools have decreased in recent years, with the enactment of free education in State schools. During 1914, 5 schools were open, 6 women were employed as teachers, and 253 individual scholars were enrolled, with an average daily attendance of 140. There were 189 children on the roll during the December quarter, 48 were under 6 years, 137 from 6 to 14 years, and 4 were over 14 years.

At charitable institutions in 1914 there were 14 schools with 54 teachers and a gross enrolment of 1,316. In December quarter the enrolment of 987 consisted of 73 under 6 years of age, 802 between 6 and 14 years, and 112 over 14. These were denominational institutions conducted by the Roman Catholic Church and the Church of England.

## MEDICAL INSPECTION OF CHILDREN.

In 1907, arrangements were made for the medical inspection of children in the State schools, but inspection was restricted to schools in the

populous centres of Sydney and Newcastle. In 1911 medical inspection was extended to the South Coast district and to a number of inland towns.

During 1913 the medical inspection was reorganised to include the pupils of all Public Schools throughout the State, and the majority of those attending the private schools; and arrangements were made to examine each child every four years, thus ensuring two medical examinations during school-life. To provide facilities for the treatment of defective children in sparsely populated areas a travelling school hospital and a travelling ophthalmic clinic were established during 1914; in the following year a travelling dental clinic was organised, also one in Sydney.

The work of the medical officers of the Department of Education includes the investigation of epidemics of infectious diseases affecting school children; the inspection of school buildings; systematic courses of lectures at the Training College; 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 of ophthalmia in the back-country schools; the following up of untreated cases by visits of school nurses to parents in order to secure the medical treatment of children.

A series of lectures given by a member of the School Medical Staff to the women students at the Teachers' Training College forms part of the Infant Teachers' course of instruction, the students being trained to observe children and to diagnose simple ailments.

Arrangements are being made for a considerable extension of the work of the medical branch of the Department of Education during the year 1916. Details regarding the medical inspection of school children and the school clinics will be given in a later chapter of the Year Book.

UNIVERSITY EXAMINATIONS.

For upwards of 40 years the University has conducted annual Public Examinations, Junior and Senior, open to candidates from any school, on payment of a fee, and these examinations have ranked as tests of the soundness of instruction imparted in the public and private schools of the State.

In 1915 the Senate decided to abolish these Examinations, as they have been superseded by the examinations conducted by the Department of Education as described below.

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 Candidates.
1867-1870	35	30	85·7	69	53	76·8
1871-1875	291	174	59·2	951	544	57·2
1876-1880	316	237	75·0	1,737	1,046	60·2
1881-1885	311	233	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	563	84·3	5,841	3,944	67·5
1906-1910	867	719	82·9	6,403	4,560	71·2
1911	168	131	77·9	1,227	944	76·9
1912	210	167	79·5	1,178	886	75·2
1913	171	131	76·6	867	632	72·9
1914	136	91	66·9	464	332	71·6

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
1914	58	33	91	195	137	332

*Education Department's Certificate Examinations.*

Prior to 1911 students from public schools, superior and high, were successful competitors at public examinations conducted by the University. Since the introduction of a co-ordinated system of secondary education, designed to furnish adequate preparation for various types of vocation and the institution of State bursaries, the necessity for competing at such examinations has vanished with the acceptance, by the University, of the certificates of the Department of Education, as indicating the attainment of satisfactory standards of education.

The regulations provide for three certificates to mark definite stages in the progress of school pupils, the examinations being open to students of State and private schools. 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 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 examinations held during the year 1911 to 1914, the candidates being pupils of Public and Private Primary Schools :—

Year.	Candidates.	Passes.	Scholarships awarded.		Bursaries awarded.	
			Boys.	Girls.	Boys.	Girls.
1911	10,708	7,092	297	240	186	116
1912	14,978	8,464	330	184	198	102
1913	15,348	7,934	418	213	218	85
1914	16,684	11,137	1,255	745	195	106

In allotment of the certificates on this examination, which also determines the allocation of Scholarships to Secondary Schools, the teachers' reports and the record of school attendance are taken into account.

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 results of the Intermediate Certificate Examinations are shown below. 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. In 1914, of 2,334 candidates, 67 per cent. were successful.

Year.	Candidates.	Passes.	Scholarships awarded.		Bursaries awarded.	
			Boys.	Girls.	Boys.	Girls.
1912	1,571	645	43	2	56	62
1913	1,573	912	19	5	63	181
1914	2,334	1,563	3	...	74	210

The first Leaving Certificate Examination was held in November, 1913, and of 156 candidates, 123, or 71 per cent., were successful. In 1914 the percentage of passes was 83.

Year.	Candidates.	Passes.	University bursaries awarded.	
			Boys.	Girls.
1913	156	123	20	4
1914	337	280	20	9

On the results of this examination, the University bursaries, also the exhibitions, provided for in the University Amendment Act, are awarded.

The Intermediate and Leaving Certificate Examinations have been adopted as standards for the admission of persons to the public services of the State.

The first examination for Superior Public School Certificates was held in December, 1914; 566 candidates who had completed the two years' course sat for examination, and 469 passed.

*Evening Continuation School Certificates.*

Certificates of proficiency are awarded to pupils of Evening Continuation Schools whose attendance and work have been satisfactory throughout the course. In 1914 there were 291 candidates at the examination for certificates, and 182 passed; in the previous year 99 passed out of 176 candidates.

TECHNICAL EDUCATION EXAMINATIONS.

The following are particulars of examinations conducted in the Technical Branch during the last five years :—

Particulars.	1910.	1911.	1912.	1913.	1914.
Number examined ... ..	5,391	5,581	5,714	4,811	3,684
Number of passes ... ..	4,078	4,708	4,728	3,577	3,095
Percentage of passes ... ..	75.6	84.3	82.7	74.3	84.0
Number obtaining honours ...	522	670	593	502	466

STATE SCHOLARSHIPS AND BURSARIES.

It has been the policy of the State to assist promising students, especially to the High Schools and to the University, by means of scholarships and bursaries.

High School scholarships, awarded upon the result of the Qualifying Certificate Examinations, to pupils under 14 years of age, are tenable for a period of four years, and entitle the holder to a grant of text-books and other school

material to the value of £1 10s. per annum. Under specified conditions an allowance in aid of maintenance or travelling may be granted. If the holder is unable to attend a High School, the scholarship may be held for two years at a Superior Public School. In 1914 2,000 scholarships were awarded.

Intermediate Scholarships, tenable for the third and fourth years' courses in High and District Schools, are awarded upon the results of the Intermediate Certificate Examination. In addition to a grant of text-books, holders receive an annual allowance.

Three scholarships are awarded annually to students of the Agricultural High School, entitling the holders to free education for two years at the Hawkesbury Agricultural College, with monetary allowance and text-books. The holders commence on the second years' course at the College.

Probationary students who intend to become teachers may gain two-year scholarships at District Schools. Text-books are supplied and an allowance is granted during the second year.

Scholarships, admitting to courses of technical instruction, are provided to assist students to pass from the Day and Evening Junior Technical Schools to the Trades and Science Schools, and from Lower to Higher Trades Courses, and from Trades to Diploma Courses. Students holding Leaving Certificates may obtain entrance by Scholarship to the Diploma Courses; and those who have gained the Intermediate Certificate at the Technical High School may obtain scholarships enabling them to enter the Higher Trades Courses. These technical scholarships carry exemption from fees and a grant of text-books and appliances, and it is stipulated that holders must be engaged in the trade or profession for which the course has been established.

Students who pass through the Diploma Course with distinction are enabled to continue their education at the University by means of scholarships valued at £100 per annum. Two scholarships each will be granted in the Departments of Science, Engineering, and in Architecture at a later stage.

The following scholarships were awarded in 1914 :—

Classification.	Tenable at	Period.	Number awarded, 1914.		
			Boys.	Girls.	Total.
Scholarships ... ..	High Schools ... ..	4	820	491	1,311
	Superior Public Schools...	4	124	51	175
	District Schools ... ..	4	307	203	510
	Sydney Grammar School..	4	4	...	4
			1,255	745	2,000
Probationary Student Scholarships.	High or District Schools..	2	59	206	265
Junior Technical and Domestic Science Scholarships.	Trades Schools ... ..	3	15	10	25
Hawkesbury Agricultural Scholarships.	Hawkesbury Agricultural College.	2	3	...	3

In addition to the foregoing the Falkiner Scholarship, established by private benefaction, is open for competition at the Leaving Certificate examination to boys attending the Hay District School; it entitles the holder to free University education and text books for four years and a grant for maintenance. As the Falkiner Scholarship is available only once in every

four years the Department of Education has supplemented the award by a scholarship similar in value, to be known as the Riverina Scholarship, which will be open for competition in alternate years; it was first awarded as from the beginning of 1914.

Scholarships tenable at the Teachers' Training College, consisting of a money allowance, text-books, and exemption from college tuition fees, are awarded annually. For first and second year students the allowance is £30 per annum, with an additional grant of £20 to holders who have to board away from home; third and fourth year students receive £50 per annum; and for the short course the allowance is £25. Three scholarships are awarded annually to the longer course at the Training College for competition amongst those who have completed the short course at Hereford House. Scholarships are awarded also in the training course for cookery. Travelling scholarships have also been instituted in connection with the Training College; former students of two or more years' standing are eligible for these scholarships, which are of the annual value of £200, and are tenable, at the discretion of the Director of Education, for one or two years. Holders of Travelling Scholarships are required to pursue a definite line of study or research into some branch of the theory, practice, or administration of education. The Women's College of the Sydney University awards three scholarships annually to women students of the Teachers' Training College who are matriculated students of the University.

In connection with the wheat industry, the Government Farrer Scholarship and the Farrer Research Scholarship are tenable at the Hawkesbury Agricultural College, and the Daily Telegraph Farrer Scholarship is awarded to the best wheat student at the Bathurst or Wagga Experiment Farm School; details of these scholarships are given in the chapter relating to Agriculture.

#### *Bursary Endowment.*

In 1912 the Bursary Endowment Act was passed by Parliament providing public moneys for establishing a fund for bursaries, tenable in public or private secondary schools 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 Education and of the Secondary schools registered under the Act. A representative of the Department of Education is chairman.

Schools desiring to benefit under the Act must register; and such registration, which is effective for two years, is conditional upon 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 Education.

Under the general conditions attached to registration a school must be capable of providing a four-year course of instruction beyond the primary stage, to a standard not lower than that of the Leaving Certificate in at least six approved subjects (of which mathematics shall count as two). As at 30th June, 1915, fifty-nine schools had been registered under the Bursary Endowment Act.

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, in order to attend school, 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.



The bursaries made available by the Bursary Endowment Board during 1914 were as follows :—

Classification.	Tenable at—	Period.	Number awarded, 1914.		
			Boys.	Girls.	Total.
Bursaries ... ..	High Schools ... ..	yrs. 4	133	72	205
	District Schools ... ..	4	35	17	52
	Registered Secondary Schools ... ..	4	27	17	44
			195	106	301
Intermediate Bursaries..	High Schools ... ..	2	5	2	7
	Registered Secondary Schools ... ..	2	3	1	4
			8	3	11
Fourth Year Bursaries...	High Schools ... ..	1	5	...	5
	Registered Secondary Schools ... ..	1	2	1	3
			7	1	8
University Bursaries ...	Sydney University... ..	...	20	9	29

In addition to the bursaries made available by the Bursary Endowment Board, three bursaries, tenable for three years, may be awarded at the Hawkesbury Agricultural College ; three, tenable for two years, at each of the Farm Schools at Bathurst and Wagga Experimental Farms ; and one, tenable for one year, at the Apprentice School at Wollongbar Experimental Farm.

#### *University Exhibitions.*

The University Amendment Act, 1912, provides for the allotment of Exhibitions by the Senate to students desirous of entering the University. The Exhibitions are awarded on the results of the Leaving Certificate Examinations, and exempt the holders from payment of matriculation, tuition, and degree fees ; they are tenable in all faculties and departments. The number awarded yearly is at the rate of one for every 500 persons in the State between the ages of 17 and 20 years, as shown by the latest census records. The exhibitions are open for competition to students of State High Schools and registered 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.

In 1914 the Senate allotted 165 exhibitions in the following faculties :— Arts, 50 ; Medicine, 62 ; Science, 23 ; Engineering, 21 ; Law, 4 ; Dentistry, 3 ; Economics, 1 ; Agriculture, 1. One hundred and nine were allotted to the State schools, and fifty-six to the registered secondary schools.

#### 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.

The government of the University was vested in a Senate of sixteen elective fellows (at least twelve laymen) with 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 is 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.
- 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 members who were then 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 was voted annually for the maintenance of these departments. During 1910 the aid received from the Government for general purposes amounted to £18,800.

In 1913 the Government statutory endowment was raised to £20,000 per annum, and for the year 1914-15 Parliament voted the following sums for the services mentioned. :—

	£		£
Extensions of existing departments	1,500	Organic and Applied Chemistry ...	2,500
Chair of Agriculture ... ..	2,500	Astronomy ... ..	200
„ Botany ... ..	2,000	Scientific apparatus ... ..	2,500
„ Economics and Commerce	2,000	Tutorial Classes and University	
„ Mechanical Engineering ...	500	Extension ... ..	1,500
Veterinary Science ... ..	3,500	Loss by reduction of Lecture Fees	2,500
Science Research Scholarships ...	500	Evening Lectures ... ..	2,000
Retiring allowances ... ..	800		

Including the vote for additions, repairs, and furniture, £2,000, the total endowment from the State for 1914-15 was £46,000.

#### *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. William Charles Wentworth for the foundation of a travelling scholarship had, in December, 1914, accumulated to £3,868. 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, 1914, credit balances to the extent of £550,710.

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. The Hovell bequest—made in 1877—of properties for the endowment of a Professorship in Geology and Physical Geography, is valued at £6,000; and 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 Dixson to enable the University to purchase the Aldridge Collection of Minerals from the Barrier District of New South Wales.

*University Receipts and Disbursements.*

The following statement shows the amounts derived by the University from each of the principal sources of revenue, and the total expenditure, during each of the last eight 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
1914	43,783	20,151	25,643	1,106	90,683	86,782	550,710

The principal item of disbursements in each year is for salaries. In 1913 and 1914 the total expenditure was distributed as follows:—

Classification.	Amount.		Percentage of Total.	
	1913.	1914.	1913.	1914.
	£	£		
Salaries ... ..	58,317	61,575	66·3	70·9
Maintenance and Apparatus ... ..	21,504	17,862	24·5	20·6
Buildings and Grounds ... ..	1,267	256	1·4	·3
Scholarships and Bursaries ... ..	4,727	4,741	5·4	5·5
Books, retiring allowances ... ..	2,136	2,348	2·4	2·7
Total ... ..	87,951	86,782	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 six Departments. A Dean for each Faculty is appointed for a period of two years. The Professors, with the Chancellor and Vice-Chancellor, form the Professorial Board which superintends matters relating to study and discipline. The degrees and diplomas given, and the cost of graduation, including lecture and laboratory fees, matriculation, and degree or diploma fees, also—in the medicine and dentistry course—hospital fees, are as follow:—

Faculty or Department.	Degree or Diploma.	Minimum Term of Study.	Degree Fes.	Total Cost of 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....			
	Doctor " M.D....	2	10	.....
	Diploma in Public Health (post graduate).	*	10	31 0 0
Department of Dental Studies.	Bachelor of Dental Surgery. B.D.S.	4	10	154 16 0
Pharmacy Course ... ..	.....	1	...	18 7 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.—Civil	4	10	125 8 0
	Mining and Metallurgical			
	Mechanical and Electrical			
	Master of Engineering. M.E.			
Department of Veterinary Science.	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 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 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, Dentistry, 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, and a general paper in English, comprising questions in English and Geography, 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 were obtainable also at the senior public examinations. In 1914, 268 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 Education. The University is entitled to four representatives on the examining board for this certificate.

#### *Lectures and Lecturerships.*

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 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 1914, the Teaching Staff included 23 professors, 9 assistant professors, and 106 lecturers and demonstrators, of whom 7 professors and 7 lecturers and readers were paid out of the Challis Fund, and 12 lecturers and demonstrators from the Peter Nicol Russell Fund. There were, in addition, 11 honorary lecturers and 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 1914 there have been 4,451 Degrees of various kinds conferred; male graduates numbered 3,811, and females 640. The Degrees conferred during 1913 and 1914, and the total Degrees from the foundation of the University to the end of 1914, are shown in the following statement:—

Degree.	Conferred during				Total to December, 1914.						
	1913.		1914.		Conferred by Examination.		Admitted <i>ad eundum</i> .		Total.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.
M.A. ...	8	4	16	1	352	53	25	2	377	55	432
B.A. ...	46	35	56	28	1,401	474	10	...	1,414	474	1,888
B.Ec. ...	...	...	3	1	3	1	...	...	3	1	4
LL.D. ...	...	...	...	...	22	...	3	...	25	...	25
LL.B. ...	12	...	10	...	208	1	5	...	213	1	214
M.D. ...	...	...	1	...	31	...	26	...	57	...	57
M.B. ...	56	2	102	2	720	41	9	...	729	41	770
Ch.M. ...	29	1	51	2	451	30	1	...	452	30	482
L.D.S. ...	...	...	...	...	28	2	...	...	28	2	30
B.D.S. ...	8	...	6	3	57	5	...	...	57	5	62
D.Sc. ...	...	...	9	...	9	...	9	...	18	...	18
B.Sc. ...	13	3	16	3	125	31	5	...	130	31	161
B.Sc. Agr. ...	...	...	6	...	6	...	...	...	6	...	6
B.V. Sc. ...	...	...	11	...	14	...	...	...	14	...	14
M.E. ...	...	...	...	...	5	...	1	...	6	...	6
B.E. ...	12	...	20	...	281	...	1	...	282	...	282
Total	184	45	307	40	3,716	633	95	2	3,811	640	4,451

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 individual students attending lectures at the University at intervals since 1876 :—

Year.	Matriculated.	Non-matriculated.	Total.	Year.	Matriculated.	Non-matriculated.	Total.
1876	34	24	58	1909	924	350	1,274
1886	122	81	203	1910	1,005	337	1,342
1896	438	16	454	1911	1,060	327	1,387
1906	836	218	1,054	1912	1,084	388	1,472
1907	871	307	1,178	1913	1,259	372	1,631
1908	875	449	1,324	1914	1,244	430	1,674

The following table shows the distribution of the students attending lectures during 1914 :—

Department.	Matriculated.		Non-matriculated.		Total.
	Men.	Women.	Men.	Women.	
Arts—Day ... ..	116	123	22	15	276
„ Evening ... ..	103	27	56	34	220
„ Post-graduate ... ..	26	17	...	...	43
Law ... ..	98	...	10	...	108
Medicine... ..	472	39	...	...	502
„ Post-graduate ... ..	3	...	...	...	3
„ Dentistry ... ..	24	2	3	...	29
Science—Pure ... ..	33	26	4	2	65
„ Agricultural ... ..	9	1	2	...	12
„ Engineering ... ..	83	...	7	...	90
„ Veterinary ... ..	7	...	3	...	10
Pharmacy ... ..	...	...	42	7	49
Massage ... ..	...	...	...	10	10
Military History and Science	...	...	89	...	89
Economics and Commerce ...	23	3	127	4	157
Research Study ... ..	6	...	...	...	6
Total ... ..	1,008	229	365	72	1,674

*Scholarships, Bursaries, and Fellowships.*

Scholarships, exhibitions, and bursaries have been founded 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 student 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 provided annually by the Government for pupils of State schools, and those registered under the Bursary Endowment Act.



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; also a commission in the British Army is offered every year.

The following statement shows the number of students who attended University Lectures as non-paying students during the last five 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
1914	95	304	5	59	29	523

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 to a graduate in Engineering of the University of Sydney of not more than four years' standing, is of the annual value of £300 for a maximum period of three years. Similar Fellowships were also founded for graduates in Agriculture, Veterinary Science, and Medicine.

The University enjoys the privilege, bestowed through the Orient Steam Navigation Co. (Ltd.), 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, and 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, the Renwick Hospital for Infants, and the South Sydney Hospital for Women.

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.

#### *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 1914 extension lectures were delivered in Sydney and suburban centres, and in other centres embracing country districts in New South Wales.

#### *Tutorial Classes.*

In accordance with the provisions of the University Amendment Act of 1912, the Senate has made arrangements for the establishment of evening Tutorial classes, which are open to unmatriculated as well as to matriculated students; diplomas may be issued to persons who have studied in these classes for at least one year in any one subject. Tutorial classes, which may be established in particular branches of study upon specific requisition by intending students, have been formed in suburban and country centres as well as at the University, the subject of study being economics, except in the case of one class in biology.

#### *University Buildings.*

The University buildings consist of the main building, containing the great hall, lecture rooms, and offices, all built of Pymont sandstone; the Medical School, which is in the same style; the Fisher Library, adjacent to the main building, and designed to form part of the main quadrangle, 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. Buildings for the School of Agriculture and the Teachers' Training College are now in course of erection.

Most of the buildings and equipment of the University have been provided by the Government.

#### *Affiliated Colleges.*

In the affiliated colleges within the University 161 students were in residence during 1914. Following are the figures relating to these colleges:—

College.	Members.	Students in Residence.	Principals and Lecturers.	Receipts.	Disbursements.
St. Paul's (C.E.) ...	181	42	5	£ 4,400	£ 4,819
St. John's (R.C.) ...	137	22	3	1,610	1,520
St. Andrew's (Pres.) ...	247	71	7	16,650	13,990
Women's ...	102	26	2	2,501	2,413
Total ...	667	161	17	25,161	22,742

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, 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 may subsidise the building fund of a college by sums corresponding to the amounts expended for building by the college, out of its subscribed funds, up to a maximum of £20,000.

The Women's College is not attached to any religious denomination.

#### *Reciprocity.*

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 honours, 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 determine.

#### THE ARTS AND PROFESSIONS.

Prior to the recent establishment of the Conservatorium of Music there was no organised State system of higher training for the arts, apart from the initiatory work of instruction in art manual work and in singing, as portion of the syllabus work of the State schools; and practically all the preparation for art careers was undertaken by private schools.

In the Technical Education scheme provision is made for teaching art work, modelling, and painting, and elementary instruction is available in the State schools, in drawing and the theory of music. But though the State system of education made no direct provision for higher training in this connection, it offered 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.

#### *Conservatorium of Music.*

During 1912 the Government of New South Wales decided to establish a Conservatorium of Music; portion of the buildings used formerly in connection with the Government House was remodelled for the purpose, and was opened in 1915. The Director and other officers have been appointed, and the educational work of the institution commenced in 1916.

#### *Library of Music.*

A Library of Music has been instituted by the Education Department; it contains many valuable works which are available for the use of recognised musical societies and organisations.

*Medical and Legal Professions.*

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, and barristers and solicitors must be formally admitted to their profession.

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 1912 and Amendment of 1915. 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 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 averaged ninety-four per annum, and at 31st December, 1914, there were 2,109 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 its amendments as consolidated in 1912, 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 provisions. At 31st December, 1914, there were 1,399 registrations in force.

Following is the record of students in the School of Dentistry at the United Dental Hospital:—

Year.	Students.			Year.	Students.		
	Dental Board.	University.	Total.		Dental Board.	University.	Total.
1907	12	29	41	1911	14	34	48
1908	21	37	58	1912	47	21	68
1909	24	27	51	1913	4	20	24
1910	23	38	61	1914	1	24	25

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. At the end of 1914 the registrations in force numbered 1,168. In addition to qualified pharmacists, other dealers in poisons must be registered before the Pharmacy Board and obtain annual licenses; 388 such poison licenses were in force at 31st December, 1914. 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, 1915, the register of nurses in New South Wales showed as follows:—General, 1,718; Obstetric, 806; Medical Members, 88; Mental Nurses, 36; Honorary Members, 24.

Information regarding ambulance and first-aid instruction will be given in a later chapter of this Year Book.

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 1914 numbered 159; solicitors at the same date numbered 1,066, viz., 440 in the country, and 626 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. During 1914 51 candidates were examined and 23 passed; the figures for the previous year were: 43 examined and 15 passed.

#### PUBLIC ACCOUNTANTS, CLERKS, ETC.

The profession of public accountant has not been standardised by law in New South Wales; there are, however, a number of accountants' societies which conduct examinations for the admission of members. The results of the examinations in 1914 are shown below:—

Institution.	Candi- dates.	Passes.				Mem- bers at end of year.	
		Prelimi- nary.	Intermediate.		Final.		
			Account- ancy.	Legal.	Account- ancy.		Legal.
Association of Accountants of Australia (incorporated) ... ..	30	...	4	4	3	1	72
Australasian Corporation of Public Accountants ... ..	187	49	51	33	32	22	181
The Institute of Public Accountants of Australasia ... ..	20	...	4	2	8	2	96
Incorporate Institute of Accountants, Victoria (N.S.W. Branch) ... ..	178	...	43		50	38	84
Institute of Incorporated Accountants of N.S.W. ... ..	180	14	25	33	11	9	122
Society of Incorporated Accountants and Auditors, England ... ..	...	...	...	...	...	...	13
Federal Institution of Accountants, N.S.W. Division ... ..	43	...	11	8	12	14	59

A Select Committee appointed by Parliament in December, 1914, to report upon matters relating to accountancy, recommended that the profession should be given legal status under a controlling board.

Examinations for bank clerks are conducted by the Institute of Bankers; the results during the last ten years were as follows :—

Year.	Examined.	Passed.	Year.	Examined.	Passed.
1905	345	186	1910	268	182
1906	271	131	1911	280	150
1907	260	162	1912	300	152
1908	226	120	1913	257	139
1909	251	128	1914	276	122

Persons desirous of acting as clerks, auditors, engineers, and overseers, in connection with the Local Government Services are required to furnish evidence of their efficiency, in accordance with the provisions of the Local Government Acts. Particulars of examinations in 1913 and 1914 are shown below :—

Positions.	1913.		1914.		No. of certificates issued to 31st December, including those granted without examination.
	Examined.	Passed.	Examined.	Passed.	
Clerks ... ..	63	16	123	27	385
Auditors ... ..	14	8	11	5	297
Engineers ... ..	7	...	7	3	299
Interim Certificates...	1	1	2	2	17
Overseers ... ..	4	1	4	1	15
Total ... ..	89	26	147	38	1,013

Examinations for admission of Junior Clerks and Draftsmen to the Public Service of New South Wales have been conducted under the supervision of the Public Service Board. During 1914 there were 681 candidates for 235 vacancies for junior clerks, 184 were successful; for 73 vacancies for cadet draftsmen there were 220 candidates, of whom 65 attained the requisite standard. The Public Service Board has recently adopted the certificate examinations of the Education Department for admission of persons to the service.

#### EDUCATIONAL AND SCIENTIFIC SOCIETIES.

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. 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. Particulars of the operations of this Fund will be shown in a later chapter 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 Linnean 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 Apollo Society, and the Royal Sydney Philharmonic Society.

During the year ended 30th June, 1915, there were 169 associations for the advancement of agriculture, horticulture, and pastoral pursuits, of which 136 were subsidised by the Government. Of these societies, the Royal Agricultural Society of New South Wales holds an annual show at Sydney.

#### 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, 1915:—

Museums—	£	Libraries—	£	£
Australian ... ..	79,397	Public, of N. S. Wales...	28,957	
Agricultural, Forestry, Mining and Geological.	14,191	Mitchell ... ..	43,118	72,075
Technological ... ..	19,366	Fisher—Sydney University ...		96,903
Botanical—Herbarium ... ..	11,436	National Art Gallery ... ..		94,437
		Total ... ..		£387,805

All these institutions are open to the public free of charge.

#### *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 1914 numbered 9,512, of which 1,986 were purchased, and the remainder collected, exchanged, or donated. A fine library is attached to the institution, containing many valuable publications, the volumes numbering about 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, 1914 and 1915 :—

	1914.	1915.
	£	£
Salaries and allowances ... ..	7,769	7,824
Purchase, collection, and carriage of specimens ...	284	292
Books and binding ... ..	429	432
Catalogues and publications ... ..	735	458
Cases, bottles, and receptacles ... ..	885	368
Miscellaneous ... ..	1,031	989
<b>Total ... ..</b>	<b>£11,133</b>	<b>£10,363</b>

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 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 115,000, acquired by purchase, gift, loan, and exchange.

Research work is conducted by the scientific staff of the Technological Museum in connection with the development of the natural vegetable resources of Australia, particularly in respect of the pines and eucalypts.

Following are the records of attendance at museums in 1914 :—

Museum.	Visitors.			Average Attendance.		Expenditure.
	Week-days.	Sundays.	Total.	Week-days.	Sundays.	
Australian... ..	105,705	47,578	153,283	407	915	£ 10,363
Technological—						
Sydney ... ..	50,667	37,050	87,717	163	713	5,096
Newcastle ... ..	17,990	.....	17,990	78	.....	209
Bathurst ... ..	35,008	.....	35,008	149	.....	113
West Maitland ... ..	32,904	.....	32,904	136	.....	197
Goulburn ... ..	22,846	.....	22,846	84	.....	143
Albury ... ..	12,100	.....	12,100	48	.....	120

Additions to the Collections in Technological and Australian Museums in the last two years are classified as under :—

Classification.	1913.	1914.	Classification.	1913.	1914.
<b>AUSTRALIAN MUSEUM.</b>			<b>TECHNOLOGICAL MUSEUM.</b>		
Vertebrata ... ..	1,235	1,619	Mineral ... ..	396	1,878
Invertebrata ... ..	11,518	6,020	Vegetable ... ..	183	371
Fossils and Minerals ... ..	639	1,153	Animal ... ..	18	22
Ethnological and Historical... ..	879	462	Applied Art & Miscellaneous	404	323
Miscellaneous ... ..	236	258			
<b>Total ... ..</b>	<b>14,507</b>	<b>9,512</b>	<b>Total ... ..</b>	<b>1,001</b>	<b>2,594</b>



The Mining and Geological Museum is connected with the Department of Mines. Exhibits number nearly 30,000, of which 949 were acquired during 1914, viz., 712 by collection and 237 otherwise.

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 1914, 13 collections, comprising 2,200 specimens, were prepared; and many specimens received from country schools were classified.

The Agricultural and Forestry Museum is an adjunct of the Department of Agriculture and contains some 7,200 exhibits.

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.

#### PUBLIC LIBRARIES.

The principal public libraries, with the number of volumes in each at the end of the last three years, are shown in the following statement:—

Library.	Total number of volumes.		
	1912.	1913.	1914.
Public Library of New South Wales—Reference	175,575	181,367	188,587
Mitchell	74,808	77,375	81,678
Sydney University (Fisher Library) ... ..	100,000	100,000	100,000
Australian Museum ... ..	20,000	20,000	20,000
Botanical Museum ... ..	6,000	6,500	6,578
Technical College and Branches ... ..	11,020	13,271	14,048
Sydney Municipal Library ... ..	28,385	29,963	32,902
Other Municipal Libraries ... ..	31,982	34,744	27,938
Schools of Arts, Mechanics' Institutes, &c. ...	660,168	657,807	734,623
State Schools ... ..	320,046	358,177	367,406
Teachers' Training College ... ..	7,000	7,540	8,060
Total ... ..	1,434,984	1,486,744	1,581,820

The Public Library of New South Wales was established, under the designation of the Free Public Library, on 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 1914 included the following :—

	No.	Volumes.
Country Libraries ... ..	87	8,223
Lighthouses ... ..	27	2,044
Public School Teachers' Associations ... ..	35	2,681
Country Students ... ..	—	1,437

Students are expected to pay return freights on parcels, but all the other charges are defrayed by the State.

In 1914 the Reference Department of the Public Library contained 256,061 volumes, and there were also 14,204 volumes for country libraries under the lending system.

The total cost to the State of the library buildings was £28,957.

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. The Mitchell Library is located in a separate building which was opened in March, 1910. During 1914, over 4,000 volumes were added to the original collection, making a total of 81,678 volumes in the library.

The attendance at the Public Library during 1914 was as follows :—

Branch.	Visitors during Year.			Average Attendance.	
	Week-days.	Sunday (afternoon).	Total.	Week-days.	Sunday (afternoon).
Reference ... ..	172,143	11,031	183,174	564	212
Mitchell ... ..	14,685	.....	14,685	47	...

The following statement shows the cost of maintenance and administration of the Public Library, including the Mitchell Library, for the last five years :—

Year.	Salaries.			Books, &c., and Binding.	Miscellaneous.	Total.
	Reference.	Mitchell.	Country Libraries.			
	£	£	£	£	£	£
1910	3,997	1,530	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
1914	4,641	2,421	200	1,881	2,235	11,378

The Sydney Municipal Library was formed by the transfer to the C ty 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 1914 the classification of the volumes in the Sydney Municipal Library was as follows :—

Classification.	Old Portion.		Classification.	Open Access Portion.	
	Volumes.	Average Daily Issue.		Volumes	Average Daily Issue.
Natural Philosophy, Science, the Arts ...	3,537	·89	Natural Science ..	1,086	24·07
History, Chronology, Antiquities, Mythology	2,734	1·34	Useful Arts ... ..	2,127	48·49
Biography, Correspondence ... ..	3,428	1·26	Fine and Recreative Arts	882	23·47
Geography, Topography, Voyages Travels, &c....	2,842	·17	History ... ..	719	17·24
Jurisprudence ... ..	1,124	·27	Biography ... ..	1,011	24·73
Moral and Mental Philosophy .. ..	1,431	·70	Geography, Topography		
Poetry, Drama ... ..	736	·37	Travel, Description ...	871	28·27
Miscellaneous—General, Philology ... ..	1,764	·85	Social Science ... ..	1,368	20·21
			Philosophy, Religion ...	566	12·81
			Poetry, Drama ... ..	737	21·63
			Fiction ... ..	3,177	162·77
			Literature ... ..	1,099	24·60
			Miscellaneous ... ..	89	·54
			Juvenile Section ...	1,576	90·17
Total ... ..	17,596	5·85	Total ... ..	15,306	499·00

The attendance at the newspaper-room, attached to the library, was 213,670 persons during the few months ended 31st October, 1914, or an average daily attendance of 820.

Maintenance costs during 1914 amounted to £4,784, made up as follows :—Salaries, &c., £3,363; books, periodicals, binding, and electric lighting, £1,421.

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 1914 there were 432 such libraries with 762,561 volumes. Under the provisions of the Local Government Act of 1906, any shire or municipality may establish a public library, art gallery, or museum, and at the end of 1914 there were, in addition to the Sydney Municipal Library, 29 municipal libraries in the State, with 27,938 volumes.

The library of the Australian Museum, though intended primarily as a scientific library for staff use, is accessible to students, and about 20,000 volumes may be found on the shelves.

On 31st December, 1914, the library in connection with the Technological Museum, at the Central Technical College, and its branches, contained upwards of 14,000 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 a good collection of paintings and statuary, including some works of prominent modern artists, and some valuable gifts from private persons; there is also a fine collection of water colours.

The present value of the contents of the Gallery is £148,000, and the cost of the building to 30th June, 1915, was £94,437.

The number of paintings, &c., in the Gallery at the end of year 1914, and the amount expended in purchasing works of art during that year, are shown below:—

Classification.	Paintings, &c., in Gallery.	Expenditure during year.
		£
Oil Paintings ... ..	419	1,807
Water Colours ... ..	396	235
Black and White Works ... ..	564	104
Statuary, Casts, and Bronzes ... ..	165	225
Various Art Works in Metals, Ivory, Ceramics, Glass, Mosaic, &c. ... ..	411	140

The attendance at the National Art Gallery during the last eight 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
1914	172,185	113,654	553	2,185

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 1914, 115 pictures were so distributed among ten country towns.

The disbursements in connection with the Art Gallery during the last four years were:—

	1911.	1912.	1913.	1914.
	£	£	£	£
Works of art ... ..	2,369	2,868	2,817	2,511
Salaries, &c. ... ..	2,312	2,416	2,495	2,532
Sundries ... ..	612	768	689	646
<b>Total ... ..</b>	<b>£5,293</b>	<b>£6,052</b>	<b>£6,001</b>	<b>5,689</b>

The annual endowment is £2,000, payable in accordance with the provisions of the Library and National Art Gallery Act; in 1912, pending the amendment of the Act, this amount was increased by £1,500. The greater portion of this additional grant is expended on works of local artists. The Gallery has received but small support from private endowments, and, consequent upon its limited funds, is restricted mainly 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 last four years regarding these institutions, which are really libraries and recreation centres, are given below :—

Particulars.	1911.	1912.	1913.	1914.
Institutions ... ..	438	433	425	432
Membership ... ..	46,350	47,749	47,060	51,919
Books ... ..	623,440	660,168	655,807	734,623
	£	£	£	£
Value of library contents... ..	69,708	63,690	68,783	69,275
„ buildings ... ..	343,251	349,001	367,639	386,230
Government subsidy ... ..	11,353	11,152	9,734	11,059
Subscriptions ... ..	19,647	19,645	20,674	21,118
Other receipts ... ..	48,933	53,671	60,647	66,384
Expenditure—				
Books, &c. ... ..	11,083	11,288	13,243	13,391
Maintenance, &c. ... ..	67,249	73,994	81,369	81,847

Other receipts in 1914 include £21,158 on account of billiards; expenditure for maintenance includes £8,701 in this connection.

The Sydney Mechanics' School of Arts is the principal institute, having a membership of 2,168 and a library of 52,500 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.

## PUBLIC FINANCE

## SYSTEM OF REVENUE AND EXPENDITURE ACCOUNTS.

IN connection with the Public Accounts, the cash receipts within the financial year are considered as the actual income, and the cash payments during the same period the actual outlay.

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. Consequently, when the expenditure exceeded the income, there were 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 inexperienced and to the detriment of the public credit.

The following return shows the expenditure of the State during the last ten years. The figures are exclusive of advances made and repaid; but 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
	£	£	£	£
1906	12,283,082	11,386,864	896,218	.....
1907	13,392,435	12,799,797	592,638	.....
1908	13,960,763	13,704,122	256,641	.....
1909	13,625,071	14,698,442	.....	1,073,371
1910	14,540,073	14,192,855	347,218	.....
1911	13,839,139	14,448,218	.....	609,079
1912	15,776,965	15,923,827	.....	146,862
1913	16,057,394	17,441,797	.....	1,384,403
1914	18,298,749	18,047,514	251,235	.....
1915	18,928,551	18,435,156	493,395	.....

## GENERAL ACCOUNT.

The subjoined 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, 1915, will be found in the following statement:—

Head of Account.	Ledger Balances on 30th June, 1915.		
	Invested in Securities.	Credit Cash Balances.	Total.
Special Deposits Account—	£	£	£
Government Savings Bank Deposits Account .. .. .	.....	3,057,514	3,057,514
"    "    Advances Deposit Account .. .. .	.....	283,000	283,000
State Debt Commissioners' Trust Accounts .. .. .	.....	118,622	118,622
"    "    Deposit Account .. .. .	.....	53,514	53,514
Fixed Deposits Account .. .. .	.....	410,160	410,160
Other .. .. .	60,541	942,287	1,002,828
Total .. .. . Cr. £	60,541	4,865,097	4,925,638
Railways Loan Account .. .. .	.....	232,597	232,597
Closer Settlement Account .. .. .	.....	124,124	124,124
Public Works Account .. .. .	.....	165,522	165,522
Special Accounts—Colonial Treasurer's Supreme Court Moneys .. .. .	.....	334,072	334,072
London Remittance Account .. .. .	.....	1,442,723	1,442,723
Total .. .. . Cr. £	60,541	7,164,135	7,224,676
Less Debit Balance—	£		
Consolidated Revenue Account .. .. .	363,931		
General Loan Account .. .. .	2,462,047		
Loans Expenditure Suspense Account .. .. .	75,657		
Railway Store Suspense Account .. .. .	110,393		
eed Wheat and Fodder Expenditure Sus- sponse Account .. .. .	340,510	3,363,856	3,363,856
Advances to Settlers Expenditure Suspense Account .. .. .	8,974		
Flour Expenditure Suspense Account .. .. .	2,344		
Total Credit Balance in Sydney .. .. . £	60,541	3,800,279	3,860,820
Deduct—London Bank Account .. .. . Dr. £	.....	1,442,723	1,442,723
Total .. .. . £	60,541	2,357,556	2,418,097

## DISTRIBUTION OF CASH BALANCE.

The distribution of the cash balance on 30th June, 1915, 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, 1915—			
Special Deposits Account—Bank of New South Wales ..	2,591,172		
"    "    "    Commercial Banking Company of Sydney (Ltd.) .. ..	2,273,925	4,865,097	
Closer Settlement Account—Commercial Banking Com- pany of Sydney (Ltd.) ..	.....	124,124	
Public Works Account—Bank of New South Wales ..	.....	165,522	
Special Accounts—Bank of New South Wales .. ..	.....	334,072	
Railways Loan Account—Bank of New South Wales ..	134,838		
"    "    "    Commercial Banking Company of Sydney (Ltd.) .. ..	97,759	232,597	
London Remittance Account—Bank of New South Wales	721,609		
"    "    "    Commercial Banking Com- pany of Sydney (Ltd.) ..	721,114	1,442,723	
Total .. .. . Cr.			7,164,135
<i>Less</i> Debit Balances—			
Consolidated Revenue Account—Bank of New South Wales .. .. .	466,342		
"    "    "    Commercial Banking Company of Sydney (Ltd.) .. .. . Cr.	77,411		
"    "    "    "    Cash in hands of Receiver Cr	25,000	363,931	
General Loan Account—Bank of New South Wales ..	1,119,341		
"    "    "    Commercial Banking Company of Sydney (Ltd.) .. .. .	1,342,706	2,462,047	
Loans Expenditure Suspense Account—Bank of New South Wales .. .. .	44,158		
"    "    "    "    Commercial Bank- ing Company of Sydney (Ltd.) ..	31,489	75,657	
Railway Store Suspense Account—Bank of New South Wales .. .. .	90,015		
"    "    "    "    Commercial Banking Company of Syd- ney (Ltd.) .. .. .	20,378	110,393	
Seed Wheat and Fodder Expenditure Suspense Account— Bank of New South Wales ..	216,629		
"    "    "    "    Commercial Banking Com- pany of Sydney (Ltd.) ..	123,881	340,510	
Advances to Settlers' Expenditure Suspense Account— Bank of New South Wales ..	3,290		
"    "    "    "    Commercial Banking Com- pany of Sydney (Ltd.) ..	5,684	8,974	
Flour Expenditure Suspense Account—Bank of New South Wales .. .. .	.....	2,344	
Total .. .. . Dr.			3,363,856
Total Cash in Sydney .. .. . £	.....	.....	3,800,279
<i>Deduct</i> Debit Balances—London Account .. .. . £	.....	.....	1,442,723
Total .. .. . Cr. £	.....	.....	2,357,556



## 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 following table shows the Accumulated Deficiency on the Consolidated Revenue Account for each of the last ten years. 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.	
	£	£	£	£
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
19 0	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
1915	.....	.....	363,931	763,931

## REVENUE AND EXPENDITURE.

The gross and net revenue proper, as well as the net expenditure since 1906, 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.
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	14,195,357	234,594	13,960,763	9 2 3	13,704,122	8 18 11
1909	13,844,642	219,571	13,625,071	8 14 8	14,698,442	9 8 5
1910	14,689,973	149,900	14,540,073	9 2 2	14,192,855	8 17 9
1911	13,977,777	138,638	13,839,139	8 8 11	14,448,218	8 16 4
1912	15,920,907	143,942	15,776,965	9 5 9	15,923,827	9 7 6
1913	16,283,828	226,434	16,057,394	9 0 6	17,441,797	9 16 1
1914	18,513,609	214,860	18,298,749	9 19 8	18,047,514	9 17 0
1915	19,103,308	179,757	18,923,551	10 3 4	18,435,156	9 18 0

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, showing for the last four financial years receipts and expenditure for purely Government purposes and for the business undertakings of the State. The figures are exclusive of advances made and repaid:—

	REVENUE.			
	1912.	1913.	1914.	1915.
	£	£	£	£
Revenue returned by Commonwealth .. .. .	2,046,993	2,178,633	2,248,241	2,287,295
<b>Taxation—</b>				
Stamp Duties—				
Probate, &c. .. .. .	849,405	365,250	512,520	551,629
Other .. .. .	255,085	233,940	377,707	552,762
Land Tax .. .. .	6,479	5,738	4,692	3,346
Income Tax .. .. .	644,571	662,625	1,290,370	1,653,923
Motor Vehicle Tax .. .. .				45,055
Licenses .. .. .	130,113	137,807	144,707	148,965
<b>Total Taxation .. .. .</b>	<b>1,885,653</b>	<b>1,405,360</b>	<b>2,330,005</b>	<b>2,955,670</b>
<b>Land Revenue—</b>				
Alienation .. .. .	962,198	909,363	982,885	906,785
Occupation .. .. .	625,143	616,725	611,230	606,984
Miscellaneous .. .. .	178,118	189,860	204,772	184,312
<b>Total Land Revenue .. .. .</b>	<b>1,765,459</b>	<b>1,835,948</b>	<b>1,828,887</b>	<b>1,698,081</b>
Services rendered (other than Business Undertakings)	381,981	412,727	453,016	408,390
General Miscellaneous .. .. .	553,149	495,427	482,649	501,093
Industrial Undertakings .. .. .	20,281	32,585	6,300	10,353
<b>Total Governmental .. .. .</b>	<b>6,653,516</b>	<b>6,361,030</b>	<b>7,349,098</b>	<b>7,920,887</b>
<i>Business Undertakings of the State.</i>				
<b>Receipts, Corporate Bodies—</b>				
Railways and Tramways .. .. .	8,067,597	8,544,376	9,684,877	9,660,822
Sydney Harbour Trust .. .. .	412,410	452,244	470,773	464,631
Metropolitan Board of Water Supply and Sewerage .. .. .	584,654	633,590	713,056	796,338
Hunter District Water Supply and Sewerage Board .. .. .	58,783	66,145	80,945	85,823
<b>Total Business Undertakings .. .. .</b>	<b>9,123,449</b>	<b>9,696,364</b>	<b>10,949,651</b>	<b>11,007,664</b>
<b>Grand Total .. .. .</b>	<b>15,776,965</b>	<b>16,057,394</b>	<b>18,298,749</b>	<b>18,928,551</b>
<b>EXPENDITURE.</b>				
<i>Governmental.</i>				
Interest on Public Debt and on Trust Funds (excluding proportion chargeable to business undertakings) .. .. .	883,354	950,895	1,022,732	971,435
Pensions, Retiring Allowances, and Gratuities .. .. .	200,552	190,066	219,844	220,872
Elections Act Expenses, including Electoral Office .. .. .	24,207	35,078	53,455	24,112
Parliamentary Allowances and Postage .. .. .	33,232	43,175	43,160	42,658
<b>Local Government—</b>				
Endowments to Municipalities .. .. .	6,996	6,591	5,058	4,241
Endowments to Shires .. .. .	334,260	274,713	255,265	277,002
Administration, &c. (excluding salaries) .. .. .	1,675	2,038	3,087	3,355
Agricultural, Pastoral, and Horticultural Societies .. .. .	23,638	19,463	17,684	17,447
Hospitals and Charities .. .. .	390,908	405,313	439,838	524,052
Lunaey (including Master-in-Lunaey) .. .. .	187,163	238,156	243,549	245,259
Public Instruction (including Reformatories and Grants to Educational and Scientific Institutions) .. .. .	1,395,114	1,490,205	1,607,324	1,635,453
Industrial Undertakings of the State .. .. .	23,242	30,677	*	*
All other Services of the State .. .. .	2,914,926	3,247,026	3,145,800	3,255,280
<b>Total Governmental .. .. .</b>	<b>6,424,276</b>	<b>6,933,896</b>	<b>7,106,786</b>	<b>7,221,166</b>
<i>Business Undertakings of the State.</i>				
<b>Working Expenses—</b>				
Railways and Tramways .. .. .	5,428,085	6,390,420	7,123,560	6,923,379
Sydney Harbour Trust .. .. .	114,684	124,970	132,017	133,156
Metropolitan Board of Water Supply and Sewerage .. .. .	194,153	217,964	249,814	279,813
Hunter District Water Supply and Sewerage Board .. .. .	24,509	26,889	29,687	31,079
<b>Total Business Undertakings .. .. .</b>	<b>5,761,431</b>	<b>6,760,243</b>	<b>7,535,087</b>	<b>7,372,427</b>
<b>Interest on Loan Capital—</b>				
Railways and Tramways .. .. .	2,073,139	2,129,995	2,382,357	2,611,780
Sydney Harbour Trust .. .. .	199,469	207,869	234,631	250,279
Metropolitan Board of Water Supply and Sewerage .. .. .	365,103	372,714	415,944	442,019
Hunter District Water Supply and Sewerage Board .. .. .	24,769	26,780	30,486	32,389
<b>Total Business Undertakings .. .. .</b>	<b>2,662,470</b>	<b>2,737,358</b>	<b>3,063,468</b>	<b>3,336,467</b>
<b>Sinking Funds Instalments—Total .. .. .</b>	<b>436,921</b>	<b>450,602</b>	<b>5,632</b>	<b>5,688</b>
<b>Public Works Fund—Transfers in Aid .. .. .</b>	<b>683,729</b>	<b>559,698</b>	<b>336,541</b>	<b>499,408</b>
<b>Grand Total .. .. .</b>	<b>15,923,827</b>	<b>17,441,797</b>	<b>18,047,511</b>	<b>18,435,166</b>

\* See separate Statement.

The headings of Revenue and Expenditure shown previously for the years ended 30th June, 1912 to 1915, are repeated here, and against each is given the rate per head of population:—

	Per Inhabitant.			
	1912.	1913.	1914.	1915.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
<b>REVENUE.</b>				
<i>Governmental.</i>				
Revenue returned by Commonwealth .. .. .	1 4 1	1 4 6	1 4 6	1 4 7
<b>Taxation—</b>				
Stamp Duties—				
Probate, &c. .. .. .	0 10 0	0 4 1	0 5 7	0 5 11
Other .. .. .	0 3 0	0 2 8	0 4 1	0 5 11
Land Tax .. .. .	0 0 1	0 0 1	0 0 1	.....
Income Tax .. .. .	0 7 7	0 7 6	0 14 1	0 17 9
Motor Vehicle Tax .. .. .	.....	.....	.....	0 0 6
Licenses .. .. .	0 1 6	0 1 6	0 1 7	0 1 8
<b>Total Taxation</b> .. .. .	<b>1 2 2</b>	<b>0 15 10</b>	<b>1 5 5</b>	<b>1 11 9</b>
<b>Land Revenue—</b>				
Alienation .. .. .	0 11 4	0 11 3	0 10 9	0 9 9
Occupation .. .. .	0 7 5	0 7 3	0 7 0	0 6 6
Miscellaneous .. .. .	0 2 1	0 2 1	0 2 2	0 2 0
<b>Total</b> .. .. .	<b>1 0 10</b>	<b>1 0 7</b>	<b>0 19 11</b>	<b>0 18 3</b>
Services rendered (other than Business Undertakings) .. .. .	0 4 6	0 4 8	0 5 0	0 4 5
General Miscellaneous .. .. .	0 6 6	0 5 7	0 5 3	0 6 0
Industrial Undertakings .. .. .	0 0 3	0 0 4	0 0 1	0 0 1
<b>Total Governmental</b> .. .. .	<b>3 18 4</b>	<b>3 11 6</b>	<b>4 0 2</b>	<b>4 5 1</b>
<i>Business Undertakings of the State.</i>				
<b>Receipts, Corporate Bodies—</b>				
Railways and Tramways .. .. .	4 15 0	4 16 1	5 5 8	5 3 9
Sydney Harbour Trust .. .. .	0 4 10	0 5 1	0 5 2	0 5 0
Metropolitan Board of Water Supply and Sewerage .. .. .	0 6 11	0 7 1	0 7 9	0 8 7
Hunter District Water Supply and Sewerage Board .. .. .	0 0 8	0 0 9	0 0 11	0 0 11
<b>Total Business Undertakings</b> .. .. .	<b>5 7 5</b>	<b>5 9 0</b>	<b>5 19 6</b>	<b>5 18 3</b>
<b>Grand Total</b> .. .. .	<b>9 5 9</b>	<b>9 9 6</b>	<b>9 19 8</b>	<b>10 3 4</b>
<b>EXPENDITURE.</b>				
<i>Governmental.</i>				
Interest on Public Debt and on Trust Funds (excluding proportion chargeable to business undertakings) .. .. .	0 10 6	0 10 8	0 11 2	0 10 5
Pensions, Retiring Allowances, and Gratuities .. .. .	0 2 4	0 2 2	0 2 5	0 2 5
Elections Act Expenses (excluding Electoral Office) .. .. .	0 0 4	0 0 5	0 0 7	0 0 3
Parliamentary Allowances and Postage .. .. .	0 0 5	0 0 6	0 0 5	0 0 5
<b>Local Government—</b>				
Endowments to Municipalities .. .. .	0 0 1	0 0 1	0 0 1	0 0 1
Endowments to Shires .. .. .	0 3 11	0 3 1	0 2 10	0 3 0
Agricultural, Pastoral, and Horticultural Societies .. .. .	0 0 3	0 0 3	0 0 2	0 0 2
Hospitals and Charities .. .. .	0 4 7	0 4 7	0 5 4	0 5 8
Lunacy (including Master-in-Lunacy) .. .. .	0 2 3	0 2 8	0 2 8	0 2 8
Public Instruction (including Reformatories and Grants to Educational and Scientific Institutions) .. .. .	0 16 5	0 16 9	0 17 7	0 17 7
Industrial Undertakings of the State .. .. .	0 0 3	0 0 4	.....	.....
All other Services of the State (including Electoral Office) .. .. .	1 14 3	1 16 5	1 14 4	1 14 11
<b>Total Governmental</b> .. .. .	<b>3 15 7</b>	<b>3 17 11</b>	<b>3 17 7</b>	<b>3 17 7</b>
<i>Business Undertakings of the State.</i>				
<b>Working Expenses—</b>				
Railways and Tramways .. .. .	3 3 11	3 11 10	3 17 9	3 14 5
Sydney Harbour Trust .. .. .	0 1 4	0 1 5	0 1 5	0 1 5
Metropolitan Board of Water Supply and Sewerage .. .. .	0 2 3	0 2 5	0 2 9	0 3 0
Hunter District Water Supply and Sewerage Board .. .. .	0 0 4	0 0 4	0 0 4	0 0 4
<b>Total Business Undertakings</b> .. .. .	<b>3 7 10</b>	<b>3 16 0</b>	<b>4 2 3</b>	<b>3 19 2</b>
<b>Interest on Capital—</b>				
Railways and Tramways .. .. .	1 4 5	1 3 11	1 6 0	1 8 1
Sydney Harbour Trust .. .. .	0 2 4	0 2 4	0 2 7	0 2 3
Metropolitan Board of Water Supply and Sewerage .. .. .	0 4 4	0 4 2	0 4 6	0 4 9
Hunter District Water Supply and Sewerage Board .. .. .	0 0 4	0 0 4	0 0 4	0 0 4
<b>Total Business Undertakings</b> .. .. .	<b>1 11 5</b>	<b>1 10 9</b>	<b>1 13 5</b>	<b>1 15 10</b>
<b>Total Business Undertakings</b> .. .. .	<b>4 19 3</b>	<b>5 6 9</b>	<b>5 15 8</b>	<b>5 15 0</b>
Sinking Fund Instalments—Total .. .. .	0 5 2	0 5 1	0 0 1	0 0 1
Public Works Fund—Transfers in Aid .. .. .	0 7 6	0 6 4	0 3 8	0 5 4
<b>Grand Total</b> .. .. .	<b>9 7 6</b>	<b>9 16 1</b>	<b>9 17 0</b>	<b>9 18 0</b>

## CLOSER SETTLEMENT FUND.

The Closer Settlement Account 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 of the Closer Settlement Account for the financial year ended 30th June, 1915:—

RECEIPTS.		£
Balance brought forward from previous year ... ..	430,682	
Assurance Fees—Real Property Act ... ..	8,995	
Repayments by Settlers ... ..	72,278	
Repayments on Account of Improvement Leases... ..	3,174	
		<hr/>
		£515,129

EXPENDITURE.		£
Under Real Property Act ... ..	145	
Purchase of Estates, including contingent expenses ... ..	3,235	
Compensation for Improvement Leases, &c. ... ..	64,358	
Interest on Loans ... ..	23,267	
Repayment to General Loan Account ... ..	300,000	
Balance, 30th June, 1915 ... ..	124,124	
		<hr/>
		£515,129

During the period ended 30th June, 1915, there have been thirty closer settlement estates purchased, the total area of the estates being 1,060,387 acres. Receipts from all sources amounted to £570,498, and expenditure as follows:—Purchase money, £2,700,083; contingent expenses, £114,321; total, £2,814,404. There were at 30th June, 1915, 443 purchasers with overdue instalments, the amount represented being £49,083.

## 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

at times voted from the revenue, and the transactions for the year ended 30th June, 1915, are shown below:—

Receipts.	Amount.	Disbursements.	Amount.
	£		£
Repayments to credit of Votes (previous years) .. .. .	29,304	Payments on account of the undernun- tioned Services:—	
Two-thirds net proceeds of Sale of Crown Lands, exclusive of interest on purchase money—less 20 per cent. .. .. .	299,408	Premier—Immigration and Tourist Bureau—Improvements to Caves, &c. . . . .	9,579
Net proceeds of Sale of Land, under section 4, Public Instruction Act of 1880 .. .. .	1,564	Colonial Secretary—	
Transfers from Consolidated Revenue Account .. .. .	200,000	Hospitals and Benevolent Asylums	42,467
		Miscellaneous .. .. .	7,580
			50,047
		Treasurer — Government Printing Office—Plant .. .. .	3,061
		Explosives — Public Magazine Es- tablishment, Middle Harbour, &c.	16,271
		Sydney Harbour Trust .. .. .	28,102
		Miscellaneous .. .. .	5,111
			52,645
		Attorney-General and Justice .. ..	14,229
		Secretary for Lands—	
		Resumption of Parks, Foreshores, &c.	36,371
		Miscellaneous .. .. .	1,716
			38,087
		Public Works—Harbours and Rivers..	8,064
		Dredge Service .. .. .	12,616
		Public Buildings .. .. .	2,153
		Construction of Works generally ..	14,888
		Metropolitan Board of Water Supply and Sewerage—Water Supply ..	17,675
		Hunter District Water Supply and Sewerage Board—Water Supply ..	1,262
		Roads and Bridges .. .. .	46,139
		Grants to Shires and Municipalities	5,938
		Railways and Tramways .. .. .	4,793
		Recoup to Loan Vote .. .. .	39,000
			152,538
		Public Instruction—Training College	968
		Technical Education—Buildings, &c.	189,659
		Conservatorium of Music .. .. .	1,616
		Miscellaneous Services .. .. .	1,579
		Recoup to Loan Vote .. .. .	50,000
			243,842
		Agriculture—Promotion of Agricul- ture, &c. .. .. .	9,262
		Wentworth Irrigation .. .. .	984
		Fumigation Chambers .. .. .	241
		Miscellaneous .. .. .	4,746
			15,233
		Forestry—Preparing Land for Afforest- ation, &c. .. .. .	7,341
		Total Works, Services, &c. .. .. .	583,541
Balance, 30th June, 1914, brought forward .. .. .	218,787	Balance, 30th June, 1915 .. .. .	165,522
Grand Total .. .. .	£ 749,063	Grand Total .. .. .	£ 749,063

#### EXPENDITURE ON PUBLIC WORKS.

The total expenditure on Public Works during each of the last five years is shown in the following table. The amounts are obtained from the Public Works Fund, Consolidated Revenue Fund, and Loans:—

Year.	Public Works Fund.	Consolidated Revenue Fund.	Loans.	Total Expenditure.	Per Inhabitant.
	£	£	£	£	£ s. d.
1911	928,115	514,067	3,921,758	5,363,940	3 5 6
1912	876,344	632,686	5,491,103	7,000,133	4 2 5
1913	570,831	570,768	7,703,594	8,845,193	4 19 5
1914	390,358	490,206	9,126,844	10,007,403	5 9 3
1915	583,541	533,932	6,996,107	8,113,580	4 7 2

## 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, 1915:—

Head of Revenue.	Gross Revenue.	Refunds.	Net Revenue.
Collections from Licenses :—	£	£	£
To Retail Fermented and Spirituous Liquors, including Colonial Wine, Cider, and Perry ...	93,310	574	148,955
Wholesale Spirit Dealers ... ..	5,370		
Billiard and Bagatelle ... ..	8,948		
Auctioneers ... ..	6,997		
Hawkers, Pedlars, and Pawnbrokers ... ..	2,987		
Sale of Tobacco, Cigars, and Cigarettes ... ..	3,804		
Explosives Act of 1905 ... ..	1,437		
Metropolitan Traffic Act ... ..	3,660		
Motor Traffic Act ... ..	17,625		
Gaming and Betting Act, 1906 ... ..	1,210		
Theatres and Public Halls Act, 1908 ... ..	3,133		
All other ... ..	1,048		
Total, Licenses ... ..	£ 149,529	574	148,955
Land Tax ... ..	3,992	646	3,346
Income Tax... ..	1,728,916	74,993	1,653,923
Motor Vehicle Tax ... ..	45,100	45	45,055
Stamp Duties :—			
Adhesive Stamps ... ..	161,482	3,669	1,104,391
Impressed Stamps—	£		
Deeds ... ..	221,329		
Debentures, Promissory Notes, and Bills of Exchange ... ..	32,926		
Coupons, Cheques, and Receipts ... ..	115,551		
Bills of Lading, Transfers of Shares, &c. ... ..	15,553		
	385,359		
Less Commissions and Deductions	2,756		
Bank-note Composition... ..	£ 2,153		
Probate, Settlement, and Companies' Death Duties—			
Probate ... ..	543,459		
Settlement and Companies' Death Duties ... ..	8,170		
	551,629		
Miscellaneous Receipts ... ..	650		
Paid direct to Treasury .. ..	9,543		
Total, Stamp Duties ... ..	£ 1,108,060	3,669	1,104,391
Revenue from Taxation ... ..	£ 3,035,597	79,927	2,955,670

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. The following statement shows in detail the net revenue derivable from each source of taxation for the five years ended 30th June, 1915, after deducting refunds, but not allowing for cost of collection:—

Head of Taxation or Charge.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
<b>COMMONWEALTH.</b>	£	£	£	£	£
Customs Duties ... ..	4,306,952	5,148,068	5,391,029	5,389,065	5,393,560
Excise " ... ..	1,034,235	1,093,339	1,257,667	1,274,007	1,430,301
Land Tax ... ..	780,997	819,942	831,228	765,867	*1,037,000
<b>Total Commonwealth Taxation ...</b>	<b>£ 6,122,184</b>	<b>7,091,349</b>	<b>7,479,924</b>	<b>7,428,939</b>	<b>7,860,861</b>
<b>STATE.</b>					
Land Tax ... ..	7,438	6,479	5,738	4,692	3,346
Income Tax ... ..	269,142	644,571	662,625	1,290,370	1,653,922
Stamp Duties—					
Stamps ... ..	229,109	238,522	230,197	375,114	550,609
Bank-note Composition..	38,982	16,563	3,743	2,593	2,153
Probate ... ..	353,752	839,212	357,275	494,660	543,459
Settlement and Companies Death Duties ...	3,998	10,193	7,975	17,869	8,170
<b>Total, Stamps</b>	<b>£ 625,841</b>	<b>1,104,490</b>	<b>599,190</b>	<b>890,236</b>	<b>1,104,391</b>
Motor Tax ... ..	.....	.....	.....	.....	45,055
Licenses ... ..	125,098	130,113	137,807	144,707	148,956
Wharfage, Harbour, and Tonnage Rates ... ..	232,641	256,821	281,725	285,897	277,760
Fees for Registration of Dogs ... ..	15,751	16,269	16,768	17,079	17,075
<b>Total State Taxation and Charges</b>	<b>£ 1,275,911</b>	<b>2,158,743</b>	<b>1,703,853</b>	<b>2,632,981</b>	<b>3,250,505</b>
<b>LOCAL.</b>					
Municipal Rates—					
City of Sydney ... ..	206,461	221,450	226,688	242,303	285,024
" " (Land Tax)	83,569	98,183	100,267	151,212	170,653
Suburban and Country Municipalities ... ..	648,571	731,687	818,576	889,353	1,023,169
Shire Rates ... ..	424,182	470,054	524,548	572,924	623,160
Licenses—					
Auctioneers, Hawkers, &c. (City Council) ...	1,620	1,258	1,499	1,479	1,392
Water and Sewerage Rates and Charges ... ..	594,422	646,087	702,956	799,392	884,313
<b>Total Local Rates and Charges</b>	<b>£ 1,958,825</b>	<b>2,168,719</b>	<b>2,374,534</b>	<b>2,656,663</b>	<b>2,987,711</b>
<b>Total Commonwealth, State, and Local Taxes, Rates, and Charges...£</b>	<b>9,356,920</b>	<b>11,418,811</b>	<b>11,568,311</b>	<b>12,718,583</b>	<b>14,099,077</b>

\* Partly estimated ; the final figures are not available.

NOTE.—Customs and Excise Duties since 1910 are gross and do not take into account Interstate Credits and Debits, which are not available. During 1909-10, the last year in which they were recorded, the net Interstate Debits were £242,955. The figures for Municipal and Shire Rates and Licenses relate to the year ended 31st December preceeding the end of the financial year in which they are included above.

The above table of Net Revenue gives a comprehensive list of the various sources of taxation, from which in the next table the per capita rates prevailing during the past five years are compared. In that period percentages have increased in Customs Duties, Excise, Income Tax, Stamp Duties, Wharfage Rates, City Municipal Rates, Suburban and Country Rates, and Water and Sewerage Rates have advanced. Decreases are observable in Commonwealth Land Tax, and in the State Land Tax; in the latter case, owing to the operation of the Local Government Acts. A new source of State Revenue is the Finance (Taxation) Act, 1914, under the provisions of which motor vehicles must be annually registered with the Police Department, and on such registration a fee fixed at a minimum of £1 is payable in respect of a motor cycle, motor tricycle, or taxi-cab. On other motor vehicles the license fee ranges between £2 and £20. The basis upon which the fee is payable is the "horse-power" of the vehicle. Motor cars used by medical practitioners or clergymen, public motor cars (except taxi-cabs), and trade motor vehicles pay half rates. Government motor vehicles, ambulance motor vehicles, and those owned by municipalities and shires, or by the City of Sydney, are exempt from taxation. The Revenue benefited during 1915 by this tax to the extent of £45,055.

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. In 1915 a Commonwealth Income Tax Act came into force under the provisions of which all net incomes above £156 earned during the currency of the year ending 30th June, 1915, were subjected to taxation. 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:—

Head of Taxation or Charge.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
<b>COMMONWEALTH.</b>					
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Customs Duties ... ..	2 12 7	3 0 7	3 0 7	2 18 9	2 17 10½
Excise Duties ... ..	0 12 7	0 12 11	0 14 2	0 13 11	0 15 4
Land Tax ... ..	0 9 7	0 10 0	0 9 4	0 8 4	0 11 1½
<b>Total Commonwealth Taxation ... £</b>	<b>3 14 9</b>	<b>4 3 6</b>	<b>4 4 1</b>	<b>4 1 0</b>	<b>4 4 4</b>
<b>STATE.</b>					
Land Tax ... ..	0 0 1	0 0 1	0 0 1	0 0 1	0 0 0½
Income Tax ... ..	0 3 4	0 7 7	0 7 5	0 14 1	0 17 8½
Stamp Duties—					
Stamps ... ..	0 2 10	0 2 10	0 2 7	0 4 1	0 5 10¾
Bank-note Composition ... ..	0 0 6	0 0 2½	0 0 0½	0 0 0½	0 0 0½
Probate ... ..	0 4 3	0 9 10	0 4 0	0 5 5	0 5 10
Settlement and Companies Death Duties ... ..	0 0 0½	0 0 1½	0 0 1¼	0 0 2¼	0 0 1
<b>Total Stamps .. £</b>	<b>0 7 7½</b>	<b>0 13 0</b>	<b>0 6 8¾</b>	<b>0 9 8½</b>	<b>0 11 10</b>
Motor Tax ... ..	.....	.....	.....	.....	0 0 6
Licenses ... ..	0 1 6	0 1 6	0 1 7	0 1 7	0 1 7
Wharfage, Harbour, and Tonnage Rates ... ..	0 2 10	0 3 0	0 3 2	0 3 2	0 3 0
Fees for Registration of Dogs ... ..	0 0 2½	0 0 2¼	0 0 2¼	0 0 2¼	0 0 2¼
<b>Total State Taxation and Charges ... £</b>	<b>0 15 7</b>	<b>1 5 4½</b>	<b>0 19 2</b>	<b>1 8 9¾</b>	<b>1 14 10½</b>
<b>LOCAL.</b>					
Municipal Rates—					
City of Sydney ... ..	0 2 6	0 2 8	0 2 7	0 2 8	0 3 0½
" " (Land Tax) ... ..	0 1 1	0 1 2	0 1 1	0 1 8	0 1 10
Suburban and Country Municipalities ... ..	0 7 11	0 8 7	0 9 3	0 9 8	0 10 11¾
Shire Rates ... ..	0 5 2	0 5 7	0 5 11	0 6 3	0 6 8¼
Licenses—					
Auctioneers, Hawkers, &c. (City Council) ... ..	0 0 0¼	0 0 0¼	0 0 0¼	0 0 0¼	0 0 0¼
Water and Sewerage Rates and Charges ... ..	0 7 3	0 7 7	0 7 11	0 8 8	0 9 5½
<b>Total Local Rates and Charges ... £</b>	<b>1 3 11¼</b>	<b>1 5 7½</b>	<b>1 6 9¼</b>	<b>1 8 11¼</b>	<b>1 12 0½</b>
<b>Total Commonwealth, State, and Local Taxes, Rates, and Charges ... .. £</b>	<b>5 14 3¼</b>	<b>6 14 5½</b>	<b>6 10 0¼</b>	<b>6 18 9</b>	<b>7 11 2¾</b>

## LAND AND INCOME TAXATION.

*State 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 home-stead 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, 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.

*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 from 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

## STATE 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. .
- (f) Dividends derived from shares in a company.

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 STATE INCOME TAX FOR YEARS 1914 AND 1915.

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. A similar increase of threepence in the pound with respect to income tax on income received during the year 1915 was imposed by the Finance (Taxation) Act, 1915.

#### REVENUE FROM STATE 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.	State Land Tax.	State Income Tax.	Year.	State Land Tax.	State 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	1915	3,346	1,653,923

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.

#### COMMONWEALTH LAND TAX.

The Commonwealth 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.

Absentee 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 £. Interests in Crown leases carrying the right of purchase were liable to taxation under the original Act, but since 30th June, 1914, interests 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 1913-14:—

Classification.	Residents.	Absentees.	Total.
	£	£	£
Values assessed:—			
Town Lands—			
Improved ... ..	59,314,778	2,303,120	61,617,898
Unimproved ... ..	30,449,899	1,207,326	31,657,225
Tax ... ..	272,591	16,815	289,406
Country Lands—			
Improved ... ..	116,977,254	1,221,257	118,198,511
Unimproved ... ..	55,330,314	544,714	55,875,028
Tax ... ..	463,105	7,736	470,841
Total—			
Improved ... ..	176,292,032	3,524,377	179,816,409
Unimproved ... ..	85,780,213	1,752,040	87,532,253
Tax ... ..	735,696	24,551	760,247
Area of Country Land assessed in New South Wales ... ..	Acres. 33,224,162	Acres. 341,768	Acres. 33,565,930

The total figures for New South Wales show that the land tax for residents was £735,696; absentees, £24,551; total, £760,247; and for the whole Commonwealth, residents, £1,395,985; absentees, £55,788; grand total, £1,451,773.

The area of land in New South Wales included in taxable returns was 33,565,930 acres, or 52.6 per cent. of the taxable land in the Commonwealth of Australia.

The number of taxpayers resident and absentee during the year 1914-15 is shown below for the Commonwealth, classified according to the taxable

values of their properties after the allowance of deduction from unimproved values:—

Taxable Value.	Number of Taxpayers.			Percentage of Total.	
	Resident.	Absentees.	Total.	Resident.	Absentees.
£					
1-1,000	2,332	2,117	4,449	18.6	67.3
1,001-2,000	1,813	283	2,096	14.4	9.0
2,001-3,000	1,339	160	1,499	10.7	5.1
3,001-4,000	989	117	1,106	7.9	3.7
4,001-5,000	777	96	873	6.2	3.1
5,001-6,000	629	54	683	5.0	1.7
6,001-7,000	521	36	557	4.1	1.1
7,001-8,000	398	33	431	3.2	1.0
8,001-9,000	350	29	379	2.8	0.9
9,001-10,000	296	31	327	2.3	1.0
10,001-15,000	975	70	1,045	7.8	2.2
15,001-20,000	555	40	595	4.4	1.3
20,001-30,000	611	29	640	4.9	0.9
30,001-40,000	324	18	342	2.6	0.6
40,001-50,000	179	12	191	1.4	0.4
50,001-60,000	127	6	133	1.0	0.2
60,001-70,000	80	7	87	0.6	0.2
70,001-80,000	57	1	58	0.5	0.1
Above 80,000	205	6	211	1.6	0.2
	12,557	3,145	15,702	100.0	100.0

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. All Australian land-owners who leave Australia to participate in the war are treated as residents entitled to the general exemption of £5,000.

#### COMMONWEALTH INCOME TAX.

In addition to the income tax of the State, an income tax is now levied by the Commonwealth, under the provisions of two measures passed into law during the latter part of 1915.

The income tax payable for each financial year is based on the income derived from sources within Australia during the period of twelve months ending on 30th June preceding the financial year for which the tax is payable.

Among the incomes, revenues, and funds exempt are those of local governing bodies, or of a public authority, of friendly societies not carried on for pecuniary profit, of trade unions and kindred associations, of religious, scientific, charitable, or public educational institutions, and the income derived from bonds, debentures, or stock of the Commonwealth issued for the purposes of the War Loan Act (No. 1), 1915. The Act does not apply to persons on active service with the Commonwealth Forces, nor with those of Great Britain or of her Allies as regards income derived from personal exertion and earned prior to the commencement of the Act or during the present war.

In the case of a person other than an absentee, general exemptions as follows are allowed:—

- (a) In respect of income derived from personal exertion (1) if the income does not exceed five hundred pounds—the sum of one hundred and fifty-six pounds; (2) if the income exceeds five hundred pounds—the sum of one hundred and fifty-six pounds, less three pounds for every ten pounds by which the income exceeds five hundred pounds.
- (b) In respect of the income derived from property—the sum of one hundred and fifty-six pounds, less two pounds for every five pounds by which the income exceeds one hundred and fifty-six pounds.

The rate of tax upon income derived from personal exertion is slightly over threepence on the first pound of taxable income, and increases until a taxable income of £7,600 is reached. Every pound in excess of £7,600 bears an impost of five shillings.

The rate applicable to income derived from property increases from slightly over threepence in the first pound of taxable income up to £6,500, and the tax on each pound in excess of that amount is five shillings.

Companies pay at a flat rate of one shilling and sixpence in the pound.

#### 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 1911 to 1915:—

Head of Revenue.	1911.	1912.	1913.	1914.	1915.
<i>Alienation—</i>					
Sales, etc. :—	£	£	£	£	£
Auction sales ... ..	83,058	83,764	63,001	43,762	31,630
Other ... ..	15,935	15,852	29,854	21,279	14,070
Total ... ..	98,993	99,616	92,855	65,041	45,700
Conditional Purchases :—					
Deposits and improvements	135,392	70,930	62,303	42,668	25,782
Instalments and interest ...	537,226	595,805	660,703	721,470	715,697
Interest (under Act of 1861)	21,614	18,894	17,094	17,279	16,131
Balances ... ..	186,592	146,593	138,013	101,210	71,231
Homestead Selections ... ..	62,917	48,577	40,768	43,409	38,621
Total ... ..	943,741	880,799	918,881	925,436	867,462
Total, Alienation	1,042,734	980,415	1,011,736	990,477	913,162
<i>Occupation—</i>					
<i>Pastoral :—</i>					
Pastoral leases ... ..	749	706	720	735	769
Conditional leases ... ..	199,214	201,450	207,043	211,662	201,526
Occupation licenses ... ..	29,871	26,952	25,051	23,060	21,242
Homestead leases ... ..	1,688	1,771	1,551	1,114	1,085
Annual and Snow, Inferior and Scrub leases.	41,193	43,400	40,607	37,405	35,639
Settlement leases ... ..	106,736	85,331	79,147	72,238	67,743
Improvement leases ... ..	49,501	49,644	46,203	40,947	37,693
Western Land Division leases	82,265	83,364	89,613	84,662	87,488
Other leases ... ..	33,840	34,107	36,533	40,337	41,105
Total ... ..	548,057	526,725	526,468	512,160	494,290
<i>Mining :—</i>					
Mineral leases ... ..	17,490	17,739	18,796	19,682	15,426
Leases of auriferous lands	2,544	1,892	1,837	1,755	1,668
Miners' rights ... ..	2,913	2,777	3,004	2,780	2,484
Royalty on minerals ... ..	77,613	89,423	103,851	110,893	99,345
Other ... ..	10,019	8,629	9,945	10,092	8,455
Total ... ..	110,579	120,460	137,433	145,202	127,378
Total, Occupation	658,636	647,185	663,901	657,362	621,668
<i>Miscellaneous Land Receipts—</i>					
Survey fees ... ..	30,823	24,297	27,428	23,992	22,623
Rents, special objects ... ..	43,490	43,064	44,546	47,174	52,800
Timber licenses, royalty, &c.	84,460	94,560	96,929	98,972	88,903
Quit rents and other receipts	35,964	32,213	35,459	45,830	30,649
Total ... ..	194,737	194,134	204,362	215,968	194,980
Gross Revenue from Lands	1,896,107	1,821,734	1,879,999	1,863,807	1,729,810
Refunds ... ..	57,190	56,275	44,051	34,920	31,729
Net Revenue from Lands...	1,838,917	1,765,459	1,835,948	1,828,887	1,698,081

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, 1915, 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 ... ..	5,945	178	5,767
Pilotage, Harbour Dues, and Fees—	£		
Pilotage ... ..	37,137		
Harbour and Light Rates ... ..	38,086		
Harbour Dues ... ..	6,184		
Navigation Department—Fees, &c.	4,819		
	86,226	639	85,587
Mint Receipts ... ..	8,392	.....	8,392
Fees for Escort and Conveyance of Gold ... ..	209	.....	209
Public Instruction Department—			
Training Fees ... ..	1,266		
Registration of Brands ... ..	1,415		
Fees of Office —			
Registrar-General ... ..	83,367	620	183,127
Courts of Petty Sessions ... ..	27,962		
District Courts ... ..	2,442		
Supreme Court ... ..	31,440		
Shipping Masters ... ..	7,777		
Fees for Registration of Dogs ... ..	17,074		
Other Fees ... ..	11,004		
Rent for Public Watering-places, &c. ... ..	7,822		
For the support of Patients in Mental Hospitals ... ..	45,975		
Store Rent and carriage of Explosives ... ..	7,491		
For Work performed by Prisoners in Gaol ... ..	771		
Collections by Government Printer ... ..	7,305	400	125,308
For the support of Children in the Industrial Schools, and Inmates of Benevolent Asylums, Hospitals, &c.	17,134		
Fumigation and Inspection Fees... ..	7,402		
Other Receipts ... ..	31,808		
Total Receipts for Services Rendered ... ..	£ 410,227	1,837	408,390

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, 1915, 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.
<b>Rents, &amp;c. (exclusive of Land)—</b>	£	£	£
Wharfage and Tonnage Rates, &c. (Outports)...	10,015	} 300	28,443
Government Buildings and Premises ... ..	17,283		
Rent and Way-leave Port Kembla Jetty ... ..	1,445		
Darling Harbour Resumed Area... ..	59,251		
Public Service Superannuation Act, No. 8 of 1903 ...	11,454	15	59,236
		1	11,453
<b>Interest on Public Moneys—</b>			
Interest on Advances under Country Towns Water Supply and Sewerage Act ... ..	37,683	.....	37,683
Interest on Bank Deposits and other Temporary Investments of Public Moneys ... ..	22,550	.....	22,550
Interest on Water and Drainage Works, &c. ... ..	9,041	.....	9,041
„ Sale of Wire-netting... ..	2,543	.....	2,543
„ Value of properties Transferred to Commonwealth ... ..	215,573	.....	215,573
„ Accrued on Instalments of Loans floated in Sydney ... ..	1,311	.....	1,311
„ Other ... ..	6,950	.....	6,950
<b>Fines and Forfeitures—</b>			
Sheriff ... ..	1,763	} 424	34,516
Courts of Petty Sessions ... ..	29,506		
Confiscated and Unclaimed Property ... ..	52		
Industrial Arbitration Court ... ..	3,301		
Other Fines ... ..	313		
Water Conservation and Irrigation Commission ...	31,374	120	31,254
<b>Repayments—</b>			
Repayment to Credit of Votes—Previous years ...	40,118	} 1,697	100,540
Value of Materials issued by Government Stores Department ... ..	2,086		
Seed Wheat—Previous years ... ..	215		
Annandale Garbage Destructor ... ..	238		
Balances not required ... ..	6,435		
State Children Relief Act... ..	87		
Exchange on Cheques ... ..	990		
Sale of Government Property ... ..	9,055		
Receipts under Fisheries Act ... ..	9,310		
Pastures Protection Act—Contributions ... ..	1,610		
Sydney Abattoirs—Surplus Revenue ... ..	6,100		
Flemington Sale Yards—Surplus Revenue ... ..	12,350		
Costs Recovered in Various Actions ... ..	2,915		
Centennial Park Land Sales ... ..	4,000		
Hay Irrigation Area—Rent, Water Rates, &c. ... ..	176		
Unclaimed Moneys ... ..	2,730		
Other Unclassified Receipts... ..	3,822		
<b>Total General Miscellaneous Receipts ... ..</b>	<b>563,650</b>	<b>2,557</b>	<b>561,093</b>
<b>Balance of Revenue collected within the State by the Commonwealth Government and returned ... ..</b>	<b>£ 2,287,295</b>	<b>.....</b>	<b>2,287,295</b>

#### 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 ten years ended 30th June, 1915, and the rates per inhabitant, are as follow:—

Year ended 30th June.	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	5,867,585	1,038,620	730,043	7,636,248	5,285,058	504,073	278,743	6,067,874
1909	6,348,674	1,088,328	755,058	8,192,060	5,698,801	524,254	283,327	6,506,382
1910	5,285,353	1,145,038	807,929	7,238,320	6,131,654	536,669	256,212	6,954,535
1911	4,796,255	1,206,942	801,754	6,804,951	6,759,942	576,072	307,253	7,643,267
1912	5,216,458	1,395,114	888,354	7,499,926	7,501,224	608,534	314,143	8,423,901
1913	5,503,096	1,490,205	950,895	7,944,196	8,520,415	644,347	332,839	9,497,601
1914	4,818,903	1,607,324	1,022,732	7,448,959	9,505,926	725,931	366,698	10,598,555
1915	5,119,374	1,635,453	971,435	7,726,262	9,540,159	785,300	383,435	10,708,894

## 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 8	0 13 7	0 9 6	4 19 9	3 9 0	0 6 7	0 3 7	3 19 2
1909	4 1 4	0 13 11	0 9 9	5 5 0	3 13 1	0 6 9	0 3 7	4 3 5
1910	3 6 3	0 14 4	0 10 1	4 10 8	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 4	0 16 5	0 10 6	4 8 3	4 8 4	0 7 3	0 3 8	4 19 3
1913	3 1 11	0 16 9	0 10 8	4 9 4	4 15 9	0 7 3	0 3 9	5 6 9
1914	2 12 7	0 17 7	0 11 2	4 1 4	5 3 9	0 7 11	0 4 0	5 15 8
1915	2 15 0	0 17 7	0 10 5	4 3 0	5 2 6	0 8 5	0 4 1	5 15 0

\*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, 1915:—

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 .. ..	78,039,097	9,660,822	6,928,379	2,611,780	9,540,159	120,663
Sydney Harbour Trust .. ..	7,367,922	464,681	133,156	250,279	383,435	81,246
Water Supply & S.—Metropolitan	13,057,231	798,338	279,813	442,019	721,832	74,506
Do Hunter District	925,610	85,823	31,079	32,389	63,468	22,355
	99,389,860	11,007,664	7,372,427	3,336,467	10,708,894	298,770
Industrial Undertakings—						
Observatory Hill, Resumed Area (Rocks), &c. .. ..	1,303,164	61,621	12,645	45,159	57,804	3,817
Brickworks—Homebush Bay ..	81,008	62,933	47,503	7,850	55,353	7,580
„ Botany .. ..	23,847	11,326	10,448	3,219	13,667	(-) 2,341
Joinery Works—Rozelle .. ..	25,612	112	1,192	.. ..	1,192	(-) 1,080
State Clothing Factory .. ..	12,825	30,579	29,910	1,092	31,002	(-) 423
Housing Fund—Daceyville ..	86,358	4,590	620	3,109	3,729	861
Lime Works—Taree and Botany	14,580	2,959	3,684	1,621	5,305	(-) 2,346
Stone Quarry (Maroubra) .. ..	10,518	13,806	11,812	1,377	13,189	617
Building Construction .. ..	16,856	418,102	403,640	7,865	411,505	6,597
Monier Pipe Works, &c. .. ..	17,818	27,676	16,947	2,942	19,889	7,787
State Bakery .. ..	10,172	35,433	30,976	1,020	31,996	3,437
Blue Metal Quarry—Kiama ..	53,610	51,059	42,758	4,253	47,016	4,043
„ „ Port Kembla	16,374	19,166	15,239	1,648	16,887	2,279
Timber Yard, &c.—Chr's Point..	154,355	104,134	119,681	9,599	129,280	(-) 25,146
*State Motor Garage .. ..	7,605	8,262	7,696	411	8,107	155
†Power House—Chr's Point ..	32,515	1,676	1,713	1,849	3,562	(-) 1,856
	1,875,251	853,434	756,464	93,019	849,483	3,951
Total .. .. .	£ 101,265,111	11,861,098	8,128,891	3,429,486	11,558,377	302,721

\* From 1st October, 1914.

† From December, 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 1907-1915:—

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
1915	101,265,111	11,861,098	8,128,891	3,429,486	11,558,377	302,721	.30

(-) 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, 1914 and 1915, of the Glebe Island Abattoirs:—

Receipts.	1914.	1915.	Disbursements.	1914.	1915.
	£	£		£	£
Rents .. .. .	10,458	10,346	Salaries and wages .. ..	9,137	8,982
Fees .. .. .	7,504	6,976	Repairs and new works .. ..	1,151	277
Miscellaneous .. .. .	1,588	1,479	Miscellaneous .. .. .	3,605	3,659
	19,550	18,801	Consolidated Revenue.. ..	13,893	12,918
				5,500	6,100
				19,393	19,018
			Surplus .. .. .	£ 5,657	5,883

The new Abattoirs at Homebush were opened in April, 1915.

*Flemington Saleyards.*

The receipts and disbursements of the Flemington Saleyards are shown hereunder for the years ended 30th June, 1914 and 1915:—

Receipts.	1914.	1915.	Disbursements.	1914.	1915.
	£	£		£	£
Rents .. .. .	803	835	Salaries and wages .. ..	4,333	4,499
Fees .. .. .	14,633	16,096	Repairs and new work .. ..	789	314
New Abattoirs .. .. .	1,077	2,112	Meat Supply for Imperial Uses Act.	....	161
Cattle Bath .. .. .	....	30	Miscellaneous .. .. .	1,160	2,039
Miscellaneous .. .. .	59	56	Consolidated Revenue.. ..	6,282	7,013
	16,572	19,129		10,500	12,350
				16,782	19,363
			Surplus .. .. .	£ 10,290	12,116

## 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	1902	11,720,889	1909	2,575,757
*1876	854,571	1903	10,564,026	1910	2,743,156
*1881	1,671,183	1904	10,191,160	1911	4,522,915
*1886	2,702,486	1905	10,562,513	1912	5,547,741
*1891	4,997,055	1906	10,007,626	1913	6,134,067
1896	7,657,741	1907	2,359,665	1914	5,341,060
1900	10,103,940	1908	1,867,442	1915	5,259,710
1901	10,823,128				

\* 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, 1915, was £5,259,710—£4,925,638 as Special Deposits Account and £334,072 as Special Accounts.

*Special Deposits Account.*

	£		£
Government Savings Bank of New South Wales Deposit Account ... ..	3,057,514	Treasury Guarantee Fund ...	20,625
Government Savings Bank of New South Wales Advance Deposit Account ... ..	283,000	Treasury Fire Insurance Fund	56,021
State Debt Commissioners' Deposit Account ... ..	53,514	Sobraon Fund ... ..	10,000
State Debt Trust Accounts ... ..	118,622	Water and Drainage Loan Redemption Fund ... ..	27,758
Public Works Department ... ..	73,333	Union Trustee Company of Australia, Limited... ..	20,000
Fixed Deposits Account ... ..	410,160	Revenue Suspense Account ...	10,853
Industrial Undertakings ... ..	60,713	Unclaimed Salaries and Wages Account ... ..	10,969
Sundry Deposits Account ... ..	379,787	Public Trustee Unclaimed Balances ... ..	15,627
Municipal Council of Sydney Sinking Funds ... ..	168,741	Wheat Acquisition Act ... ..	39,828
Government Railways Superannuation Account ... ..	42,929	Other Accounts—less than £10,000 ... ..	52,077
Housing Fund ... ..	13,567		
		Total ... ..	£4,925,638

*Special Accounts.*

	£		£
Master-in-Equity Account ... ..	96,528	Prothonotary Account ... ..	3,146
Master-in-Lunacy Account ... ..	29,217	Registrar of Probates' Account	28,679
Public Trustee Account ... ..	176,502	Total ... ..	£334,072

Grand Total, Special Deposits and Special Accounts, £5,259,710.

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 £5,259,710 at the credit of the Trust Funds and Special Deposits on 30th June, 1915, £60,541 was invested in securities; £4,474,175 was uninvested, but used in Advances and on Public Account at interest; while the remainder, £724,994, was similarly used, but without interest charge.

The rate of interest paid on 30th June, 1915, was 3 per cent., with the following exceptions:—

Crown Leases Security Deposit Account ... ..	4 per cent.
Government Savings Bank Deposit Account ... ..	4 „
„ „ Advances Account ... ..	4 „
Fixed Deposits Account ... ..	1 to 5 „
Municipal Council of Sydney (50 Vic., No. 13) Sinking Funds ...	4 „
State Debt Commissioners' Deposit Account ... ..	1 to 3 „
Master-in-Equity and Master-in-Lunacy Accounts ... ..	1 „

On 30th June, 1915, the Trust Funds in the custody of the State Treasurer were held thus:—

In Banks—	£
Special Deposits Account ... ..	4,865,097
Special Accounts ... ..	334,072
In New South Wales Funded Stock ... ..	20,500
Treasury Bills ... ..	20,000
Fixed Deposit (Metropolitan Board of Water and Sewerage Trust Account) ... ..	1,250
In Miscellaneous Securities ... ..	18,791
Total ... ..	£5,259,710

The total amount of interest received by the Treasury during the year ended June, 1915, on bank deposits and other temporary investments of public moneys was £22,550.

#### *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 various Loan Acts are also 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, 1902, 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. 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:—

Period.	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	10,509,590	7,480,034	17,989,644
1910-14	22,649,240	2,549,350	25,198,590
1915	7,560,702	.....	7,560,702

#### RAILWAYS LOAN ACCOUNT.

The Railways Loan Account was opened under the authority of Act No. 4, 1910, and subsequent Acts passed in the years 1913 and 1915 increased to £8,000,000 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 following are the transactions for the year 1914-15:—

Receipts—	£	Net Expenditure—	£
Balance brought forward from		Duplications—	
1913-14 ... ..	1,006,007	Main Suburban Line ...	833
Proceeds of Sales—		Southern Line ... ..	849,380
Treasury Bills ... ..	616,667	Western Line ... ..	186,552
Repayment—		Northern Line ... ..	154,050
Rolling Stock ... ..	200,000	South Coast Line ... ..	267,091
			1,457,911
		Rolling Stock ... ..	132,166
		Credit Balance carried forward to 1915-16 ... ..	232,597
	£1,822,674		£1,822,674

#### LOAN ACCOUNTS.

The following figures show the amount of loans raised from the commencement of the Loan Account, in 1853, to 30th June, 1915, 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, 1915 ... ..	£185,651,798
Discount, interest, bonus, and charges ... ..	10,037,310
Net amount raised ... ..	£175,614,458
Add net amount transferred from Consolidated Revenue to make good amount short-raised ... ..	176,767
	£175,791,225
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
	£5,543,146
Net amount available for works, &c. ... ..	£170,248,079

As the above statement shows, a sum of £185,651,798 has been raised by loan to 30th June, 1915, in connection with which the discount, interest, bonus, and other charges amounted to £10,037,340, leaving £175,614,458 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 £170,248,079.

At 30th June, 1915, £57,916,393 had been redeemed, £9,519,705 being a charge on the Consolidated Revenue, leaving £127,735,405 outstanding at the close of the last financial year. The aggregate amount of interest paid by the State on its loans to 30th June, 1915, was £89,716,187, of which the charge during the last financial year was £4,125,600.

The uses to which the available sum of £170,248,079 was applied are shown in the following table. The sum of £48,396,688 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 £172,736,046, in which the original loans, as well as the redemption loans, were included:—

Expended on—	£	£
Reproductive Works:—		
Railways... ..	68,594,086	
Tramways ... ..	8,450,155	
Water Supply ... ..	9,386,401	
Sewerage... ..	7,130,969	
Sydney Harbour Trust ... ..	7,008,193	
Darling Harbour Wharves Resumptions ... ..	1,291,237	
Industrial Undertakings ... ..	465,046	
Partly Productive Works:—		102,326,080
Conservation of Water, Artesian Boring, &c. ... ..	4,287,104	
Harbours and Rivers—Navigation ... ..	5,064,286	
Roads and Bridges ... ..	1,861,738	
Housing Fund ... ..	95,000	
		11,308,128
Public Buildings and Sites ... ..	6,125,280	
Immigration ... ..	*569,930	
Public Works in Queensland prior to separation ... ..	49,855	
		6,745,065
Commonwealth Services—		
Construction of Telegraph and Telephone Lines ... ..	1,297,582	
Post and Telegraph Offices ... ..	464,262	
Fortifications and Defence Works ... ..	1,457,533	
Lighthouses ... ..	144,288	
Customs Buildings ... ..	48,880	
Quarantine Buildings ... ..	18,099	
Government Dockyard—Cockatoo Island ... ..	502,988	
Naval Victualling Stores—Darling Harbour ... ..	26,450	
		3,960,085
Redemptions:—		£124,339,358
Loans repaid under various Acts, &c. ... ..	24,004,788	
Treasury Bills for Loan Services repaid ... ..	24,391,900	
		48,396,688
		£172,736,046
Add Credit Balance of Railways Loan Account ... ..		232,597
		£172,968,643
Less Debit Balance, General Loan Account ... ..	2,462,047	
"    "    "    Loans Expenditure Suspense Account ... ..	75,657	
"    "    "    Other Accounts (details not available) ... ..	182,860	
		2,720,564
Total ... ..		£170,248,079

\* 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, 1915, of £1,294,663.

The sum actually expended from loans on public services was, therefore, £124,339,358, the balance to make up the total of £172,736,046 being represented by redemptions. Analysing the above amounts, the following shows the allocation of the items of Loan Expenditure:—Reproductive Works, 82 per cent.; partly productive works, 9 per cent.; other, 6 per cent.; Commonwealth services, 3 per cent.

The loan expenditure on account of the various services during the last four years has been as follows:—

Head of Service.	1912.	1913.	1914.	1915.
	£	£	£	£
Railways ... ..	2,850,791	3,614,306	4,903,328	4,394,318
Tramways ... ..	597,335	1,004,661	811,636	296,590
Water Supply and Sewerage—				
Water Supply ... ..	371,824	517,146	606,521	621,021
Sewerage ... ..	403,919	445,774	428,133	381,695
Water Conservation and Irrigation ... ..	568,492	632,173	907,843	365,544
Harbours, Wharves, and Docks ... ..	415,579	682,502	856,468	684,368
Rivers ... ..	*1,581	*4,247	3,443	*433
Dredges, Punts, &c. ... ..	.....	*2,075	3,016	1,296
Roads and Bridges ... ..	*10	1,451	23,703	8,609
Educational ... ..	.....	*60	10,830	16,905
Public Instruction, School Buildings, &c. ... ..	*4,545	235,005	228,397	*21,103
Public Abattoirs, Homebush ... ..	120,284	58,205	82,480	315,510
Administration of Justice ... ..	*1,218			
Other Public Buildings and Works ... ..	28,119	116,881	17,075	83,824
Closer Settlement ... ..	.....	300,000	.....	*300,000
Pastures Protection Boards for wire netting ... ..	210	3,012	2,318	*174
Roads of access to Crown Lands ... ..	*5,790	*251	.....	.....
Promotion of Agriculture ... ..	.....	.....	.....	48,188
State Brickworks ... ..	43,808	37,565	24,379	7,693
„ Metal Quarries, including steamer ... ..	23,904	13,972	8,967	18,504
„ Lime Quarry ... ..	4,982	6,472	949	*226
„ Joinery Works, Rozelle ... ..	.....	10,000	55,017	*36,000
„ Cement Works .. ... ..	.....	23	44	94
„ Quarry, Maroubra ... ..	.....	3,060	2,916	4,304
„ Bakery ... ..	.....	.....	9,085	677
„ Workshops and Timber Depôt ... ..	.....	.....	72,714	54,720
„ Monier Pipe and Reinforced Concrete Works ... ..	.....	.....	16,000	1,074
„ Trawlers ... ..	.....	.....	.....	36,921
Meat Distributing Depôt, Pyrmont ... ..	.....	.....	21,344	9,782
New Store Depôt at Leichhardt ... ..	.....	.....	6,987	8,259
Superintendent of Public Works ... ..	.....	28,019	3,251	9,811
Housing Act, 1912 ... ..	75,000	.....	20,000	.....
Shires and Municipalities for Works ... ..	.....	.....	.....	17,310
Advances to Settlers for Wheatgrowing ... ..	.....	.....	.....	6,026
Public Works Fund—Amount recouped ... ..	.....	.....	.....	*39,000
Total Expenditure on Public Works, &c. £	5,491,103	7,703,594	9,126,844	6,996,107
Loans repaid by New Loans (including Treasury Bills) ... ..	35,925	3,940,778	757,772	8,864,654
Total ... ..	£ 5,527,028	11,644,372	9,884,616	15,860,761

\* Excess repayments to credit of votes over expenditure.

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.
	£	£ s. d.	£	£ s. d.
1842-1890	.....	.....	43,955,551	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
1906-1910	10,579,736	6 16 9	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	108,216,403	59 16 4
1914	9,126,844	4 19 7	117,343,251	63 3 9
1915	6,996,107	3 15 2	124,339,358	66 10 9

The difference between the actual Loan Expenditure shown in the previous table, and the Public Debt stated below, is due to the fact that the outstanding debt represents the gross amount sold, while the expenditure is the net amount, after deducting discount and expenses of flotation, and allowing for debit balances of Loan Accounts.

#### 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	1915	127,735,405
1870	9,681,130	1905	82,321,998		

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.
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 7
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 10
1915	207,445,569	185,651,798	9,519,705	48,396,688	57,916,393	127,735,405	68 7 1

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.	£
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
1915	86,167,288	67·46	41,568,117	32·54	127,735,405

From the above figures it will be noted that the amount of liabilities held locally at the close of the financial year 1914-15 amounts to nearly one-third of the total indebtedness.

The next table shows the annual payments under each head for interest and expenses of the Public Debt since 1906:—

Year ended 30th June.	Interest.	Redemptions.	Expenses connected with management of Inscribed Stock.	Commission paid to Financial Agents in England and New South Wales.	Total Interest and Charges paid.	
					Total.	Per Inhabitant.
	£	£	£	£	£	£ s. d.
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	3,908,853	2 2 8
1915	4,125,600	5,688	21,334	1,492	4,154,174	2 4 8

The average rate of interest on the whole debt at the end of the financial year 1915 was 3.60 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. The amounts outstanding and annual interest payable on 30th June, 1915, were as follows:—

Description of Stock.	Amount outstanding, 30th June, 1915.	Annual Interest payable.
Debentures—	£	£
Matured ... ..	19,950	.....
Still bearing interest ... ..	11,912,700	513,585
Stock—		
Matured ... ..	625	.....
N. S. W. 4 per cents. ... ..	530,189	21,208
„ 1924 Stock ... ..	198,065	5,942
„ 1925 „ ... ..	222,255	6,668
Inscribed and Funded Stock ... ..	104,825,115	3,741,420
Total, Funded Debt... ..	£117,708,899	£4,288,823
Treasury Bills—		
For Public Works ... ..	*8,234,969	229,446
Renewals ... ..	1,791,537	80,619
Total, Unfunded Debt ... ..	£10,026,506	310,065
Total, Public Debt ... ..	£127,735,405	£4,598,888

\*Includes £1,000,000 discounted for twelve months.

The following table shows the total amount of stock and the annual interest payable; there were overdue debentures to the amount of £19,950, and inscribed and funded stock to the amount of £625, outstanding on 30th June, 1915:—

Interest—Per cent.	Amount of Stock.	Annual Interest payable.
	£	£
5 ... ..	*2,015,550	10,735
4½ ... ..	10,107,837	454,853
4½ ... ..	†4,316,669	178,063
4 ... ..	‡30,427,715	1,176,325
3½ ... ..	§5,514,098	506,779
3½ ... ..	§50,306,464	1,760,721
3 ... ..	17,047,072	511,412
Total ... ..	£127,735,405	£4,598,888

\*Includes £850 matured debentures and £1,800,000 Treasury Bills issued in Sydney, redeemed in London, the rate of discount not to exceed 5 per cent. † Approximate rate not definitely fixed. ‡ Includes £19,100 matured debentures, £482 matured inscribed and funded stock, and £1,000,000 Treasury Bills, currency one year, which were discounted at 4 per cent. § Includes £143 matur d.

The total amount of discount on the Treasury Bills was £81,221, so that the actual interest liability was £4,680,109.

## DATES OF MATURITY.

The dates of repayment extend from 1915 to 1962; and the sums repayable in the different years vary considerably in amount.

The following table shows the due dates and the amount repayable in London and Sydney:—

Due Date.	Registered in—		Total.
	London.	Sydney.	
	£	£	£
Overdue ... ..	19,150	1,425	20,575
1915 ... ..	1,000,000	1,800,000	2,800,000
1916 ... ..	.....	828,667	828,667
1917 ... ..	.....	4,970,352	4,970,352
1918 ... ..	12,649,318	176,862	12,826,200
1919 ... ..	.....	11,113,945	11,113,945
1920 ... ..	2,000,000	3,077,837	5,077,837
1921 ... ..	.....	4,872,843	4,872,843
1922 ... ..	4,400,000	100,000	4,500,000
1923 ... ..	.....	5,850,725	5,850,725
1924 ... ..	16,464,545	233,520	16,698,065
1925 ... ..	.....	311,799	311,799
*1927 ... ..	5,000,000	.....	5,000,000
1933 ... ..	9,583,775	102,525	9,686,300
1935 ... ..	12,475,800	24,200	12,500,000
†1950 .. ..	12,073,500	176,500	12,250,000
‡1962 ... ..	10,500,000	.....	10,500,000
Interminable ... ..	1,200	531,689	532,889
§ Indefinite ... ..	.....	7,395,208	7,395,208
Total ... ..	86,167,288	41,568,117	127,735,405

\* Redeemable after 1st July, 1922, in whole or in part, on Government giving three months' notice.  
 † Redeemable after 1st July, 1930, on Government giving six months' notice. ‡ Redeemable on 1st July, 1942, on Government giving six months' notice. § Redeemable at option of Government, on giving twelve months' notice.

## 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  $\frac{1}{2}$  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 debenture loans, and of the inscribed and funded stock loans floated during the period from 1895 to 1914-15:—

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							
1912-13	4,500,000	4,425,000	5,625	11,250	4,360	68,743	89,978	2 0 8
1914-15	5,000,000	*	*	*	*	*	*	*
1914-15	2,000,000	1,990,000	2,500	5,000	.....	30,662	38,162	1 18 4
Issued (in Sydney) as Debentures.								
1904-5	131,100	131,100	nil.	nil.	nil.	nil.	nil.	nil.
1914-15	410,000	410,000	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	2,826,382	2,826,382	.....	.....	.....	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
1914-15	718,522	718,522	.....	.....	.....	nil.	nil.	nil.
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	1,506,263	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	107,509	3 16 1
1905-6	2,000,000	1,993,000	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	48,657	3 6 7
	3,000,000	2,955,000	18,750	7,500	29,691	45,393	101,339	3 8 7
1909-10	2,750,000	2,667,500	17,137	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	18,750	7,500	27,733	45,885	99,868	3 7 3

\* Not available—raised in June, 1915, not brought to account on 30th June, 1915.



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, 1914-15.

The average market prices of stock in London and in Sydney are shown in the subjoined table for each month of the year 1914-15:—

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.	3¼ per cent. Stock.	3 per cent. Stock.
	£	£	£	£	£	£	£
1914.							
July ... ..	99	96½	83	99½	97¼	94	73½
August ... ..	98¼	95½	82	No Quotations.			
September ... ..				97	95¼	88½	70
October ... ..				96½	95	90½	.....
November ... ..				97½	95¼	85¾	.....
December ... ..				94½	95½	93	70
1915.							
January ... ..	No Quotations.			92½	96½	92¼	70½
February ... ..				94	96	92¾	70½
March ... ..				95½	97	92¾	69¾
April ... ..				94¾	96½	89½	70
May ... ..				92½	96½	87½	70
June ... ..				95¼	96½	94	70

#### 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 transactions under the Act for the financial year ended 30th June, 1915, were as follow:—

RECEIPTS.		£
Annual Contribution from Consolidated Revenue Fund ... ..		350,000
Repayments—		
Country Towns Water Supply ... ..		3,400
Country Towns Sewerage ... ..		609
Promote Closer Settlement under Crown Lands Act of 1895 ...		5,688
Interest on Funded Stock ... ..		12,862
Interest on Deposit with Colonial Treasurer... ..		356
		<hr/>
Total Receipts... ..		372,915
Balance brought forward from 1913-14 ... ..		391,349
		<hr/>
		£764,264
		<hr/>
EXPENDITURE.		£
Repayments—		
Annual contribution from Consolidated Revenue Fund (in terms of section 2 of State Debt and Sinking Fund Amendment Act, 1914) ... ..		350,000
Balance carried forward—		
Invested in N.S.W. Funded Stock ... ..		360,686
On Deposit with Colonial Treasurer ... ..		53,514
On Account Current ... ..		64
		<hr/>
		414,264
		<hr/>
Total ... ..		£764,264
		<hr/>

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, it has 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, 1915, was £8,234,969 for Public Works, and £1,791,537 for Renewals, of which £1,000,000 was discounted for one year at 4 per cent., and £1,750,000 at  $4\frac{1}{4}$  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, 1915, these were as follows:—Public Debt—Debentures, £11,932,650; Inscribed and Funded Stock, £105,776,249; Treasury Bills, £10,026,506; total Public Debt, £127,735,405.

This total amount might reasonably be lessened by the sum of £1,427,203 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 ... ..	£932,716
Country Towns Sewerage ... ..	168,700
Water Trusts ... ..	182,389
Drainage Trusts ... ..	82,941
Other Advances ... ..	60,457
Total ... ..	£1,427,203

There is also the property transferred to the Commonwealth, on which interest is paid by the Commonwealth at  $3\frac{1}{2}$  per cent. per annum. The value of this property is £3,960,085, and in 1914-15 £215,573 was received by the State as interest on such. The total amount by which the Public Debt might be reduced is, therefore, about £5,387,000.

The principal assets of the State are its trading concerns (railways, tramways, 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, 1915, was £1,729,810, distributed under the following headings:—Alienation, £45,700; Conditional Purchases, £867,462; Pastoral Leases, £494,290; Mining Leases, &c., including royalty on minerals, £127,378; Miscellaneous Land Receipts, £194,980. The balance of purchase money outstanding on 31st December, 1914, in regard to conditional purchases, amounted to £9,699,805.

The following statement shows that the Public Debt has been incurred principally on works of a reproductive character—80 per cent. being on reproductive works, 9 per cent. on partly productive works, 8 per cent. on public buildings, &c., and 3 per cent. on Commonwealth services.

Public Debt.			
Reproductive Works—	£	Unproductive Works—	£
Railways.. .. .	£8,594,086	Public Buildings and Other Works	10,141,112
Tramways .. .. .	8,450,155	Services taken over by Commonwealth	3,960,055
Water and Sewerage .. .. .	16,517,370		£14,101,197
Sydney Harbour Trust .. .. .	7,008,193		
Darling Harbour Resumptions .. .. .	1,291,230	Total Debt .. .. .	£127,735,465
Industrial Undertakings .. .. .	465,046		
	£102,326,080		
Partly Productive Works—			
Conservation of Water, &c. .. .. .	4,287,104		
Roads and Bridges .. .. .	1,861,738		
Harbours and Rivers .. .. .	5,064,286		
Housing Fund .. .. .	95,000		
	£11,308,128		

## EXPENDITURE BY STATE ON IMMIGRATION.

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 1915:—

Period.	Amount.	Period.	Amount.	Period.	Amount.
	£		£		£
1832-50	1,192,193	1902	245	1909	22,436
1851-60	1,261,255	1903	.....	1910	26,815
1861-70	278,980	1904	.....	1911	32,786
1871-80	395,536	1905	.....	1912	59,186
1881-90	533,849	1906	1,226	1913	69,656
1891-1900	14,200	1907	8,079	1914	33,158
1901	.....	1908	13,184	1915	24,501

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.

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 *qua* States in these imposts. In a previous issue of this Year Book the financial relations between the States and the Commonwealth have been 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.

## 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 monetary system of the United Kingdom, 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 British or Australian coins, is legal, if made in gold coins, for any amount; in silver coins, for a maximum amount of forty shillings; and in bronze for a maximum amount 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 are as follows:—

Denomination of Coin.	Imperial Weight.	Metric Weight.	Remedy Allowance.	
			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  $\frac{1}{2}$  fine gold,  $\frac{1}{2}$  alloy, or millesimal fineness, 916.6; for silver coins,  $\frac{3}{4}$  fine silver,  $\frac{1}{4}$  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.

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.
	d.		d.		d.
1875	56½ <sup>3</sup> / <sub>8</sub>	1895	29½	1911	24 <sup>9</sup> / <sub>8</sub>
1880	52½	1900	28 <sup>5</sup> / <sub>8</sub>	1912	28 <sup>1</sup> / <sub>8</sub>
1885	48½	1905	27½ <sup>3</sup> / <sub>8</sub>	1913	27 <sup>9</sup> / <sub>8</sub>
1890	47½	1910	24½ <sup>1</sup> / <sub>8</sub>	1914	25½ <sup>3</sup> / <sub>8</sub>

The fluctuations in value during 1914 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.
	d.		d.		d.
January ...	26 <sup>9</sup> / <sub>8</sub>	May ...	25½ <sup>5</sup> / <sub>8</sub>	September ...	24½
February ...	26 <sup>9</sup> / <sub>8</sub>	June ...	25½ <sup>3</sup> / <sub>8</sub>	October ...	23 <sup>3</sup> / <sub>8</sub>
March ...	26½ <sup>3</sup> / <sub>8</sub>	July ...	24 <sup>9</sup> / <sub>8</sub>	November ...	22½ <sup>1</sup> / <sub>8</sub>
April ...	26½ <sup>3</sup> / <sub>8</sub>	August ...	26	December ...	22 <sup>7</sup> / <sub>8</sub>

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 have been 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, 1914, was 36,867,543 oz.,

valued at £136,257,574. Of this quantity New South Wales produced 11,758,695 oz., of the value of £43,543,901, the amount from each source being as follows:—

Where produced.	Weight.	Value.
	oz.	£
New South Wales ... ..	11,758,695	43,543,901
Victoria ... ..	1,447,425	5,940,243
Queensland (including Papua) ...	17,618,171	62,818,526
South Australia ... ..	98,834	339,102
Tasmania ... ..	142,669	502,553
New Zealand ... ..	5,396,111	21,570,555
Other Countries ... ..	79,931	278,479
Coin ... ..	325,707	1,264,215
Total ... ..	36,867,543	136,257,574

Nearly the whole of the gold mined in New South Wales and Queensland, and a big proportion of the output of New Zealand, is received at the Sydney Mint for coinage. The value of gold coin and bullion issued up to the end of 1914 was £136,031,719, of which £129,491,500 represented coin, the value of sovereigns and half-sovereigns being as follows:—

Year.	Sovereigns.	Half-sovereigns.	Total.
	£	£	£
1855 to 1904	102,293,500	3,025,000	105,318,500
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
1914	1,774,000	161,000	1,935,000
Total... £	125,380,500	4,111,000	129,491,500

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 bars of fine gold issued to local banks. The amount of gold bullion issued during 1914 was valued at £32,806, the total from 1855 to the end of 1914 being 1,584,486 ounces, valued at £6,540,219.



*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 1914 were valued at £620,400, made up as follows:—

Coin.	1910.	1911.	1912.	1913.	1914.	Total.
Silver—	£	£	£	£	£	£
Florins ...	61,500	22,950	51,000	86,900	65,700	288,050
Shillings ...	42,200	39,900	4,700	25,000	26,000	137,800
Sixpences ...	28,100	22,200	7,400	15,800	10,600	84,100
Threepences ...	10,500	37,400	6,500	13,900	9,000	77,300
Total silver	£ 142,300	122,450	69,600	141,600	111,300	587,250
Bronze—						
Pence ...	.....	7,840	9,060	2,400	4,350	23,650
Halfpence ...	.....	2,750	3,450	1,650	1,650	9,500
Total bronze	£ .....	10,590	12,510	4,050	6,000	33,150
Total coin ...	£ 142,300	133,040	82,110	145,650	117,300	620,400

*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 1914 was 2s. 1 $\frac{3}{16}$ d., the difference, 3s. 4 $\frac{1}{16}$ 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. 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	.....	1913	111,659	4,744
1911	182,661	4,398	1914	188,106	8,295
1912	133,253	14,374			

*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 received 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 1914 was £714, and for the whole period since the opening of the Mint, £1,083,664.

Worn British silver coin of the value of £68,135 was withdrawn from circulation, through the Sydney Mint, during 1914; the aggregate value withdrawn to the end of 1914 was £402,087. British silver coin, not

exceeding a nominal value of £50,000 in any one year, may be withdrawn at Sydney for re-issue in other parts of the British Empire, and replaced by Australian silver coin of equivalent value and denomination. During 1914 re-issuable silver coin to the value of £21,300 was withdrawn, the total to the end of 1914 being £100,300.

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 at 1s. 6d. per oz. fine.

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 1904	521,492	136,871	94,217	752,580
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
1914	4,625	3,425	995	9,045
Total £	588,528	185,198	105,317	879,043

The cost of maintenance of the Sydney Branch of the Royal Mint is borne by the State Government, £17,000 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 1914 amounted to £15,062.

#### 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. 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 1910, but this has now been replaced by a 10 per cent. Commonwealth tax. The result of this tax has been to practically force the banks' notes out of circulation.

The following figures relating the total liability as regards notes and bills of banking institutions operating in New South Wales, 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 after the imposition of the tax:—

Year.	Circulation in—		Total.
	Notes.	Bills.	
	£	£	£
1860	949,849	62,505	1,012,354
1870	695,366	50,515	745,881
1880	1,260,772	51,698	1,312,470
1890	1,557,805	127,442	1,685,247
1900	1,447,641	209,905	1,657,546
1910	2,243,128	370,199	2,613,327
1911	400,784	411,792	812,576
1912	171,199	413,411	584,610
1913	123,468	452,964	576,432
1914	101,054	382,927	483,981

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.

#### 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.

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 Dec., 1914.	29th Dec., 1915.
	£	£	£	£	£
10s. ... ..	.....	.....	18,413	263,522	1,240,257
£1 ... ..	3,511,163	3,191,100	3,144,170	6,634,085	9,997,406
£5 ... ..	3,263,445	3,414,695	3,438,055	4,499,860	5,941,530
£10 ... ..	1,724,210	1,771,360	1,657,970	1,871,120	2,256,470
£20 ... ..	397,740	405,780	325,360	361,880	539,960
£50 ... ..	890,700	819,400	916,000	1,166,450	1,143,000
£100 ... ..	369,160	410,000	479,600	1,347,500	1,315,500
£1,000 ... ..	.....	.....	.....	3,687,000	19,332,000
Total £	10,156,358	10,012,275	9,979,568	19,831,417	41,766,123
Gold Reserve ...	4,949,422	4,465,339	4,512,599	7,987,526	14,965,317

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.

## MONEY ORDERS AND POSTAL NOTES.

Exchange by means of 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. 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 1914 the number was 879,827; and the total value £3,854,703. Appended is a statement of the business transacted in 1914 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 .. .. .	631,979	3,057,216	635,589	3,061,117
Victoria .. .. .	45,479	192,631	22,859	102,666
Queensland .. .. .	18,404	87,799	41,118	184,478
South Australia and Northern Territory.	14,095	64,592	10,568	47,106
Western Australia .. .. .	4,375	25,186	11,746	68,763
Tasmania .. .. .	5,209	22,277	7,146	30,377
Papua .. .. .	53	149	1,038	3,517
Other Countries—				
United Kingdom .. .. .	130,880	292,100	21,728	68,607
Canada .. .. .	939	3,913	1,037	5,177
Union of South Africa .. .. .	958	3,317	1,948	6,782
Ceylon .. .. .	175	591	115	351
Fiji .. .. .	233	666	4,228	11,091
Germany .. .. .	1,061	3,846	297	1,677
German New Guinea .. .. .	32	770	238	3,193
Hong Kong .. .. .	868	4,532	266	616
India .. .. .	1,979	22,880	554	2,003
Italy .. .. .	1,100	8,534	41	520
Mauritius .. .. .	65	97	2	..
New Zealand .. .. .	14,570	42,807	32,169	90,849
New Caledonia .. .. .	60	163	14	54
Egypt .. .. .	514	2,591	..	..
Straits Settlements .. .. .	112	637	126	479
Tonga .. .. .	21	106	283	3,222
United States of America, Hawaii, Pago Pago (Samoa).	6,631	17,132	2,788	13,962
Other .. .. .	34	121	912	8,932
<b>Total .. .. .</b>	<b>879,827</b>	<b>3,854,703</b>	<b>796,891</b>	<b>3,715,679</b>

The following table distinguishes money orders drawn on New South Wales from those drawn on other countries. 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
1914	3,057,216	797,487	3,854,703	3,061,117	654,562	3,715,679

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 1914 in respect of commission on the money orders issued was £25,537.

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
1914	26,448	(-) 911	25,537

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.

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.	New South Wales Postal Notes.			Postal Notes of other Australian States paid in New South Wales.					
	Paid in New South Wales.	Paid 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	129,113
1912	1,057,439	223,152	1,280,591	49,768	52,512	15,318	11,358	8,613	138,069
1913	1,132,916	278,929	1,411,845	50,693	54,532	15,467	11,512	8,448	140,657
1914	1,208,476	310,116	1,518,592	51,182	57,233	15,179	11,357	8,915	143,916

The total number of postal-notes issued in New South Wales during 1914 was 4,067,837, of which 3,172,121 were for payment in the State; and 358,038 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.	Pouodage.	Year.	Pouodage.
	£		£
1895	6,317	1911	23,389
1900	11,850	1912	24,906
1905	14,262	1913	25,949
1910	21,309	1914	29,453

## 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 a department for the transaction of savings bank business has been established.

The Commonwealth Bank was established on 15th July, 1912, by the opening of a Postal Savings Bank department in Victoria. A savings department was commenced in Queensland on 16th September; in the Northern Territory on 21st October; 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 3 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 many branches have been opened in New South Wales and in other parts of the Commonwealth. In addition, a branch has been opened at Canberra, and one in London. Savings bank business is conducted at all branches and at agencies and post offices throughout the Commonwealth, Papua, and New Zealand.

The following statement of the Savings department of the Commonwealth Bank shows the number of depositors and the amount to their credit as at 30th June, 1914, and 1915:—

	1914.		1915.	
	Depositors.	Amount at Credit of Depositors.	Depositors.	Amount at Credit of Depositors.
	No.	£	No.	£
New South Wales	37,677	1,171,255	61,023	2,026,392
Victoria ... ..	30,371	1,151,823	45,583	1,951,996
Queensland ... ..	24,202	815,947	36,621	1,309,109
South Australia ...	7,965	317,135	12,773	544,342
Western Australia ...	10,111	277,956	16,889	497,714
Tasmania ... ..	32,392	885,379	35,959	990,720
Northern Territory ...	292	18,709	716	42,643
Papua ... ..	133	7,064	151	9,041
London ... ..	.....	.....	646	48,690
Total ... ..	143,143	4,645,268	210,361	7,420,647

#### 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 funds of the Savings Bank of New South Wales 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 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.

A reciprocity agreement exists between the various Savings banks in Australia for the transfer of money of depositors, and similar arrangements obtain with the United Kingdom.

#### *Savings Bank Amalgamation.*

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. Since the amalgamation the volume of business of the Savings Bank has steadily increased, notwithstanding the fact that the Commonwealth Savings Bank is operating in New South Wales. On the 30th June, 1915, there were 628 branches and agencies of the Government Savings Bank opened in New South Wales; the number of accounts was 694,812; the balance at credit of depositors was £33,536,257; and the interest paid to depositors during the year was £1,022,846. One-fifth of the amount held to the credit of depositors represented deposits under £100, one-half deposits of between £100 and £400, and the balance sums of over £400. The rate of interest paid since the 1st October, 1915, by the State Savings Bank has been  $3\frac{3}{4}$  per cent. on sums up to £500. On similar sums the Commonwealth Savings Bank pays 3 per cent.

#### *Deposits in all Savings Banks.*

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, 1915. The returns of the Savings Department of the Commonwealth Bank are included in the figures for the last three years:—

At 30th June.	Number of Depositors.	Amount of Deposits.		
		Total.	Per Depositor.	Per head of Population.
		£	£ s. d.	£ s. d.
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
1915	755,835	35,562,649	47 1 0	19 0 7

\* 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, 1915:—

State.	Depositors.	Amount of Deposits in all Savings Banks.	Average Amount.	
			Per Depositor.	Per Inhabitant.
	No.	£	£ s. d.	£ s. d.
<i>New South Wales</i> ...	755,835	35,562,649	47 1 0	19 0 7
Victoria ... ..	781,490	26,996,025	34 10 11	18 18 6
Queensland ... ..	229,023	11,715,271	51 3 0	16 19 8
South Australia... ..	282,169	9,595,156	34 0 1	21 18 3
Western Australia ... ..	142,895	5,021,545	35 3 0	15 11 5
Tasmania... ..	80,701	2,320,946	28 15 2	11 13 11
Total ... ..	2,272,113	91,211,592	40 3 2	18 8 5

#### TRADING BANKS.

Banking institutions transacting ordinary banking business within the State during 1915 numbered eighteen, 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.), five 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 677 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 on 30th June, 1915, was stated as £18,891,145, of which £2,060,743 carried a preferential claim on the profits of the companies.

In the following table is a statement of the ordinary and preferential capital of seventeen banks at the date shown, with the amount of the reserve fund of each 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.	Preferential.	Total.	
HEAD OFFICE, SYDNEY.						
	No.		£	£	£	£
Bank of New South Wales .. .. .	173	Mar., 1915	3,500,000	....	3,500,000	2,550,000
Commercial Banking Co. of Sydney (Limited) .. .. .	181	June, 1915	2,000,000	....	2,000,000	1,780,000
Australian Bank of Commerce (Limited)	68	June, 1915	1,195,831	....	1,195,831	65,000
City Bank of Sydney .. .. .	46	June, 1915	400,000	....	400,000	36,000
HEAD OFFICE, MELBOURNE.						
Commercial Bank of Australia (Limited)	18	June, 1915	1,452,346	....	1,452,346	Nil.
Royal Bank of Australia (Limited) ..	1	Mar., 1915	300,000	....	300,000	232,500
National Bank of Australasia (Limited) ..	11	Mar., 1915	1,192,440	305,780	1,498,220	525,000
Colonial Bank of Australasia (Limited) ..	1	Mar., 1915	135,236	304,044	439,280	240,000
HEAD OFFICE, BRISBANE.						
Queensland National Bank (Limited) ..	1	June, 1915	480,000	....	480,000	173,000
Bank of North Queensland (Limited) ..	6	June, 1915	162,500	....	162,500	37,500
HEAD OFFICE, WELLINGTON.						
Bank of New Zealand .. .. .	1	Mar., 1915	975,710	1,278,989	2,254,699	2,000,000
HEAD OFFICE, LONDON.						
Bank of Australasia .. .. .	48	Oct., 1914	2,000,000	....	2,000,000	2,730,000
Union Bank of Australia (Limited) ..	39	Feb., 1915	2,000,000	....	2,000,000	1,980,000
London Bank of Australia (Limited) ..	32	Dec., 1914	496,902	171,930	668,832	300,000
English, Scottish, and Australian Bank (Limited) .. .. .	50	June, 1914	539,437	....	539,437	350,000
Total .. .. .	676	....	16,830,402	2,060,743	18,891,145	12,984,000

\* Particulars not available.

In addition to the paid-up capital shown above, an amount of £2,848 and £953, totalling £3,801, had still to be paid in respect of calls made on the shareholders of the Australian Bank of Commerce (Limited), and the London Bank of Australia (Ltd.), respectively.

The following table shows the amount of the paid-up capital and reserve funds of banks operating in the State, at intervals since 1895. The paid-up capital represents the amount called up by each bank operating in New South Wales, irrespective of the countries where it was subscribed:—

Year.	Banks.	Capital Paid up.		Total.	Reserve Funds.
		Ordinary.	Preferential.		
	No.	£	£	£	£
1895	13	14,610,177	5,094,780	19,704,957	4,175,912
1900	13	12,212,129	4,594,940	16,807,069	4,529,109
1905	13	9,870,871	4,095,060	13,965,931	5,474,199
1910*	15	13,911,796	2,281,754	16,193,550	8,462,235
1911*	15	14,280,807	2,281,754	16,562,561	9,281,000
1912*	15	14,689,126	2,281,754	16,970,880	10,121,000
1913*	15	16,213,705	2,551,444	18,765,149	12,146,000
1914*	15	16,830,402	2,060,743	18,891,145	12,984,000

\* Exclusive of Commonwealth Bank of Australia, and Comptoir National d'Escompte de Paris.

The decrease in the year 1905 (£2,841,138) was due to the writing down of the capital of the Australian Joint Stock Bank, Limited (now the Australian Bank of Commerce, Limited), of the Commercial Bank of Australia, Limited, of the Bank of New Zealand, and of the London Bank of Australia, Limited; while a slight increase occurred in the capital of the Queensland National Bank, Limited. The total reductions were £2,841,560, and the increases amount to £422, leaving a net decrease of £2,841,138, as shown above.

During the period 1905-1910, the capital was materially increased, by additional calls on shares of the Bank of New South Wales (£913,820), the Commercial Banking Company of Sydney (£500,000), the Australian Bank of Commerce, Limited (£1,026,242), and smaller items amounting to £575. A further augmentation was due to the commencement of operations in the State by the Colonial Bank of Australasia, Limited, and the Royal Bank of Australia, Limited, the total paid-up capital of these two institutions being £739,280. Against these increases must be placed the estimated deficiency in connection with the Special Assets Trust Company, Limited, of the Commercial Bank of Australia, Limited, which amounted to £952,298. The net increase during the five years 1905 to 1910 was therefore £2,227,619, exclusive of the capital of the Comptoir National d'Escompte de Paris.

#### LIABILITIES AND ASSETS OF BANKS.

The aggregate liabilities to the public in New South Wales and elsewhere of the banks enumerated were £205,542,304, against which there were assets representing £238,880,651. 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:—

Bank.	Notes in Circulation.	Deposits* (approximate).	Other Liabilities.	Total.
	£	£	£	£
Bank of New South Wales . . . . .	370,918	38,778,056	8,192,156	47,341,130
Commercial Banking Co. of Sydney (Limited) . . . . .	16,952	25,071,778	665,369	25,754,099
Australian Bank of Commerce (Limited) . . . . .	965	4,677,522	299,607	4,978,094
City Bank of Sydney . . . . .	6,243	2,140,435	.....	2,146,678
Colonial Bank of Australasia (Limited) . . . . .	19,108	4,183,673	469,664	4,672,445
Commercial Bank of Australia (Limited) . . . . .	39,124	7,091,970	723,148	7,854,242
National Bank of Australasia (Limited) . . . . .	36,223	11,196,570	809,349	12,042,142
Royal Bank of Australia (Limited) . . . . .	961	2,279,308	485,363	2,776,632
Queensland National Bank (Limited) . . . . .	Nil.	10,683,362	377,465	11,060,827
Bank of North Queensland (Limited) . . . . .	Nil.	1,134,157	41,797	1,175,954
Bank of New Zealand . . . . .	1,676,051	18,741,657	1,670,193	22,087,811
Bank of Australasia . . . . .	262,995	19,108,792	2,896,301	22,208,088
Union Bank of Australia (Limited) . . . . .	274,937	23,594,898	1,747,446	25,617,281
London Bank of Australia (Limited) . . . . .	7,155	5,151,572	683,358	5,842,085
English, Scottish, and Australian Bank (Limited) . . . . .	2,756	9,483,494	549,546	9,985,796
Total † . . . . .	£ 2,654,388	183,267,244	19,620,672	205,542,304

\* Includes "other liabilities" in some cases.

† Exclusive of Commonwealth Bank of Australia and Comptoir National d'Escompte de Paris.

The assets in New South Wales and elsewhere 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..	10,707,401	4,552,574	25,726,173	12,507,617	53,583,765
Commercial Banking Co. of Sydney (Limited).	4,912,505	4,809,667	14,236,405	5,748,256	29,706,833
Australian Bank of Commerce (Limited).	1,073,424	311,364	3,380,588	894,036	6,259,412
City Bank of Sydney	531,069	147,199	1,630,650	284,293	2,593,231
Colonial Bank of Australasia (Limited)	1,055,870	* .....	2,862,842	1,456,665	5,375,377
Commercial Bank of Australia (Limited).	2,300,616	* .....	5,071,075	1,988,820	9,858,511
National Bank of Australasia (Limited)	3,212,400	* .....	8,914,253	2,647,041	14,173,694
Royal Bank of Australia (Limited)	855,525	* .....	1,655,412	824,356	3,335,293
Queensland National Bank (Limited)	2,087,935	1,427,448	6,288,587	1,966,603	11,770,573
Bank of North Queensland (Limited)	329,753	63,667	815,130	174,767	1,383,332
Bank of New Zealand	4,827,522	Nil.	11,840,166	9,851,753	26,528,441
Bank of Australasia	5,424,703	* .....	20,041,792	1,736,168	27,202,663
Union Bank of Australia (Limited)	5,500,872	* .....	17,440,135	6,846,734	29,787,791
London Bank of Australia (Limited)	1,257,088	* .....	4,378,277	1,227,040	6,862,405
English, Scottish, and Australian Bank (Limited).	1,382,191	* .....	6,452,765	2,674,324	10,509,280
Total †	£ 45,908,899	11,311,919	131,343,310	50,316,523	238,880,651

\* Included with coin, bullion, &c.

† Exclusive of Commonwealth Bank of Australia, and Comptoir National d'Escompte de Paris.

The difference between the assets and liabilities shown in the table amounts to £33,338,347, and consists of the paid-up capital and reserves (£32,453,045), and dividends paid (£885,302).

#### 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 and 1914. 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
1914	*18	73,513,228	63,785,692	9,727,536

\* Includes Reuter's Bank (Limited).

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 19·1 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 66·4 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 88·1 per cent. of liabilities (exclusive of liabilities to shareholders), while advances are 66·4 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	358,673	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	31,646,555*	27,221,654	58,868,209	1,242,004	60,233,681
1914	101,054	32,967,472 <sup>o</sup>	29,014,546	61,982,018	1,702,620	63,785,692

\* Includes Savings Bank deposits in Commonwealth Bank of Australia.

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	19,038,386	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	13,026,727	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	1,940,098	3,625,622	66,046,728
1914	15,128,719	51,761,520	2,065,615	4,557,374	73,513,228

Under the heading of "other assets" are grouped notes and bills of banks, balances due from other banks, and 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 ten 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	359,038	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
1914	1,319,693	449,295	1,351,040	2,757,039

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.

#### 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. The figures represent the weekly average amounts during the quarter ended 31st December in each year:—

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	15·3	49·1
1900	5,933,076	193,050	6,126,126	18·0	44·8
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	18·3	39·2
1913	13,492,871	122,971	13,615,842	22·6	49·8
1914	14,995,145	133,574	15,128,719	23·7	51·9

\* Amount of deposits at call unobtainable.

## 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 deposit 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
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	26 16 9
1913	46,856,166	79·6	70·9	25 11 5
1914	51,761,520	83·5	78·4	27 15 11

## DEPOSITS IN BANKS.

The total amount of money deposited with the banks operating in New South Wales during 1914 was, approximately, £224,914,574, of which sum £61,982,018 was received locally. 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.			Proportion of Deposits not bearing Interest to Total Deposits.	Proportion of Deposits to Liability (to Public).
	Bearing Interest.	Not bearing Interest.	Total.		
	£	£	£	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
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
1914	32,967,472	29,014,546	61,982,018	46·8	97·1

The deposits reached their highest level in December, 1914, when there was entrusted to the banks an average total of £61,982,018.

## 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 to 2½ 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.

Year.	Bank Interest on Deposits for twelve months.	Year.	Bank Interest on Deposits for twelve months.
	per cent.		per cent.
1860	5	1910	3
1870	5	1911	3
1880	5	1912	3 to 3½
1890	4½	1913	3½
1900	3	1914	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 1914 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
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
1914	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 3½ per cent., the banks at that date requiring all their available assets. The rates from 1890 to 1914 were:—

Year.	Exchange rate on London at 60 days' sight.	
	Buying.	Selling.
	per cent.	per cent.
1890	99¾ to 100	100¾ to 101¾
1895	99½ „ 99¾	100 „ 100¾
1900	98¾ „ 99½	100¼ „ 100¾
1910	98½ „ 99	99¾ „ 99¾
1911	98¾ „ 99	99¾ „ 99¾
1912	98½ „ 99¼	99¾ „ 100¼
1913	98¾ „ 98¾	99¾ „ 99¾
1914	98¾ „ 98¾	99¼ „ 100¼



## 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 London Bank of Australia (Limited), the English, Scottish, and Australian Bank (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	90,729	239,406	330,135	10	175,000	50,000	105,135
Commercial Banking Company of Sydney (Limited) ..	70,931	123,773	197,734	10	100,000	25,000	72,734
Australian Bank of Commerce (Limited) ..	3,246	27,241	30,487	3	17,937	10,000	2,550
City Bank of Sydney ..	2,457	10,096	12,553	4	8,000	2,000	2,553
Colonial Bank of Australasia (Limited) ..	6,835	23,317	34,652	7	15,375	11,000	8,277
Commercial Bank of Australia (Limited) ..	7,650	44,273	51,923	Pref., 4	42,347	Nil.	9,576
National Bank of Australasia (Limited) ..	23,107	85,225	108,332	7	52,437	28,000	27,895
Royal Bank of Australia (Limited)	7,845	19,316	27,161	8	12,000	7,500	7,061
Queensland National Bank (Ltd.)	Nil.	51,746	51,746	..	*39,746	12,000	..
Bank of North Queensland (Ltd.)	3,175	6,753	9,928	6	5,106	2,500	2,262
†Bank of New Zealand ..	51,608	†218,787	270,395	Pref., 4 Ord., 6 Bonus, 3	128,760	84,464	57,171
Bank of Australasia ..	94,066	220,509	314,575	Div'nd. 14 Bonus, 3	170,000	30,000	114,575
Union Bank of Australia (Limited)	71,460	139,050	210,510	Div'nd. 10 Bonus, 2	140,000	Nil.	70,510
‡London Bank of Australia (Ltd.)	25,072	83,378	108,650	7	43,149	‡37,184	28,317
‡English, Scottish, and Australian Bank (Limited) ..	32,588	108,036	140,624	8	43,155	‡54,385	43,084

\* To Private Deposits Repayment Fund. † The figures for Bank of New Zealand are for twelve months. The net profit shown is exclusive of £45,000 interim dividend at 6 per cent. on "A" and "B" preference shares, and £35,700 for interim dividend on ordinary shares, not in balance-sheet. ‡ Twelve months' operations. § Including interest on Transferable Deposits, £5,184; Reserve Fund, £30,000; and grant to Officers' Provident Fund, £2,000. ¶ £35,000 to Reserve Fund, £14,385 for purchase and cancellation of Deferred Inscribed Deposit Stock, and £5,000 to Officers' Guarantee and Provident Fund.

## 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 £750,000 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 £750,000 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	1912	330,621,122
1900	144,080,314	1913	348,741,175
1910	274,343,666	1914	353,068,040
1911	304,488,435	1915	357,803,425

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, requires that every firm carrying on business or having any place of business in New South Wales under a firm-name which does 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, must register with the Registrar-General the name under which their or his business is conducted. A change in constitution, ownership, or firm-name of such a firm must be evidenced by registration within one month.

The following return shows the transactions under the Act during the last five years:—

Transactions.	1910.	1911.	1912.	1913.	1914.
Statements ... ..	1,430	1,477	1,601	1,736	1,858
Declarations and Powers of Attorney ...	15	15	12	19	24
Certified Copies and Certificates ...	21	34	19	25	37
Inspections ... ..	3,476	2,972	3,713	4,332	4,678
Inquiries ... ..	8	5	13	12	15
Total Fees ... ..	£ 489	529	593	660	712

#### 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 Imperial Conferences held in London in 1907 and 1911.

At the 1911 Conference it was resolved that more uniformity should exist throughout the British Empire in the law relating to companies, copyrights, patents and trade-marks.

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.

A company must file certain documents with the Registrar-General before and periodically after registration. The information which is afforded thereby is anticipated by the Act to be sufficient to give requisite publicity for the protection of creditors and of investors.

In regard to limited companies and no-liability mining companies in New South Wales, the following particulars are recorded for the past five years:—

Year.	Limited Companies.			No-Liability Mining Companies.		
	New Companies.	Nominal Capital.	Total Fees received.	New Companies.	Nominal Capital.	Total Fees received.
		£	£		£	£
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	12,336,737	5,790	26	568,910	84
1914	354	7,382,472	4,625	15	190,650	59

Ten of the limited companies now carry on bank deposit business in addition to their ordinary business. Their liabilities, assets, and paid-up capital for the quarter ended June, 1915, were as follows:—

Companies.	Number.	Liabilities (excluding Shareholders).			Assets.			Paid-up Capital.
		Deposits.	Other Liabilities.	Total.	Landed Property.	Other Assets.	Total.	
		£	£	£	£	£	£	£
Investment .. .. .	8	104,961	134,544	239,505	249,506	647,111	896,617	624,825
Trading .. .. .	2	74,889	1,837,086	1,911,975	721,737	5,121,518	5,843,255	3,350,000
Tota .. .. .	10	179,850	1,971,630	2,151,480	971,243	5,768,629	6,739,872	3,974,825

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 any member of the company, wherever such member may have been domiciled, in respect of shares held by the member at time of his death, the value of which 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, numbered 45 at the end of 1914.

The working of the co-operative societies during the last five years will be seen below:—

	1910.	1911.	1912.	1913.	1914.
Number of Societies ... ..	44	42	42	40	45
Number of Members ... ..	*	23,083	26,767	30,586	33,854
	£	£	£	£	£
<b>Liabilities—</b>					
Share capital ... ..	121,241	138,201	156,534	199,174	234,846
Reserves and Net Profits... ..	96,963	101,977	103,891	140,794	153,314
Other liabilities ... ..	66,580	86,672	130,729	104,797	101,972
Total Liabilities ... ..	£ 284,784	326,850	391,154	444,765	490,132
<b>Assets—</b>					
Freehold, Plant, &c. ... ..	80,430	101,290	133,387	142,108	155,298
Stock ... ..	132,609	144,972	172,282	188,757	197,090
Other Assets ... ..	71,745	80,588	85,485	113,900	137,744
Total Assets ... ..	£ 284,784	326,850	391,154	444,765	490,132

\*Not available.

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 1914 the sales amounted to £1,605,849, and the expenses, including interest and depreciation, to £234,151, equal to 14·2 per cent. on the amount of sales. The balances of profit amounted to £168,594, but in four cases there were losses amounting to £831. The profit on sales was at the rate of 10 per cent.

#### BENEFIT BUILDING AND INVESTMENT SOCIETIES.

##### *Permanent Building 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.

The aggregate liabilities and assets, &c., of Permanent Building Societies for the years 1910-14 are shown in the following return:—

	1910.	1911.	1912.	1913.	1914.
Number of Societies ... ..	14	13	13	9	8
<b>Liabilities—</b>	<b>£</b>	<b>£</b>	<b>£</b>	<b>£</b>	<b>£</b>
Deposits ... ..	448,375	472,410	504,650	462,294	480,592
Share Capital ... ..	249,101	246,047	261,544	258,501	274,585
Reserves ... ..	81,326	87,258	93,714	91,918	103,896
Other Liabilities ... ..	9,216	26,800	18,775	36,389	47,584
Balance of Profit ... ..	34,324	38,905	36,111	61,576	53,113
<b>Total ... ..</b>	<b>822,342</b>	<b>871,420</b>	<b>914,794</b>	<b>910,678</b>	<b>959,770</b>
<b>Assets—</b>					
Advances ... ..	700,260	760,622	690,732	694,429	741,831
Other Assets ... ..	122,082	110,798	224,062	216,249	217,939
<b>Total ... ..</b>	<b>822,342</b>	<b>871,420</b>	<b>914,794</b>	<b>910,678</b>	<b>959,770</b>

The income of the eight societies operating in 1914 was £78,817, while the expenditure during the year amounted to £75,302.

Particulars relating to Starr-Bowkett Societies for the years 1910 to 1914 are shown below:—

	1910.	1911.	1912.	1913.	1914.
Number of Societies ... ..	71	87	94	100	108
<b>Liabilities—</b>	<b>£</b>	<b>£</b>	<b>£</b>	<b>£</b>	<b>£</b>
Members Subscriptions ... ..	385,444	493,666	590,975	744,256	855,272
Other Liabilities ... ..	49,227	41,862	35,971	15,529	28,617
Balance of Profit... ..	29,562	38,715	41,451	63,495	75,996
<b>Total ... ..</b>	<b>464,233</b>	<b>574,243</b>	<b>668,397</b>	<b>823,280</b>	<b>959,885</b>
<b>Assets—</b>					
Advances ... ..	406,451	503,287	608,414	735,018	879,319
Other Assets ... ..	57,782	70,956	59,983	88,262	80,566
<b>Total ... ..</b>	<b>464,233</b>	<b>574,243</b>	<b>668,397</b>	<b>823,280</b>	<b>959,885</b>

#### 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, and from official returns, but unfortunately their balance-sheets do not sufficiently separate local from foreign business. During 1915 there were nineteen institutions operating in the State. Of these, ten 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. As the operations of the American companies are confined to the collection of Renewal premiums, and a small amount of new business, the figures relating to them have been excluded from the following tables, unless where otherwise specified. 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.

*Ordinary Branch—Total Business.*

The following table gives the total business in force in the ordinary branch in detail, for each society for the year 1914-15, exclusive of the American companies. All the institutions do not close their transactions on the same date. The figures, therefore, relate to business existing on various dates between 30th September, 1914, and 30th September, 1915:—

Institution.	Date on which year closes.	Policies in Force, exclusive of Annuities.	Amount Assured, exclusive of Bonuses and Re-assurances.	Bonus Additions.	Total.	Annual Premium Income.
<i>Head Office in New South Wales.</i>		No.	£	£	£	£
Australian Mutual Provident .. .. .	31-12-14	298,801	84,006,216	16,887,923	100,894,139	2,672,860
Mutual Life and Citizens' .. .. .	31-12-14	123,075	23,139,248	2,200,269	25,339,517	782,738
City Mutual .. .. .	31-12-14	23,387	3,491,005	196,796	3,687,801	144,891
Australian Metropolitan .. .. .	31-12-14	3,489	267,895	11,191	379,086	16,178
People's Prudential .. .. .	31-8-15	3,322	231,331	5,168	236,499	11,924
Australian Provincial .. .. .	31-10-14	1,895	394,175	Nil.	394,175	17,416
Assurance and Thrift .. .. .	31-3-15	998	187,016	2,431	189,447	9,405
Co-operative .. .. .	30-9-15	657	164,667	Nil.	164,667	7,093
Australian Amicable .. .. .	30-11-14	280	179,250	....	179,250	8,233
<i>Head Office in Victoria.</i>						
Australian Alliance .. .. .	31-12-14	360	124,955	1,268	136,223	2,822
National Mutual .. .. .	30-9-14	115,772	29,265,565	2,650,790	31,916,355	1,032,505
Colonial Mutual .. .. .	31-12-14	60,115	14,083,775	495,315	14,579,090	509,297
Australasian Temperance and General ..	30-9-14	46,537	4,991,362	192,931	5,184,293	194,239
<i>Head Office in New Zealand.</i>						
Provident Life .. .. .	30-6-15	2,506	343,506	4,255	347,760	11,313
<i>Head Office in United Kingdom.</i>						
†Liverpool and London and Globe ..	31-12-14	326	134,041	* .....	134,041	4,185
Total .. .. .	.....	681,520	161,104,006	22,658,337	183,762,343	5,425,149

\* Not available.

† Australasian business only.

*Ordinary Branch—New South Wales Business.*

The business in force for the year 1914-15 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 and Reassurances.	Bonus Additions.	Total.	Annual Premium Income.
	No.	£	£	£	£
Australian Mutual Provident Society	83,010	23,964,325	4,902,889	28,867,214	758,438
Mutual Life and Citizens' Assurance Company (Ltd.) ... ..	34,507	6,745,228	641,968	7,387,196	224,572
City Mutual Life Assurance Society (Ltd.) ... ..	8,806	1,306,102	†	1,306,102	£54,200
Australian Alliance Assurance Company ... ..	Nil.	Nil.	Nil.	Nil.	Nil.
National Mutual Life Association of Australasia (Ltd.) ... ..	18,043	4,196,108	†	4,196,108	148,260
Colonial Mutual Life Assurance Society (Ltd.) ... ..	10,087	1,740,284	47,972	1,788,256	64,028
Australasian Temperance and General Mutual Life Assurance Society (Ltd.)	10,087	1,046,453	36,591	1,083,044	40,665
Australian Metropolitan Life Assurance Company (Ltd.) ... ..	1,679	180,046	5,440	185,486	7,794
Equitable Life Assurance Society of the United States ... ..	1,440	526,630	7,486	534,116	23,716
Mutual Life Insurance Company of New York ... ..	2,136	953,898	60,666	1,014,564	27,116
New York Life Insurance Company...	2,214	938,908	*	938,908	35,129
Liverpool and London and Globe Insurance Company ... ..	150	54,011	†	54,011	1,783
People's Prudential Assurance Co. (Ltd.)	3,322	231,331	5,168	236,499	11,924
Provident Life Assurance Company ...	162	17,850	247	18,097	649
Australian Provincial Assurance Association (Ltd.)... ..	1,252	256,025	Nil.	256,025	13,887
Assurance and Thrift Association (Ltd.)	745	146,278	2,431	148,709	6,682
Co-operative Assurance Company (Ltd.)	533	120,183	Nil.	120,183	5,185
Australian Amicable Assurance Association (Ltd.) ... ..	280	179,250	.....	179,250	8,233
Total ... ..	178,483	42,602,910	5,710,858	48,313,768	1,432,261

\* Included in previous column.

† Not available.

‡ Approximate.

*Industrial Branch—Total Business.*

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. For the year 1914-15 the total business in force in Australasia of the nine companies showing transactions in the industrial branch is shown in the following table:—

Institution.	Policies in Force, exclusive of Annuities.	Amount Assured, exclusive of Bonuses.	Bonus Additions	Total.	Annual Premium Income.
	No.	£	£	£	£
Australian Mutual Provident Society	121,055	4,212,942	9,640	4,222,582	264,743
Mutual Life and Citizens' Assurance Company (Ltd.)	265,013	4,934,587	Nil.	4,934,587	274,913
Australasian Temperance and General Mutual Life Assurance Society (Ltd.)	176,598	3,744,332	29,945	3,774,277	272,753
Colonial Mutual Life Assurance Society (Ltd.)	64,956	1,631,411	Nil.	1,631,411	102,001
Provident Life Assurance Company	31,378	841,802	Nil.	841,802	47,342
Australian Metropolitan Life Assurance Company (Ltd.)	26,255	665,932	609	656,541	38,582
People's Prudential Assurance Company (Ltd.)	5,528	111,018	Nil.	111,018	7,732
Phoenix Mutual Provident Society (Ltd.)	203	3,653	Nil.	3,653	283
Co-operative Assurance Company (Ltd.)	3,127	87,571	Nil.	87,571	6,348
Total	694,113	16,223,248	40,194	16,263,442	1,014,697

*Industrial Branch—New South Wales Business.*

The following statement shows the New South Wales business in force in the industrial branch in the year 1914-15:—

Institution.	Policies in Force, exclusive of Annuities.	Amount Assured, exclusive of Bonuses.	Bonus Additions	Total.	Annual Premium Income.
	No.	£	£	£	£
Australian Mutual Provident Society	39,103	1,304,672	*....	1,304,672	85,625
Mutual Life and Citizens' Assurance Company (Ltd.)	82,674	1,544,502	Nil.	1,544,502	88,933
Australasian Temperance and General Mutual Life Assurance Society (Ltd.)	32,999	703,554	*....	703,554	51,839
Colonial Mutual Life Assurance Society (Ltd.)	19,751	464,771	Nil.	464,771	28,857
Provident Life Assurance Company	4,215	115,582	Nil.	115,582	5,648
Australian Metropolitan Life Assurance Company (Ltd.)	14,839	376,794	357	377,151	21,332
† People's Prudential Assurance Company (Ltd.)	5,528	111,018	Nil.	111,018	7,732
† Phoenix Mutual Provident Society (Ltd.)	203	3,653	Nil.	3,653	283
Co-operative Assurance Company (Ltd.)	3,127	87,571	Nil.	87,571	6,348
Total	202,439	4,712,117	357	4,712,474	296,597

\* Not available.

† Exclusive of medical business.

*Summary—Ordinary and Industrial, 1914-15.*

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. The American companies have been excluded from the total business:—

Branch.	Total Business.			Local Business.		
	Policies.	Amount Assured.	Annual Premium Income.	Policies.	Amount Assured.	Annual Premium Income.
	No.	£	£	No.	£	£
Ordinary	681,520	161,104,066	5,425,149	178,483	42,602,910	1,432,261
Industrial	694,113	16,223,248	1,014,697	202,439	4,712,117	296,597
Total	1,375,633	177,327,254	6,439,846	380,922	47,315,027	1,728,858



In the ordinary branch the policies in force in New South Wales represent 26·2 per cent., and the amount assured 26·4 per cent. of the total ordinary business. In the industrial branch the proportions in New South Wales are—policies, 29·2 per cent.; amount assured, 29·1 per cent.

*Local Business.*

The next statement shows the ordinary and industrial business in force in New South Wales in each of the last nine 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	1,166,897	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	3,918,060	238,800
1913	173,834	41,432,591	1,382,162	191,333	4,413,289	273,997
1914	178,483	42,602,910	1,432,261	202,439	4,712,117	296,597

A feature of this table is the steady increase in industrial insurance; since 1906 the increase in the number of these policies amounted to 94 per cent., and in the amount assured 101 per cent.

The number of ordinary and industrial policies per 1,000 of population at 31st December, 1914, was 204, as compared with 152 in 1906, and the total sum assured advanced from £21 16s. 3d. to £25 8s. 2d. 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
1914	204	25 8 2

*New Assurances in New South Wales.*

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.	1913.			1914-1915.		
	Policies.	Amount Assured.	Annual Pre-miums.	Policies.	Amount Assured.	Annual Pre-miums.
	No.	£	£	No.	£	£
Australian Mutual Provident Society .. ..	6,616	1,843,032	58,958	5,551	1,540,065	50,633
Mutual Life and Citizens' Assurance Company (Ltd.) .. .. .	3,335	700,794	22,451	2,901	609,440	20,611
City Mutual Life Assurance Society (Ltd) ..	1,068	196,200	8,800	922	182,225	7,949
Assurance and Thrift Association (Ltd.) ..	350	65,708	2,876	325	57,210	2,495
Co-operative Assurance Company (Ltd.) ...	373	74,256	3,239	277	68,825	2,832
Australian Alliance Assurance Company ..	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.
National Mutual Life Association of Australasia (Ltd.) .. .. .	2,084	546,906	18,500	1,595	446,880	15,657
Colonial Mutual Life Assurance Society (Ltd.) ..	1,300	228,932	8,633	1,282	237,617	9,186
Australasian Temperance and General Mutual Life Assurance Society (Ltd.) .. .. .	2,162	226,608	8,636	1,972	230,947	9,271
Australian Metropolitan Life Assurance Company (Ltd.) .. .. .	386	43,600	1,790	332	34,637	1,482
Equitable Life Assurance Society of the United States .. .. .	6	2,500	235	Nil.	Nil.	Nil.
Mutual Life Insurance Company of New York ..	66	53,680	2,432	31	21,300	804
New York Life Insurance Company .. ..	94	66,048	2,450	121	58,702	2,445
Liverpool and London and Globe Insurance Co. .	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.
People's Prudential Assurance Company (Ltd.) ..	762	73,300	3,735	543	54,587	2,784
Provident Life Assurance Company .. ..	52	4,500	194	114	12,400	454
Australian Provincial Assurance Association (Ltd.)	1,193	288,600	13,149	992	187,775	8,197
Australian Amicable Assurance Association (Ltd.)	....	....	....	259	172,325	7,992
<b>Total .. .. .</b>	<b>19,847</b>	<b>4,414,664</b>	<b>156,078</b>	<b>17,217</b>	<b>3,914,935</b>	<b>142,792</b>

*Industrial Branch.*

Institution.	1913.			1914-1915.		
	Policies.	Amount Assured.	Annual Pre-miums.	Policies.	Amount Assured.	Annual Pre-miums.
	No.	£	£	No.	£	£
Australian Mutual Provident Society .. ..	9,640	338,616	22,793	8,279	236,106	19,577
Mutual Life and Citizens' Assurance Company (Ltd.) .. .. .	11,022	234,623	15,905	8,705	195,043	13,331
Co-operative Assurance Company (Ltd.) .. ..	5,075	162,422	11,215	2,403	80,395	5,287
Australasian Temperance and General Mutual Life Assurance Society (Ltd.) .. .. .	12,278	275,951	23,416	11,920	292,207	24,518
Colonial Mutual Life Assurance Society (Ltd.) ..	5,332	165,704	9,677	4,668	116,187	9,327
Provident Life Assurance Company .. ..	1,956	52,398	2,746	2,682	70,183	3,843
Australian Metropolitan Life Assurance Company (Ltd.) .. .. .	6,489	189,144	9,939	6,467	211,081	10,457
*People's Prudential Assurance Company (Ltd.) ..	3,573	87,264	6,296	3,064	70,209	4,958
*Phoenix Mutual Provident Society (Ltd.) ..	19	348	29	79	1,555	129
<b>Total .. .. .</b>	<b>55,384</b>	<b>1,506,470</b>	<b>102,016</b>	<b>48,267</b>	<b>1,332,966</b>	<b>91,427</b>

\* Exclusive of medical business.

The following is a comparison of the new business in New South Wales during the last three years:—

Year.	Ordinary Branch.			Industrial Branch.		
	Number of Policies.	Amount Assured.	Annual Premiums.	Number of Policies.	Amount Assured.	Annual Premiums.
		£	£		£	£
1912	19,500	4,300,576	148,908	53,820	1,476,965	96,693
1913	19,847	4,414,664	156,078	55,384	1,506,470	102,016
1914-15	17,217	3,914,935	142,792	48,267	1,332,966	91,427

*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 funds. The general direction of business of the Australasian societies is shown in the following table, which includes both ordinary and industrial departments:—

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
1914-15	15	1,375,633	9,069,130	5,757,737	3,311,393	2.40

The aggregate receipts and disbursements for the Australasian institutions for 1914-15 were as follow, ordinary and industrial branches being shown separately, except in the cases of two companies (the Co-operative

and the People's Prudential), which did not keep the accounts of each branch separately, and the figures relating to the industrial department have therefore been included in the ordinary branch:—

	Ordinary Branch.	Industrial Branch.	Total.
	£	£	£
Receipts—			
Premiums—			
New ... ..	564,937	4,610	569,547
Renewal ... ..	4,790,795	934,651	5,725,446
Consideration for Annuities... ..	81,352	.....	81,352
Interest ... ..	2,465,669	107,827	2,573,496
Other (Rents, &c.) ... ..	112,557	6,732	119,289
Total Receipts ... ..	8,015,310	1,053,820	9,069,130
Expenditure—			
Claims ... ..	2,910,155	196,940	3,107,095
Surrenders ... ..	588,584	22,615	611,199
Annuities ... ..	117,981	100	118,081
Cash Bonuses and Dividends ... ..	135,912	31,784	167,696
Expenses ... ..	888,788	393,063	1,281,851
Amount written off to Depreciation, Reserves, &c. ... ..	440,997	30,818	471,815
Total Expenditure ... ..	5,082,417	675,320	5,757,737

The following table shows the revenue and expenditure of the New South Wales business only for the year 1914-15. The particulars relating to the ordinary and industrial departments are separated (with the exception mentioned above), and the transactions of the American companies have been included, in order to give the total for the State:—

	Ordinary Branch.	Industrial Branch.	Total.
	£	£	£
Receipts—			
Premiums—			
New ... ..	137,083	2,099	139,182
Renewal ... ..	1,290,155	264,333	1,554,488
Consideration for Annuities... ..	16,108	.....	16,108
Interest ... ..	827,821	57,987	885,808
Other (Rents, &c.) ... ..	177,359	5,084	182,443
Total Receipts ... ..	2,448,526	329,503	2,778,029
Expenditure—			
Claims ... ..	929,044	60,206	989,250
Surrenders ... ..	186,982	4,649	190,931
Annuities ... ..	29,824	100	29,924
Cash Bonuses and Dividends ... ..	86,757	9,403	96,160
Expenses ... ..	249,675	106,204	355,879
Amount written off to Depreciation, Reserves, &c. ... ..	235,997	2,409	238,403
Total Expenditure ... ..	1,717,579	182,971	1,900,550

*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 on Mean Funds.
	£	£	£	per cent.
1890	1,404,215	14,580,210	827,909	5·97
1895	1,057,942	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
1914-15	2,932,693	58,051,229	2,573,496	4·55

The decrease in earning power over the period reviewed is noticeable; but since 1900 the rate has been very constant at about 4½ per cent. A 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 steady proportion to the general decline.

*Expenses of Management—Australasian Societies.*

The expenses of management for 1914-15 in the aggregate represent 14·13 per cent. of total receipts, or 20·10 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, including commission, per cent. of premium income and gross income, ordinary and industrial departments being included:—

Year.	Management Expenses.	Premium Income.	Gross Receipts.	Policies.	Management Expenses.	
					Per cent. of—	
					Premium Income.	Gross Receipts.
	£	£	£	No.		
1895	438,524	2,380,167	3,392,423	268,242	18·42	12·93
1900	565,380	2,799,512	4,093,376	331,868	20·19	13·81
1905	858,741	3,500,448	5,437,589	756,585	24·53	15·79
1910	1,016,153	5,074,204	7,131,250	1,056,173	20·03	14·25
1911	1,137,165	5,417,202	7,650,230	1,138,955	20·99	14·86
1912	1,255,464	5,812,581	8,152,393	1,228,104	21·60	15·40
1913	1,259,057	6,152,728	8,572,977	1,312,696	20·46	14·69
1914-15	1,281,851	6,376,445	9,069,130	1,375,633	20·10	14·13

The management expenses of the ordinary and industrial branches can be stated separately only for the year 1914-15, and the proportions for that year were:—Ordinary branch, 16·35 per cent. of premiums and 11·09 per cent. of total income, while for the Industrial branch the proportions were 41·85 per cent. and 37·30 per cent. respectively. 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 an essential feature of the system.

*Liabilities and Assets—Australasian Societies.*

The following table gives a summary of the liabilities and assets of the Australasian Societies for the year 1914-15:—

Liabilities.	Assets.
<b>Assurance Funds—</b>	<b>Loans—</b>
Participating ... .. £ 55,963,524	On Mortgage ... .. 24,485,816
Non-participating ... .. 916,752	„ Municipal and other
Claims Investment Fund ... 11,881	local rates ... .. 9,075,737
Other Funds ... .. 600,194	„ Reversionary, Life, and
	other interests... .. 526,906
<b>Total ... .. 57,492,351</b>	„ Policies ... .. 7,727,315
	„ Personal Security ... .. 23,622
	„ Government Securities.. 34,050
	„ Other Debentures and
	Bonds ... .. 493,280
	„ Miscellaneous Loans ... 178,754
	<b>Total ... .. 42,545,480</b>
Fidelity Guarantee Funds ... 6,523	<b>Government Securities—</b>
Investment Fluctuation Fund 167,778	British Consols ... .. 74,922
Claims admitted but not paid	New South Wales Stock ... 2,102,798
(including Annuities) ... 612,135	Other Commonwealth
Outstanding Accounts... .. 73,172	Stocks ... .. 5,390,412
Other Liabilities—	New Zealand Stocks ... 2,214,863
Paid-up Capital ... .. 283,319	Other Government Securities 420,575
Reserve Funds ... .. 101,258	
Miscellaneous ... .. 151,900	<b>Total ... .. 10,203,570</b>
	<b>Real Estate—</b>
	Office Premises—
	New South Wales ... 531,512
	Other Australian States 1,163,895
	Elsewhere ... .. 626,026
	Properties acquired by Fore-
	closure and other Real
	Estate ... .. 562,529
	<b>Total Real Estate.. 2,883,962</b>
	<b>Outstanding and Deferred</b>
	Premiums ... .. 720,553
	<b>Accrued and Outstanding</b>
	Interest... .. 628,658
	Cash in Banks and in hand 1,623,945
	Other Assets ... .. 282,268
<b>Total Liabilities... £58,888,436</b>	<b>Total Assets ... £58,888,436</b>

The aggregate liabilities and assets for the period 1895 to 1915 are shown in the subjoined table. The accounts of three companies have not been included, as the balance-sheets do not disclose the particulars of the life business, which, however, is small compared with the total operations:—

Year.	Societies.	Liabilities.			Assets.		
		Paid-up Capital and Accumulated Funds.	Other Liabilities.	Total.	Loans on Mortgages, Policies, &c.	Securities, Freehold Property, &c.	Total.
	No.	£	£	£	£	£	£
1895	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
1914-15	13	57,775,670	1,112,766	58,888,436	42,525,480	16,362,956	58,888,436

Loans on mortgage, municipal rates, and the policies of the societies represent 72 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 and investments in shares, and considerable sums are deposited with banks, or invested in freehold and leasehold property. Investments on personal security are unusual, advances being generally combined with life policies, and the total amount invested under this heading for the year 1914-15 was only £23,622. 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	1911 ...	67·21
1900 ...	69·21	1912 ...	66·85
1905 ...	61·54	1913 ...	66·88
1910 ...	65·94	1914-15 ...	72·25

#### 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 74. 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 following table shows the revenue account and balance-sheet for the year ended 31st December, 1915:—

## REVENUE ACCOUNT, 1915.

Revenue.				Expenditure.			
£				£			
Balance from 1914 ... ..	20,682	Administration ... ..	4,953				
Subsidy from Government ...	41,362	Salaries—Permanent ... ..	64,274				
Subsidy from Municipalities and Shires ... ..	41,362	Salaries—Volunteer ... ..	10,124				
Subsidy from Fire Insurance Com- panies ... ..	41,362	Buildings, repairs and alterations	7,099				
Other Sources ... ..	2,698	Clothing ... ..	2,288				
		Electrical work, telephones, fire alarms, &c. ... ..	1,576				
		Horses, fodder, harness, &c. ...	6,504				
		Lighting and fuel ... ..	1,671				
		Miscellaneous ... ..	33,691				
		Balance ... ..	15,286				
Total ... ..	147,466	Total ... ..	147,466				

## BALANCE-SHEET, 1915.

Liabilities.				Assets.			
£				£			
Fund Account ... ..	55,131	Lands and buildings ... ..	98,900				
Debentures ... ..	101,425	Plant, stocks on hand, &c. ...	78,131				
Revenue Account ... ..	15,286	Bank balance and cash ... ..	35,821				
Other... ..	41,010						
Total ... ..	212,852	Total ... ..	212,852				

The estimates of necessary revenue adopted by the Board for 1916 amounted to £124,740, being £87,213 for Sydney Fire District, and £37,527 for the seventy-five Country Fire Districts. The ratio of municipal contributions to the Assessed Annual Value in Sydney and suburbs was 7s. per £100 in 1914, 5s. 9d. per £100 in 1915, and 5s. 5d. in 1916.

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 1915 contributions amounting to £40,932 were received from 84 insurance companies, and in addition contributions amounting to £430 were received from 68 individual firms who insured goods with companies not registered in New South Wales. The contributions in the Sydney Fire District represent £6 0s. 6d. per £100 of premium, and in the remaining districts the percentage ranged from £2 5s. to £23.



## GENERAL INSURANCE—TOTAL BUSINESS.

There were 74 companies transacting general insurance business in New South Wales during 1914. The following statement shows the classification of their revenue and expenditure for the year 1914-15. The premiums and losses are exclusive of re-insurances:—

Revenue.				Expenditure.			
			£				£
Premiums	...	...	61,179,636	Losses	...	...	34,408,009
Interest...	...	...	3,835,124	Dividends	...	...	3,874,213
Rent, fees, &c....	...	...	1,360,827	Management—			
				Commission	...	...	8,522,646
				Salaries, fees, &c.	...	...	10,866,535
				Taxes...	...	...	1,010,979
				Total Management	...	...	20,400,160
				Transfers	...	...	7,246,825
				Depreciation	...	...	1,406,248
				Other	...	...	559,958
Total	...	...	£66,375,587	Total	...	...	£67,895,413

The total premiums received were £61,179,636, and the losses amounted to £34,408,009, or 56·24 per cent. of the premiums. The expenses, including taxes and depreciation, &c., amounted to £22,366,366, which was 36·56 per cent. of the premium income, and 33·69 of the total income.

*Liabilities and Assets.*

The liabilities consist mainly of shareholders' capital, reserve funds, insurance funds, and miscellaneous items, such as outstanding losses, sundry debtors, &c. The assets comprise investments on mortgage, Government securities, landed property, deposits in banks, and smaller items.

The particulars of the balance-sheets for the year 1914-15 are shown in the subjoined statement:—

Liabilities.				Assets.			
			£				£
Paid-up Capital	...	...	15,552,901	Loans on Mortgage	...	...	17,138,629
Reserve Funds...	...	...	20,583,506	Other Loans (chiefly on life policies)	...	...	8,286,778
Reserve for Unearned Premiums	...	...	10,800,689	Investments—			
Insurance Funds	...	...	84,193,540	Government Securities	...	...	19,453,379
Other Funds	...	...	17,933,474	Municipal and Other Debentures and Stocks	...	...	81,246,579
Outstanding Losses	...	...	7,637,747	Land and House Property	...	...	17,509,371
Miscellaneous Liabilities	...	...	16,364,344	Cash on Deposit and in hand...	...	...	9,419,902
				Miscellaneous Assets (outstanding premiums, agents' balances, sundry creditors, balance of profit and loss, &c.)	...	...	20,011,563
Total	...	...	£173,066,201	Total	...	...	£173,066,201

*New South Wales Business.*

The particulars relating to the business transacted in New South Wales are shown in the table below:—

Nature of Insurance.	Revenue in New South Wales.		Expenditure in New South Wales.			
	Premiums.	Interest.	Losses.	Expenses of Management.		Total.
				Commis- sion.	Other.	
Fire ... ..	856,009	£	£ 662,381	£ 120,508	£ 247,423	£ 1,030,312
Marine ... ..	282,671	54,308	112,128	17,112	46,919	176,159
Accident ... ..	119,879		40,284	31,302		
Employers' Liability and Workmen's Compensa- tion ... ..	65,573		14,646	4,274		
Public Risk and Third Party ... ..	9,213		3,873	622		
Motor Car ... ..	26,573		8,110	1,209		
Hailstone ... ..	9,179		9,555	407		
Boiler Explosion... ..	1,505		664	177		
Live Stock ... ..	35,390		24,168	2,362	88,671	248,901
Burglary ... ..	5,338		1,503	327		
Guarantee .. ..	8,121		1,204	621		
Profits ... ..	3,765		2,097	10		
Plate Glass ... ..	12,244		5,777	1,073		
Elevator ... ..	247		.....	.....		
Indemnity ... ..	34		.....	.....		
Other ... ..	2,082		641	324		
Total ... ..	1,437,823	54,308	887,031	180,328	383,013	1,450,372
	£1,492,131					

The total premiums amounted to £1,437,823, and the losses to £887,031, the latter being 61·69 per cent. of the premiums. The expenses for commission were £180,328, and for general management £383,013, making a total of £563,341, being 39·18 per cent. of the premium income, or 37·75 of the gross revenue.

According to the local statements, fire business comprises about 60 per cent. of the total general insurances. The premiums received for fire risks were £856,009, and the losses amounted to £662,381, or 77 per cent. It will thus be seen that losses under the other branches were proportionately much below those incurred in the Fire Department.

**BANKRUPTCY.**

Transactions in insolvency were conducted by the Chief 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 nine 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
1914	282	123	405	30	375

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 3,073, including 103 for 1914, being 19 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, 81 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. The number of sequestrations for the years the Act has been in force is 19,282, and of these 16,209 remain uncertificated.

During 1914, of a total of 375 sequestrations, the liabilities, according to bankrupts' schedules, were £323,111, and the assets amounted to £141,068. The qualification "according to bankrupts' schedules" is necessary, as the assets and liabilities established after investigation by the Court differ widely from those furnished by bankrupts.

The following statement shows the number of bankruptcies and the nominal liabilities and assets from 1888 to 1914:—

Period.	Sequestrations.	Nominal—		
		Liabilities.	Assets.	Ratio of Asset 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	994,803	9 3
1903-1907	2,084	1,359,121	781,108	11 6
1908-1912	1,674	986,970	590,470	12 0
1913	320	208,755	144,038	13 10
1914	375	323,111	141,068	8 9

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 and half-yearly 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. The area for which such grants were issued was 7,478,794 acres; of these grants, 2,258,973 acres have since been brought under the provisions of "Torrens" Act, so that the area still held under the earlier Act is 5,219,821 acres.

Lands may be placed under the Real Property 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 1914, were as follows:—

Year.	Area.			Value.		
	Crown Lands.	Private Lands.	Total.	Crown Lands.	Private Lands.	Total.
	acres.	acres.	acres.	£	£	£
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
1914	424,617	46,391	471,008	397,855	1,199,817	1,597,672

For the whole period during which the "Torrens" system has been in operation, 35,145,691 acres, valued at £34,928,187, have been conveyed under its provisions; and 2,258,973 acres, valued at £39,501,259, 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 lands sold on long terms:—

Year.	Conveyances or Transfers.		
	Under Deeds Registration Act.	Under Real Property (Torrens) Act.	Total.
	£	£	£
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
1914	3,612,722	16,585,718	20,198,440

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 halfpenny 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 and accuracy 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 1914 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.	£	£	£
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
1914	5,071	17,834	22,905	4,769,337	15,905,411	20,674,748

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 1914 was £181,657, so that the net amount lent on lien was £438,943.

Classification.	1910.	1911.	1912.	1913.	1914.
<b>Wool—</b>					
Liens ... .. No.	1,639	1,452	1,416	1,387	1,134
Sheep ... .. "	3,625,589	3,010,173	2,856,691	2,850,894	2,433,986
Consideration ... £	657,215	658,517	575,413	801,551	620,600
<b>Growing Crops—</b>					
Liens ... .. No.	798	786	953	1,438	1,270
Consideration ... £	94,804	111,904	158,182	233,665	204,020
<b>Live Stock—</b>					
Mortgages ... .. No.	3,142	3,265	3,166	2,749	3,205
Sheep ... .. "	3,488,617	3,395,547	2,882,917	2,313,922	3,711,843
Cattle ... .. "	125,588	149,131	117,874	81,016	73,682
Horses ... .. "	19,894	24,224	24,382	19,282	26,617
Consideration* ... £	1,404,957	1,133,489	1,228,065	1,313,171	1,418,298

\* Amount not supplied in all cases.

## DISCHARGES OF MORTGAGES ON LIVE STOCK.

The number of discharges registered amounted to 30 per cent. of the number of mortgages of live stock registered during 1914; the difference is partly due to the fact that in many cases one discharge covers several mortgages. The figures for the ten years ended 1914 were:—

Year.	Dis- charges.	Amount.	Year.	Dis- charges.	Amount.
	No.	£		No.	£
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
1909	912	684,714	1914	961	228,410

## 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	£ 1,872	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 <sup>3</sup> / <sub>4</sub>	11
1913	4	1,600	15	14,934	2	501	5	148
†1914-15	...	.....	8	14,113	...	.....	2	126

\* Information not available.

† Year ended 30th June, 1915.

## 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 further 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 void as against execution creditors, and in case of the insolvency of the grantor of the bill; 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 1914 are as follow:—

Year.	Registrations.		Renewals under Bills of Sale Act of 1898.
	Filed in Supreme Court.	Satisfied or orders for discharge made.	
1910	2,335	282	1,713
1911	2,430	352	1,689
1912	2,861	370	1,748
1913	3,058	385	2,015
1914	3,194	402	2,179



## REGISTRATION OF MONEY LENDERS.

Under the Money Lenders and Infants Loans Act, 1905, money-lenders must be registered at the Registrar-General's Office, and may conduct their business only under their own or firm names, and at their registered offices. The expression "money-lender" includes every person or company whose business is that of money-lending, but excludes licensed pawnbrokers, registered friendly societies, institutions incorporated by special Act of Parliament to lend money, and banking and insurance companies. The number of registrations and renewals during the year 1915 was 89.

## 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 ten years ended 30th June, 1915; the figures for the six years ended June, 1911, are exclusive of estates administered by the Curator of Intestate Estates, for which particulars are not available:—

Year ended 30th June.	Estates.	Amount.	Year ended 30th June.	Estates.	Amount.
	No.	£		No.	£
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	10,439,256
1910	3,187	10,417,169	1915	4,438	9,997,615

According to these figures, stamp duty was paid during the ten years ended 30th June, 1915, on 38,690 estates, valued at £86,973,289. This gives an average value per estate of £2,248.

In the next table, information, collected for the first time in 1911, is given concerning the property left during the three years 1911-13 by deceased persons classified according to age at death; the results for 1914 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 period; 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 three 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 five years or more 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; 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	20	5,751	288	1	13	5,583	429	1
15—20	57	13,105	230	18	13	4,078	314	7
21—29	474	139,490	294	74	116	20,573	177	12
30—39	726	441,012	607	204	288	164,776	572	91
40—49	1,262	1,512,928	1,199	508	378	292,899	775	163
50—59	1,641	2,689,065	1,639	685	572	440,879	771	216
60—69	1,844	4,428,095	2,401	1,028	754	879,735	1,167	336
70—79	1,973	6,654,390	3,373	1,349	815	1,109,964	1,362	361
80—89	810	5,155,121	6,364	2,335	399	1,508,115	3,780	897
90 and over	85	187,794	2,209	693	45	103,918	2,309	351
Not stated	273	732,577	2,683	.....	86	554,253	6,445	.....
Absentees	528	3,203,340	6,067	.....	165	723,597	4,385	.....
Total ...	9,693	25,162,668	2,596	673	3,644	5,808,370	1,594	219

Of the males who died in the State during the period under review, 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 average value of estates in relation to the total number of persons who died was £673 per male, and £219 per female. Taking only persons leaving property, the estates of males were valued on the average at £2,596, and of females at £1,594.

Comparing the above with a statement 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 70-89 years, 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 three years 1911-13 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	20	288	13	429	5	218	6	278
15—20	57	230	13	314	27	373	13	485
21—29	474	294	116	177	258	394	100	441
30—39	726	607	288	572	500	799	296	483
40—49	1,262	1,199	378	775	1,047	1,331	526	593
50—59	1,641	1,639	572	771	1,279	2,109	659	1,046
60—69	1,844	2,401	754	1,167	1,370	2,465	911	831
70—79	1,973	3,373	815	1,362	2,067	2,901	1,341	1,147
80—89	810	6,364	399	3,780	1,427	3,268	681	942
90 and over	85	2,209	45	2,309	132	2,280	78	2,250
Not stated	273	2,683	86	6,445	.....	.....	.....	.....
Absentees...	528	6,067	165	4,385	641	1,758	318	1,059
Total ...	9,693	2,596	3,644	1,594	8,753	2,293	4,929	943

Information regarding the estates of deceased persons in each State of the Commonwealth is shown in the following statement; the results are based on the experience of five years 1910-14, and particulars relating to intestate estates are included where available:—

State.	Estates of Deceased Persons.		Average Deaths of Adults.	Estates per 1,000 Deaths of Adults.	Average Estate per Adult Dying.	Average Value per Estate.
	Mean Number.	Mean Value.				
		£		No.	£	£
New South Wales ...	4,424	10,051,807	12,214	362	823	2,272
Victoria ..	4,164	8,256,639	11,434	364	722	1,982
Queensland ...	1,406	2,324,834	4,433	317	524	1,653
South Australia ...	1,234	2,513,993	3,100	398	811	2,037
Western Australia ...	825	880,980	1,939	425	454	1,068
Tasmania ...	510	777,687	1,311	389	593	1,524

The proportion of adults who died possessed of property was lower in New South Wales than in any other State except Queensland. In Western Australia the proportion was the highest, but a large number were intestate, and the average value of the property was the lowest shown in the statement. The amount left per adult who died was the highest in New South Wales, South Australia being next. In making these comparisons, however, it should be remembered that no consideration has been given to the age and sex distribution of the populations. That these are important considerations is shown by the facts that the proportion of persons aged 50 years and over at the census of 1911 varied from 15 per cent. in Victoria to 10·4 per cent. in Western Australia, and the number of male adults per 100 females from 98 in the former State to 160 in the latter. Moreover, the experience in New South Wales and Victoria indicates that the average value of estates increases greatly after the age of 50, and that the males who die possessed of property are more numerous proportionately than the females.

## 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 655; in 1912, 1,062; and in 1913, 1,699:—

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	23·2

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	57·8	35·0

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; and in 1913, 41·9 per cent. and 23·3 per cent.

The same weakness exists in these figures as in the case of those previously given in regard to the values, as some 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, 1915. The figures for the six years ended June, 1911, are exclusive of estates administered by the Curator of Intestate Estates:—

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 ...	204	·53	30,491,641	35·06
£25,000 to £50,000 ...	308	·80	10,539,951	12·12
£12,500 to £25,000 ...	553	1·43	9,508,641	10·93
£5,000 to £12,500 ...	1,598	4·13	12,344,177	14·19
£200 to £5,000 ...	23,555	60·88	23,068,493	26·52
Under £200 ...	12,472	32·23	1,020,386	1·17
Total ...	38,690	100·00	86,973,289	100·00

#### *Absentees.*

Analysis of the returns 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 the three years 1911-13, the number of estates of male absentees was 528, and the average value £6,067; there were 165 estates of female absentees of an average value of £4,385.

#### 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. 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, as the Taxation Commissioners do not furnish details of the transactions.

## 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 Statute; 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.	1910.	1911.	1912.	1913.	1914.
Children's Courts ... ..	2,020	2,405	2,869	2,638	2,477
Courts of Petty Sessions ... ..	71,940	72,709	87,082	89,469	92,289
All Magistrates' Courts ... ..	73,960	75,114	89,951	92,107	94,766

The following table summarises the operations of these Courts for 1914 :—

Procedure.	Charged before Magistrates.	Treated summarily.			Committed to higher Courts.
		Convicted.	Withdrawn or Discharged.	Total.	
By arrest... ..	56,171	50,736	3,909	54,645	1,526
By summons ... ..	38,595	30,481	7,992	38,473	122
Total ... ..	94,766	81,217	11,901	93,118	1,648

The cases (1,648) committed to higher Courts represent 1·8 per cent. of the total charges ; the remainder, representing 98·2 per cent., were summarily treated, convictions resulting from 85·7 per cent. of the charges. A division of accused persons, according to sexes, shows that the charges against females numbered 7,989, being only 8·4 per cent. of the total :—

Sex	Charged before Magistrates.	Treated summarily.			Committed to higher Courts.
		Convicted.	Withdrawn or Discharged.	Total.	
Males ... ..	86,777	74,572	10,652	85,224	1,553
Females ... ..	7,989	6,645	1,249	7,894	95
Total ... ..	94,766	81,217	11,901	93,118	1,648

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	85·8	12·5	1·7
1914	85·7	12·5	1·8

Investigation into the nature of the offences for which summary convictions were effected during 1914 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 nine years:—

Year.	Against the Person.	Against Property.	Against Good Order.	Under Defence Act.	Other Offences.	Total Summary Convictions.
NUMBER OF SUMMARY CONVICTIONS.						
1906	1,619	3,857	41,173	13,251		59,900
1907	1,728	3,574	44,759	13,470		63,531
1908	1,571	3,780	44,221	13,204		62,776
1909	1,498	4,193	42,781	13,116		61,588
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
1914	2,023	4,068	51,609	3,210	20,307	81,217
PER 1,000 OF MEAN POPULATION.						
1906	1.09	2.60	27.73	8.93		40.35
1907	1.14	2.35	29.49	8.87		41.85
1908	1.02	2.44	28.61	8.54		40.61
1909	.95	2.66	27.12	8.32		39.05
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
1914	1.09	2.19	27.85	1.73	10.96	43.82

In most instances the offences shown under the heading of "Other" offences are committed in ignorance of the law, and are met with small or nominal penalties.

The following table gives a comparison of summary convictions of males and females during the years 1906 and 1914:—

Offences.	Summary Convictions.					
	1906.			1914.		
	Males.	Females.	Total.	Males.	Females.	Total.
Against the person ... ..	1,420	199	1,619	1,858	165	2,023
Against property .. ...	3,376	481	3,857	3,736	332	4,068
Against good order ... ..	33,469	7,704	41,173	46,712	4,897	51,609
Other offences ... ..	12,426	825	13,251	22,266	1,251	23,517
Total ... ..	50,691	9,209	59,900	74,572	6,645	81,217

A survey of this table shows that the increase of offences, during the period under review, resulted primarily from a considerable increase in offences of men against good order and other offences, excluding those against person



or property. The reduction in number of offences of women is noticeable, and may be attributed to the application of the principle of indeterminate sentences.

For each of the last nine 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	50,691	9,209	59,900	65·59	12·94	40·35
1907	54,752	8,779	63,531	63·81	12·05	41·85
1908	54,322	8,454	62,776	67·74	11·37	40·61
1909	54,901	6,687	61,588	67·10	8·81	39·05
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
1914	74,572	6,645	81,217	76·81	7·53	43·82

Summary convictions in 1914 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 ... ..	1,280	320	297	92	34	2,023
Against property ... ..	1,413	964	893	622	176	4,068
Against good order ... ..	23,379	19,661	1,309	286	1,974	51,609
Other offences ... ..	19,359	786	374	89	2,899	23,517
Total ... ..	50,441	21,731	2,873	1,089	5,083	81,217

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 62; imprisonment in lieu of fine, 27; peremptory imprisonment, 4; bound over, &c., 1; and other punishments, 6.

The fines paid amounted to £61,566, of which £31,350 were paid into Consolidated Revenue and £15,040 to the Police Reward Fund, £4,464 to municipalities and shires, £1,541 to Pastures Protection Boards, £3,485 to informers, and £5,686 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 a later chapter of this Year Book.

During the year 1914 the charges investigated in Children's Courts numbered 2,477. In addition to these cases, there were 2,943 applications for orders, relating to the disposal of neglected and uncontrollable children, and to the maintenance of children; and 1,717 were cases of non-compliance with orders.

The following table shows the cases taken at Children's Courts during 1914; 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 ..	64	9	70	19	61	1	195	29	224
Against property ...	698	36	335	30	2	...	1,035	66	1,101
Against good order ...	235	2	135	8	1	...	371	10	381
Other offences... ..	433	12	311	14	...	1	744	27	771
Total ... ..	1,430	59	851	71	64	2	2,345	132	2,477

The following table shows the number of convictions recorded in each class during the last five years:—

Offences.	Convictions.				
	1910.	1911.	1912.	1913.	1914.
Against the person ... ..	77	73	83	76	73
Against property ... ..	747	814	900	826	734
Against good order ... ..	302	465	301	337	237
Under Defence Act ... ..	313	416	377	303	218
Other offences ... ..			379	278	227
Total ... ..	1,439	1,768	2,040	1,820	1,489

The figures shown above and other particulars of Children's Courts are included in the aggregate tables relating to Courts of Petty Sessions.

## SMALL DEBTS COURTS.

The total number of cases dealt with by the Small Debts Courts during 1914 was 46,109; in only 290 cases was the amount claimed in excess of £30. The transactions during the last two years are shown in the following table:—

Transactions.	1913.			1914.		
	Up to £30	£30 to £50	Total.	Up to £30	£30 to £50	Total.
Cases brought before the Registrar—						
Judgments given for Plaintiff...	9,248	169	9,417	10,009	118	10,127
Not proceeded with ... ..	14,530	105	14,635	12,817	38	12,855
Verdicts given by Court—						
For Plaintiff ... ..	6,706	48	6,754	6,507	63	6,570
For Defendant ... ..	388	6	394	415	2	417
Withdrawn or struck out ...	8,532	95	8,627	7,074	29	7,103
Non-Suits ... ..	431	7	438	397	3	400
Cases pending... ..	5,320	76	5,396	8,600	37	8,637
Total cases ... ..	45,155	506	45,661	45,819	290	46,109
Amount of Judgments for Plaintiff £	65,952	5,743	71,695	68,042	4,536	72,578
Amount of Verdicts for Plaintiff £	33,291	1,823	35,114	32,983	2,249	35,232

In garnishee cases the Court may order that all debts due by a garnishee to the defendant may be attached to meet a judgment debt, and by a subsequent order, may direct the garnishee to 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. The garnishee cases in 1914 numbered 1,315.

Oral examinations of judgment debtors as to debts due to them, ordered on the application of a judgment creditor, numbered 534 in 1914. Interpleader cases, as to claims made to goods held under a writ of execution, by a person not party to the suit, numbered 56.

## 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 1914, 2,658, the decrease being 364, or 12 per cent. since 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.

In consequence of the establishment of military training camps in proximity to the metropolis and other large towns, public interest has turned to the question of closing hotels at an earlier time than the statutory hour of 11 p.m. On 17th February, 1916, the Minister for Defence, in the exercise

of powers conferred under the provisions of the War Precautions Act, ordered that all licensed premises in the county of Cumberland, and in places within five miles of any military training camp in the State, should be closed at 6 p.m. On 24th February the order was varied, making the closing hour 8 o'clock. An Act has since been passed in the State Parliament authorising a referendum, when the electors will be able to vote for the hour of their choice, ranging from 6 p.m to 11 p.m., both inclusive.

#### 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 existent 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—			Percentage of Total Votes.		
	Con- tinuance.	Reduction.	Con- tinuance.	Reduction.	No-license.	Con- tinuance.	Reduction.	No-license.
1907	25	65	200,384	75,706	178,580	45	16	39
1910	76	14	324,973	38,856	212,889	56	7	37
1913	75	15	380,707	44,453	245,202	57	7	36

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."

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.

When the first local option vote was taken in September, 1907, 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 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 population to each:—

Year.	Licenses Issued.	Average Population to each Hotel.	Year.	Licenses Issued.	Average Population to each Hotel.
1900	3,163	428	1910	2,865	564
1905	3,063	475	1911	2,775	600
1906	3,055	486	1912	2,723	638
1907	3,022	502	1913	2,717	666
1908	2,980	519	1914	2,658	697
1909	2,923	540			

The annual fee for a Publican's license is regulated by the annual assessed value of the hotel. During the year 1914, an amount of £84,625 was collected on account of such licenses.

##### *Additional Bar Licenses.*

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 1914 there were 140 of these licenses granted, the total amount of license fees collected being £2,730.

##### *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 £810. 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 1914 there were 2,126 such licenses issued, the total fees received being £4,252.

##### *Packet Licenses.*

These licenses are held by Masters of steamers engaged in the coastal trade of the State. In 1914 there were 20 Packet licenses in force, for which an amount of £172 was collected as fees.

##### *Wine Licenses.*

The Colonial Wine, Cider, and Perry licenses current during 1914 numbered 506, for which an amount of £1,518 was received as license fees.

The licenses are held chiefly by grocers and keepers of restaurants and oyster saloons, wine 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 are not allowed

to sell a quantity less than 2 gallons of liquor of the same kind at the one time. In 1914 there were 205 Spirit Merchants' and 26 Brewers' licenses; the total fees received amounted to £5,460.

#### *Club Licenses.*

In 1914 licenses to sell intoxicating liquors were issued to 76 Clubs, and fees amounting to £903 were collected. The annual license fee is £5 for the first forty members and £1 for each additional forty.

#### *Billiard and Bagatelle Licenses.*

The license fee is £10 per annum, and during 1914 there were 934 in force, the total fees collected being £9,133.

#### *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 318 of the former and 1,631 of the latter current in 1914, the fees received being £7,545. 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, except in the Municipality of Albury, where, under the Auctioneers' Licensing (Amendment) Act, 1915, wool may be put up to sale or sold after sunset.

#### *Pawnbrokers' Licenses.*

In 1914 there were 100 Pawnbrokers' licenses current in New South Wales, for each of which an annual fee of £10 is payable. 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 1914 was £2,009.

#### *Licenses Issued—Comparative Table.*

A table showing the principal licenses issued in 1905, and in the last five years, is given hereunder:—

License.	1905.	1910.	1911.	1912.	1913.	1914.
Publicans' ... ..	3,063	2,865	2,775	2,723	2,717	2,658
Additional Bar ... ..	...	115	118	124	127	140
Club ... ..	...	76	76	76	76	76
Railway Refreshment ... ..	24	24	29	26	27	27
Booth or Stand ... ..	1,915	1,765	1,829	1,940	2,049	2,126
Packet ... ..	24	23	24	22	19	20
Colonial Wine, Cider, and Perry	682	564	532	569	515	506
Spirit Merchants' ... ..	205	195	198	186	207	205
Brewers' ... ..	40	37	39	32	29	26
Billiard and Bagatelle ... ..	698	856	859	902	973	934
Auctioneers'—General ... ..	222	305	298	317	309	318
District ... ..	1,064	1,405	1,443	1,589	1,586	1,631
Pawnbrokers' ... ..	66	92	105	97	80	100

*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. 3d. for latter six months of year. During 1914 there were 134,138 dogs registered in New South Wales, the fees collected amounting to £16,808. Additional revenue to the extent of £252 was obtained from searches, copies of registration, sale of forms, &c. In the same year 2,721 stray dogs were destroyed by the Metropolitan police, the expenditure being £340.

## 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 are 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 1914 resulted in 51 persons, 42 males and 9 females, being committed for trial to higher Courts; the offences charged being murder, 12 males and 1 female; manslaughter, 20 males and 6 females; arson, 10 males and 2 females.

*Inquests upon Deaths.*

Under the Coroner's Court Act, 1904, a Coroner may hold an inquest, 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 1914, the causes of which were investigated by Coroners or Magistrates, was 1,309 of males and 328 of females, giving a total of 1,637; the verdicts were that 1,271 deaths were caused by violence. The deaths of 699 males and 150 females were the results of accidents, and 204 males and 58 females were found to have committed suicide.

*Inquests upon Fires.*

During 1914 inquiries were held into the origin of 182 fires; accident was ascribed as the cause in 8 cases, arson in 33; in 141 instances there was insufficient evidence.

## DISTRICT COURTS.

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 1914 there were 70 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).						
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
1914	6,788	464	242	1,868	2,295	7	1,912	328,429	18,062

\* Year ended 1st March.

Of the 706 causes heard during 1914, only 76 were tried by jury. During the same period there were 13 appeals from judgments given in District Courts, and 5 were successful; there were 12 motions for new trials, of which 5 were granted. The amount of judgment for plaintiffs during the year was £109,422.

The several District Court Judges, numbering ten, 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.

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, 1915, 218 Boards were in operation, 15 having been constituted and 8 dissolved during the year. Prosecutions for strikes or lock-outs numbered 1,162, and 628 convictions followed. There were 28 proceedings on appeal from the Industrial Magistrates. The expenditure for Boards, representing fees and travelling expenses, amounted to £9,568. 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, the cases under the Industrial Arbitration Act numbered 2,947, and the convictions and orders 2,412. In 157 cases orders were made to pay fines and subscriptions to unions. There were 955 convictions for breach of award or industrial agreement, 690 for failure to keep time and pay sheets of employees, and 558 for failure to exhibit awards.



*Industrial Registrar.*

The applications for registration of Unions numbered 17. The records of the Industrial Registrar's Office show that 918 indentures of apprenticeship were lodged, and 29 industrial agreements filed.

*Investigation Office.*

At the Investigation Office 3,231 complaints were received during the year 1914-15. There were 2,612 prosecutions and 2,361 convictions, and the fines inflicted amounted to £2,325, and costs, £1,527.

## 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, the other Judges to Equity, Bankruptcy, and Probate, and to Divorce and Matrimonial Causes.

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 1914, 8 causes were taken in the Admiralty Court, 3 for loss by collision, 4 for salvage, and 1 for damage to cargo. In two cases verdicts were given for plaintiff, and in two for the defendant, and the remaining 4 cases were settled, not proceeded with, or pending.

## SHERIFF'S OFFICE.

The transactions of the Sheriff's Office during 1914 included the issue for service of 1,507 writs of summons in the Supreme Court, as against 1,434 for 1913; the money value involved is not recorded. Other writs issued included 450 *feri-facias*, involving amounts aggregating £52,589, and fines and estreats, 550, aggregating £13,388 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, 1914, the Master in Lunacy held Trust Funds amounting to £259,889. 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.
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
1914	222	122	87	150	204	1,100

The amount of Trust Funds invested under Equity Jurisdiction in 1914 was £736,216, 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; in 1914 probate or letters of administration were granted for 364 such estates valued at £49,856.

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; the figures for 1914 include estates administered by the Public Trustee:—

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.
		£		£		£
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	7,649,944	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
1914	2,767	10,973,225	1,656	1,004,219	4,423	11,977,444

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.

*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, was 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.

On 1st January, 1914, the functions of the Curator of Intestate Estates were taken over by the Public Trustee, who may act as executor or trustee either by will or by appointment, also as agent or attorney.

The Public Trustee is not allowed to make profits, and the commission and fees chargeable against estates are arranged from time to time to produce an annual amount sufficient to defray working expenses. Special provision has been made for the deposit 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 1914 and 1915:—

Particulars.	1914.	1915.
New estates administered—		
As administrator ... ..	1,256	1,790
As Executor or Trustee ... ..	21	86
As Attorney or Agent ... ..	2	8
Amount received ... ..	£ 174,750	266,277
Amount paid ... ..	£ 150,774	205,181
Commission and fees ... ..	£ 7,226	7,890
Unclaimed Money—		
Paid into Treasury ... ..	£ 7,477	8,408
Subsequently claimed ... ..	£ 3,210	783

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 1914 shows the following grouping:—

Group.	Number of Bankrupts.	Group.	Number of Bankrupts.
Professional ... ..	22	Industrial ... ..	144
Domestic ... ..	11	Primary Producers ... ..	45
Commercial ... ..	104	Indefinite ... ..	24
Transport and communication...	25	Total ... ..	375

According to Bankrupts' Statements of Affairs, the liabilities of the estates sequestrated in 1914 amounted to £323,111, and the assets to £141,068, thus leaving a deficiency of £182,043.

The Court Fees paid to the Treasury were £4,136.

#### 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.

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 <i> nisi</i> .	Decrees absolute.		Decrees <i> nisi</i> .	Decrees absolute.
1873-1877	55	33	...	...	...
1878-1882	85	70	...	...	...
1883-1887	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
1908-1912	1,301	1,299	61	20	18
1913	360	313	9	3	4
1914	367	295	5	4	2

In 1914 one decree for jactitation was granted.

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 148, rising again to 343 in 1912; in 1914 the number was 295.

Reckoning as a divorce only those cases where the decree has been made absolute, the total number of decrees from 1873 to 1914 was 6,039, of which 5,646 were divorces, 62 cases of nullity of marriage, and 331 judicial separations. The majority of petitions are lodged by the wife, the proportion being approximately 70 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.
1905	63	119	1910	81	176
1906	51	106	1911	64	142
1907	40	108	1912	116	227
1908	68	138	1913	129	184
1909	85	202	1914	125	170

In regard to judicial separations over the same period, 15 were granted on petition of the husband, and 109 on petition of the wife.

The grounds of suits for divorce made during each year since 1905 were as follow :—

Ground of Suit.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.
Adultery ... ..	58	60	62	67	85	69	65	87	97	102
„ coupled with bigamy, cruelty, and desertion ... ..	8	6	4	7	13	10	5	3	5	5
Attempt to murder ... ..	...	...	...	...	...	...	...	...	1	...
Cruelty and repeated assaults ... ..	2	...	1	1	1	3	1	1	...	...
„ „, habitual drunkenness ..	8	9	6	8	7	5	...	1	6	5
Desertion ... ..	98	73	65	110	157	152	118	224	195	158
Habitual drunkenness and neglect to support ... ..	4	3	6	5	11	4	11	12	2	10
Habitual drunkenness and neglect of domestic duties ... ..	...	2	1	1	2	2	3	2	...	3
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	12
Total ... ..	182	157	148	206	287	257	206	343	313	295

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, 1905-1914 :—

Year.	Causes based on—		Other.	All Causes.	Year.	Causes based on—		Other.	All Causes.
	Desertion.	Drunkenness				Desertion.	Drunkenness		
1905	100	12	70	182	1910	162	11	84	257
1906	76	14	67	157	1911	121	14	71	206
1907	67	13	68	148	1912	236	15	92	343
1908	115	14	77	206	1913	200	8	105	313
1909	164	20	103	287	1914	170	18	107	295

It will thus be seen that 55 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 1914 show an average of 12·7 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 1914 the total bills of costs amounted to £52,030, but from this a sum of £18,454 was taxed off, leaving the net costs at £33,576. The Court costs of taxation amounted to £675:—

Year.	Writs issued.	Judgments signed.	Year.	Writs issued.	Judgments signed.
	No.	£		No.	£
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
1909	2,023	193,039	1914	3,103	No Record.

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.	
1905	260	89	2	102	49	5	13	169
1906	235	76	2	105	34	5	13	157
1907	174	62	4	80	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
1914	266	103	5	122	32	...	4	158

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 during 1914 numbered 28, of which 11 were as to collisions, 9 stranding or shipwrecks, 1 grounding, 2 loss of vessel, 1 mishap to vessel, and 4 misconduct of officers. The Courts found in 11 cases that blame was not attachable to any particular person; in 16 cases the master was exonerated; in 13 cases masters were found at fault, and 4 certificates were suspended. In 2 cases a mate was deemed at fault, and one certificate was suspended.

#### 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.

#### CHARGES BEFORE HIGHER COURTS.

During the year 1914 there were 951 persons, viz., 890 men and 61 women, charged before the higher Courts of the State. The following table shows the results in the cases of these accused persons for 1913 and 1914 in comparison:—

Sex.	1913.			1914.		
	Charged.	Convicted.	Withdrawn, discharged, &c.	Charged.	Convicted.	Withdrawn, discharged, &c.
Males ... ..	1,098	748	350	890	763	127
Females ... ..	27	24	3	61	47	14
Total ... ..	1,125	772	353	951	810	141

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 1914:—

Offences.	Males.		Females.		Total.	
	Number.	Per cent. of total.	Number.	Per cent. of total.	Number.	Per cent. of total.
Against the person ... ..	199	22·4	20	32·8	219	23·0
Against property ... ..	586	65·8	33	54·1	619	65·1
Forgery and against the currency ...	65	7·3	...	...	65	6·8
Against good order ... ..	5	0·6	4	6·6	9	1·0
Other offences... ..	35	3·9	4	6·5	39	4·1
Total ... ..	890	100·0	61	100·0	951	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.	1910.	1911.	1912.	1913.	1914.
Against the person ... ..	125	141	136	189	180
Against property ... ..	329	313	410	478	537
Forgery and against the currency ... ..	41	48	48	60	61
Against good order ... ..	5	14	2	11	7
Other offences ... ..	46	22	24	34	25
Total ... ..	546	538	620	772	810

#### 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, 1915, the cases referred to the Court numbered 70, of which 65 were referred by the Minister for Lands, and 5 by local Land Boards. Of the cases heard during the period, 31 resulted in the appeal being upheld, and 11 were sent back for rehearing, 43 were dismissed, and 5 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 1914, 398 appeals were taken before Courts of Quarter Sessions in this way, and convictions were confirmed in 208 cases, varied in 39, and quashed in 71, a balance, 80 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.*

In connection with appeals from Magistrates and Wardens' Courts, applications for prohibition or mandamus are made either to a Judge in Chambers or to the Full Court; appeals from decisions of District Court Judges sitting in the Mining Appeal Court are made to the Supreme Court, and appeals by way of special case from Warden's Courts are determined by a Judge in Chambers.

During 1914, applications for writs of prohibition and mandamus numbered 40, of which 19 were to Judges in Chambers, and 21 to the Full Court. Writs granted were 13, viz., 3 of mandamus and 10 of prohibition.

The special cases numbered 22 ; decisions were sustained in 13 and reversed in 5 from the Magistrates' Courts. Of Appeals in Land Cases, 2 decisions were sustained and 1 reversed.

#### *Appeals to Full Court.*

In Common Law 28 cases were taken during 1914, all of which were civil cases. The cases consisted of new trial motions, of which 5 were granted and 19 refused, and 4 were not proceeded with. The following statement shows the appeals in Equity, Probate, Bankruptcy, and Divorce :— Equity, 2 sustained and 1 disallowed ; Probate and Bankruptcy, nil ; Divorce, 1 sustained, and 2 disallowed. Appeals from District Courts numbered 12, of which 4 were allowed, 4 refused, and 4 were 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 1914, 1 application to a judge was granted, and 18 were refused ; The appeals to the Court numbered 46, the convictions were affirmed in 42 cases, and quashed in 4.

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.

### 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 1914 appeals made from decisions of Judges of the Supreme Court of New South Wales were decided as follows :—In Equity, 4 dismissed ; in Bankruptcy, 1 settled ; and in Probate, 1 allowed.

In addition, appeals from the Full Court of the Supreme Court of New South Wales numbered 17, of which 6 were allowed and 11 were dismissed. The Full Court also dealt with 4 special cases, 5 prohibitions, 1 appeal from a Justice of the High Court, 1 from the Commissioner of Patents, and 3 appeals from the Queensland Registry.

Two appeals from the decision of a Judge exercising Federal jurisdiction in New South Wales were allowed, and 2 were dismissed. Six notices of appeal under the Land Tax Assessment Act were filed during 1914, 1 being allowed, 4 dismissed, and 1 settled.

Two applications for leave to appeal from judgments of the Supreme Court of New South Wales were refused.

*Appeals to Privy Council.*

During 1914, 1 application for leave to appeal in Common Law and 1 in Equity were granted. There were 7 appeals to the Privy Council; 3 were in Common Law, 1 was upheld, 1 dismissed, and 1 not concluded; 4 were in Equity, 2 being dismissed, 1 upheld, and 1 not concluded.

THE GOVERNMENT IN LITIGATION.

The Government of New South Wales was concerned in 2,786 actions during the year 1914, as plaintiff in 1,993, and as defendant in 793. Of these actions 1,883 were instituted or defended by the Crown Solicitor, 829 by the Solicitor for Railways, and 74 were cases concerning the Metropolitan Board of Water Supply and Sewerage.

The results of the actions were as stated below :—

Actions.	Government as—		Total.
	Plaintiff.	Defendant.	
Settled or discontinued ... ..	1,304	667	1,971
Tried—Verdict for Plaintiff ... ..	422	13	435
Defendant ... ..	1	21	22
Total Tried ... ..	423	34	457
Under consideration ... ..	266	92	358
Total ... ..	1,993	793	2,786

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 elsewhere in this Year Book. A solicitor who ceases to practise for two years continuously is allowed to resume practice only under an order from the Court; and 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 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 prescribed examinations. 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 1914, 159 barristers practising in New South Wales, and the number of solicitors was 1,066; of the latter, 626 were in the Metropolis.

## PATENTS.—COPYRIGHTS.—TRADE MARKS AND DESIGNS.

Since 1st June, 1904, the administration of the statutes relating to Patents, Copyright, and Trade Marks has devolved upon the Federal authorities, and a patent granted under the Commonwealth law 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. 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.

The Patents Trade Marks and Designs Act, 1914-15, empowers the Minister to suspend the registration of a trade mark, the proprietor whereof is a subject of a State at war with the King; a large number of such registrations have been suspended in favour of the Minister for Trade and Customs, and other persons approved by the Attorney-General of the Commonwealth.

## 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; and 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 a number of Acts.

In some localities the police also act, as clerks of petty sessions, gaolers, wardens' clerks, mining registrars, and registrars of births, deaths, and marriages.

### POLICE REGULATION (SUPERANNUATION) 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 1914 there were 54 members of the police force superannuated on pensions amounting to £11,800 per annum; 4 were discharged with gratuities to the total of £395. The sum of £2,358 was paid from the Police Superannuation and Reward Fund as gratuities to eight widows, in addition to £59 funeral expenses. Six widows of members of the Police Force were granted pensions amounting to £589 per annum.

Additional information regarding the Police Superannuation Fund may be found in a later chapter of this Year Book.

### POLICE FORCE.

A police force numbering 2,677 men is maintained under the immediate control of an Inspector-General. The following statement shows the distribution of the establishment at 31st December, 1914:—

Classification.	Superintendents.	In-spectors.	Sub-In-spectors.	Ser-geants.	Con-stables.	De-tectives.	Track-ers.	Total.
General Police ... ..	13	9	38	218	2,166	...	50	2,494
Detective ,, ... ..	2	...	1	...	...	24	...	27
Water ,, ... ..	...	1	...	2	37	...	...	40
Traffic ,, ... ..	1	...	2	3	104	...	...	110
Weights & Measures Office	...	...	...	...	6	...	...	6
Total... ..	16	10	41	223	2,313	24	50	2,677

In addition to the above, there are four women attached to the police stations as searchers.

The following statement shows, during the last ten years the increases in the strength of the police establishment have not been proportionate to the extension of population; the ratio of one policeman to 627 inhabitants, at the end of 1905, has changed gradually, so that for 1914 the ratio was one policeman to 709 inhabitants:—

Year.	Number of Police.	Inhabitants to each Policeman.	Year.	Number of Police.	Inhabitants to each Policeman
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
1909	2,435	656	1914	2,627	709

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. The number of persons taken to hospitals by the police in the Metropolitan District as the result of accidents, or illness in the streets, was 1,230.

As regards the services of the police in cases of accident, it is of interest to note that during the year 1914, at examinations in swimming held by the Royal Life-saving Society, 19 police were successful. Of the total police force of 2,677 men at 31st December, 1914, no less than 547 were the holders of First Aid Certificates.

## VEHICLES AND LICENSES.

The following table shows the licenses granted under the Metropolitan Traffic Act and the Motor Traffic Act and regulations during the years 1913 and 1914:—

License or Certificate.	Annual Fee.	Licenses Issued.		License or Certificate.	Annual Fee.	Licenses Issued.	
		1913.	1914.			1913.	1914.
Metrop. Traffic—	s. d.	No.	No.	Metrop. Traffic—	s. d.	No.	No.
Horse cab ... ..	20 0	759	747	Permit ... ..	1 0	284	287
Motor cab ... ..	20 0	228	236	Badge ... ..	2 0	238	247
Horse van ... ..	20 0	1,604	1,615	Taximeter test ...	10 0	475	330
Motor van ... ..	20 0	7	14	'Bus Permits ...	5 0	...	31
Horse omnibus ...	40 0	32	29	Motor Traffic—			
Motor omnibus ...	40 0	5	9	Motor vehicle ...	20 0	8,072	10,590
Horse-cab driver ...	5 0	928	917	Motor vehicle driver	5 0	12,154	16,078
Motor-cab driver ...	5 0	350	376	Motor cycle ...	2 6	4,880	6,369
Horse-van driver ...	5 0	1,903	1,897	Motor cycle rider..	Free	6,088	8,095
Motor-van driver ...	5 0	18	22	Motor cycle duplicate..	2 6	49	84
Horse-bus driver ...	5 0	58	45	Learner's permit ...	2 6	3,753	4,868
Motor-bus driver ...	5 0	14	15	Transfers ... ..	2 6	1,378	1,858
Conductor ... ..	5 0	5	4	New number plate	2 0	870	1,180
Transfer ... ..	1 0	236	225				



The revenue obtained under the Metropolitan Traffic Act was £3,802 for the year 1913, and £3,740 for the year 1914.

The revenue obtained under the Motor Traffic Act was £12,456 for the year 1913, and £16,380 for 1914. In 1914 an Act was passed imposing a graduated tax on motor vehicles other than motor cycles.

#### INSPECTION OF WEIGHTS AND MEASURES.

In accordance with the Weights and Measures Act, the Bread Act, and the Coal Mining Regulation Act, the inspection of weights, measures, and weighing instruments at traders' premises is a duty of the Police. Transactions during the year 1914 were as follow :—

Transactions.	Weights and Measures Act.		Bread Act.	Coal Mining Regulation Act.
	Inspection.	Verification.		
Premises visited ... ..	12,510	.....	1,458	134
Weights, measures, and Weighing Instruments—				
Examined ... ..	98,623	69,150	1,458	234
Found correct ... ..	85,552	65,615	1,366	223
Prosecutions ... ..	45	.....	20	.....
Cautions issued ... ..	2,727	.....	65	.....
Fines ... ..	£81	.....	329	.....
Fees collected... ..	.....	£1,125	.....	.....

#### PRISONS.

The aim of the 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 with advantage to themselves and to the community. The idea of imprisonment as punitive or retributive is no longer entertained, but it is considered that the committal of crime demonstrates unfitness to be at liberty; 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.

#### *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.

Between 1902 and 1914 the number of gaol establishments was reduced from 60 to 30.

The State Reformatory for Women at Long Bay is occupied by prisoners of all classes, and the State Penitentiary for Men at Long Bay is used as a place of detention for incapables from the city, and as a centre from which long-sentence prisoners are distributed to the principal country establishments, which are classified as follows:—Goulburn for first offenders; Bathurst for men previously convicted but deemed amenable to reformatory influences; Parramatta for more confirmed or habitual criminals; Grafton for special cases; Maitland Gaol 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. The Prisoners' Afforestation Camp, Tuncurry, receives selected prisoners (first offenders) after portion of their sentence has been served at Goulburn Gaol, and at the Enu Plains Prison Farm, young industrious prisoners, with suitable qualifications are treated on somewhat similar lines.

#### *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.

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 confinees.

#### *Restricted Association.*

Prisoners under classes 1 and 2 are further subjected to divisional treatment, that is, 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 its success. 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 provided from the prison libraries, which, in December, 1914, contained 23,638 volumes.

The enforcement of this system has involved heavy expenditure, which has been counterbalanced, however, by the resultant advantages. 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
	M	16	.....	.....	.....	.....	.....
5*	F	16	.....	.....	.....	.....	.....
	M	16	8	8	12	$\frac{1}{4}$	1

\* d cted or idle prisoners, irrespective of sentence, and during solitary confinement.

In addition,  $\frac{1}{2}$  oz. of salt is allowed with each ration, and where females are employed at washing, &c., 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.

The dietary allowance of the Prisoners' Afforestation Camp, Tuncurry, is similar to number 4 dietary, with the addition of 2 oz. of sugar, and  $\frac{1}{2}$  oz. of tea.

#### PRISON POPULATION.

At the end of 1914 there were in New South Wales 30 gaol establishments; of these, 5 were principal, 11 minor, and 14 police gaols.

The number of prisoners in gaol at the close of each year during the last ten 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
1914	1,497	146	86	11	1,583	157	1,740

The prisoners under sentence at the end of the year 1914 are exclusive of inebriates, viz., 42 men and 57 women.

#### Ages of Prisoners.

During 1914, 12,485 convicted and unconvicted persons were received into the institutions; of these 4,994, representing 40 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.	1910.	1911.	1912.	1913.	1914.
Years.					
Under 16	2	6	9	11	4
16-20	933	897	1,079	1,214	1,092
21-24	1,105	1,136	1,261	1,252	1,293
25-29	1,543	1,483	1,837	1,911	2,130
30-34	1,258	1,223	1,589	1,671	1,827
35-39	1,172	1,157	1,426	1,479	1,584
40-44	1,159	1,012	1,152	1,366	1,322
45-49	933	873	1,082	1,037	1,140
50 and over	1,710	1,710	1,892	1,880	2,043
Not stated	34	35	34	32	50
Total	9,849	9,532	11,361	11,853	12,485

*Decreasing Prison Population.*

The total prison population at the close of 1914 was 1,740. The following comparison shows that though the general population has more than trebled since 1875, the gaol population has increased only 20 per cent. The gaol entries shown in the table represent convicted persons, persons awaiting trial, debtors, naval and military offenders, and persons on remand :—

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
1914	1,862,028	12,485	1,740*	·93

\* Exclusive of Inebriates detained.

## 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 nor "dark-cell" punishments 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 under 2·7 per cent. of the total number of prisoners received into the gaols during the year 1914; of a total of 638 breaches, 11 were cases of violence to officers, and 32 of idleness. The general decrease is attributed to the fact that since the middle of the year 1914 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 :—

	1910.	1911.	1912.	1913.	1914.
Persons committed to gaol in default of payment of fines ... ..	5,027	4,959	5,844	6,016	6,299
Prisoners subsequently released after paying portion of fines ... ..	1,385	1,480	1,807	1,407	1,461
Days prisoners would have served if portion of fines had not been paid ...	45,573	41,104	55,835	46,031	57,914
Days remitted by part-payment of fines ...	32,823	30,120	41,000	32,042	25,134
Amount received at gaol as part-payment of fines ... .. £	2,881	3,153	4,255	3,387	3,343

In the year 1914, 64 per cent. of the total persons received into gaol were detained in default of payment of fines. Of the 6,299 so detained, 1,461 subsequently obtained release by paying part fines proportionate with unserved balance of sentence, and an amount of £3,343 was received at the gaols.

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 1914, 61 men and 5 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 1914 there were no debtors 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.
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
1909	40	5	45	1914	61	5	66

#### 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 1914, there were 276 persons, viz., 162 at Magistrates',

and 114 at Higher Courts, released as first offenders; of these, 232 were men, and 44 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 817 persons convicted during 1914, 382 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 the critical period during which temptation is hardest to resist, and 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 disciplinary, scholastic, religious, physical training and industrial courses are provided, for the last of which facilities in the form of workshops are available. Great discrimination and special care are necessary to prevent such youthful offenders from becoming confirmed criminals. It is found that healthy outdoor agricultural work supplies an effective means of ensuring profitable employment when the offenders are released conditionally. Nineteen per cent. of the prisoners admitted during 1914 were in the class described above, and principally from this group were drawn the 639 prisoners eligible for instruction, of whom 213, or 33 per cent. were practically uneducated.

#### *Maintenance Confinees.*

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.

During 1914 the number of maintenance confinees received from the committing courts was 332; of these 32 paid the whole amount under the provisions of Act, while 173 met their liabilities partly through the assistance of friends and partly through the amounts earned in prison.

#### 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 1914, 1,715 women were received and 1,718 discharged from Long Bay, the number remaining at end of the year being 141. 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 £2,436. 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 1914 the daily average at the Long Bay State Reformatory for Women was 148; and 18 prisoners were punished for breaches of the regulations of the establishment.

In 1914, at all gaols of New South Wales, 1,728 female prisoners were received under sentence, the daily average number being 165.

#### 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.

Three men were declared to be habitual criminals during 1914—making a total of 60 men and 1 woman so declared since the inception of the Act. Of this number, 15 men and 1 woman were released on probation, 1 being recommitted to gaol, 6 died, 2 were released on medical grounds, and 6 on account of technical flaws in the declaration determining their detention, and at the end of 1914 there were under detention 11 men who had not yet completed the definite period, and 20 men 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.

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 1914, of the 20 male prisoners in the indeterminate stage, 19 had succeeded in passing into the higher grade, while 1 was an inmate of the criminal hospital for insane. Of the 16 habitual criminals released to date, only 1 has been recommitted to gaol in New South Wales. In several 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 £136 at the end of year 1914.

#### 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 made also for the commutation of capital sentences.



The following table shows the number of convictions, and executions for capital offences, in the State at periods from 1861 to 1914, together with the total number of death sentences pronounced, and sentences of death recorded :—

Year.	Capital Offences.		Death Sentences Pronounced and Sentences of Death Recorded.	Year.	Capital Offences.		Death Sentences Pronounced and Sentences of Death Recorded.
	Convictions.	Executions.			Convictions.	Executions.	
1861	6	2	...	1911	8	...	5
1871	13	3	...	1912	18	1	9
1881	6	2	...	1913	16	...	10
1891	10	3	7	1914	16	...	13
1901	8	3	8				

Of the 13 death sentences in 1914, 8 were commuted to penal servitude for life, 2 to fifteen years, and one to twelve years penal servitude, and two cases were not decided at the end of the year.

#### DRUNKENNESS.

During 1914 the total convictions for drunkenness numbered 33,208. 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.	Total Convictions			Convictions per 1,000 of—		
	Males.	Females.	Total.	Male Population.	Female Population.	Total.
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
1914	30,135	3,073	33,208	31·04	3·48	17·92

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 six 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 1905 the rate was 25·06 per 1,000 of male population, while in 1914 it was 31·04, an increase of nearly 24 per cent.

#### THE TREATMENT OF INEBRIATES.

Inebriates in prisons have been treated separately since 12th August, 1907, and two State institutions, under the control of the Comptroller-General of Prisons, have been devoted to their treatment. 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.

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, of 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 1914, are under the direction of the Comptroller-General of Prisons. A portion of Darlinghurst Gaol was set apart for inebriate men, but reformative treatment was hampered by the lack of adequate accommodation. On 18th June the inebriates were transferred to the State Penitentiary at Long Bay, and the Darlinghurst Institution was disestablished. Inebriate women were detained at the State Reformatory, Long Bay. Open air working conditions are apparently the most suitable for these persons; and the services of the inebriates have been used in gardening, scrub-clearing, &c., for which remuneration is given on the expiration of their sentences.

*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, 1914, the total number of original receptions amounted to 567—259 men and 308 women; while in the cases of 94 men and 188 women it was found necessary to cancel the licenses and recommit the holders to institutions. The number of males released on license was 244, and the number of females so released was 405.

The following statement shows the number of admissions to, and departures from, the two inebriate institutions during 1914 :—

Classification.	Males.	Females.	Total.
In custody at beginning of year .. .. .	47	72	119
Received from Courts ... .. .	66	103	169
Discharged after detention ... .. .	2	4	6
"    on medical grounds ... .. .	...	1	1
Released on license ... .. .	63	112	175
Died ... .. .	1	1	2
Removed to Hospitals, Asylums, &c. ... .. .	5	...	5
Detained at end of year ... .. .	42	57	99

Of the persons released on license during 1914 from the institutions, 9 were sent to domestic service, 15 to gardening or labouring work, 8 to other more or less skilled work, 75 to homes, and 39 to care of friends, 5 to hospitals, and 24 to employment the nature of which was not stated.

Of 169 persons admitted during 1914 to the institutions, 98 were Australian born, 82 being natives of New South Wales, and of the remainder 63 were British born. The minimum period of detention was twelve months, for which period 93 were committed; those between 1 and 2 years numbered 20, and those over two years 56.

Of the persons admitted during 1914, the number of convictions recorded in the various cases were as follows :—

Convictions.	Cases.	Convictions.	Cases.
1 ... .. .	1	31-40... .. .	8
2-5 ... .. .	23	41-50... .. .	4
6-10 ... .. .	38	51-100 ... .. .	20
11-20 ... .. .	52	Over 100 ... .. .	9
21-30 ... .. .	14		

The majority of persons admitted during 1914 were over 40 years of age, viz. :—

Under 21, 1; 21-25 years, 1; 25-30 years, 5; 30-35 years, 23; 35-40 years, 27; 40-45 years, 31; 45-50 years, 32; 50 years and over, 49.

Of the 66 men admitted 47 were labourers, dealers, &c., *i.e.*, unskilled, 5 were seamen, and 14 were skilled or professional workers. Of the 103 females admitted, 74 were domestic servants, 5 needlewomen, charwomen, &c., and 24 domestic duties.

The total expenditure on inebriate institutions during 1914 amounted to £3,085, 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 under the supervision of competent instructors.

The gross value of articles manufactured during 1914 amounted to £19,719, 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 £9,213; in domestic service the labour value for the year was £13,766. The bootmaking work was valued at £3,780, the gardening at £3,426, the tailoring at £3,009, and the carpentry at £1,868.

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.

The baking of bread by prison labour is carried out at the State Penitentiary. The scheme will be extended to Goulburn Gaol, and it is hoped that the prisons will supply, not only their own requirements, but also those of neighbouring Government institutions.

#### *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.

During 1914 a Prison Farm, containing about 107 acres, was established at Emu Plains. Selected first offenders are employed in vegetable growing and general farm work.

#### *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. In November, 1913, four officers and twenty prisoners commenced active operations, and were occupied

in fencing, levelling, grass planting, grubbing, well-sinking, &c. In addition, two vegetable gardens covering three-quarters of an acre were prepared, while 6,000 posts were split for fencing, and 9 miles of fencing put up.

Between May and September, 1914, the number of pine trees planted by prison labour was 121,896, of which 48,700 were at the agricultural area and 73,196 in the prison area.

The scheme has proved most successful, from both a prison and a forestry point of view; and to the end of 1914 there were no punishments for breaches of discipline or regulations at the camp.

#### 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 1914 there were 228 such, the causes being—

Under medical treatment, 63; in cells, 12; exempted, 11; recently received, 43; not under sentence, 97; others, 2.

#### 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. Prisoners suffering from tuberculosis receive special treatment in Bathurst Gaol.

The general medical statistics of prisons show that with an average daily number of 1,675 inmates, the total number of cases of sickness treated in hospital, irrespective of minor ailments treated outside hospital, was 610.

Particulars in regard to the duration of illness are not available, but details regarding the deaths show 4 from heart disease, 1 from cardiac asthma, and 1 from nephritis, while one prisoner committed suicide and one died from self-administered poison.

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	1914	7	1	4·70

In 1912, one male prisoner was executed; this was the only occasion in which capital punishment was enforced since 1907.

## INSANITY IN GAOLS.

During 1914, 52 cases of insanity, viz., 47 males and 5 females, were diagnosed among the gaol inmates, of which number 30 showed symptoms on reception and 12 developed them within one month of admission. There were also 5 prisoners sent to observation wards, 121 persons received for protection or on charges of mental defectiveness, and 18 were received suffering from the effects of alcoholism. Of the cases diagnosed, 3 recovered in gaol, 15 were certified for removal to a hospital for insane; in 7 cases the sentences expired, in 1 remission was granted, and in 23 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 1914—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. During 1914, 32 prisoners were detained for periods ranging between one day and five months.

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 306 cases were discharged from prison while possibly in a contagious state.

In the following 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	148
1912	51	20	23	1	39	10	113	31	144
1913	65	11	27	9	73	9	165	29	194
1914	101	25	32	2	60	5	193	32	225

*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
1914	101	1	26	1	8	52	135	54	36	225

\* Excludes 2 deaths.

## TERMS OF SENTENCES.

The following statement shows the number of persons received into penal establishments during the years 1913 and 1914 for sentences of the duration specified :—

Term of Sentence.	Persons Received.					
	1913.			1914.		
	Males.	Females.	Total.	Males.	Females.	Total.
1 month and under ... ..	4,539	1,283	5,822	4,849	1,320	6,169
From 1 to 3 months ... ..	1,546	315	1,861	1,656	275	1,931
" 3 to 6   " ... ..	703	105	813	691	107	798
" 6 to 12   " ... ..	237	11	248	249	14	263
" 1 to 2 years ... ..	160	1	161	173	4	177
" 2 to 5   " ... ..	104	2	106	92	1	93
" 5 to 10   " ... ..	14	...	14	6	...	6
Over 10 years ... ..	2	...	2	...	...	...
Death and Death recorded ...	10	...	10	13	...	13
Life... ..	1	...	1	...	...	...
Unspecified ... ..	271	6	277	339	7	346
<b>Total ... ..</b>	<b>7,592</b>	<b>1,723</b>	<b>9,315</b>	<b>8,068</b>	<b>1,728</b>	<b>9,796</b>

Cumulative sentences have been taken as in the aggregate, and concurrent sentences as equal to the longest term. It is noticeable that for 1914, 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, 1914, there were 59 prisoners serving life sentences (including 2 females), and 18 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 liberating prisoners on license, but difficulty is experienced in compelling the license holders to comply with conditions. The following table shows that 508 persons were discharged from prisons on license during 1914 :—

Released under.	Males.	Females.	Total.
Crimes Act ... ..	112	9	121
Prison Regulation ... ..	380	7	387
<b>Total ... ..</b>	<b>492</b>	<b>16</b>	<b>508</b>

Licenses operate for the unexpired portion of the sentence and sureties are required. The licensee is required to report periodically, and a breach of the conditions of release may be punished by the cancellation of the license, and recommittal to gaol for the balance of the sentence.

#### 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.

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 1914, 39 persons—37 males and 2 females—were arrested in other countries as fugitive offenders, and returned to New South Wales. Of these 6 were discharged, 6 were summarily convicted before magistrates, 15 were committed to higher courts, in 2 cases proceedings were discontinued, in 1 case a maintenance order was made, and the remaining cases were otherwise dealt with.

The number of persons arrested in New South Wales during 1914 as fugitives from other parts of the British Empire was 31, of whom 30 were males. Of these 1 was discharged, 23 were remanded to other States of the Commonwealth, and 7 to New Zealand.

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 1914 there was one extradition to California.

#### 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 1914, 405 discharged prisoners were supplied with food, money, clothing, or lodging, while employment was secured in 118 cases. Formal applications for assistance numbered 449, of which only 14 were refused.

The work of the Association in assisting first offenders with advice or help in obtaining sureties covered 1,438 cases during 1914. Fines amounting



to £1,267 were collected in 704 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.

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.

#### 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.	1910.	1911.	1912.	1913.	1914.
<b>Expenditure—</b>	£	£	£	£	£
*Police ... ..	465,307	493,638	510,407	574,806	581,044
Penal establishments ... ..	104,608	131,632	105,399	106,825	113,305
Total ... ..	569,915	625,270	615,806	681,631	694,349
<b>Revenue—</b>					
Fines paid to Consolidated Revenue	23,813	25,637	29,760	29,868	31,350
Net value of prison labour of a productive character.	24,470	21,620	20,688	22,614	28,978
Total ... ..	48,283	47,257	50,448	52,482	60,328
<b>Net Expenditure ... ..</b>	<b>521,632</b>	<b>578,013</b>	<b>565,358</b>	<b>629,149</b>	<b>754,677</b>
<b>Per Head of Mean Population—</b>	s. d.	s. d.	s. d.	s. d.	s. d.
Police ... ..	5 9	5 11	5 10½	6 4	6 0
Penal establishments ... ..	1 0	1 4	0 11¾	0 11¼	0 11

\* Financial year ending 30th June.

## 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 became law on 16th November of the same year.

On 1st November, 1902, the Commonwealth Post and Telegraph Rates Act secured for all the States uniformity 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.

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.

#### 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.

#### 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. 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 2,512 in 1914; temporary employees are included during the last five 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	752	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	1,022,339	970,868
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
1914	2,049	574	11,131	1,738,076	2,486,697

\* 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	2,100,939	* ...	...
1860	4,230,761	3,668,783	83,736	...
1865	6,328,353	4,689,858	249,904	...
1870	7,083,500	3,914,700	157,700	...
1875	13,846,686	6,262,600	337,000	...
1880	21,885,860	13,791,000	711,600	...
1885	39,692,200	25,567,400	3,446,800	...
1890	63,695,100	40,597,200	3,939,600	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	111,953,588	44,599,104	22,683,000	994,100
1910	163,754,656	66,963,559	39,098,610	1,600,426
1911	189,656,461	71,619,194	36,283,500	1,748,822
1912	192,986,376	68,696,648	32,687,604	2,067,652
1913	212,639,659	64,874,811	38,583,889	2,318,453
1914	217,907,644	63,216,699	34,203,574	2,372,964

\* Included with letters.

In 1855 the number of letters and newspapers, inland and foreign, was slightly over 2 millions each, whereas in 1914 the number of letters and post-cards had grown to nearly 218 millions, and newspapers to nearly 66½ millions, without reckoning 36½ millions of packets and parcels.

Further particulars of the postal matter carried during 1914 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	151,174,779	38,551,614	26,270,979	215,997,372	117
Registered articles ...	1,273,041	347,314	289,917	1,910,272	1
Newspapers ...	39,502,817	18,951,106	7,762,776	66,216,699	36
Packets and parcels ...	26,657,034	7,785,318	2,131,186	36,576,538	20

During 1914 the postal matter posted and received per head of population was—Letters, post-cards, and registered articles, 118 ; newspapers, 36 ; and packets and parcels, 20. A large percentage of circulars classified previously as packets have been sent as letters since the reduction of letter rates.

#### *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 1914, the number of parcels posted in New South Wales was 12,587 and the value collected was £20,181, the revenue, including postage, commission on value, registration, and money-order commission being £1,618.

#### *Customs Duty Parcels.*

The number of parcels on which Customs duty was charged in New South Wales during 1914 was £39,359, the amount collected being £59,151.

#### *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 1914 was 1,910,272.

#### DEAD LETTERS, &c.

The number of dead letters and other postal articles dealt with by the Post Office in New South Wales during 1914 was as follows :—

How dealt with.	Letters.	Post-cards.	Packets.
Returned direct to senders, or delivered ...	492,797	4,537	565,610
Destroyed in accordance with Act ...	113,086	17,348	70,801
Returned as unclaimed to other States or Countries ...	160,791	4,041	2,459
Total ...	766,674	25,926	638,870

#### 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 1914 there were 866 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 parcels to other Australian States, New Zealand, Fiji, and Papua is 8d. for 1 lb., increasing at the rate of 6d. per lb. to 5s. 8d. for 11 lb.

Parcels addressed to members of the Australian Expeditionary Forces abroad may be transmitted by post at special rates, viz., 3 lb. and under, 1s.; 3 lb. to 7 lb., 2s.; 7 lb. to 11 lb., 3s.

#### *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, 1915, an amount of £5,430 was paid as commission to licensed vendors in New South Wales, the total so paid for all States of the Commonwealth being £18,529.

#### MAIL ROUTES AND SERVICES.

The mail routes in New South Wales in the year 1914 totalled 51,032 miles, represented by railway, 4,072 miles ; water, 2,820 miles ; and other, 44,140 miles.

The distances travelled by mail conveyances were railway, 5,615,476 miles ; water, 2,252,676 miles ; other, 9,954,090 miles ; total, 17,822,242 miles ; the cost of conveyance was £326,064. The number of inland mail services in 1914 was 2,085.

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.

#### 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, *viâ* San Francisco, was inaugurated, under contract with the New Zealand Government, in which New South Wales participated under certain con-

ditions 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 Norddeutscher 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 service provided by the British lines, the Messageries Maritimes and the Norddeutscher Lloyd steamships carried mails for the Commonwealth at poundage rates. Since the outbreak of war the number of trips run by the Orient steamers has been reduced by half, as a number of the ships have been requisitioned for war purposes; the sailings of the French steamers have been intermittent; the German service has ceased.

*Oversea Mails.*

The postal matter carried to and from New South Wales by each of the services during 1914, is shown below :—

Postal Articles.	Orient Royal Mail.	P. & O. Co.	Canadian-Australian, via Vancouver.	Nord-deutscher Lloyd.	Messageries Maritimes.	Oceanic SS. Co.
<b>Interstate—</b>						
Letters and Postcards	461,509	497,774	.....	576	9,797	.....
Newspapers ... ..	343,648	334,748	.....	.....	9,338	.....
Packets and Parcels	144,647	140,549	.....	.....	3,668	.....
<b>Oversea—</b>						
Letters and Postcards	6,871,914	7,859,988	1,166,217	43,049	32,433	1,977,937
Newspapers ... ..	1,867,015	2,097,934	381,943	8,371	5,159	567,514
Packets and Parcels	397,019	447,433	104,894	5,225	1,963	178,713

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 1914 :—

Service.	London to Sydney.		Sydney to London.	
	Average Time.	Quickest Time.	Average Time.	Quickest Time.
<i>Viâ</i> Suez—				
Per Orient Royal Mail Line ... ..	32 $\frac{1}{2}$ days.	31	34 $\frac{1}{2}$ days.	31
„ Peninsular and Oriental S. N. Co. ... ..	34 $\frac{1}{2}$ days.	31	35 $\frac{1}{2}$ days.	31
„ Norddeutscher Lloyd ... ..	.....	.....	36 $\frac{1}{2}$ days.	35
„ Messageries Maritimes ... ..	.....	.....	37 $\frac{1}{2}$ days.	35
<i>Viâ</i> Vancouver—				
Per Canadian-Australian ... ..	38 $\frac{1}{2}$ days.	35	37 $\frac{1}{2}$ days.	34
<i>Viâ</i> San Francisco—				
Per Oceanic SS. Co. ... ..	37 $\frac{1}{2}$ days.	33	33 $\frac{1}{2}$ days.	30

*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 an 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 was 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

1914 there were 1,937 stations, exclusive of 78 railway offices, and 16,865 miles of lines open, with 37,236 miles of wire in 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	273,665
1913	1,602*	6,116,945	456,722	6,573,667	297,965
1914	1,937*	6,178,926	524,093	6,703,019	289,347

\* Excluding railway offices.

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 1914 were classified as follows :—

Inland (counted once) ... ..	3,753,301
Interstate ... ..	2,110,116
To and from other countries (cablegrams) ... ..	315,509
In transit ... ..	524,093
<b>Total ... ..</b>	<b>6,703,019</b>

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, 1876, 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 1915, the Commonwealth Government reserved for the exclusive use of Pacific cable traffic a wire between the Board's office in Sydney and the General Post Office in Melbourne.

International traffic, *via* Pacific, was suspended for two months in 1914 in consequence of damage done at Fanning Island by an enemy cruiser on 7th September.

In connection with the working of the Pacific Cable for the year ended 31st March, 1915, the amount to be made good by the Commonwealth was £2,638, as compared with £3,650 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 have increased steadily during the period.

Year.	Cable Messages.		Amount Collected.	
	Sent from New South Wales.	Received in New South Wales.	Total.	Portion due to Commonwealth Government.
			£	£
1905	32,519	81,548	169,298	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
1914	162,114	153,395	366,086	29,833

## 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.; Alexandria, Cairo and Suez (Egypt), 3s. 5d.; Vancouver, *via* Pacific, 2s. 4d. The rate per word for press telegrams to the United Kingdom is 7½d., and to Vancouver 3¼d. per word.

Special rates are allowed for cable messages concerning members of the military and naval forces on active service abroad.

## 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.

## 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., also to the Commonwealth wireless stations in the Pacific, and to Port Moresby and Flinders Island. 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, 1¾d. 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, 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.

On the termination of this arrangement, in July, 1912, a new agreement was made, by which the Commonwealth Government grants a subsidy of £2,000 per annum for a period of four years, on the condition that at least 26,000 words are supplied in each month.

#### WIRELESS TELEGRAPHY.

Wireless telegraphy in Australia was placed under the control of the Department of the Navy in September, 1915; previously the Postmaster-General held the exclusive right to establish wireless stations in Australia, and to transmit messages, but issued 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, 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 Balsillie 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.

A station has also been erected on King Island. A station erected on Macquarie Island, south of Tasmania, to maintain communication between Australia and Dr. Mawson's Antarctic Expedition, was closed in 1915.

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.

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. Several radio-telegraph stations in the Pacific are controlled by the Commonwealth, viz.:—Kieta (Bougainville), Madang, Nauru, Rabaul, Woodlark Island, Kawieng, Wilhelmshaven (New Guinea), and at Nauru (Marshall Islands), for the transaction of public correspondence; the charges, in addition to land-line charges, are 3d. per word, except to Woodlark Island, 2d. per word, and Kawieng, 4d. per word.

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. For radio-telegrams addressed to Noumea (New Caledonia) the Commonwealth charges are:—coast station 4d. per word, and land-line 1d. per word.

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.

Special rates apply to press messages, to official messages to or from ships of the British or Australian navies, to reports concerning marine casualties and overdue vessels, and to messages conveying Christmas and New Year greetings to New Zealand or to vessels registered in Australia or New Zealand.

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. During the year ended 30th June, 1915, 840 messages containing 11,065 words were transmitted at the Sydney Station, and 1,829 with 19,934 words were received, the Coast Station charges amounted to £479.

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 1915 being 521. 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 Tele-phones.	Telephone Instruments in use.
		Sydney and Suburbs.	Country.	Total.		
1905	64	11,909	2,315	14,224	114*	18,616
1906	76	12,670	2,783	15,453	137*	20,373
1907	96	14,634	4,355	18,989	167*	24,363
1908	113	15,392	6,022	21,414	313	27,329
1909	132	18,239	7,443	25,682	347	31,888
1910	268	20,203	9,914	30,117	446	37,130
1911	353	22,476	12,075	34,551	722	43,032
1912	385	24,787	14,113	38,900	818	48,698
1913	451	27,676	16,169	43,845	916	53,978
1914	521	30,360	18,680	49,040	1,069	62,367

\* 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 18,680 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 1914 the number had been increased to 1,069.

A charge of 2d. 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. This charge was increased from 1d. as from 10th December, 1915.

*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 a revised scale of charges was brought into effect on 1st September, 1910. A further revision of the telephone charges was made in 1915; the existing rates are as follows:—

Exchanges or Networks with Subscriber's lines connected as shown hereunder—	Radius of network with main Exchange as centre.	Annual Ground Rent within two mile 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 300 ... ..	5	3 0 0	2 10 0	2 0 0
„ 301 to 600 ... ..	5	3 5 0	2 10 0	2 0 0
„ 601 to 1,500 ... ..	5	3 10 0	2 15 0	2 5 0
„ 1,501 to 4,000 ... ..	10	3 15 0	3 0 0	2 10 0
„ 4,001 and upwards ...	10	4 0 0	3 0 0	2 10 0

In addition, a charge of 1d. is made for each effective call originating from a subscriber's instrument.

For these charges, all Exchange equipment, subscriber's line not exceeding 2 miles in length radially, and one telephone wall-set per subscriber are provided and maintained.

*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 ordinary rates are charged on Sundays, Christmas Day, and Good Friday ; and reduced rates are charged for conversations in the nature of press messages.

## 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, in the following year to £629,722 ; the results during the last three years are compared in the following statement :—

Particulars.	1912-13.	1913-14.	1914-15.
	£	£	£
Total earnings ... ..	4,243,292	4,523,368	4,620,061
Total working expenses ... ..	4,263,373	4,576,915	4,749,110
Deficit ... ..	20,081	53,547	129,049
Interest on capital ... ..	376,409	435,223	488,069
Pensions and retiring allowances ...	16,612	12,687	12,604
	387,021	447,910	500,673
Total deficit for Commonwealth ...	407,102	501,457	629,722

The increase in the deficit during 1914-15 was due mainly to the effect of drought and war upon the earnings and increased charges to working expenses, under the heading of depreciation, on account of assets dismantled.

Particulars regarding the various branches in the State of New South Wales, during 1914-15, were as follows:—

Branch.	Earnings.	Working Expenses.	Net Earnings.	Interest on Capital.	Net Loss.
	£	£	£	£	£
Postal ... ..	1,034,811	1,024,246	10,565	38,149	27,584
Telegraph ... ..	313,464	304,349	9,115	32,503	23,388
Telephone ... ..	432,391	508,190	(—) 75,799	94,794	170,593
Wireless Telegraph ... ..	629	2,828	(—) 2,199	748	2,947
Pensions and Interest on General Assets ... ..	.....	4,089	(—) 4,089	10,011	14,100
Total, all branches ... ..	1,781,295	1,843,702	(—) 62,407	176,205	238,612

The result in New South Wales for the year 1914-15 was a loss of £238,612. In connection with the telephone branch there was a loss of £170,593, 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.

The results of the various divisions of the telephone branch during the last three years were as follows:—

Telephone Branch.	1912-13.		1913-14.		1914-15.	
	Profit.	Loss.	Profit.	Loss.	Profit.	Loss.
	£	£	£	£	£	£
Exchanges ... ..	.....	106,870	.....	152,200	.....	160,179
Trunk lines ... ..	.....	18,790	.....	20,779	.....	12,639
Non-exchange lines ... ..	86	.....	495	.....	387	.....
Sydney-Melbourne trunk line... ..	1,025	.....	915	.....	1,838	.....
Total Net Loss ... ..	.....	124,549	.....	171,569	.....	170,593

In the Sydney network there are 29 exchanges, and at each a day and night service is maintained. At 30th June, 1915, there were 31,172 subscribers, and the capital value, excluding sites and buildings, was £1,587,529. The direct working expenses for the year—including operating and general expenses, £108,852 and repairs and renewals, £134,287—amounted to £243,139 and the revenue was £268,200. The revenue exceeded the direct working expenses by £25,061, but if administration charges, depreciation, and interest were added, the loss on the Sydney network alone would amount to £140,000 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 .. .. .	27,584	(†) 66,425	24,880	17,631	64,376	3,675	71,721
Telegraph .. .. .	23,388	(†) 5,274	50,246	(†) 24,612	52,857	9,857	106,462
Telephone .. .. .	170,593	85,751	3,678	6,335	85,321	12,431	364,109
Wireless Telegraph .. .. .	2,947	1,944	12,400	6,179	16,643	3,054	43,167
Pensions and Retiring Allowances and Interest on General Assets..	14,100	16,559	6,275	1,093	4,868	768	44,263
Net Loss .. .. .	238,612	32,555	97,479	7,226	224,065	20,785	629,722

(†) Denotes profit.

The Postal branch which showed a loss of £71,721 was affected more severely by the adverse conditions than the other branches; the low cost of mail transport in Victoria enables the postal business to be conducted at a profit. The operations of the telegraph branch involved a loss of £106,462; the only States showing a surplus were South Australia and Victoria, which benefited to a greater extent than the other states by an increase in cable business resulting from the war. It must be pointed out that no revenue has been credited in respect of meteorological and shipping telegrams transmitted free of charge.

## 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. Duplications and deviations of existing lines are, however, carried out by the Commissioners. In February, 1915, a contract was made between the Government of New South Wales and the Norton Griffiths Company for the construction of certain public works, including the following railways:—City railway and portions of the eastern and western suburban lines; Sydenham to Botany; Broken Hill to Condobolin; portions of the North Coast Railway, between Kempsey and Glenreagh; Glenreagh to Dorrigo; and sections of the Dubbo to Werris Creek, Stockinbingal to Forbes, and of the Wagga to Tunbarumba lines. The contracting company agreed to complete these works within five years from 1st July, 1915.

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, 1915, is shown below:—

	Railways.	Tramways.	Railways and Tramways.
	£	£	£
Cost of Construction and Equipment at 30th June, 1915 ... ..	65,583,274	7,970,293	73,554,567
Year ended 30th June, 1915—			
Earnings ... ..	7,616,511	1,986,060	9,602,571
Working Expenses ... ..	5,311,162	1,611,286	6,922,448
Balance after Working Expenses ... ..	2,305,349	374,774	2,680,123
Interest on Capital ... ..	2,328,680	284,639	2,613,319
Surplus ... ..	(—) 23,331	90,135	66,804

## 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, but 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 during the following decade, when the average was only 53 miles per annum. During the quinquennium 1900-4, the average rose again to 125 miles. During the ten years ended June, 1915, a further length of 686 miles was brought into use. In the year 1914-15 the new lines opened amounted to 167 miles, the total length of line on 30th June, 1915, being 4,134 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, 1915. 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	1900-4	575	3,231
1860-4	88	143	1905-9	342	3,623
1865-9	175	318	1910	20	3,643
1870-4	85	403	1911	118	3,761
1875-9	331	734	1912	71	3,832
1880-4	884	1,618	1913	98	3,930
1885-9	553	2,171	1914	37	3,967
1890-4	330	2,501	1915	167	4,134
1895-9	205	2,706			

In addition to the mileage shown above there were at 30th June, 1915, 786 miles of sidings and crossovers; extensions of a total length of 1,128 miles were under construction, and 148 miles of line had been authorised for construction but not commenced.

## 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 1900 the average population per mile of line was 482, and in 1915 it was 452. 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 75 square miles in 1915. 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	1915	452	74·8

#### *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	158 $\frac{3}{4}$	...	8 $\frac{1}{2}$	2,811 $\frac{1}{4}$
1905	3,079 $\frac{1}{4}$	193	...	8 $\frac{1}{2}$	3,280 $\frac{3}{4}$
1910	3,393	241 $\frac{1}{4}$	...	8 $\frac{3}{4}$	3,643
1911	3,476	276	...	8 $\frac{3}{4}$	3,760 $\frac{3}{4}$
1912	3,525 $\frac{3}{4}$	290 $\frac{3}{4}$	6 $\frac{1}{4}$	8 $\frac{3}{4}$	3,831 $\frac{1}{2}$
1913	3,589 $\frac{1}{2}$	316 $\frac{3}{4}$	5 $\frac{3}{4}$	18	3,930
1914	3,594 $\frac{3}{4}$	338	7	27 $\frac{3}{4}$ *	3,967 $\frac{1}{2}$
1915	3,692 $\frac{1}{4}$	406 $\frac{1}{4}$	8	27 $\frac{3}{4}$ *	4,134 $\frac{1}{4}$

\* 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 Holbrook; 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 connect with the Victorian railways at Tocumwal. 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 is under construction. A branch from Temora to Aria 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 Cauowindra. From Galong there is a branch to Burrowa.

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 is under construction. 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 Nevertire to Warren, and from Nyngan to the important mining district of Cobar. There is a connecting line from Narromine on the main western line *viâ* Parkes to Forbes, and an extension from Forbes to Stockinbingal, on the southern line, has been commenced. 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 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, *viâ* Narrabri and Moree, to Inverell, placing the Namoi and Gwydir districts in direct communication with the ports of Newcastle and Sydney. A branch runs from Moree to Mungindi, on the border of the State of Queensland. 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, a section to Denman being open for traffic. 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 Wauchope 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 Dorrigo district, a branch of the North Coast line, from Dorrigo 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 saler yards 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 Water Conservation and Irrigation Commission, and is used mainly for the conveyance of material to the site of the works.

*Commonwealth Railways in New South Wales.*

A short railway, 5½ miles, in length, has been constructed from Queanbeyan, on the Cooma-Nimmitabel branch, to connect Canberra, the Federal Capital, with the State railway system. The work of construction was 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. The line was opened for departmental goods traffic in May, 1914, and is worked by the New South Wales Government on behalf of the Commonwealth. A trial survey of a line from Canberra to Yass has been made.

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.

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, *viâ* Gulgong, Wollar, and Denman, to Muswellbrook.
  - (b) Morpeth to Salamander Bay, Port Stephens.
  - (c) Walcha Road, *viâ* Walcha, Nowendoc, 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 Finley to Tocumwal, from Canberra to Queanbeyan, and a section from Muswellbrook to Denman, are open for traffic, and those from Stockinbingal to Forbes and from Condobolin to Broken Hill are under construction.

#### 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.

#### 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 cost of these works, exclusive of alterations or additions to Central Station, electrical equipment, thermit welding, wiring, bonding rails, signals, and lighting, was estimated at £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 at £69,933 and £98,809 respectively.

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.

In February, 1915, as stated above, the City Railway and portions of the Eastern and Western Suburbs Railways to Bondi Junction and Weston-road, Balmain, respectively, were included in the list of works to be carried out by the Norton Griffiths Company under contract with the New South Wales Government—the estimated cost, including materials, is £5,175,000.

## 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.

The following statement shows the number of miles on different gradients in June, 1915:—

Gradients.	Southern System.	Western System.	Northern System.	Total.
1 in	miles.	miles.	miles.	miles.
18 to 30	3½	...	...	3½
31 „ 40	52½	62½	33	148
41 „ 50	64½	49½	76	190
51 „ 60	55½	66½	56¾	178½
61 „ 70	52½	55	35¾	143¾
71 „ 80	114¾	79½	132½	326¾
81 „ 90	39	38½	40¾	118¾
91 „ 100	83½	111	79½	273½
101 „ 150	127½	136	132½	395¾
151 „ 200	82½	73½	79½	235
201 „ 250	45½	32½	36¾	114½
251 „ 300	61	59	55½	175½
301 „ level	579¾	568	643	1,790¾
Total ..	1,361½	1,331	1,400¾	4,093¼

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 £11,978—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 £2,111 per mile; Burren Junction to Collarenebri East, £2,439 per mile; from Byrock to Brewarrina, £2,729 per mile; and

from Dubbo to Coonamble, £2,765 per mile. The cost of construction of the various branches of the railway systems to 30th June, 1915, is set forth in the following table:—

Lines opened for Traffic.	Length.	Total Cost.	Average Cost per Mile.
<b>GOODS LINES.</b>			
Darling Harbour Branch, Sydney ... ..	1 49½	956,703	591,013
Flemington to Homebush Bay ... ..	2 13	72,109	33,345
*Flemington to Belmore and Wardell-road to Glebe Island.	...	1,574,838	...
<b>MAIN SOUTHERN LINE.</b>			
Sydney to Granville ... ..	15 58½	3,131,378	202,269
Granville to Goulburn ... ..	122 72½	3,332,883	27,117
Goulburn to Wagga ... ..	181 46	2,893,509	15,935
Wagga to River Murray ... ..	79 15½	946,152	11,947
<i>Branch Lines.</i>			
Lidcombe to Regent's Park ... ..	1 75¾	27,045	13,891
Clyde to Carlingford ... ..	4 39¼	33,588	7,480
Campbelltown to Camden ... ..	7 66½	46,388	5,923
Yass Tramway ... ..	2 78	29,230	9,825
Goulburn to Crookwell ... ..	35 43	160,009	4,503
Joppa Junction to Nimmitabel ... ..	151 54¼	1,532,538	10,104
Galong to Boorowa ... ..	17 6¾	115,714	6,773
Murrumburrah to Blayney, on Western Line	110 50	1,115,765	10,086
Koorawatha to Grenfell ... ..	32 24	117,376	3,634
Cowra to Canowindra ... ..	23 51	136,434	5,772
Cootamundra to Tunut ... ..	65 22½	537,858	8,239
Cootamundra to Temora ... ..	38 72	211,896	5,447
Temora to Wyalong ... ..	41 26	126,551	3,062
Temora to Barellan ... ..	61 41¾	210,131	3,416
Junee to Hay ... ..	168 43¼	1,023,068	6,070
Narrandera to Finley ... ..	100 70½	498,856	4,945
Finley to Tocumwal ... ..	11 7½	36,419	3,283
The Rock to Oaklands ... ..	77 44¼	280,491	3,617
Culcairn to Holbrook ... ..	16 61	60,794	3,627
Culcairn to Corowa ... ..	48 3	233,190	4,854
<b>MAIN WESTERN LINE.</b>			
Granville to Penrith ... ..	20 72¼	621,698	29,742
Penrith to Bathurst ... ..	111 3¾	3,846,446	34,638
Bathurst to Dubbo ... ..	137 67¾	1,460,225	10,593
Dubbo to Bourke ... ..	225 51¾	1,375,185	6,094
<i>Branch Lines.</i>			
Blacktown to Richmond ... ..	16 19½	182,755	11,251
Wallerawang to Dunedoo ... ..	134 79¾	1,207,452	8,944
Blayney to Murrumburrah (see Southern Line)	...	...	...
Orange to Forbes ... ..	96 51¼	670,899	6,942
Parkes to Condobolin ... ..	62 60¼	132,496	2,111
Bogan Gate to Tullamore ... ..	37 66¼	127,683	3,375
Dubbo to Coonamble ... ..	95 79½	265,429	2,765
Narromine to Peak Hill ... ..	36 62¼	119,751	3,256
Nevertire to Warren ... ..	12 29½	41,318	3,341
Nyngan to Cobar and The Peak	85 26¾	323,069	3,786
Byrock to Brewarrina ... ..	58 42	159,671	2,729
Parkes to Peak Hill ... ..	31 26¾	134,073	4,279

\* In course of construction.

Lines opened for Traffic.	Length.		Total Cost.	Average Cost per Mile.
<b>MAIN NORTHERN LINE.</b>				
	m.	ch.	£	£
Homebush to Waratah ... ..	95	57	3,527,130	36,851
Newcastle to Wallangarra ... ..	393	59 $\frac{1}{2}$	5,934,621	15,072
<i>Branch Lines.</i>				
Hornsby to Milson's Point ... ..	13	36 $\frac{3}{4}$	763,554	57,162
Fassifern to Toronto ... ..	2	55	20,057	7,463
Bullock Island ... ..	4	70 $\frac{1}{2}$	648,844	133,011
Morpeth ... ..	3	47 $\frac{3}{4}$	61,482	17,693
Muswellbrook to Denman ... ..	15	68 $\frac{3}{4}$	47,829	3,016
Werris Creek to Narrabri West ... ..	96	58	634,540	6,560
Narrabri Junction to Inverell ... ..	158	78 $\frac{1}{2}$	511,418	3,217
Narrabri West to Walgett ... ..	106	9	326,435	3,076
Burren Junction to Collarenebri East ... ..	42	44 $\frac{1}{2}$	103,771	2,439
Tamworth West to Barraba ... ..	61	50 $\frac{1}{2}$	255,734	4,150
Moree to Garah ... ..	36	30 $\frac{1}{2}$	165,725	4,555
Garah to Mungundi ... ..	40	51 $\frac{1}{2}$	199,133	4,899
<b>NORTH COAST LINE.</b>				
West Maitland to Taree... ..	115	36 $\frac{3}{4}$	1,636,054	14,170
Murwillumbah to Grafton ... ..	149	9	1,383,234	9,276
Casino to Kyogle ... ..	17	71 $\frac{1}{2}$	90,063	5,034
Taree to Wauchope ... ..	47	37 $\frac{1}{2}$	528,923	11,143
<b>SOUTH COAST (ILLAWARRA) LINE.</b>				
Sydney to Nowra... ..	97	55 $\frac{1}{2}$	3,845,376	39,363
<i>Branch Line.</i>				
Sydenham to Bankstown ... ..	8	33 $\frac{1}{2}$	264,931	31,469
<b>BROKEN HILL LINE.</b>				
Broken Hill to Tarrawingee ... ..	40	7	32,929	821
Total, All Lines ... ..	*4,134	21 $\frac{3}{4}$	51,095,846	*11,978

\* Exclusive of Flemington-Glebe Island goods line.

The amount expended on rolling-stock, &c., to 30th June, 1915, was £14,487,428:—Rolling stock, £11,828,935; machinery, £790,719; workshops, £825,738; furniture, £10,036; stores advance account, £1,032,000. Thus the total capital expenditure amounted to £65,583,274, or, excluding £1,574,838 expended on the Flemington-Glebe Island goods line, an average of £15,483 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	1890-4	6,016,104	35,855,271
1860-4	1,353,374	2,631,790	1895-9	2,137,005	37,992,276
1865-9	2,049,539	4,681,329	1900-4	4,296,241	42,288,517
1870-4	2,163,217	6,844,546	1905-9	5,324,149	47,612,666
1875-9	3,561,949	10,406,495	1910-14	13,652,203	61,264,869
1880-4	9,673,643	20,080,138	1915	4,318,405	65,583,274
1885-9	9,759,029	29,839,167			



Of the £65,583,274 expended to 30th June, 1915, an amount of £657,379 has been provided from the Consolidated Revenue of the State, leaving a balance of £64,925,895, which has been raised by the issue of debentures and other stock. The net revenue for the year ended 30th June, 1915, after paying working expenses, was £2,305,349, which gave a return of 3·52 per cent. upon the total capital expenditure, and 3·55 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, 1915, is shown below:—

Working Expenses.		Earnings.	
	£		£
Maintenance of Way, Works, and Buildings ... ..	918,790	Passengers ... ..	2,910,684
Locomotive Power ... ..	2,181,048	Mails, Parcels, Horses, &c. ...	404,610
Greasing and Oiling Carriages and Waggon ... ..	5,798	Total Coaching... ..	3,315,294
Carriage and Waggon Repairs and Renewals, &c. ... ..	568,823	Goods—	
Traffic Expenses ... ..	1,502,945	Merchandise ... ..	2,173,638
Compensation ... ..	25,959	Live Stock ... ..	1,005,976
General Charges ... ..	101,089	Wool ... ..	354,356
Gratuities, &c. ... ..	4,710	Minerals ... ..	672,264
Fire Insurance Fund ... ..	2,600	Total Goods ... ..	4,266,234
	5,311,162	Rents ... ..	71,587
Balance, Net Earnings ... ..	2,305,349	Miscellaneous ... ..	23,396
Total ...£	7,616,511	Total ...£	7,616,511

The expenditure on locomotive power amounted to 41·1 per cent. of the total; traffic expenses to 28·3 per cent.; and maintenance of way, works, and buildings to 17·3 per cent. Of the earnings 38·2 per cent. was derived from the carriage of passengers, 5·3 per cent. from mails, parcels, &c., and 55·2 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, 1915. 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	1900	3,163,572	1,844,520	58·3
1860	62,269	50,427	81·0	1905	3,684,016	2,216,442	60·2
1865	166,032	108,926	65·6	1910	5,485,715	3,276,409	59·7
1870	307,142	206,003	67·1	1911	6,042,205	3,691,061	61·1
1875	614,648	296,174	48·2	1912	6,491,473	4,169,591	64·2
1880	1,161,017	647,719	55·8	1913	6,748,985	4,644,881	68·8
1885	2,174,368	1,458,153	67·1	1914	7,742,241	5,409,820	69·9
1890	2,633,086	1,665,835	63·3	1915	7,616,511	5,311,162	69·7
1895	2,878,204	1,642,589	57·1				

The working expenses during the year ended 30th June, 1915, represented 69·7 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 since that year, 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, 1915, was £2,305,349; while the capital expended on lines open for traffic to that date was £65,583,274. The amount thus available, to meet the interest charges on the capital expended, represents a return of 3·52 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	1900	1,394,052	3·63
1860	11,842	0·83	1905	1,491,869	3·46
1865	57,106	2·07	1910	2,209,306	4·52
1870	101,139	1·81	1911	2,351,144	4·61
1875	318,474	4·39	1912	2,321,882	4·34
1880	513,298	4·35	1913	2,104,104	3·65
1885	716,215	3·87	1914	2,332,421	3·80
1890	967,251	3·17	1915	2,305,349	3·52
1895	1,310,615	3·60			

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 of 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 during 1905 to 1912 were highly satisfactory; a decrease occurred in the years 1913 and 1914, due, as stated previously, to increased cost of working. During the year 1914-15 the abnormal conditions of war and drought caused a further decline in the earnings; steps were taken, however, to reduce the working expenditure.

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
1915	3·52	3·67	- 0·15

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.
1860	per cent. 73·0	per cent. 27·0	1900	per cent. 38·8	per cent. 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	1915	44·7	55·3

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 1915 the percentage was 44·7.

*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
1915	88,774,451	3,315,294	47·7	35 7

The increase in the number of journeys per head of population has been exceedingly rapid, the average being 47·7 per head in 1915, 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. 7d. as compared with 19s. 10d. in 1905.

Particulars regarding the passenger traffic on suburban and country lines during the year ended 30th June, 1915, are shown below; suburban lines include distances within 34 miles of Sydney and Newcastle:—

Description.	First Class.	Second Class.	Total.
<b>SUBURBAN LINES.</b>			
Ordinary Passengers ... .. No.	5,812,729	23,355,665	34,168,394
Season Ticket Holders' Journeys ... ..	7,600,260	14,622,450	22,222,710
Workmen's Journeys ... ..	.....	23,523,348	23,523,348
Total Passenger Journeys ..	13,412,989	66,501,463	79,914,452
Miles Travelled ... .. Miles.	93,402,827	455,483,034	548,885,861
Average Mileage per Passenger ... ..	6·96	6·85	6·87
Amount Received from Passengers ... .. £	233,519	787,676	1,021,195
Average Receipts per Passenger per Mile d.	·60	·42	·45
<b>COUNTRY LINES.</b>			
Passengers ... .. No.	2,208,729	6,651,270	8,859,999
Miles Travelled ... .. Miles.	263,798,655	418,216,547	682,015,202
Average Mileage per Passenger ... ..	119·43	62·88	76·98
Amount Received from Passengers ... .. £	812,761	1,076,728	1,889,489
Average Receipt per Passenger per Mile d.	·74	·62	·66

*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 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 women. 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.

*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
1915	11,920,881	4,206,234	6·4	2 5 2

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; the decline in 1915 was due mainly to the failure of the wheat crop.

A statement showing the class of goods carried on the railways since 1900 is shown below:—

Year ended 30th June.	General Merchandise.		Wool.	Live Stock.	Minerals.		Total Goods.
	Grain, Flour, &c. (Up Journey).	Other.			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
1903	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	4,553,965	528,017	8,393,038
1911	787,632	2,288,078	137,599	485,021	6,059,648	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
1915	482,876	2,849,908	132,895	849,604	6,649,704	955,894	11,920,881

*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:—

Year.	Charge.	Year.	Charge.	Year.	Charge.
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.	1915	0-9d.
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	136 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, 1910.	Five years ended 30th June, 1915.	Increase.	Percentage increase.
Earnings—					
Coaching Traffic ...	£	9,532,792	15,003,848	5,471,056	57
Goods and Live Stock ...	£	12,822,414	17,028,584	4,206,170	33
Coal and Coke ...	£	2,047,281	2,608,982	561,694	27
Total earnings ...	£	24,402,496	34,641,415	10,238,919	42
Passengers ...	No.	232,096,472	386,219,240	154,122,768	66
Goods and Live Stock ...	Tons	16,470,536	24,221,137	7,750,601	47
Coal and Coke ...	Tons	27,820,144	33,877,954	6,057,810	22
Total Tonnage ...	...	44,290,680	58,099,091	13,808,411	31



## ROLLING-STOCK.

Information regarding the rolling-stock of New South Wales Railways on 30th June, 1914 and 1915, appears in the following table. The figures for the previous year have been inserted for the purpose of comparison:—

Classification.	1914.	1915.	Classification.	1914.	1915.
Locomotives—			Merchandise—		
Engines ... ..	1,065	1,162	Goods, open ... ..	14,784	15,140
Tenders ... ..	863	945	Goods, covered ... ..	980	1,003
Coaching—			Meat trucks ... ..	344	392
Special & sleeping cars	92	95	Live-stock trucks ... ..	2,504	2,548
First-class ... ..	391	413	Brake-vans ... ..	491	501
Composite ... ..	190	201	Total ... ..	19,103	19,584
Second-class ... ..	805	858			
Brake-vans ... ..	163	162	Departmental Stock—		
Horse-boxes, carriages, trucks, &c. ... ..	281	282	Loco. coal, ballast, &c., waggons ... ..	1,507	1,469
Total ... ..	1,922	2,011			

## MAINTENANCE OF PERMANENT WAY.

During the year ended 30th June, 1915, the total length of line wholly or partially renewed by relaying, re-sleeping, or re-railing was 182 miles 43 chains, and 249 miles 71 chains were re-ballasted, thus making a total of 432 miles 34 chains of line either partially or completely renewed. In this work 491,237 sleepers and 102,586 cubic yards of ballast were used.

The total weight of rails used in relaying and re-railing work during the year amounted to 6,268 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 in 1914 and 1915 are shown below:—

	Single Line.	1914.		1915.	
		Mls.	Chs.	Mls.	Chs.
By electric tablet	... ..	389	28	354	38
electric train staff	... ..	739	18	1,078	28
train staff and ticket with line clear reports	... ..	1,692	44	1,581	36
train staff and ticket without line clear reports	... ..	764	51	682	4
train staff and one engine only	... ..	6	14	6	14
		3,591	75	3,702	40
		1914.		1915.	
	Double Line.	Mls.	Chs.	Mls.	Chs.
By absolute block system	... ..	376	53	414	69
permissive block system	... ..	3	40	6	27
telephone	... ..	0	33	0	33
automatic signalling with track block working	... ..	20	35	35	42
		401	1	457	11

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, 1915, 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.				
	1911.	1912.	1913.	1914.	1915.	1911.	1912.	1913.	1914.	1915.
Passengers—										
Causes beyond their own control—										
Killed ... ..	...	...	...	14	1	...	...	...	...	...
Injured ... ..	9	21	23	46	77	3	...	2	...	...
Their own misconduct, or want of caution—										
Killed ... ..	2	7	11	9	5	...	...	...	1	...
Injured ... ..	83	113	168	137	174	32	40	49	83	40
Servants of the Department—										
Causes beyond their own control—										
Killed ... ..	...	...	1	1	2	...	9	1	...	...
Injured ... ..	36	58	53	44	30	69	189	130	83	64
Their own misconduct, or want of caution—										
Killed ... ..	19	...	...	...	...	5	...	...	...	5
Injured ... ..	188	26	30	41	31	1,653	4	6	4	2,704
		255	252	257	281		2,272	2,920	3,120	
Trespassers and others—										
Killed ... ..	25	35	42	47	39	1	8	4	3	6
Injured ... ..	52	66	86	86	83	84	119	113	131	107
Total { Killed ... ..	46	68	84	112	78	6	21	11	8	11
Injured ... ..	368	513	582	570	645	1,841	2,620	3,214	3,417	2,915

The rates per million passengers carried during the quinquennium were as follow:—

	Killed.	Injured.
Accidents connected with movement of railway vehicles—		
Causes beyond their own control ... ..	·04	·46
Their own misconduct or want of caution... ..	·09	1·75
Accidents not connected with movement of railway vehicles—		
Causes beyond their own control ... ..	...	·01
Their own misconduct or want of caution... ..	·00	·63
Total ... ..	·13	2·85

*Compensation Paid—Railways.*

The amount of compensation paid during the twelve months ended 30th June, 1915, in connection with accidents on railways, was £25,959, of which £12,852 was personal, £13,107 being paid in respect of goods.

*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, 1915, was 8,518 members.

*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> ...	0·13	2·85	Norway ...	0·11	0·19
Victoria ...	0·9	3·28	Netherlands ...	0·10	0·59
South Australia ...	0·13	3·55	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 ...	0·34	14·11
Sweden ...	0·18	0·29	Canada ...	0·99	10·35

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 70 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 Silvertown 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 1914:—

Name of Private Railway.	Line.		Total Capital Expended.	Reserve Fund.	Debentures Outstanding.	Passengers Carried.	Goods Carried.	Live Stock Carried.	Train Miles Run.
	Length.	Gauge.							
Deniliquin and Moama.	m. 45	ch. 0 ft. 5 in. 3	£ 162,673	£ 14,010	£ ...	No. 11,938	tons. 29,748	No. 464,708	No. 42,317
Silvertown ...	35	54 3 6	464,115	156,102	...	58,216	*1,466,209	49,652	151,993
Warwick Farm ...	0	66 4 8½	5,700	...	...	30,430	...	682	57
Seaham Colliery...	6	0 4 8½	16,000	...	...	17,211	9,668	73	7,728
East Greta ...	8	0 4 8½	180,538	...	...	854,579	58,987	...	381,487
Hexham-Minmi ...	6	0 4 8½	\$1,000,000	...	...	10,700	1,200	...	4,600
Commonwealth Oil Corporation.	33	0 4 8½	194,590	...	475,000	286	2,169	...	12,909
†New Red Head...	9	0 4 8½	90,000	...	...	‡	‡	...	‡

\* Includes 544,712 tons local shunting.

† Year 1912.

‡ Not available.

§ Approximate.

The Deniliquin and Moama Company possesses 4 locomotives, 6 passenger carriages, and 63 goods carriages and vans. The Silvertown Company has 18 locomotives, 679 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 2,417 goods vehicles being hired during 1914. On the East Greta railway there are 17 locomotives, 32 passenger carriages, and 33 goods carriages. The Hexham-Minmi Company has 1 locomotive, and 4 passenger carriages; and the Commonwealth Oil Corporation has 5 locomotives, 3 passenger carriages, 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. m. ch.	Gauge. 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> ... ..	4,309	434	72·0	15,737
Victoria ... ..	3,904	365	22·5	13,244
Queensland ... ..	5,393	128	124·3	6,748
South Australia ... ..	2,669	164	142·4	7,200
Western Australia ... ..	3,919	82	249·0	4,597
Tasmania ... ..	698	284	37·5	8,292
New Zealand ... ..	2,863	379	36·6	11,301
United Kingdom ... ..	23,701	1,960	5·1	56,589
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 ... ..	30,795	262	121·1	12,074
United States of America	242,177	408	12·3	13,157
Argentina ... ..	20,402	360	56·5	10,982
Japan ... ..	5,607	9,330	26·3	12,000

#### 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 pro-

ceeded 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, 1915, 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	4,099	.....	4,165*
Victoria ... ..	.....	122	.....	.....	3,753	3,875
Queensland ... ..	.....	.....	4,838	.....	.....	4,838
South Australia ... ..	.....	.....	1,664	.....	970	2,634
Western Australia ... ..	.....	.....	3,332	.....	.....	3,332
Tasmania ... ..	24	.....	509	.....	.....	533
Northern Territory ... ..	.....	.....	145	.....	.....	145
Total Commonwealth ... ..	50	122	10,528	4,099	4,723	19,522

\* Includes Burrinjuck line.

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 the lines will be extended 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 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.

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 at £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; rails have been laid for a distance of 750 miles, and it is expected that the whole distance will be completed at the end of 1916. The total length will be 1,053 miles, which will make the distance by rail from Sydney to Fremantle (Western Australia), 2,763 miles, divided up as follows:—Sydney to Melbourne, 583 miles; Melbourne to Adelaide, 483; Adelaide to Port Augusta, 259; Port Augusta to Kalgoorlie, 1,053; Kalgoorlie to Fremantle, 385. The cost of construction and equipment was estimated at £3,988,000. 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. These lines are now controlled by the South Australian Railway Commissioner on behalf of the Federal Government. The Commonwealth has agreed to construct a line across the Continent to connect these systems; the section from Pine Creek to Katherine, 54½ miles, is in course of construction, and surveys have been made of other sections.

## TRAMWAYS.

With the exception of 2 $\frac{3}{4}$  miles privately owned, the tramways of New South Wales are the property of the State Government. The standard gauge of 4 ft. 8 $\frac{1}{2}$  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 219 $\frac{1}{4}$  miles of line open at 30th June, 1915, there were 150 miles under the electric system and 69 $\frac{1}{4}$  miles worked by steam:—

Line.	Length of Line.	Length of Single Track.
Electric—	mils. ch.	mils. ch.
City and Suburban ... ..	110 16	199 35
North Sydney ... ..	19 31	33 33
Ashfield to Mortlake and Cabarita ... ..	8 33	12 33
Rockdale to Brighton-le-Sands ... ..	1 20	1 20
Manly to Spit and Narrabeen ... ..	10 58	14 47
	150 3	261 8
Steam—		
Arncliffe to Bexley ... ..	2 50	2 50
Kogarah to Sans Souci ... ..	5 45	5 45
Farramatta to Castle Hill ... ..	6 55	6 55
Sutherland to Cronulla ... ..	7 32	7 32
Newcastle City and Suburban ... ..	32 68	42 53
East to West Maitland ... ..	4 47	4 47
Broken Hill ... ..	10 4	11 35
	69 61	80 77
Total ... ..	219 64	342 5
Sidings, loops, and Crossovers ... ..	.....	52 24

During the year ended 30th June, 1915, the length of line opened for traffic was 8 miles 7 chains; and 2 miles 51 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 1½d. 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 1¾ miles.

#### Rolling-stock.

The tramway rolling-stock, on 30th June, 1915, consisted of 22 steam motors, 74 steam cars, 1,410 motor cars and 20 trail cars for electric lines, and 104 service vehicles, making a total of 1,630.

#### Cost of Construction.

The capital cost of the State tramways to 30th June, 1915, amounted to £7,970,293 or £36,261 per mile open; the cost of construction was £3,933,572 or £17,896 per mile, and the expenditure on rolling-stock, workshops, machinery, &c., amounted to £4,036,721.

#### Working of Tramways.

The following statement shows the working of the various tramways in sections for the year ended 30th June, 1915. Only two sections returned a profit during the period; the total profit on all lines, after allowing for interest on capital, amounted to £90,135:—

Line.	Cost of Construction and Equipment.	Passengers carried.	Gross Revenue.	Working Expenses.	Net Earnings.	Interest on Capital.	Profit + Loss —
	£	No.	£	£	£	£	£
<b>Electric—</b>							
City and Suburban .. ..	6,176,905	240,545,317	1,651,585	1,301,986	349,599	220,459	+ 129,140
North Sydney .. .. .	670,413	20,743,680	127,922	110,708	17,214	24,362	— 7,148
Ashfield to Mortlake & Cabarita	185,957	4,728,551	23,589	23,422	167	6,547	— 6,380
Manly to The Spit and Narrabeen.	303,193	2,965,037	27,487	30,271	— 2,784	10,734	— 13,513
Rockdale to Brighton-le-Sands	13,398	651,053	3,439	2,839	600	437	+ 163
<b>Steam—</b>							
Arncliffe to Baxley .. ..	21,679	565,693	3,169	5,239	— 2,070	786	— 2,856
Kogarah to Sans Souci .. ..	24,390	893,937	7,379	9,290	— 1,411	852	— 2,263
Parramatta to Castle Hill .. ..	38,282	876,116	7,322	7,663	— 281	1,402	— 1,683
Sutherland to Cronulla .. ..	49,520	685,116	11,312	8,568	3,244	1,814	+ 1,430
Newcastle City and Suburban	360,313	13,803,736	101,542	85,326	16,216	12,632	+ 3,584
East to West Maitland .. ..	38,819	789,535	5,217	6,190	— 973	1,421	— 2,394
Broken Hill .. .. .	87,424	2,030,074	15,937	19,784	— 4,747	3,193	— 7,940
<b>Total, All Lines.. ..</b>	<b>7,970,293</b>	<b>289,282,845</b>	<b>1,966,060</b>	<b>1,611,286</b>	<b>374,774</b>	<b>284,639</b>	<b>+90,135</b>

*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, 1915, amounted to 4.70 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	9.60
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	1,423,518	282,316	230,993	51,323	3.60
1900	71½	1,924,720	409,724	341,127	68,597	3.66
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	123½	3,669,524	908,701	727,947	180,754	4.93
1908	132½	3,732,991	1,011,994	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	5,064,324	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
1915	219½	7,970,293	1,986,060	1,611,286	374,774	4.70

During the year ended 30th June, 1915, the percentage of working expenses to the total receipts was 81.1 as compared with 86.3 in the previous year; the net earnings amounted to £374,774, which is equal to a net return per average mile open of £1,730, as compared with £1,262 per mile open in 1914.

*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 219½ miles; the number of passengers from 66,244,334 to 289,282,845; and the tram mileage from 4,355,024 miles to 26,842,974 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. 5½d.; the working cost per tram mile dropped from 1s. 10d. in 1900 to 9d. in 1906, but increased steadily to 1s. 2½d. in 1915:—

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
1905	125¾	139,669,459	16,413,762	1 0	0 10
1910	165¾	201,151,021	20,579,386	1 1¾	0 11½
1911	189¾	230,275,938	22,541,429	1 2½	1 0¼
1912	195½	236,789,546	24,362,219	1 3½	1 1
1913	207¾	294,455,452	26,954,767	1 3½	1 2
1914	212	310,592,698	28,415,476	1 4¼	1 2
1915	219¾	289,282,815	26,842,974	1 5¾	1 2½

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	73¾	125,756,680	14,246,845	11¾	9,641,474	1,118,633
1907	75½	134,088,696	14,516,536	11¾	10,082,128	1,139,417
1908	78	148,729,916	15,329,695	11¾	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	16¼	13,677,491	1,651,152
1911	97½	197,871,083	19,107,419	16¾	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
1915	110½	240,545,317	22,242,010	19½	20,743,680	2,375,916

## 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.				
	1911.	1912.	1913.	1914.	1915.	1911.	1912.	1913.	1914.	1915.
Passengers—										
Causes beyond their own control—										
Killed... ..				2	1					
Injured ... ..	149	163	229	120	75	2	2	4	3	2
Their own misconduct, or want of caution—										
Killed... ..	11	11	9	11	7					
Injured ... ..	276	382	406	487	312	7	9	16	16	19
Servants of the Department—										
Causes beyond their own control—										
Killed... ..	1				1					
Injured ... ..	48	55	66	74	37	23	36	48	45	19
Their own misconduct, or want of caution—										
Killed... ..	1	1	1		3			1	1	
Injured ... ..	164	202	199	212	161	382	496	608	549	411
Others—										
Killed... ..	18	16	28	16	21	1	1			
Injured ... ..	324	336	373	368	267	9	5	8	8	2
Total { Killed... ..	31	28	38	29	33	1	1	1	1	
Injured ... ..	961	1138	1273	1261	852	423	548	684	621	453

As the tramways usually traverse crowded streets, the number of accidents must be considered small.

The number of passengers carried on the tramways during the year ended 30th June, 1915, was 289,282,845, and the rate of fatal accidents to passengers was .03 per million. With three 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, 1915, in respect of accidents on the tramways was £26,966, as compared with £23,330 for the preceding year.

## PRIVATE TRAMWAYS.

There is one tramway under private control within the State—a steam tramway, which passes through the town 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.

#### RAILWAYS AND TRAMWAYS—EMPLOYMENT AND WAGES.

The account of wages paid, together with the staff employed on the Government railways and tramways in June, 1915, is shown in the following statement, in comparison with the previous year:—

Particulars.	Year ended 30th June, 1914.			Year ended 30th June, 1915.		
	Railways.	Tramways.	Total.	Railways.	Tramways.	Total.
Persons employed—						
Salaried staff ...	3,422	567	3,989	3,649	561	4,210
Wages ,, ...	31,810	8,628	40,438	33,096	8,644	41,740
Total number	35,232	9,195	44,427	36,745	9,205	45,950
Wages paid—	£	£	£	£	£	£
Maintenance Branch	1,701,079	201,184	1,902,263	2,013,518	181,336	2,194,854
Locomotive ,,	1,887,494	.....	1,887,494	1,887,163	.....	1,887,163
Electric ,,	.....	411,417	411,417	.....	376,635	376,635
Traffic ,,	843,628	663,516	1,507,144	815,966	655,125	1,471,091
Total	£ 4,432,201	1,276,117	5,708,318	4,716,647	1,213,096	5,929,743

The average number of men employed during the year ended 30th June, 1915, was 46,712, including employees on active war service with the Australian Expeditionary forces. At 30th June, 1915, 217 officers and 1,805 men belonging to the Railway and Tramway staff had joined the Expeditionary Forces, all permanent employees being paid the difference in their pay in railway and tramway service and in the defence forces; under certain conditions similar terms are allowed to members of the temporary staff.

A scheme to provide superannuation allowances for the officers of the railway and tramway service was introduced in 1910; particulars will be shown in a later chapter of this Year Book.

#### *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.

## 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 were 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 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.

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 microbial 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 Branch 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 State expenditure on hospitals and charitable relief, including grants to National Relief Funds, for the year 1914-15, amounted to £871,329. The 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 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 expenditure in the five years ended 30th June, 1915:—

Payments from—	1911.	1912.	1913.	1914.	1915.
	£	£	£	£	£
Consolidated Revenue ...	553,264	593,030	693,090	734,511	826,549
Public Works Account ...	85,614	48,755	87,857	52,919	44,780
<b>Total ...</b>	<b>£ 638,878</b>	<b>641,785</b>	<b>780,947</b>	<b>787,430</b>	<b>871,329</b>

There has been an increase in the Government expenditure on hospitals and charities throughout the period reviewed amounting to £232,451, or 36 per cent.

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:—

	1913-14.	1914-15.
	£	£
General Hospitals and Charitable Institutions ...	188,236	202,552
Mental Hospitals and Institutions ...	271,942	267,715
Children's Relief ...	120,199	127,095
Government Asylums for the Infirm ...	100,996	104,601
Destitute and Deserted, Sick and other ...	32,846	53,383
Aborigines Protection ...	17,145	17,420
Charitable Societies ...	3,062	3,754
National Relief Funds... ..	.....	44,049
Miscellaneous ...	85	5,980
<b>Total ...</b>	<b>724,511</b>	<b>826,549</b>

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 24,337 acres at the end of December, 1914. At the various stations and camps the residents are encouraged to work; dwellings have been erected, and assistance in the form of food and clothing is supplied when necessary; the stations are under the control of managers appointed by the Board. Aboriginal children are required to attend school until the age of 14 years, and they may be apprenticed under supervision. An Amending Act of 1915 authorises the Board to assume control of the child of any aboriginal, and extends its powers with regard to apprenticing children or placing them in training homes. Several schools exclusively for the use of aborigines have been established. In 1914 there were 1,077 aboriginal children attending school, viz., 1,044 at public schools, and 33 at private schools.

In a home at Cootamundra, established in 1912, orphan and neglected aboriginal children are trained for domestic service; accommodation is provided for thirty-five inmates. A home-finder has been appointed to obtain situations, to arrange apprenticeships, and to exercise general supervision over the children.

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 1914 amounted to £23,035, including £13,222 for general maintenance, £2,502 for the purchase of blankets, clothing, &c., £1,946 as disbursements from the Board's produce and sale store account, £4,212 for educational purposes, £1,089 for medical attention, and £64 for other services; an amount of £2,915 was received as revenue from sales, so that the net expenditure was £20,120.

#### 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 children whose admission to such institutions 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 sentence according to law, 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.

Under the provisions of the Liquor Act, children may not be supplied with intoxicating liquor, nor allowed in the bar of licensed premises, nor sent to licensed premises to obtain liquor.

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, and supervises 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, at 5th April, 1915, was 15,081, as compared with 13,891 in the previous year:—

	1914.	1915.
Boarded out apart from their mothers ... ..	4,695	4,880
"    with their mothers ... ..	5,970	6,612
In foster homes licensed under Children's Protection Act	925	925
In institutions licensed under Infant Protection Act ...	331	535
Engaged in street trading ... ..	477	680
Released on probation ... ..	1,213	1,184
Employed in theatres ... ..	280	265
Total ... ..	13,891	15,081

The supervision of these children is undertaken by salaried inspectors, whose efforts are supplemented by honorary officers. Four women 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, 1915, on account of the services of the State Children Relief Department was £134,446; of this amount £52,940 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 £61,890. Contributions by parents and relatives and repayments of maintenance allowances amounted to £4,111, being £488 less than in the previous year; the Department experiences the need for comprehensive and remedial legislation to enable the recovery of 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
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
1915	52,940	61,890	9,962	9,654	134,446	6,194	128,252

\* 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.

#### *Baby Clinics.*

In 1914 the Baby Clinics, Pre-Maternity and Home-Nursing Board was appointed by the Government 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 Board consists of ten members, including three women and two medical practitioners. At the end of 1915 six clinics had been opened in the most thickly-populated suburbs of Sydney, and one in Newcastle; those at Alexandria and Newtown continue the work conducted previously by a private organisation—the Alice Rawson School for Mothers.

There are an honorary medical officer and two nurses attached to each clinic; the nurses instruct the mothers, and make arrangements for medical treatment when necessary; dental defects of children up to 5 years of age are treated at the dental hospital. Particulars relating to the work of the clinics during 1915 are shown below:—

Patients seen by doctor	...	3,780	Cases—Ophthalmia	...	...	189
„ sent to hospital	...	662	Gastro-enteritis	...	...	1,562
Babies weighed	...	16,928	Miscellaneous	...	...	6,164
New-born babies visited	...	6,522	Dental	...	...	59
Subsequent visits	...	3,697	Pre-maternity	...	...	320

*Notification of Births.*

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.

The Act was proclaimed in Sydney and Newcastle and their most populous suburbs, and in these areas a notification must be sent within thirty-six 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, 1915:—

State.	1912. (From 10th Oct.)	1913.	1914.	1915.	Total.
New South Wales ...	5,604	51,564	53,690	52,028	162,886
Victoria ...	4,763	36,636	36,571	34,707	112,677
Queensland ...	2,211	19,709	20,298	19,801	62,019
South Australia ...	1,366	12,484	13,107	11,640	38,597
Western Australia...	806	9,305	9,404	8,835	28,350
Tasmania ...	758	5,969	6,089	5,761	18,577
Total ...	15,508	135,667	139,159	132,772	423,106

*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 1907-14 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	233
1911	144	17	263
1912	155	19	229
1913	173	21	331
1914	184	21	309

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, institutions for the reception of children, operate under special Acts, and are exempted from the provisions of the Infant Protection Act. The children were transferred from the Randwick Asylum in 1915, and the institution was converted into a military hospital.

The twenty-one institutions licensed during 1914 provided accommodation for 535 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 ... ..	33	5-6 years ... ..	48
1-2 years ... ..	31	6-7 years ... ..	58
2-3 years ... ..	46		
3-4 years ... ..	50	Total ... ..	309
4-5 years ... ..	43		

Three Homes for Mothers and Infants are maintained in the metropolitan area under the direction of the State Children Relief Department. They were 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, 1915, 124 mothers and 204 infants were treated; 1 infant died; and 87 mothers and 165 infants were discharged.

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.

*Registrations under Children's Protection Act.*

The number of children registered under the Children's Protection Act, during 1914 was 1,648, and at 31st December there were 925 under supervision; 265 theatre licenses for children were issued, as compared with 280 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 1910-14 may be seen in the following statement:—

Particulars.	1910.	1911.	1912.	1913.	1914.
Registrations from Lying-in Homes ...	4,203	3,796	2,830	4,430	7,884
Foster Homes registered ... ..	114	71	95	82	140
Children registered ... ..	1,138	1,188	1,215	1,447	1,648
" died ... ..	51	62	41	41	59
" discharged from supervision ...	511	567	491	481	664
" under supervision at 31st Dec....	576	559	683	925	925
Theatre Licenses for Children ... ..	188	216	321	280	265

Of the children under supervision during 1914 the deaths numbered 59, the principal cause of death being gastro-enteritis, 47.

#### DEPENDENT, NEGLECTED, AND DELINQUENT CHILDREN.

Since its inception in 1881, 23,171 children have been placed under the control of the State Children Relief Board to be boarded-out apart from their parents. Of this total 18,291 children had been removed from the control of the Board, so that there were 4,880 remaining under its charge on 5th April, 1915, of whom 2,916 were boys and 1,964 were girls. In addition the Board was paying allowances towards the support of 6,612 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 11,492.

#### *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 placed usually 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, 1915, was as follows:—

Classification.	Boys.	Girls.	Total.
Boarders ... ..	1,671	1,187	2,858
Without subsidy ... ..	33	51	84
Apprentices ... ..	747	490	1,237
Adopted ... ..	57	75	132
In Hospitals ... ..	22	19	41
Cottage Homes ... ..	284	104	388
Depôt ... ..	12	18	30
Absconded ... ..	88	17	105
Unofficial ... ..	2	3	5
<b>Total ... ..</b>	<b>2,916</b>	<b>1,964</b>	<b>4,880</b>

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, 1,391 wards of the State Children Relief Board passed through the depôt during the twelve months ended 5th April, 1915.

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	1915	2,916	1,964	4,880

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—				
	1911.	1912.	1913.	1914.	1915.
Under 1 year ...	196	191	170	188	186
1 year ...	56	72	71	85	84
2 years ...	55	66	48	55	54
3 " ...	34	46	42	46	48
4 " ...	32	45	40	49	47
5 " ...	48	45	55	49	50
6 " ...	46	56	53	48	51
7 " ...	45	52	53	50	52
8 " ...	55	49	53	75	72
9 " ...	55	54	58	59	52
10 " ...	74	85	58	82	81
11 " ...	88	93	87	74	78
12 " and over ...	183	285	290	217	214
Unknown ...	32	30	31	127	126
Total ...	999	1,169	1,109	1,204	1,195

Of the children received by the Board during 1914-15, 501 were committed from the Children's Courts, 50 were transferred from the Sydney Benevolent Asylum, and 31 were received from other sources, while 613 were boarded-out direct from the State Children's Depôt.

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.

*Children boarded-out with their mothers.*

In April, 1915, 2,290 widows and deserted wives were receiving allowances towards the support of 6,612 children under 14 years of age. The new cases during 1914 numbered 1,058; aid was granted in 721 cases, and refused in

337. The applications considered since payments were authorised in 1896 numbered 12,434; allowances were approved with regard to 9,060 applications, and refused in 3,374 cases. The mothers receiving allowances in April 1915 were 1,310 widows, 458 deserted wives, and 522 wives deprived of their husbands' support through insanity (169), imprisonment (115), detention in hospital (166), or in asylum for infirm and destitute (72). There is no law in operation in New South Wales to compel relatives, other than parents, to contribute towards cost 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 6,612 children boarded-out with their mothers the allowances in respect of 2,198 were at the rate of 5s. per week, the others varied from 4s. 6d. to 2s. per week. Of 2,858 boarders apart from parents, 2,606 were paid for at the rate of 5s. per week; and 252 at rates ranging from 6s. to 10s.; there were 84 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; two are occupied by feeble-minded, and one by crippled boys, the remainder are used for sick and debilitated children; and at Parramatta one home is for feeble-minded girls, and two for paralysed or incapacitated 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 children in the Cottage Homes. Since the opening in October, 1906, 2,773 boys have been admitted, and 2,568 discharged; the number under supervision in the Farm Home at 5th April, 1915, was 205.

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.
1906	157	169	1911	370	383
1907	306	271	1912	555	517
1908	392	325	1913	534	520
1909	465	406	1914	518	490
1910	444	525	1915	565	497



On 1st April, 1915, 394 children remained in the various Homes, 298 boys and 96 girls.

In addition to the Cottage Homes there is a home at Raymond Terrace for feeble-minded boys who are not suitable for boarding with private families; 29 boys were admitted during the year, and 18 discharged, 27 being under supervision at 5th April, 1915.

#### *Permanent Adoption of Children.*

The State Children Relief Act provides that orphan children, or those who have been surrendered for adoption, may be adopted for life; the permanent adoption of 216 State wards—90 boys and 126 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, 1915:—

	1911.	1912.	1913.	1914.	1915.
Boys ...	291	288	220	298	257
Girls ...	169	183	103	174	162
Total ...	460	471	323	472	419

At the end of April, 1915, there were 1,237 apprentices (747 boys and 490 girls) 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, 1915, the total collections of the Apprentices Fund were £81,599, of which £64,663 had been paid over on completion of the indentures, and £16,936 remained to the credit of the fund, the collections for the year having been £3,755. 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 replaced 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, 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, 1914, 83 boys were admitted, and 73 discharged; of the latter 12 were apprenticed principally in the country, 59 were released on probation, and 2 were transferred to the Mittagong Farm Home.

At the Girls' Industrial School a training home was established in 1912, to enable a more effective classification of the inmates. On 31st December, 1914, there were 145 girls in the institution—121 in the Industrial School and 24 in the Training Home; 65 girls were admitted during the year, and 39 were discharged.

There are a number of institutions conducted by religious bodies and other organisations, in which destitute children are placed by their natural guardians 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 1914, supported 1,962 children:—

Institutions.	Boys.	Girls.	Total.
General Public ... ..	320	185	505
Church of England ... ..	16	181	197
Roman Catholic .. ...	419	678	1,097
Methodist ... ..	14	25	39
Presbyterian ... ..	57	26	83
Salvation Army ... ..	...	...	41

#### *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 serve also 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 Dépôt for State Children, where boys under 7 years of age also are received. The Shelter for boys over 7 years is attached to the Metropolitan Children's Court.

During the year ended 5th April, 1915, the number of children brought before the Metropolitan Children's Court was 1,889, of whom 1,691 were boys and 198 girls; 392 were uncontrollable children; 363 were neglected or under improper guardianship; 147 were charged with breaking conditions of

release on probation, and 987 with other offences. The proved cases numbered 1,314, 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 .. ..	174	177	..	429	717	63	780
Do do do Other persons .. ..	31	15	..	29	56	19	75
Committed to care of State Children's Relief Board.	8	22	..	5	21	14	35
Do do do Ormond House, Paddington.	14	32	3	4	23	30	53
Do do do Farm Home, Mittagong	91	17	48	57	213	..	213
Do do do Farm Home, Gosford ..	10	3	7	25	45	..	45
Do do do Industrial School, Ramatta.	19	7	7	4	..	37	37
Do do do Private Institutions ..	1	3	1	3	5	3	8
Fined .. .. ..	..	..	..	63	68	..	68
Withdrawn .. .. ..	30	68	77	285	436	24	460
Dismissed or Discharged .. .. ..	14	19	4	78	107	8	115
Total .. .. ..	392	363	147	987	1,691	198	1,889

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, 1915, there were 1,184 children under probation from the Children's Courts, 1,079 boys, and 105 girls; 143 had been brought before the Court as neglected, 243 as uncontrollable, 521 were convicted for stealing, and 277 for other offences.

The terms of probation were:—One year and under, 1,055; one to two years, 85; over two years, 44. Cases in which the term of probation exceeds one year usually refer to children committed to the care of relatives or private establishments, the length of term implying legal authority to retain custody of the children apart from their parents.

Since its inauguration approximately 7,039 children have been released on probation by the Metropolitan Children's Court; the proportion of failures has been very small. During the year ended April, 1915, 384 children were released by the State Children Relief Board, the term of probation being one year.

#### *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 trading. Licenses are issued by the State Children Relief Department to

boys under 16 years; the trading hours prescribed for boys between ages 12 and 14 are from 7 a.m. to 7 p.m., and 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 half-year ended 31st March, 1915, 680 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 ... ..	442	201	643
„ flowers, &c. ... ..	5	2	7
„ other articles ... ..	22	8	30
Total ... ..	469	211	680

The average weekly earnings of newspaper-sellers are:—Age 12-14 years, from 10s. to 15s.; 14-16, 15s. to 25s.

Particulars regarding the licenses granted and refused since 1906 are shown below:—

Period ended 31st March.	Boys Licensed.			Applications refused.	Licenses withdrawn during year.
	Under 14.	Over 14.	Total.		
1906	263	190	453	24	59
1907	456	279	735	4	11
1908	491	304	795	4	5
1909	638	199	837	4	4
1910	517	197	714	3	2
1911	548	179	727	5	3
1912	651	205	856	7	4
1913	477	175	652	191	10
1914	317	160	477	170	33
1915	469	211	680	130	40

#### *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 physical training; and Swedish drill, exercises, and sports have been embodied 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, and it was found that the percentage of pupils with defective teeth was high.

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 by the Roman Catholic Denominational schools, and by 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 medical officers and 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. Dental inspections are conducted in conjunction with the medical. At the end of 1914 the medical staff included fourteen doctors and six nurses. A travelling hospital and a travelling ophthalmic clinic were established during the year, and in 1915 a metropolitan dental clinic and a travelling dental clinic were commenced.

Where there are no resident doctors or dentists the travelling hospital visits parts of the State with a staff of two medical officers, a nurse, and a dentist; one doctor gives general treatment and performs minor operations; the other treats eye defects; and the dentist attends to the hygiene of the mouth. The travelling ophthalmic clinic treats eye defects at the larger country schools. The number of children treated by the hospital and clinic from August to December, 1914, was 2,558.

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 number of children examined during 1914 was 94,198; of these 57,283 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.
<b>State Schools—</b>									
Metropolitan district .. .. .	15,278	13,957	29,235	12,833	11,356	24,195	6,818	6,122	12,940
Large country towns .. .. .	18,222	16,908	35,130	16,027	14,813	30,840	11,469	10,845	22,314
Small country areas .. .. .	14,196	12,662	26,858	12,446	10,978	23,424	6,171	5,648	11,819
<b>Total .. .. .</b>	<b>47,696</b>	<b>43,527</b>	<b>91,223</b>	<b>41,312</b>	<b>37,147</b>	<b>78,459</b>	<b>24,458</b>	<b>22,615</b>	<b>47,073</b>
<b>Private Schools—</b>									
Metropolitan district .. .. .	2,488	2,303	4,791	2,018	1,760	3,778	1,174	968	2,142
Large country towns .. .. .	5,481	6,610	12,091	4,508	5,491	9,999	3,229	3,950	7,179
Small country areas .. .. .	..	..	2,288	975	987	1,962	410	479	889
<b>Total .. .. .</b>	<b>..</b>	<b>..</b>	<b>19,170</b>	<b>7,501</b>	<b>8,238</b>	<b>15,739</b>	<b>4,813</b>	<b>5,397</b>	<b>10,210</b>
<b>Total, all Schools .. .. .</b>	<b>..</b>	<b>..</b>	<b>110,393</b>	<b>48,813</b>	<b>45,385</b>	<b>94,198</b>	<b>29,271</b>	<b>28,012</b>	<b>57,283</b>

The proportion of pupils who showed defects needing treatment was 61 per cent. of those examined; it was lowest in the small country areas, being 50·1 per cent., as compared with 72·2 in the large country towns. There was not an appreciable difference between the proportion of each sex:—

Schools.	Percentage of defective pupils.		
	Boys.	Girls.	Total.
Metropolitan district ..	53·8	54·1	53·9
Large country towns...	71·6	72·9	72·2
Small country areas ...	49·0	51·2	50·1
<b>Total all Schools ..</b>	<b>60·0</b>	<b>61·7</b>	<b>60·8</b>

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.			Private Schools.	Total.
	Metropolitan District.	Large Country Towns.	Small Country Areas.		
Eyes—Vision ... ..	5,357	4,673	3,086	2,404	15,520
Other ... ..	851	474	628	393	2,346
Ears—Hearing, gross ... ..	539	978	301	425	2,243
slight ... ..	2,281	2,890	1,041	1,221	7,433
Other ... ..	339	16	47	72	474
Nose and Throat—					
Tonsils, Adenoids ... ..	9,060	11,465	6,504	5,679	32,708
Other ... ..	2,496	305	454	553	3,808
Teeth—Second, gross ... ..	1,215	3,201	1,704	1,455	7,575
slight ... ..	6,946	11,504	6,072	5,527	20,049
First ... ..	11,119	12,645	10,878	6,509	41,151
Hair ... ..	1,536	2,729	475	1,144	5,884
Skin ... ..	238	382	128	178	926
Deformities—Round Shoulders...	851	1,253	300	493	2,897
Other ... ..	40	91	28	550	709
Hernia ... ..	4	18	15	6	43
Enlarged Glands ... ..	4,644	11,144	4,894	4,905	25,587
Anæmia ... ..	475	1,093	419	352	2,339
Defective Nutrition ... ..	3,681	773	513	779	5,746
Defective Speech ... ..	301	390	209	164	1,064

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 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 ... ..	15,082	4,850	32·2
Large country towns ... ..	29,493	6,704	22·7
Small country towns ... ..	11,785	4,242	36·0
Total ... ..	56,360	15,796	28·0

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.

*Vaccination of School Children.*

Of the 94,198 children inspected by the medical officer in 1914, it was found that 33,109, or 35·4 per cent., had been successfully vaccinated. The proportion was highest in the metropolitan district, where a large number were vaccinated during the epidemic of smallpox in 1913:—

Schools.	Pupils examined.			Pupils found to have been successfully vaccinated.			
	Boys.	Girls.	Total.	Boys.	Girls.	Total.	Per cent. of Pupils examined.
Metropolitan district ...	14,857	13,116	27,973	8,527	7,261	15,788	56·44
Large country towns ...	20,535	20,304	40,839	6,166	6,177	12,343	30·22
Small country areas ...	13,421	11,965	25,386	2,634	2,344	4,978	19·61
Total ...	48,813	45,385	94,198	17,327	15,782	33,109	35·14

## 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; a comprehensive investigation is now in progress.

## 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 1914, 151 general hospitals for the treatment of the sick; 25 were in the metropolitan area, and 126 in country districts. The accommodation provided was 5,674 beds, viz., 2,374 in the metropolitan hospitals, averaging 95 beds per hospital; and 3,300 in country districts, averaging 26 beds per hospital. The cubic capacity of metropolitan hospitals was 2,945,170 cubic feet, averaging 1,241 cubic feet per bed; in the country hospitals the average was 1,206 cubic feet, the average for New South Wales being 1,220 cubic feet per bed. The following statement shows the extent to which the general hospital services have increased since 1901:—

Particulars.	1901.		1911.		1914.	
	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	2,374	3,300
Indoor patients ... ..	16,919	16,093	29,610	26,954	38,950	31,204
Outdoor patients ... ..	72,645	7,614	104,466	11,880	139,118	10,801
Indoor patients per 1,000 of mean population ... ..	24·1		34·0		37·9	



The number of indoor patients is exclusive of those treated in Government asylum hospitals; 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

Country hospitals were licensed in 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 ended 1914:—

Items.	Metropolitan.	Country.	New South Wales.
Receipts—	£	£	£
State aid ... ..	132,790	123,133	255,923
Subscriptions and donations ... ..	58,164	67,691	125,855
Patients' contributions ... ..	32,244	34,213	66,457
Miscellaneous ... ..	18,673	8,289	26,962
Total Receipts ... ..	£ 241,871	233,326	475,197
Expenditure—			
Buildings and repairs ... ..	53,194	52,254	105,448
Salaries and Wages ... ..	96,879	84,459	181,338
Provisions, Stores, &c. ... ..	94,783	91,025	185,808
Miscellaneous ... ..	20,419	17,541	37,960
Total Expenditure ... ..	£ 265,275	245,279	510,554

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 1914 was £132,790, and by the country hospitals £123,133. The total for the State was £255,923, comprising special grants amounting to £43,693 for metropolitan and £39,393 for country hospitals, and subsidies, £89,097 to metropolitan and £83,740 to country institutions. These amounts do not include payments for attendance on aborigines, expenses in connection with special outbreaks of disease, which are met from the general Medical Vote, nor 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.	Buildings 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
1914	255,923	125,855	66,457	26,962	475,197	105,448	367,146	37,960	510,554

#### Hospital Funds.

The balances of the funds of the hospitals as at the beginning and end of the year 1914 are shown in the following statement:—

Hospitals.	Current Account.		Invested Funds.	
	At 1st Jan., 1914.	At 31st Dec., 1914.	At 1st Jan., 1914.	At 31st Dec., 1914.
	£	£	£	£
Metropolitan ...	(—) 44,042	(—) 60,033	138,403	130,990
Country ...	26,717	20,875	97,876	91,765
<b>Total ...</b>	<b>(—) 17,325</b>	<b>(—) 39,158</b>	<b>236,279</b>	<b>222,755</b>

(—) Indicates debit balance.

*Cost of Maintenance of Hospital Patients.*

The average annual cost of maintenance per patient in the hospitals during 1914 was £94; 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	7	£ 473·20	£ 292·81	£ 87·25	£ 853·26
1 to 3	12	154·40	95·80	22·52	272·72
3 „ 5	13	88·99	64·76	17·92	171·67
5 „ 10	34	66·76	56·75	13·34	136·85
10 „ 15	16	50·14	51·10	10·42	111·66
15 „ 20	17	42·16	45·98	8·23	96·37
20 „ 25	11	28·73	43·34	6·14	78·21
25 „ 30	7	30·62	40·16	6·73	77·51
30 „ 35	5	35·95	40·27	5·45	81·67
35 „ 40	4	22·04	35·22	5·55	62·81
40 „ 100	13	34·94	41·75	8·87	85·56
Over 100	8	45·06	41·18	8·74	94·98
Total ...	147	42·12	43·27	8·68	94·07

## STAFFS AND PATIENTS IN PUBLIC HOSPITALS.

The following statement shows the medical and nursing staffs attached to public hospitals during 1914:—

Hospitals.	Medical Staff.		Nursing Staff.			
	Honorary.	Salaried.	Qualified Nurses.	Nurses Training.	Others.	Total.
Metropolitan ...	354	73	718	208	30	956
Country ...	208	145	426	322	83	831
Total ...	562	219	1,144	530	113	1,787

During the year 70,154 persons were under treatment as indoor patients, 38,950 in metropolitan, and 31,204 in country hospitals, and the number remaining in hospitals at the close of the year was 4,085 (2,249 males and 1,836 females). The average time during which each person was under treatment was: of those who died—males, 22·2 days, and females, 26·5 days; and of those who recovered—males, 21·0 days, and females 20·9 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.	Number of Patients at the end of Year.
1905	38,646	33,581	2,529	2,536
1906	41,552	36,402	2,576	2,574
1907	44,667	39,133	2,767	2,767
1908	47,349	41,391	3,020	2,938
1909	50,541	44,208	3,194	3,139
1910	54,683	48,370	3,224	3,089
1911	56,564	49,605	3,550	3,409
1912	61,711	53,538	4,488	3,685
1913	65,190	56,908	4,458	3,824
1914	70,154	61,759	4,310	4,085

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 37·9 per 1,000 in 1914.

#### Outdoor Hospital Patients.

During 1914, 153,866 persons were treated as outdoor patients of the general hospitals, viz., 142,992 at metropolitan hospitals, including 3,874 at the Dental Hospital, and 10,874 at country hospitals.

#### Sickness in Public Hospitals.

The principal diseases of patients under treatment in the public hospitals during 1914 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 1914 numbered 70,154—males, 37,938, and females, 32,216. The number who died, or were discharged as recovered, relieved, or unrelieved, numbered 66,069, leaving 4,085 under treatment at the end of the year. These figures include transfers, and represent the aggregate of the number of cases treated at each hospital, except those treated in the Lady Edeline Hospital for Sick Children, particulars of which were received too late, and 104 cases in the Wee Waa Hospital, of which the records were destroyed by fire. Cases admitted more than once during the year are counted each time admitted:—

Disease.	Total under Treatment during 1914.		Number of those discharged during the year who—					
			Recovered.		Were Relieved.	Were unrelieved.	Died.	
	Males.	Females.	Males.	Females.	Persons.	Persons.	Males.	Females.
Typhoid ... ..	1,236	726	962	579	15	3	123	62
Smallpox ... ..	415	217	390	210	12	7	1	...
Scarlet fever ... ..	483	731	421	626	20	6	3	6
Diphtheria and Croup ...	1,774	2,303	1,450	1,935	300	8	79	83
Influenza ... ..	653	287	623	275	16	1	8	1
Tuberculosis of lungs ...	1,233	680	99	62	794	149	233	92
Tuberculosis, other organs ... ..	413	303	114	100	283	47	50	25
Veneral diseases ... ..	1,553	624	369	192	1,409	104	8	9
Cancer ... ..	760	587	232	190	287	266	178	114
Rheumatism ... ..	976	550	597	293	466	14	17	15
Diseases of the eyes ...	795	501	461	305	404	60	3	...
Heart diseases ... ..	775	359	79	45	644	29	176	84
Hæmorrhoids, &c. ... ..	726	360	621	283	89	17	3	2
Diseases of nose ... ..	965	779	911	742	52	21	...	...
Bronchitis ... ..	799	494	578	388	220	9	43	9
Pneumonia ... ..	1,778	971	1,398	769	35	9	279	151
Diseases of the stomach ...	944	782	728	598	263	26	24	13
Diarrhœa and Enteritis ...	1,084	804	771	549	136	18	165	151
Appendicitis, Typhlitis ...	1,631	1,668	1,395	1,439	147	25	58	40
Intestinal obstruction ...	1,244	424	1,049	354	73	34	59	34
Nephritis, Bright's disease ... ..	452	307	92	84	260	24	166	86
Diseases, female genital organs ... ..	...	3,616	...	3,068	240	71	...	57
Puerperal condition ... ..	...	6,246	...	5,526	112	211	...	119
Diseases of skin, &c. ... ..	1,238	559	1,001	445	219	11	19	6
Accidents ... ..	6,636	1,333	5,218	1,011	921	79	301	75
All Diseases ... ..	37,938	32,216	25,187	23,967	10,783	1,822	2,724	1,586

*Duration of Illness.*

The following figures show the condition under which discharges during 1914 were effected, and the period of treatment in hospital:—

Condition.	Discharges.				Period of Treatment in Hospital.			
	Number.		Proportion.		Total.		Average.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
Recovered ...	25,187	23,967	per cent	per cent	days.	days.	days.	days.
Died ...	2,724	1,586	7·6	78·9	528,777	501,678	21·0	20·9
Relieved ...	6,798	3,985	19·0	13·1	191,891	120,700	.....	.....
Unrelieved ...	980	842	2·8	2·7	28,794	17,179	.....	.....
Total ...	35,689	30,380	100·0	100·0	809,861	681,632	22·7	22·4

*Fatality Rates in Age-Groups.*

For all cases of sickness treated in hospital, the fatality rates were 7·6 per cent. for males and 5·2 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.
Under 1 year ...	per cent.	per cent.	65 and over ...	per cent.	per cent.
1-4 years ...	20·9	28·2	All ages ...	19·7	16·4
5-19 „ ...	7·9	9·6		30·0	9·7
20-44 „ ...	3·0	2·2			
45-64 „ ...	5·1	3·6			
	11·1	9·4	Total ...	- 7·6	5·2

The fatality rates per 100 cases of various diseases treated during 1914 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.
Typhoid fever ...	1,100	644	per cent.	per cent.
Diphtheria and Croup ...	1,671	2,184	11·1	9·6
Tuberculosis—Lungs ...	910	519	4·7	3·8
Other ...	354	265	25·6	17·7
Cancer ...	713	554	14·1	9·4
Diseases of the heart ...	733	324	24·9	20·6
Bronchitis ...	773	474	24·0	25·9
Pneumonia ...	1,706	935	5·6	1·8
Diarrhoea and Enteritis ...	1,030	760	16·3	16·1
Appendicitis ...	1,536	1,568	16·0	19·9
Intestinal obstruction ...	1,194	409	3·8	2·5
Nephritis ...	428	284	4·9	8·3
Accident ...	6,327	1,278	38·8	30·3
			4·7	5·8

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 1914 was 3,124, 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.		1914.	
	s.	d.	s.	d.
Salaries and money allowances ... ..	2	2	3	5
Provisions, extras, medical comforts, and forage ... ..	3	4	4	9
All other expenses ... ..	2	8½	1	11
Gross weekly cost for maintenance per inmate ... ..	8	2½	10	1
Average weekly contribution towards Revenue per inmate...	0	5	0	11
Net weekly cost per inmate ... ..	7	9½	9	2

ASYLUM HOSPITALS.

In the hospitals attached to these institutions 4,883 cases of illness were treated during 1914—males, 3,857, and females, 1,026; at the end of the year, 1,159 cases remained under treatment.

Particulars regarding the diseases treated, the deaths, recoveries, &c., are shown below:—

Disease.	Cases Treated during 1914.		Discharged during 1914.					
			Recovered.		Relieved.	Un-relieved.	Died.	
	Males.	Females.	Males.	Females.	Persons.	Persons.	Males.	Females.
Tuberculosis—								
Lungs ... ..	538	29	.....	.....	329	29	107	9
Other ... ..	57	5	5	.....	22	8	12	.....
Venereal diseases ... ..	325	68	147	6	145	30	4	2
Cancer ... ..	194	29	4	.....	18	54	89	11
Rheumatism ... ..	317	85	137	2	145	8	8	7
Cerebralhæmorrhage, &c.	108	56	2	1	25	15	37	11
Diseases of the eyes ... ..	60	18	27	.....	16	5	.....	.....
Other diseases of the nervous system.	281	89	31	2	65	83	40	6
Heart diseases ... ..	104	26	.....	.....	31	1	58	7
Hæmorrhoids, &c. ... ..	112	50	35	1	63	5	14	3
Bronchitis ... ..	119	58	31	4	57	3	33	12
Diseases of the stomach	41	48	21	5	38	3	1	1
Diarrhœa and Enteritis	63	8	24	3	9	.....	25	.....
Intestinal obstruction	19	11	16	1	7	1	.....	.....
Nephritis ... ..	88	4	2	1	33	2	35	.....
Diseases of the skin, etc.	294	56	218	7	62	7	2	8
Senility ... ..	330	161	5	.....	58	56	121	42
Accident... ..	189	55	133	10	46	4	5	2
All diseases ... ..	3,857	1,026	1,109	62	1,395	360	668	130

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:—

Condition.	Discharges.				Period of Treatment.			
	Number.		Proportion.		Total.		Average.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
Recovered ...	1,109	62	36·8	8·7	days. 51,721	days. 1,956	days. 46·6	days. 31·5
Died ...	668	130	22·2	18·3	134,085	51,318	200·7	394·7
Relieved ...	973	422	32·3	59·5	67,295	36,351	.....	...
Unrelieved ...	264	96	8·7	13·5	24,658	17,440	.....	...
Total ...	3,014	710	100·0	100·0	277,759	107,065	92·2	150·8

#### 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	1911	732
1907	626	1912	728
1908	683	1913	718
1909	673	1914	610
1910	525		

At Bathurst Gaol special provision has been made for the treatment of prisoners suffering from tuberculosis.

#### CONVALESCENT HOSPITALS.

Two State Convalescent Hospitals were opened in 1914—Denistone House, at Ryde, for men; and the Strickland, at Rose Bay, for women. These institutions receive persons who are convalescent from serious illness, and thereby accommodation is made available for urgent cases at the metropolitan public hospitals.

At the Carrington Centennial Convalescent Hospital, Camden, patients from the metropolitan district are accommodated for rest and change in the bracing climate of the southern highlands; the hospital is subsidised by the Government. The Thomas Walker Convalescent Hospital is privately endowed.

#### MILITARY HOSPITALS AND CONVALESCENT HOMES.

A number of military hospitals and convalescent homes have been established since the outbreak of war for the accommodation of soldiers; several properties have been donated, and others have been acquired by the Defence authorities or through the agency of the Red Cross Society.

Particulars regarding these institutions are not included in the figures relating to hospitals and charitable institutions.

## 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. Cerebro-spinal fever also was proclaimed as a notifiable disease during 1915.

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.

*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 detention of lepers was not made until 1890. The number of cases admitted to the lazaret since 1883 was 134; of these 60 died, 11 were discharged, 39 were repatriated, and 24, of whom 19 were males, remained in the lazaret at 31st December, 1914. The birthplaces of the patients are shown below:—

Birthplaces.	Admitted.	Died.	Discharged, &c.	Repatriated.	Inmates at end of Year.
White (European descent)—					
New South Wales ...	34	20	5	.....	9
Other Australian States ...	2	1	.....	.....	1
United Kingdom ...	14	8	3	.....	3
Other Countries ...	8	6	.....	1	1
Coloured—					
China ...	50	16	.....	32	2
Pacific Islands ...	16	6	.....	4	6
Other Countries ...	10	3	3	2	2
Total ...	134	60	11	39	24

During 1914 four patients were admitted, and one died; the cost of management was £2,117, or an average of £93 12s. 5d. 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. In 1915 there were 471 cases; the



majority were from mining centres in the Newcastle and Hunter River districts—only 42 occurred in Sydney; one patient died, but the primary cause of death was gastro-enteritis.

#### *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 7·2 per cent. of the deaths in New South Wales during 1914 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.

Under the by-laws of the City of Sydney medical practitioners were required to notify cases of phthisis within the city area.

Under the provisions of the Public Health Amendment Act of 1915 pulmonary consumption may be proclaimed in any area as notifiable; it has been so proclaimed in the Metropolitan and Hunter River districts, the Health authorities being empowered to take the necessary action to check the spread of the disease.

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 370 beds in the institution; 577 males and 249 females were accorded hospital treatment during 1914, and a number of persons in the initial stages of consumption, but not requiring hospital treatment, were given employment in the grounds. The expenditure during the year 1914 was £14,935, and the patients contributions £828; the average cost of treatment, excluding buildings, repairs, &c., was £48 per occupied bed. At the hospitals attached to the State asylums at Rookwood and Newington, accommodation is reserved for a limited number of tuberculous patients.

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, and also at Newcastle.

*Veneral Diseases.*

Two night clinics for the treatment of venereal diseases have been established in Sydney; the results of their work have been so successful that it is proposed to open others in suburban and country centres. A special ward for these cases has been provided at the Newington State Asylum Hospital. In the chapter relating to police and prison services, particulars are given of persons treated in Lock Hospitals under the Prisoners Detention Act.

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 1914 the recorded admissions to the various charitable institutions numbered 16,419, and at the end of the year there were 6,795 persons in the institutions, viz., 2,929 men, 1,383 women, and 2,483 children. The estimated value of outdoor relief afforded during 1914 was £6,518, State aid amounted to £205,834, the total revenue and expenditure being respectively £321,868 and £331,752.

In addition to the institutions which afforded both indoor and outdoor relief numerous societies are engaged in distributing relief in various forms. During 1914 these societies distributed outdoor relief to the value of £17,188, their total revenue and expenditure were £88,776 and £84,384 respectively, State aid amounting to £26,204.

The following is a comparative statement of the revenue and expenditure of the charitable institutions and societies:—

Particulars.	1905.	1910.	1914.
Number of Institutions and Societies ... ..	167	179	190
Revenue—	£	£	£
State Aid ... ..	164,040	189,584	232,038
Subscriptions, &c. ... ..	49,670	66,815	77,465
Other ... ..	50,357	67,806	101,141
Total ... ..	264,067	324,205	410,644
Expenditure—			
Buildings and Repairs ... ..	9,195	13,912	36,043
Maintenance, Salaries and Wages ... ..	223,198	278,590	351,428
Other ... ..	29,088	26,103	28,665
Total ... ..	261,481	318,605	416,136

*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.

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 of instruction are held throughout the State, certificates of competency being awarded by the Association. Ambulance Corps connected with the Railway and Tramway Department and the Department of Mines also encourage first-aid instruction. Particulars relating to the certificates and other awards during the last five years are shown below:—

Year.	N.S.W. Government Railway and Tramway Ambulance Corps— Examination Passes.			St. John Ambulance Association.			Government Ambulance Corps— Mines Department.	
	Primary.	Efficiency.	Total.	Certificates.		Medallions	Primary Certifi- cates.	Silver Medallions
				First Aid.	Home Nursing.			
1910	1,207	587	1,794	932	41	97	34	11
1911	1,249	814	2,063	1,148	150	62	59	2
1912	1,158	952	2,110	628	175	59	31	8
1913	881	952	1,833	662	103	101	43	10
1914	721	948	1,669	1,715	163	67	10	25

The strength of the Railway and Tramway Ambulance Corps in 1914 was 8,531, as compared with 4,873 in 1910.

The Royal Life-saving Society promotes technical education in life-saving and resuscitation of the apparently drowned. During the year 1913-14 this society conducted examinations in connection with 98 classes, at which 1,540 awards were gained.

*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 1914 eight nurses connected with the Association made 26,241 visits to 1,199 patients. The Association is maintained by public subscriptions, but received a grant of £250 from the Government in 1914.

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 centre 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, and at the end of the year twelve nurses had been appointed in various parts of the State. Arrangements were 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 are expected to guarantee a

certain sum to the doctor, and his earnings are further supplemented by Government subsidy. The subsidised doctors and nurses are 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 1914 12,400 orders were granted, of which 6,540 were to the Government asylums, 2,907 were to the Coast Hospital, and 2,069 were for outdoor treatment at hospitals; the balance were distributed among other institutions. The total applications numbered 12,761 in 1914, as compared with 11,851 in 1913; 361 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 1914 were over 40 years of age, 2,734 being over 60.

#### PUBLIC CHARITABLE COLLECTIONS.

Numerous public collections have been made for the relief of distress occasioned by war, 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.

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 were as follows:—The Patriotic Fund 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 initiated for the relief of sufferers by the disaster at Mount Kembla mine in 1902; the Bulli Colliery Disaster Fund, 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.

At 31st December, 1914, the assets of the National Relief Fund amounted to £55,964, the relief distributed from 24th August to 31st December was valued at £491, and administrative expenses £30.

#### *War-Relief-Funds.*

On the outbreak of the present war numerous relief funds were initiated in New South Wales. Particulars as to the more important are given below:—

The Lord Mayor's Patriotic Fund was inaugurated in August, 1914, to alleviate distress arising from the war, and provides, *inter alia*, monetary assistance for the direct benefit of soldiers and their dependents.

The Red Cross Fund is devoted to the needs of sick and wounded soldiers and sailors. The Red Cross Society supplies medical equipment, ambulances, food, clothing, surgical appliances, and other comforts, and provides free accommodation at convalescent and rest homes. An important branch of its work is an agency for obtaining news of wounded, sick, and missing men.

The Australia Day Fund—30th July, 1915—was collected for the sick and wounded Australian soldiers and sailors; it supplies funds to the Red Cross Society and the Amelioration Committee, the latter affording assistance to returned men.

The Chamber of Commerce Fund provides Australian foodstuffs for soldiers and their dependents. The Citizens' War Chest Fund, established for immediate assistance in any emergency arising from the war, is intended primarily for the benefit of soldiers while on active service.

The Belgian, French, Polish, Servian, and Montenegrin Funds are used for the relief of distress in the Allied nations. On 14th May, 1915, a special collection was made for the Belgians, and on Allies' Day, 19th November, for the other Funds.

The Australian Soldiers' Repatriation Fund was created in April, 1916, upon the authority of the Commonwealth and State Governments, to re-establish soldiers in civil life when they return from the war, and to assist their dependents. The Fund will be vested in a board of trustees representative of all the States, and its administration will be regulated by an Act of the Commonwealth Parliament.

On 25th April, 1916, the anniversary of the landing of Australian troops at Gallipoli, the Returned Soldiers' Association appealed for funds to erect a memorial building. The Young Men's Christian Association receives public subscriptions for the prosecution of its work amongst the troops, and numerous regimental comforts committees collect gifts in money and kind for the various divisions of the military and naval forces.

The total amount of contributions to the War Relief Funds at 30th April, 1916, was £2,272,897; the Repatriation Fund is not included, as the information is not available:—

Fund.	Amount.
	£
Australia Day ... ..	779,340
Belgian Relief ... ..	635,309
Lord May's Patriotic ... ..	208,117
Red Cross ... ..	121,113
Chamber of Commerce ... ..	119,438
Polish Relief... ..	87,709
French Relief ... ..	70,321
Servian and Montenegrin ... ..	43,638
Miscellaneous ... ..	207,862
Total ... ..	£2,272,897

The item "Miscellaneous" includes a balance of £9,618 at the credit of the Allies' Day Fund, after transferring £56,000 to French, £57,000 to Polish, and £30,500 to Servian and Montenegrin Relief Funds.

*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, 1915, £10,891 was collected and £10,000 was distributed, the expenses amounted to £826. Four city and twelve suburban hospitals participated in the 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, 1915, the amount collected was £1,405, and the amount distributed was £1,200, the expenses being £361; twenty-six charitable institutions, mostly orphanages and children's homes, benefited to the extent of £600; thirty-four relief societies, manly benevolent, received £600.

## 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, 1914, amounted to £259,889. 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 mental patients, but special hospitals are maintained by the Government for their treatment and care.

## MENTAL HOSPITALS.

For the treatment of mental patients there were during 1914 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 department specially designed and fully equipped for the treatment of curable patients.

The medical staff of the hospitals and licensed houses numbered 21, the nursing staff and attendants numbered 560 men and 437 women, and the average daily number of patients resident, excluding patients on leave, was 6,508, comprising 3,900 males and 2,608 females.

At the end of the year 1914 there were in the New South Wales hospitals 6,520 patients—3,901 males and 2,619 females; in the South Australian hospitals the patients from New South Wales numbered 12 men and 20

women; in addition there were 179 men and 207 women on leave from various institutions, making a total number of 6,938 under official cognisance—4,092 males and 2,846 females.

In the following table is stated the number of mental patients 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 Mental Patients.			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
1914	4,092	2,846	6,938	4·23	3·17	3·73

From these figures it appears that generally the proportion of patients treated in the mental hospitals increased steadily. 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 1914, 80 insane patients were received from places beyond the State, 36 being discharged after a few days' treatment at the Reception House, while 44 were admitted to mental hospitals.

The numbers of admissions and re-admissions to mental hospitals 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	2,703	1,724	4,432	518	410	928
1911	674	387	1,061	113	73	186
1912	621	394	1,018	117	78	195
1913	643	415	1,058	125	88	213
1914	760	462	1,222	118	81	199

Of the admissions in 1914 natives of New South Wales numbered 740, England 252, Ireland 104, Scotland 73, other British countries 166, foreign countries 82, unknown 4.

The following table shows 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	763	503	1,271	1,239	1,706	1,424
1914	878	543	1,421	1,106	1,625	1,304

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
1914	341	222	563	69	48	117	301	168	469

## 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	9.8	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
1914	8.7	8.5	8.7	1.8	1.8	1.8	7.7	6.4	7.2

*Ages of Mental Patients.*

During 1914 there were 8,393 patients, 5,027 males and 3,366 females under care in the mental hospitals and licensed houses; included in this number were 231 males and 102 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 1914.			
			Recovered.		Relieved, Transferred, &c.							
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.	
Years.												
0-4	10	2	...	...	2	1	...	2	15	8	23	
5-9	12	2	...	...	1	...	...	...	39	12	51	
10-14	8	6	...	2	1	2	3	...	47	38	85	
15-19	30	25	13	11	20	3	2	...	180	98	278	
20-29	160	106	74	60	62	24	15	13	745	500	1,245	
30-39	213	136	77	68	54	46	38	23	1,064	753	1,817	
40-49	148	127	82	46	56	23	51	32	1,109	776	1,885	
50-59	142	77	64	25	47	20	58	26	958	655	1,613	
60-69	84	31	25	6	46	17	58	34	583	320	903	
70-79	58	20	6	4	15	11	53	28	249	160	409	
80-89	12	10	...	...	1	2	19	10	30	45	75	
90 & over	1	1	...	...	...	1	3	...	7	1	8	
Not stated	...	...	...	...	...	...	1	...	1	...	1	
Total ...	878	543	341	222	305	150	301	168	5,027	3,366	8,393	

Analysis of the direct causes of deaths as certified, during 1914, 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 ...	26	22	48
General Paralysis ... ..	66	8	74
Other Cerebral Diseases ... ..	42	38	80
General Debility and Old Age ... ..	25	15	40
Pulmonary Tuberculosis ... ..	19	18	37
Diseases of Heart and Blood-vessels ... ..	42	20	62
Inflammation of Lungs, Pleura, and Bronchia...	18	12	30
Abdominal Diseases ... ..	40	26	66
Other Diseases ... ..	18	8	26
Accident and Suicide ... ..	5	1	6
Total ... ..	301	168	469

*Causes of Insanity.*

The records of persons admitted during 1914 show that among the exciting causes of insanity intemperance in drink is most prominent, particularly among men; among predisposing causes the most important are old age, congenital defects, and hereditary influence.

*Cost of Maintenance.*

The weekly cost of maintaining mental patients in Government hospitals during the year 1914 was 14s. 11½d. per patient, of which the State paid 12s. 2½d., the balance being derived from private contributions. The sub-joined table shows the average weekly cost per patient from 1905 to 1914:—

Year.	Annual Cost of maintenance of Patients.	Cost of maintenance of Patient per week.					
		To State.	Private Contributions.	Total.			
	£	s.	d.	s.	d.	s.	d.
1905	137,971	8	9½	2	0½	10	10
1906	143,245	8	8½	2	0½	10	9½
1907	149,728	8	9	2	1½	10	10½
1908	165,428	9	8½	2	2½	11	10½
1909	166,528	9	6½	2	2½	11	8½
1910	181,482	10	0½	2	2½	12	2½
1911	185,266	9	9½	2	3½	12	0½
1912	231,185	12	3½	2	5½	14	8½
1913	248,105	12	9½	2	8	15	5½
1914	249,832	12	2½	2	8½	14	11½

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 1914, of 563 cases recovered, viz., 341 men and 222 women, 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 1914:—

Length of Residence in Institution.	Recovered.			Died.		
	Males.	Females.	Total.	Males.	Females.	Total.
Under 1 month ...	10	10	20	30	22	52
From 1 to 3 months	99	31	130	39	16	55
" 3 6 "	75	31	106	27	16	43
" 6 9 "	54	26	80	18	10	28
" 9 12 "	22	17	39	13	8	21
" 1 2 years	46	72	118	38	21	59
" 2 3 "	11	21	32	21	10	31
" 3 5 "	14	7	21	26	13	39
" 5 7 "	4	2	6	17	7	24
" 7 10 "	4	5	9	16	15	31
" 10 12 "	...	...	...	8	6	14
" 12 15 "	2	...	2	9	4	13
Over 15 years ...	...	...	...	39	20	59
Total ...	341	222	563	301	168	469

*Reception Houses for the Mentally Afflicted.*

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 1914 was 1,870; 949 were transferred to mental hospitals, and 901 were discharged as recovered.

Persons who become mentally deranged in gaol are placed in the observation ward at the State Penitentiary at Long Bay, which has replaced a ward at Darlinghurst Gaol, closed in 1914. At these wards sixty-seven persons were under observation during 1914.

*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 earlier and curable stages of mental diseases, wherein restraint or the special conditions of a hospital are not required. Accommodation is provided for 20 male patients; and during 1914 the number of cases treated was 141; 121 were discharged, 2 died, and 18 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 four 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	10·48	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 subscriptions; 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 are conducted in connection with this institution, and a free circulating library of embossed books is provided.

Under the Commonwealth invalid pension system provision is made for the payment of pensions to permanently blind persons above the age of 16 years.

#### 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 arranged, and the necessary tables of values have been issued to the societies for adoption.

*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; 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 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.

The work of the 1914 valuation is proceeding, and reports have been issued relating to all the societies with the exception of four. The same experience is being used as the basis of the present valuation, but on account of the enhanced interest earnings which have been maintained throughout the quinquennium it has been found possible to adopt a 4 per cent. standard in many cases.

*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 1914 there were 68 Societies, including 28 Miscellaneous; 17 possessed branches, and 51 were classed as Single Societies, though in 2 cases juvenile branches were attached.

At 31st December, 1915, there were 67 Societies, including 28 Miscellaneous; 17 possessed branches, and 50, including 2 with juvenile branches, were classed as Single Societies.

The following summary shows the branches, membership, and funds as at 31st December, 1914:—

Classification.	Branches.	Members.	Funds.
Friendly Societies Proper—	No.	No.	£
Affiliated ... ..	1,874	177,923	1,734,135
Single ... ..	25	4,402	50,796
	1,899	182,325	1,784,931
Miscellaneous Societies ... ..	28	1,434	22,342
Total... ..	1,927	183,759	1,807,273

#### *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 existing societies, however, continue to extend their sphere of operations by opening branches in new centres. One new society was registered in 1914.

#### *Membership.*

The following table shows the number of members during the ten years ended 31st December, 1914:—

Year.	Aggregate Membership.		Year.	Aggregate Membership.	
	Members.	Percentage of Population.		Members.	Percentage of Population.
1905	101,463	6·9	1910	149,579	9·1
1906	106,678	7·1	1911	164,910	9·7
1907	117,130	7·6	1912	179,932	10·1
1908	123,440	7·9	1913	188,590	10·3
1909	133,273	8·3	1914	182,325	9·8

The membership of 182,325 at 31st December, 1914, represented 9·8 per cent. of the total population of the State. The number of members entitled to benefits was 161,475, 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 635,000 persons, or one-third of the population, participate in the benefits provided by the societies.

The membership in 1914 comprised 164,844 men, 10,517 women, and 6,924 juveniles. As compared with the previous year there was a decrease of 4,960 men and 1,484 women, and an increase of 179 juveniles, the total net decrease being 6,265 members. This is the first year in which there has been a decrease in membership. This decrease is doubtless due to the depression caused by the war.

## FINANCES OF FRIENDLY SOCIETIES.

*Receipts and Expenditure.*

The receipts and expenditure of the societies for the ten years ended 31st December, 1914, 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.
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	104,313	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	50,500	52,552	455,621	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	64,261	38,043	515,331	148,576	38,359	143,040	59,154	45,989	435,118
1912	456,097	69,599	32,493	558,189	166,270	40,828	157,821	66,485	42,654	474,058
1913	489,698	75,038	37,365	602,107	73,451	45,52	170,594	69,228	49,618	508,841
1914	496,961	80,707	34,915	612,583	172,796	44,446	182,308	87,358	39,463	626,371

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 1914 on account of benefits amounted to £399,550; the figures afford convincing evidence of the importance of the societies and of their immense value to the community.

The apparent increase in the expenses of management in 1914 is due to the fact that the figures for that year include certain items of expenditure classified previously under the heading "Other."

*Accumulated Funds.*

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.
	£	£	£	£	£
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	595,238	78,264	49,852	1,506,838
1912	803,046	655,456	82,538	51,715	1,597,755
1913	839,689	719,413	87,446	52,171	1,698,719
1914	876,121	765,583	88,256	54,971	1,784,931



The total funds of the Friendly Societies at the end of 1914 amounted to £1,784,931, disposed as under:—

Mode of Disposal.	Sickness Fund.	Funeral Fund.	Medical and Management Fund.	Other Funds.	Total Funds.	
					Amount.	Per Cent.
	£	£	£	£	£	
Mortgage ... ..	697,173	555,356	14,241	26,517	1,293,287	72·5
Public Funds ... ..	2,806	3,631	645	.....	7,082	·4
Banks bearing Interest	79,746	68,746	36,077	14,857	199,426	11·2
Buildings and Freehold Property.	78,249	91,544	28,096	2,460	200,349	11·2
Other Investments ...	4,096	1,625	4,222	3,512	13,553	·7
Uninvested ... ..	25,936	22,552	17,540	7,581	73,542	4·1
In use by other Funds...	7,393	22,503	2,702	923	33,490	1·9
Total ... ..	895,399	765,957	103,523	55,850	1,820,729	102·0
Overdraft ... ..	19,278	374	15,267	879	35,798	2·0
Total Funds ... ..	876,121	765,583	88,256	54,971	1,784,931	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 84·4 per cent. of the total—short-call investments, *i.e.*, money in savings banks, other banks, and public funds, form 11·6 per cent., while cash represents 4·1 per cent. Overdrafts in the year under review represented 2 per cent., but the greater portion of these were financed by other funds, and the actual overdraft obtained from outside sources represented only ·1 per cent. of the total funds.

To state the case more concisely, ready money equal to 4 per cent. of the assets is sufficient to carry on business, with an additional 11 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 11·6 per cent. in 1914; and conversely the investments on mortgage have risen from 42·8 per cent. to 72·5 per cent. in the same period.

For the quinquennium 1910-14 the average interest earned by all societies in the sickness funds was 4·7 per cent., and in the funeral funds 4·6 per cent., the rates for the previous quinquennium being 3·9 per cent. and 4·2 per cent. respectively.

#### MISCELLANEOUS SOCIETIES.

In addition to the Friendly Societies proper there were at the end of 1914 twenty-eight Miscellaneous Societies registered under the Friendly Societies Act. Twenty-two 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 lists by contributing branches, and in some cases arrange also for medical attendance.

The receipts of the dispensaries in 1914 were £35,763, and the expenditure was £35,145, so that there was an excess of receipts amounting to £618. These bodies have received liberal grants from the Government, and with this assistance have been able to purchase land and to erect buildings, 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 1914:—

Classification.	Dispensaries.	Other Miscellaneous Societies.	Total.
Societies ... .. No.	22	6	28
Membership ... .. No.	.....	1,671	1,671
Receipts ... .. £	35,763	3,872	39,635
Expenditure ... .. £	35,145	3,823	38,968
Funds ... .. £	18,287	4,055	22,342

During the year 1914 eight Miscellaneous Societies were registered, and two were closed; during 1915 two were registered and three were closed.

#### 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 1914 to 2,433 members amounted to £14,807, and the payments on account of contributions to £8,525; of the latter amount £5,985 provided medical attendance and medicine to 4,713 aged members and widows, and £2,540 paid the contributions to the Funeral Fund of 5,061 aged members and widows.

The following is a summary of the claims for the six 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	2,466	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	8,428	3,194	4,028	3,400	2,055	17,348
1912	29	617	3,296	1,519	9,742	3,940	4,549	4,170	2,222	19,809
1913	29	681	3,480	1,607	10,065	4,300	4,874	4,521	2,297	20,716
1914	29	773	4,037	1,660	10,770	4,713	5,985	5,061	2,540	23,332

During the six years the Societies have received £101,850 in subvention. 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. In 1911 and 1912 there were further large increases, due to special causes; it is probable that henceforth the increase will be gradual.

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, 1900-1903.	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	3·82
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.

#### *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.

## 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	108
I.O.O.F.	1.64	2.92	1.73	2.39	4.63	7.01	9.71	15.49	24.72	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	28.73	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	31.93	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.

## 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, 1903-7.	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	42-974	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	26-268
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	2-157
98	1-716	1-619	1-558	1-639	1-657	1-493	1-499
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. A Provident Fund for employees of the State Government and other public bodies will be established under the Superannuation Act, 1916, which will come into operation at the beginning of the financial half-year following a period of six months after the proclamation of peace.

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, 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 should be paid to or out of the Consolidated Revenue. During the year 1914-15 the expenditure was £159,597, consisting of pensions, £152,728; refunds of contributions, £6,519; and gratuities, £350; contributions by public servants amounted to £11,453, the balance, £148,144, 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 1914-15 amounted to £2,424, the balance unallotted being £1,076.

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 are 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, 1915, the receipts of the Police Superannuation and Reward Fund amounted to £64,610, including deductions from salaries, £33,610, and special appropriation from Consolidated Revenue, £31,000; the disbursements, £67,038, included pensions, £65,628, gratuities, £1,198, and miscellaneous, £212.

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  $1\frac{1}{2}$  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, 1915, there were 29,003 contributors, the number of pensioners was 1,066, viz., 871 over 60 years of age, and 195 under 60 years of age. The average rate of pension payment was £66 9s. 9d. per annum. Since the inception of the fund 1,235 pensions have been granted; and 164 pensioners have died, 89 being over and 75 under 60 years of age, and 5 officers under 60 have been re-employed. During the year 1914-15 the receipts of the fund amounted to £66,382; the disbursements, representing pensions, gratuities, refunds, &c., amounted to £71,685. The assets of the fund at 30th June, 1915, amounted to £58,592, viz., cash in hand, £46,040, and £12,552 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 State Provident Fund will be established within six months after the commencement of the Superannuation Act, 1916, to provide pensions and other benefits for employees of the New South Wales Government and other public bodies, except those subject to the Railway Service and Police Superannuation Acts. Half the cost will be borne by the employees, except where otherwise provided, and the balance by the employers. The retirement age is 60 years, but women may elect to contribute for retirement at age 55; upon the death of a contributor or pensioner his widow will receive half the amount of pension for which he has contributed and £13 per annum for each child under 16 years. Contributions of employees will vary in accordance with age and salary; the rates in the following table indicate half cost payable twice each month:—

Age next Birthday.	Men.		Women.	
	First £52 to man, £26 to widow, £13 to each child under 16.	Subsequent increment £52 to man, £26 to widow.	Each £52 on retirement at age.	
			55 Years.	60 Years.
Years.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
16	0 2 6	0 2 2	0 2 0	0 1 2
20	0 3 2	0 2 10	0 2 8	0 1 7
25	0 4 5	0 3 11	0 4 0	0 2 4
30	0 5 9	0 5 2	0 5 11	0 3 5
35	0 7 6	0 6 10	0 8 9	0 4 10
40	0 9 11	0 9 2	0 13 4	0 6 11
45	0 13 11	0 13 2	1 2 7	0 10 6
50	1 2 1	1 1 3	2 10 6	0 17 10
55	2 5 11	2 4 10	.....	1 19 2
60	11 3 11	10 19 11	.....	10 4 5

Employees over 30 years of age may contribute at the rates prescribed for age 30 for pensions up to a maximum of £104, or if under 55 years £156, per annum. The amount of pensions will vary in accordance with salary, as shown hereunder:—

Annual Rate of Salary.		Pension.	Annual Rate of Salary.		Pension.
£	£	£	£	£	£
1	to 130	52	365	to 416	182
131	„ 156	65	417	„ 468	208
157	„ 204	78	469	„ 520	234
209	„ 260	104	521	„ 572	260
261	„ 312	130	573	„ 624	286
313	„ 364	156	625	and over.	312

Clauses of the Act, which came into operation when it received Royal assent, authorising the payment of pensions up to £104 per annum, without contribution, to employees who attain the age of 60 years after 1st January, 1914, and are retired after ten years' service. The Superannuation Act does not apply to employees having rights to pension or gratuity under the Civil Service Acts, but they may elect to come under it.

The following statement shows the total pensions and gratuities paid from the sources enumerated during the year ended 30th June, 1915:—

Particulars.	Public Revenue.	Contributions.	Total.
Pensions—	£	£	£
Judges ... ..	3,792	.....	3,792
Stipends to Clergy ... ..	213	.....	213
Public Service—			
Superannuation Act ... ..	141,343	11,453	152,796
Constitution Act ... ..	2,424	.....	2,424
Parkes' Family Grant ... ..	225	.....	225
Police Superannuation and Reward Fund.	31,000	34,628	65,628
Government Railways Superannuation.	.....	66,303	66,303
Other ... ..	849	.....	849
Total Pensions ... ..	179,846	112,384	292,230
Gratuities—			
Railway and Tramway ... ..	5,693	.....	5,693
Public Works... ..	100	.....	100
Imperial and State Contingents, South Africa and China.	681	.....	681
Public Service ... ..	350	.....	350
Police Superannuation and Reward Fund.	.....	1,219	1,219
Government Railways Superannuation Fund.	.....	2,876	2,876
Other ... ..	20,224	.....	20,224
Total Gratuities ... ..	27,048	4,095	31,143
Total Pensions and Gratuities	206,894	116,479	323,373

#### WAR PENSIONS.

The War Pensions Act, 1914-15, passed by the Commonwealth Parliament, provides 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 general administration of the Act is entrusted to a Commissioner.

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 <i>and under.</i>	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 rates of pension are as follow:—To the widow, the rate as specified above; to each child under 16 years of age, £13 per annum; and to other dependents, rates as assessed by the Commissioner, but not exceeding in the aggregate the rate specified above, plus £52 per annum. In the case of total incapacity the rates are—to the member, the rate specified above; to his wife, 50 per cent. of that rate, to children under 16 years of age and to other dependents, the same as in the case of death. In the case of partial incapacity the rates of pension are as assessed by the Commissioner. Where the pension payable is not more than 30 per cent. of the rate for total incapacity payment of a lump sum may be substituted. The maximum pension payable to a child under 16 years whose parents are dead or whose mother is dead and father totally incapacitated is £19 10s. per annum; and except to a child, wife, widow, parent, or grandparent, no pension is payable for more than two years to any dependent who is able to earn a livelihood. Pensions to female dependents cease upon marriage or re-marriage.

Operations under the War Pensions Act to 28th April, 1916, were as follow:—

			In New South Wales.		In Common- wealth.
Pension claims received ...	...	...	3,409	...	10,704
granted ...	...	...	2,064	...	6,266
cancelled ...	...	...	21	...	233
Deaths ...	...	...	6	...	20
Annual liability at 28/4/16	...	...	£69,057	...	£199,079

Under the provisions of an Amending Act passed in 1916 the rates of pensions have been increased.

#### 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 £377 was paid as pensions to persons in New South Wales during the year ended 30th June, 1915.

#### 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 State system was maintained until the payment of invalidity pensions was undertaken by the Commonwealth, as from 15th December, 1910. 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 pension is the same as in the case of old-age pensions. The applicant must have resided for at least five years, and have become incapacitated or blind in Australia; 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
1915	2,204	388	150	538	4,158	3,980	8,138

\* From 15th December, 1910.

The invalid pensions current in New South Wales on 30th June, 1915, represented 4.4 per thousand of population compared with 4.1 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 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 ended 30th June.	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
1915	4,732	2,845	834	3,679	14,569	18,335	32,904

The old-age pensioners in New South Wales represent 17·7 per thousand of population; in the Commonwealth the rate is 18·4.

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 is 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 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 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, 1915, was as follows:—

							£
Paid as pensions	...	...	...	...	...	...	2,691,317
Paid to benevolent asylums for maintenance of pensioners	...	...	...	...	...	...	27,630
Cost of administration	...	...	...	...	...	...	48,018
<b>Total</b>							<b>£2,766,965</b>

*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, 1915, 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, 1915:—

State.	Old-age.		Invalid.		Total.	
	Pensioners.	Average Fortnightly Pension.	Pensioners.	Average Fortnightly Pension.	Old-age and Invalid Pensioners.	Annual Liability (approximate).
New South Wales..	32,904	s. d. 19 5	8,138	s. d. 19 8	41,042	£ 1,037,192
Victoria ... ..	28,365	19 5	6,054	19 8	34,419	871,806
Queensland ... ..	11,924	19 5	2,430	19 7	14,354	362,804
South Australia ...	9,018	19 1	1,511	19 6	10,529	262,340
Western Australia..	4,153	19 3	935	19 7	5,088	127,686
Tasmania ... ..	4,528	19 0	1,349	19 6	5,877	145,730
<b>Total</b> ... ..	<b>90,892</b>	<b>19 4</b>	<b>20,417</b>	<b>19 8</b>	<b>111,309</b>	<b>2,807,558</b>

## 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.	Dwell-ings.	Propor- tion per cent.	Nature of Dwelling.	Dwell-ings.	Propor- tion per cent.
Private house ... ..	317,462	95·33	Military and Naval Establish- ment ... ..	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 edu- cational) ... ..	135	·04	Aboriginal Camps in which Whites or Half-castes were living... ..	21	·01
Hospital ... ..	479	·14	Other Camps without dwell- ings ... ..	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.	Inmates.
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	1,763	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
Ruberoïd 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; 123 new buildings were erected during 1915, and 352 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. During the past five years new buildings have been erected in the city and suburbs at a rate averaging 7,650 per annum:—

Year.	New Buildings.			Net Increase of Population, Sydney and Suburbs.
	Sydney.	Suburbs.	Total.	
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
1915	123	5,943	6,066	10,500

Since 1911 the number of new buildings in the suburban areas has largely increased, but there has been a considerable decline in building operations since the commencement 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	55s. and under 60s.	78	.03
5s. and under 10s.	90,254	34.18	£3 .. £4	700	.26
10s. ,, 15s.	76,689	29.05	£4 .. £5	242	.09
15s. ,, 20s.	28,122	10.65	£5 .. £6	123	.05
20s. ,, 25s.	16,040	6.08	£6 .. £7	68	.03
25s. ,, 30s.	7,372	2.79	£7 .. £8	23	.01
30s. ,, 35s.	4,449	1.69	£8 .. £9	10	.00
35s. ,, 40s.	1,175	.44	£9 .. £10	5	.00
40s. ,, 45s.	1,823	.69	£10 and over ...	15	.01
45s. ,, 50s.	301	.11	Unspecified ...	55,741	...
50s. ,, 55s.	558	.21	Total ...	319,766	100.00

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 in a judgment given in February, 1914, in the Court of Industrial Arbitration 12s. per week was assumed to be a fair average rental in Sydney for a workman's home of three rooms and a kitchen.

The increase in house rents was the subject of an investigation by a Select Committee of the Legislative Assembly of New South Wales appointed in 1911.

The rise was ascribed to 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.

Following the recommendation of the Committee the Fair Rents Act was passed in 1915; it provides for the determination of the fair rent of any dwelling-house which is the subject of a lease for a period not exceeding three years at a rental not exceeding £156 per annum. The fair rent is determined at a rate not less than, and not more than 2½ per cent. above, the rate of interest charged upon overdrafts by the Commonwealth Bank, plus rates and taxes, and an amount to cover repairs, maintenance, renewals, insurance, depreciation of buildings, and allowance for time when the house may be untenanted; except under special circumstances the fair rent may not exceed that at which the house was let on 1st January, 1915. In the case of furnished houses, the court may determine also the amount of rent to be paid for the furniture.



For the purposes of the Act the capital value of a dwelling is the unimproved value of the land plus the estimated cost of erecting a similar dwelling-house thereon at the date of application, less depreciation. The Act, which applies within proclaimed localities, commenced on 1st January, 1916, and was proclaimed in the Metropolitan District.

The practical working of the Act is effected by means of a Fair Rents Court.

#### 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; 122 cottages had been completed and let by ballot at 30th June, 1915, and contracts for 50 were in hand. The cottages are built of brick or concrete blocks, 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 £434 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.	Accommodation in addition to kitchen, &c.	Number of Cottages.
	£	Rooms.	
14s. 6d.—15s.	505	3	39
15s. 6d.	434	3	8
15s. 6d.	457	4	1
16s.	500	3	25
16s.	525	3	12
17s.—18s.	595	4	28
17s. 6d.	446	4	3
18s. 6d.—21s.	640	3	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. Owing to the increased cost of loan moneys the rental of cottages costing £446 was fixed at 17s. 6d. to permit a net return of  $4\frac{1}{2}$  per cent., instead of the statutory 4 per cent. minimum.

The expenditure to 30th June, 1915, amounted to £86,358, of which £60,636 represented the cost of erection of houses, and the balance the expenditure on drainage, levelling, and roadmaking; in addition a sum of £3,834 was paid as fees of the Board, salaries, wages, and other expenses. During the financial year 1914-15 the rentals contracted for amounted to £4,590, and the rents received to £4,482; at the end of the year the arrears of rent outstanding amounted to £71.

#### *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. The capital employed amounted to £1,303,168 as at 30th June, 1915, and the net revenue during the year was £48,904.

#### *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.

A block of flats has been erected by the Council on land acquired in Chippendale in connection with street improvements. The buildings are three storeys high, and cover a ground space of 279 feet by 78 feet; the total cost, including land, was £49,814. At each end there are four shops opening upon business thoroughfares, and the remainder of the building is divided into 71 suites of self-contained flats of two, four, or six rooms; the rents range from 12s. 6d. to 27s. 6d. per week.

## 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.

The system came into operation on 1st July, 1914; during the first year 840 applications were received for advances amounting to £337,894; 728 were approved, the total amount being £283,870, of which £221,900 had been advanced at 30th June, 1915.

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 New South Wales in 1836, 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.

The number of recipients of these subventions in June, 1916, was two, the total allowance made during 1914-15 amounting to £212.

*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 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 were made subsequently of this Bishopric, viz., New Zealand and Tasmania (Van Diemen's Land) formed into suffragan sees in 1842, and Sydney, Newcastle, Adelaide, and Melbourne dioceses 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.

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 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. 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 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." 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.

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.

The churches of the Baptist Denomination, which are independent of each other, 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 Jewish element in the population of New South Wales dates from its earliest years of settlement.

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, at West Maitland and Newcastle; and there is one in existence at Broken Hill.

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 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 ... ..	59	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.
<b>Protestant—</b>						
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	183,099	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	7,357	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
<b>Total, Protestants ... ..</b>	<b>791,346</b>	<b>965,654</b>	<b>1,182,232</b>	<b>71·30</b>	<b>72·18</b>	<b>73·16</b>
Roman Catholic ... ..	286,911	347,286	412,680	25·85	25·96	25·54
Greek Church... ..	253	561	1,083	·02	·04	·07
<b>Others—</b>						
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	...	...	...
<b>Total ... ..</b>	<b>1,123,954</b>	<b>1,354,846</b>	<b>1,648,448</b>	<b>100</b>	<b>100</b>	<b>100</b>

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, 1916, was 1,705, those for each denomination being:—Church of England, 513; Roman Catholic, 415; Methodist, 291; Presbyterian, 227; Congregational (Independent), 72; Baptist, 63; Church of Christ, 26; Salvation Army, 36; Seventh Day Adventist, 11; Jews, 5; German Evangelical Lutheran Church, 5; Evangelical Lutheran Church, 3; Free Presbyterian Church of Australia, 6; Reorganised Church of Jesus Christ of Latter Day Saints, 9; Australian Aborigines Mission, 4; Catholic Apostolic Church, 2; Aborigines Inland Mission, 2; and one each for the following:—Lay Methodist 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, Devonshire-street Mission, Mascot Congregational Church, Full Gospel Mission, Stanmore Spiritualist Temple, Orthodox (Antioch) Church.

## 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 the Act known as the Navigation Act, 1912, has received the Royal Assent, but will not become law until a date to be proclaimed in the Commonwealth.

Within Port Jackson control of shipping, and matters incidental thereto, is vested in the Sydney Harbour Trust.

### SYDNEY HARBOUR TRUST.

The Sydney Harbour Trust was created by Act of Parliament in 1901. Previous to that year the whole of the shipping of New South Wales was regulated by the Navigation Department, but owing to the growing mercantile importance of Sydney the complete supervision and control of Port Jackson and its shipping, including lighthouses (excepting Macquarie lighthouse), beacons, wharves, &c., was vested in the Trust. The Trust is administered by a Board of three Commissioners. The issue of licenses and certificates to Masters and Marine Engineers is still within the province of the Navigation Department; but otherwise the direction of all matters appertaining to shipping within the Port is under the jurisdiction of the Trust.

The revenue of the Trust for the year ended 30th June, 1915, was £464,681, and the expenditure £129,856.

### 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 superintendence of lights, and 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; motor boats; safety and prevention of accidents; unseaworthy ships; life-saving appliances, lights, fog-signals, and sailing rules; and the accommodation for seamen. The regulation of lighthouses was transferred to Commonwealth control on 1st July, 1915. The Department administers the Wharfrage 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, wharfrage rates, and tonnage rates. In addition to these charges, regulations under the Navigation Act, 1901, stipulate the fees for "swinging ships for 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.

*Wharfrage Rates and Tonnage Rates.*—These rates are charged at ports other than Sydney in accordance with schedules to the Wharfrage and Tonnage Rates Act, 1901.

#### PORT JACKSON (SYDNEY HARBOUR).

*Inward Wharfrage and Harbour Rate.*—Payable by owners on goods entering the port of Sydney, 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 Wharfrage 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 ton 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 ½d. 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 ½d. per ton per day, for the first six days, on the registered tonnage of the vessel up to 5,000 tons, and ¼d. 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 since 1905, 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.												
1905	1,831	3,401,019	717	1,182,267	57	74,085	34	80,772	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	8,917	2,598	5,283,719
1907	2,163	4,275,985	909	1,657,254	76	92,320	32	31,644	53	16,760	3,238	6,070,933
1908	2,128	4,409,621	908	1,746,070	39	58,910	50	54,908	71	29,375	3,190	6,298,784
1909	2,062	4,507,187	620	1,182,051	42	72,894	71	86,468	66	21,354	2,861	5,870,034
1910	2,021	4,791,025	694	1,393,133	64	87,851	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	52,041	3,127	6,822,135
1912	2,333	5,732,055	806	1,570,581	65	85,148	49	58,798	101	43,464	3,354	7,490,046
1913	2,275	6,174,321	908	1,771,032	67	87,488	57	63,139	88	21,521	3,398	8,117,561
1914*	1,163	3,262,307	527	1,045,127	29	36,273	27	31,743	48	17,552	1,799	4,399,002
1914-15	2,032	5,399,836	765	1,487,487	50	72,990	65	64,390	88	26,800	3,000	7,051,563
CLEARANCES.												
1905	1,413	2,922,461	1,062	1,586,134	103	135,193	36	31,479	80	8,841	2,694	4,684,105
1906	1,516	3,277,987	1,115	1,702,472	140	185,793	38	37,486	74	11,373	2,883	5,275,631
1907	1,718	3,717,792	1,221	2,044,768	155	197,832	32	31,957	79	16,995	3,205	6,009,332
1908	1,592	3,442,795	1,372	2,408,946	103	154,111	49	51,235	100	46,040	3,219	6,308,125
1909	1,559	3,705,231	979	1,676,759	93	123,761	49	61,417	87	32,258	2,767	5,659,420
1910	1,676	4,239,857	1,082	1,915,312	115	146,656	54	64,619	108	45,411	3,083	6,471,855
1911	1,691	4,459,039	1,151	2,106,013	104	141,332	51	61,380	149	66,027	3,146	6,893,762
1912	1,737	4,822,859	1,293	2,395,674	107	124,531	48	58,509	111	51,402	3,346	7,453,005
1913	1,716	5,220,913	1,388	2,617,578	97	122,554	55	66,829	119	43,227	3,375	8,071,101
1914*	923	2,840,957	691	1,340,997	53	74,819	26	30,485	62	31,408	1,765	4,318,636
1914-15	1,586	4,764,466	1,199	2,219,703	105	137,234	52	61,768	117	36,743	3,059	7,219,914

\* Six months ended 30th June.

Of "Other Ports," grouped together in the above table, the more important are Bellambi and Richmond River. Following are the figures for each of the "Other Ports," for 1914-15 :—

Port.	Entries.		Clearances.	
	Vessels.	Tonnage.	Vessels.	Tonnage.
Tweed River ... ..	29	3,239	26	2,933
Richmond River ... ..	31	5,230	33	5,618
Clarence River... ..	4	416	5	938
Bellinger River ... ..	...	.....	2	324
Nambucca ... ..	1	185	6	980
Port Macquarie ... ..	...	.....	2	324
Manning River ... ..	1	185	2	370
Port Stephens ... ..	3	1,847	24	7,036
Bellambi ... ..	15	14,878	17	18,220
Jervis Bay ... ..	4	820	...	.....
	88	26,800	117	36,743

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 at intervals of five years since 1860, with the average tonnage per vessel, 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
1914-15	3,000	7,051,503	3,059	7,219,914	2,355

Between 1860 and 1915, the number of vessels engaged in the trade of the State has more than doubled, the entries increasing from 1,424 to 3,000. In the same period the tonnage of the vessels increased sixteen times.

The average tonnage has advanced steadily, and in the last twenty years very rapidly.

Although the figures for 1915 show a slight decrease on those of the previous year, side by side with an advance in tonnage has been an improve-

ment 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 outside the Commonwealth, direct and indirect (*via States*), for 1914-15 :—

State.	Entries Oversea.			
	Direct.		<i>Via States.</i>	
	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales ... ..	626	1,364,242	440	1,653,893
Victoria ... ..	236	660,865	356	1,383,057
Queensland ... ..	180	336,088	153	604,175
South Australia ... ..	130	496,277	141	581,383
Western Australia ... ..	282	925,511	20	80,610
Tasmania ... ..	81	324,462	14	36,411
Northern Territory ... ..	33	67,510	.....	.....

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 1914-15, and show the relative pre-eminence of New South Wales :—

State.	Oversea and Interstate.			
	Entries.		Clearances.	
	Vessels.	Tonnage.	Vessels.	Tonnage.
New South Wales ... ..	3,000	7,051,503	3,059	7,219,914
Victoria ... ..	2,324	5,290,063	2,329	5,308,817
Queensland ... ..	917	2,110,254	914	2,125,396
South Australia ... ..	933	2,878,843	939	2,880,689
Western Australia ... ..	651	2,369,311	656	2,385,356
Tasmania ... ..	1,004	1,178,997	1,005	1,181,458
Northern Territory ... ..	82	173,943	81	172,482

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.

Port.	Tonnage Entered excl. Coastwise.	Port.	Tonnage. Entered excl. Coastwise.
<i>Sydney</i> ... ..	5,399,836	Malta—Valetta ... ..	5,546,093
Melbourne ... ..	5,206,130	Aden ... ..	3,925,044
Brisbane ... ..	1,926,378	Singapore ... ..	8,636,467
Port Adelaide ... ..	2,603,156	Penang ... ..	4,419,092
Fremantle ... ..	1,539,842	Hong Kong ... ..	11,483,663
Hobart ... ..	681,025	Cape Town... ..	2,542,170
Auckland ... ..	821,236	Durban ... ..	2,692,935
London ... ..	13,006,065	Montreal ... ..	2,037,764
Liverpool (including Birkenhead) ... ..	11,958,542	Halifax ... ..	2,034,531
Cardiff ... ..	7,284,899	Victoria (B.C.) ... ..	2,149,395
Newcastle and North and South Shields..	5,998,570	Hamburg ... ..	12,346,600
Hull ... ..	3,658,831	Petrograd ... ..	2,024,418
Southampton ... ..	4,652,310	Lisbon ... ..	8,734,011
Dover ... ..	1,634,824	Funchal ... ..	7,425,518
Grimsby ... ..	1,969,056	Barcelona ... ..	2,395,805
Manchester (includ- ing Runcorn) ... ..	1,884,987	Marseilles ... ..	7,986,609
Middlesbrough ... ..	1,843,065	Havre ... ..	3,631,849
Newport ... ..	2,016,103	Genoa ... ..	5,846,731
Plymouth ... ..	3,460,244	Naples ... ..	6,254,554
Swansea ... ..	1,919,627	Trieste ... ..	3,054,867
Glasgow ... ..	3,120,436	Antwerp ... ..	13,686,297
Leith... ..	1,441,155	Rotterdam ... ..	11,559,443
Dublin ... ..	313,954	Copenhagen ... ..	3,440,901
Belfast ... ..	590,666	New York ... ..	13,673,765
Cork (including Queenstown) ... ..	3,011,825	Boston and Charles- town ... ..	2,948,244
Calcutta ... ..	2,002,585	New Orleans ... ..	2,214,681
Bombay ... ..	2,174,104	Shanghai ... ..	4,471,447
Colombo ... ..	7,713,987	Monte Video ... ..	8,598,326
Gibraltar ... ..	6,315,267	Rio de Janeiro ... ..	6,387,400
		Kobe ... ..	6,059,500

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 latest figures, including coastwise, for the principal ports of Australasia and the United Kingdom:—

Port.	Tonnage. Entered incl. Coastwise.	Port.	Tonnage. Entered incl. Coastwise.
<i>Australia—</i>		<i>England—</i>	
Sydney ... ..	8,164,333	London ... ..	18,832,660
Melbourne ... ..	5,658,930	Liverpool (including Birkenhead) ... ..	16,061,969
Newcastle ... ..	4,097,060	Cardiff ... ..	11,542,366
Port Adelaide ... ..	2,603,156*	Southampton ... ..	5,844,221
Brisbane ... ..	2,686,917	Hull ... ..	4,731,846
Fremantle ... ..	1,659,679	Plymouth ... ..	4,209,089
Townsville ... ..	1,463,303	<i>Scotland—</i>	
Albany ... ..	1,485,850	Glasgow ... ..	6,015,883
Hobart ... ..	709,107	Leith ... ..	2,144,953
<i>New Zealand—</i>		<i>Ireland—</i>	
Wellington ... ..	3,375,015	Cork (including Queenstown) ... ..	3,561,055
Lyttelton ... ..	2,195,795	Belfast ... ..	3,599,233
Auckland ... ..	1,918,093	Dublin ... ..	3,499,068
Dunedin ... ..	972,029		

\* Exclusive of Coastwise Shipping—not available.

The total number of vessels from all ports entering Sydney Harbour in 1915 was 9,446, having a net registered tonnage of 8,164,333, and the value of overseas, interstate, and State imports was £46,217,756.

Wharfage space in Sydney Harbour is commodious, and as dredging is continually carried on ships may now load to a deep draught. The s.s. "Ceramic," 18,500 tons, left the port drawing 30 feet 11 inches.

The rate of progress of the shipping trade of Sydney has been uniform, and the vessels registered as entered considerably exceed in tonnage those cleared. This is caused by reckoning vessels which leave Sydney for Newcastle for the purpose of shipping coal, as departures from Newcastle, and not from Sydney. Consequently the clearances at 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:—

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	333,242
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
*1914	3,262,307	2,840,957	1,045,127	1,340,967
1914-15	5,399,836	4,764,466	1,487,487	2,219,703

\* Six months ended 30th June.

## 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. From the table given below, distinguishing British and foreign shipping at intervals since 1860, 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. The disturbance of trade, caused by war conditions, has affected this average, the figures for 1914-15 showing British shipping tonnage as rising to 89·08 per cent. and foreign tonnage falling proportionately to 10·92 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
*1914	6,918,688	1,792,950	8,711,638	79·42	20·58
1914-15	12,712,330	1,559,087	14,271,417	89·08	10·92

\* Six months ended 30th June.

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 possessions. 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 1915, 40·7 per cent. of the total was Australian.

The present war has materially altered foreign tonnage, as may be gathered from the statement below, which shows the number and tonnage of shipping of the principal nationalities that entered and cleared the ports of New South Wales in 1913, 1914, and 1915, as well as the tonnage proportions per cent. :—

Nationality.	Entries and Clearances.						Tonnage— Percentage of each Nationality.		
	1913.		1914. Jan. to June.		1914-15. Year ended, 30th June.		1913.	1914.	1914-15.
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.			
British—									
Australian .. ..	3,231	5,711,398	1,642	2,960,114	3,259	5,827,097	31·28	33·97	40·82
New Zealand .. ..	771	1,359,138	379	677,813	712	1,265,033	8·40	7·78	8·86
United Kingdom ..	1,589	6,081,117	857	3,271,569	1,404	5,562,020	37·56	37·55	38·96
Other British .. ..	22	30,459	8	9,192	30	58,180	·19	·10	·40
Total .. ..	5,613	13,182,112	2,886	6,918,688	5,405	12,712,330	81·43	79·40	89·03
Foreign—									
France .. ..	150	313,252	85	169,064	109	192,768	1·93	1·94	1·35
Germany .. ..	487	1,533,728	251	917,682	68	215,254	9·47	10·51	1·58
Norway .. ..	183	353,843	136	274,855	146	260,810	2·19	3·15	1·89
Sweden .. ..	23	57,643	14	35,550	20	50,874	·36	·48	·35
Netherlands .. ..	52	128,870	32	82,098	61	179,661	·80	·94	1·26
Italy .. ..	29	47,770	19	31,664	17	29,206	·29	·36	·20
Japan .. ..	103	332,471	46	159,930	108	381,432	2·05	1·83	2·67
United States of America .. ..	76	148,553	32	66,536	84	163,172	·92	·76	1·14
Other Nationalities	52	90,060	33	55,571	41	76,910	·56	·63	·53
Total .. ..	1,155	3,006,490	678	1,792,950	654	1,559,087	18·57	20·60	10·97
Grand Total .. ..	6,768	16,188,602	3,564	8,711,638	6,059	14,271,417	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.					
	1900.		1910.		1914-15.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
British Empire—						
Australian States ... ..	3,082	3,861,154	3,413	6,275,901	3,726	7,645,870
United Kingdom ... ..	341	954,232	484	2,029,216	372	1,843,258
New Zealand ... ..	540	598,710	573	1,125,492	573	1,149,850
India and Ceylon ... ..	57	138,993	59	178,571	108	349,715
Hong Kong ... ..	68	121,933	26	40,392	23	34,833
Canada ... ..	41	76,477	42	145,481	51	231,451
Union of South Africa—						
Cape Colony ... ..	152	240,755	16	30,127	} 26	56,172
Natal ... ..	40	60,701	19	46,434		
Fiji ... ..	65	64,125	66	101,754	65	168,158
Straits Settlements ... ..	19	31,212	62	151,091	53	121,688
Papua ... ..	14	11,448	20	13,657	25	37,425
Ocean Island ... ..	...	.....	30	63,260	29	64,290
Other British Possessions ... ..	46	46,653	38	39,997	171	552,474
Total, British Countries ... ..	4,465	6,206,393	4,848	10,241,373	5,222	12,255,184
Foreign Countries—						
France ... ..	44	100,793	51	148,137	25	77,799
Germany ... ..	70	234,817	155	510,510	32	111,112
Belgium ... ..	13	28,129	12	34,126	...	.....
United States of America ... ..	157	303,187	183	403,343	226	591,775
China ... ..	19	41,161	...	.....	...	.....
Japan ... ..	34	83,179	93	239,713	66	204,257
New Caledonia ... ..	118	143,867	59	107,341	46	79,503
Java ... ..	45	89,129	46	104,488	60	168,952
Philippine Islands ... ..	31	44,825	47	125,945	26	75,541
Hawaiian Islands ... ..	94	107,248	27	62,841	...	.....
Peru ... ..	28	37,411	44	58,389	...	.....
Chile ... ..	211	295,829	207	443,202	119	264,893
Other Foreign Countries ... ..	169	154,535	200	282,566	237	442,401
Total, Foreign Countries ... ..	1,033	1,664,110	1,124	2,520,601	837	2,016,233
Total ... ..	5,498	7,870,503	5,972	12,761,974	6,059	14,271,417

Of the total tonnage amounting to 14,271,417 in 1914-15, vessels from and to other Australian States provided 7,645,870 or slightly under 50 per cent. The United Kingdom furnished the next largest tonnage, with 1,843,258, equal to 12·9 per cent., followed by New Zealand with 1,149,850 tons, or 8 per cent. The United States follows with 591,775 tons, being 4·1 per cent., then Chile with 264,893, Japan with 204,257, and Java with 168,952 tons completes the list of important tonnages. Germany with 111,112 tons is sixth in the list; in 1913 she headed the foreign tonnages, but on the declaration of war in August, 1914, the shipping trade with this country ceased. Several circumstances have contributed to the fall in Chilean trade, of which the 1914 coal strike and the prohibition of the export of coal are the most notable.

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.

#### 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 1915 is the lowest recorded, being 374,141, or 2 per cent. of the total shipping, as compared with steam tonnage, 13,897,276, or 98 per cent. 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
*1914	4,147,905	4,119,514	245,097	199,122	94·41	95·39
1914-15	6,892,390	7,004,886	159,113	215,028	97·74	97·03

\* Six months ended 30th June.

#### 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 the year ending 30th June, 1915 :—

Nationality.	Entries.				Clearances.			
	With Cargo.		In Ballast.		With Cargo.		In Ballast.	
	Steam.	Sailing.	Steam.	Sailing.	Steam.	Sailing.	Steam.	Sailing.
British—								
Australian ...	1,191	26	396	5	1,574	31	34	2
Other ...	811	20	218	18	961	37	75	6
Foreign ...	185	39	46	45	214	93	19	13
Total ...	2,187	85	660	68	2,749	161	128	21

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.

## 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 1915 the tonnage entered in ballast amounted to 1,287,158 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	17·12	1·69
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
*1914	817,211	119,139	195,655	2,461	14·36	1·72
1914-15	1,203,440	330,191	83,718	23,139	18·25	4·89

\* Six months ended 30th June.

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 year ended 30th June, 1915 :—

Port.	Vessels.	Tonnage.	Crews.	Port.	Vessels.	Tonnage.	Crews.
Bateman's Bay..	95	11,779	1,214	Moruya ... ..	72	9,568	844
Bellinger River..	79	11,037	992	Nambucca River ... ..	192	24,130	2,348
Byron Bay ... ..	131	81,948	5,503	Narooma ... ..	88	10,202	1,092
Camden Haven... ..	102	14,025	1,423	Port Hunter (Newcastle)..	4,993	4,097,060	29,662*
Cape Hawke ... ..	168	16,791	1,878	Port Jackson (Sydney) ...	9,466	8,164,333	150,071*
Clarence River ... ..	227	77,955	9,456	Port Kembla (Wollongong)	665	140,470	9,165
Coff's Harbour ... ..	376	127,514	8,769	Port Macquarie ... ..	157	27,458	2,287
Edon ... ..	229	169,937	7,544	Port Stephens ... ..	444	31,013	2,729
Kiama ... ..	363	53,127	4,893	Richmond River ... ..	302	87,337	5,828
Lake Macquarie ... ..	104	4,669	562	Shoalhaven ... ..	76	9,240	1,038
Macleay River ... ..	228	24,319	4,227	Tweed River ... ..	126	17,183	1,563
Manning River ... ..	205	31,501	4,333	Woolgoolga ... ..	131	37,382	2,612

\* 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 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 recorded.

## CREWS.

In 1902, the crews of vessels entering New South Wales ports averaged 42 per vessel; in 1914-15, 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 years 1909-15:—

Nationality.	1902.	1909.	1910.	1911.	1912.	1913.	1914-15.
<b>Entries:</b>							
British—							
Australian ...	49,285	59,197	61,387	65,351	69,960	79,405	82,684
United Kingdom ...	41,214	54,739	61,199	66,100	69,963	74,547	63,185
Other Possessions...	10,298	16,128	16,336	17,825	21,559	21,099	21,114
Total British ...	100,797	130,064	138,922	149,276	161,482	175,051	166,983
Foreign ...	20,680	24,217	23,698	26,876	31,537	32,685	17,917
Total Crews ...	121,477	154,281	162,620	176,152	193,019	207,736	184,900
<b>Clearances:</b>							
British—							
Australian ...	48,530	57,356	62,898	65,827	69,468	79,352	83,488
United Kingdom ...	41,286	53,349	62,423	65,195	68,538	72,903	64,990
Other Possessions...	9,608	15,932	16,287	17,291	21,365	21,003	20,936
Total British ...	99,424	126,637	141,608	148,313	159,371	173,258	169,414
Foreign ...	20,496	23,890	23,788	26,864	31,176	32,845	18,677
Total Crews ...	119,920	150,527	165,396	175,177	190,547	206,103	188,091

The crews of shipping on the New South Wales register at 30th June, 1915, numbered 7,038, viz., 5,114 on steamers, 434 on motor vessels, and 1,490 on sailing vessels. On the shipping added to the registers during the year ending 30th June, 1915, the crews were 335, viz., steam, 228; motor, 39; sailing, 68.

## CERTIFICATES AND LICENSES.

*Department of Navigation.*

During year ending 30th June, 1915, the Department of Navigation issued 851 certificates as under :—

Master—Extra ... .. 9	Marine Surveyor ... .. 2
Foreign-going ... .. 11	Pilotage ... .. 41
Coast Trade ... .. 4	Compass Adjuster ... .. 4
Harbours and Rivers .. 53	Coxswains and Drivers of
Mate—Foreign-going —1st ... 20	Motor Boats—
—2nd ... .. 13	Coxswains ... .. 281
Coast Trade —1st ... .. 1	Drivers ... .. 309
Engineer —1st ... .. 33	Total ... .. 851
—2nd ... .. 22	
—3rd ... .. 48	

The certificates issued to trading vessels during year ending 30th June, 1915, numbered 416, distributed among coastal ports as follows :—

Port.	Vessels.	Tonnage.	Passenger capacity.	Port.	Vessels.	Tonnage.	Passenger capacity.
Sea-going Steamers				Harbour and River			
Sydney ... .. 191	386,567	13,286		Steamers ( <i>contd.</i> )—			
				Port Stephens ... 3	173	353	
				Richmond River 7	369	1,234	
				Tweed River ... 3	164	767	
				Total ... .. 105	14,089	52,958	
Harbour and River				Motor Boats ... 92	.....	2,416	
Steamers—				Sailing Vessels—			
Sydney ... .. 67	12,077	46,356		Sydney ... 28	5,334	.....	
Newcastle ... 9	384	1,872		SUMMARY.			
Clarence River ... 10	568	1,576		Steamers ... .. 296	400,656	66,244	
Hawkesbury R... 1	117	163		Motor Boats ... 92	.....	2,416	
Lake Macquarie... 1	88	456		Sailing Vessels ... 28	5,334	.....	
Macleay River ... 1	60	72		Total ... .. 416	405,990	68,660	
Manning River ... 2	56	76					
Port Macquarie... 1	33	33					

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 1914–15 numbered 78; viz., 22 at Newcastle; 15 at Clarence River; 9 at Hawkesbury River; 7 at George's Bay; 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, 1915, there were 32 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 ... .. 488	24,957	Water Boats ... .. 17	679		
Ferry Steamers ... .. 69	8,379	Hulks ... .. 18	11,888		
Tugs ... .. 58	1,550	Punts ... .. 13	108		
Launches—Steam ... .. 10	121	Moorings ... .. 941	.....		
Oil ... .. 48	.....				

## 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 some of the foreign lines are assisted by subventions and contributions from national exchequers.

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 is 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. The rates of freight payable on perishable produce are stipulated in the contract.

An annual subsidy is given to Burns, Philp, & Co., by the New South Wales Government, for the maintenance of a monthly service with Java ports and Singapore, and by the Commonwealth for the Pacific Islands service.

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 is subsidised.

## 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.

Overseas the New South Wales trade during 1914-15 included direct shipping to the following places within the British Empire:—

United Kingdom.	Mauritius.
Canada.	New Zealand.
Fiji.	Norfolk Island
Gilbert Islands.	Ocean Island.
India.	South African Union.
	Straits Settlements.

There is also considerable indirect shipping to nearly all these countries.

Trade with Germany, Austria-Hungary and other countries with whom the Empire is at present at war, is non-existent.

In the New South Wales shipping trade the greater part of the business is conducted by regular liners; those trading with ports outside Australia are generally owned and controlled by companies registered outside the Commonwealth, but 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 may 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.

## RATES OF FREIGHTS.

Distance from foreign trading centres renders freight a large item in the cost of placing the products of the State on oversea 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 three years, 1912-14, as compared with 1905, and shows that the increases have affected all the principal articles of export:—

Article.	Freight rate.			
	1905.	1912.	1913.	1914.
Wool (greasy) ... .. lb.	$\frac{1}{2}$ d. to $\frac{1}{2}$ d.	$\frac{1}{4}$ d. to $\frac{1}{2}$ d.	$\frac{1}{2}$ d.	$\frac{1}{2}$ d. to $1\frac{1}{2}$ d.
Wheat ... .. ton	16/3 to 23/9	10/- to 35/-	25/- to 37/6	.....
Frozen meat ... .. lb.	$\frac{1}{2}$ d.	$\frac{1}{8}$ d. to $\frac{1}{4}$ d.	$\frac{1}{8}$ d. to $\frac{1}{4}$ d.	$\frac{1}{8}$ d. to $\frac{1}{2}$ d.
Preserved meat ... .. 40 cub. ft.	22/6 to 25/-	30/-	30/-	30/- to 55/-
Rabbits ... .. "	25/- to 40/-	50/-	55/-	55/- to 65/-
Butter ... .. 56 lb.	1/9 to 1/10	2/- to 2/6	2/- to 2/6	2/- to 2/9
Tallow ... .. ton	22/6 to 35/-	42/6	47/6	47/6 to 65/-
Leather ... .. "	25/- to 40/-	60/-	80/-	80/- to 95/-
Hides ... .. "	27/6 to 32/6	40/- to 52/6	50/- to 60/-	55/- to 80/-
Timber ... .. 100 sup. ft.	4/- to 5/-	6/-	6/9	6/9 to 8/6
Copra ... .. ton	20/- to 37/6	40/-	42/6	42/6 to 80/-
Measurement goods 40 cub. ft.	25/- to 45/-	35/-	40/- to 45/-	40/- to 55/-

During 1914 the rates remained firm throughout. 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 the freights for products such as wool (greasy) were practically the same as to London.

Freights for wool to the East Coast of the United States of America and to Japan were as under:—

Route.	Freight rate.		
	1912.	1913.	1914.
Wool (Greasy)—			
To United States of America—			
Via London or Liverpool ... ..	$\frac{1}{2}$ d. to $1\frac{1}{2}$ d.	$\frac{1}{2}$ d. to $\frac{1}{2}$ d.	$\frac{1}{2}$ d. to $1\frac{1}{2}$ d.
,, San Francisco to Boston and New York.	$\frac{1}{2}$ d.	$\frac{1}{2}$ d. to $\frac{1}{2}$ d.	.....
To Boston, direct ... ..	$1\frac{1}{2}$ d. to d.	$\frac{1}{2}$ d. to $\frac{1}{2}$ d.	$\frac{1}{2}$ d. to $1\frac{1}{2}$ d.
To Japan ... ..	$\frac{1}{2}$ d. and 5 % primage.	$\frac{1}{2}$ d. and 5 % primage.	$\frac{1}{2}$ d. and 5 % primage.
Wool (Scoured)—			
To Japan ... ..	$\frac{1}{2}$ d. and 5 % primage.	$\frac{1}{2}$ d. and 5 % primage.	$\frac{1}{2}$ d. and 5 % primage.

COASTAL AND HARBOUR LIGHTS.  
Lighthouses and Signal Stations.

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 30th June, 1915, 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 ... ..	Nautical miles. 19
Twofold 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
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
Cook's River (Botany Bay).	33 57	„ ... ..	White ... ..	...
M. Port Jackson, Sydney—Macquarie (Outer South Head).	33 51	Revolving — 4 Flashes 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 $\frac{1}{4}$ 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



Location of Lighthouse.	South Latitude.	Description of Light.	Colour of Light.	Distance visible (See note).
	° ' "			Nautical miles.
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 3 min.	White (Incandescent petroleum)	20
Clarence River ... ..	29 26	Fixed ... ..	White ... ..	12
Richmond River (2) ...	28 52	{ „ ... ..	„ ... ..	12
		{ „ ... ..	„ ... ..	7
M. Cape Byron ... ..	28 38	Flashing—Flash $\frac{1}{2}$ sec. duration, eclipse $4\frac{1}{2}$ sec.	„ ... ..	26
„ (same Tower) ...		Fixed ... ..	Red    ... ..	...
Tweed River (Fingal Head)	28 11	„ ... ..	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 from vessels may be sent to them according to the rules laid down in the British Signal Manual. 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), the Cape Byron group-flashing light (visible 26 miles), and the Macquarie revolving light, on the South Head of Port Jackson (visible 25 miles), 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; at South Solitary Island visible 20 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, and leading lights have been erected at the entrance to the port, with occulting lights to mark the channels. The five light buoys and the fixed light at Fort Denison have been converted to the Aga system of dissolved acetylene lighting. 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 there is a lighthouse, built in sections, of reinforced concrete, and a light is on Fort Denison. Electric fog bells placed at Dawes Point, Sydney Cove, Fort Denison, and Bradley's Head, are used in times of fog.

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.

*Fire Appliances—Sydney Harbour.*

The salvage pumps, hoses, &c., on three vessels of the Sydney Harbour Trust are maintained in efficient condition, and the Fire Brigade at Goat Island is fully equipped to cope with outbreaks of fires amongst the shipping or on the wharves of the harbour.

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 30th June, 1915, and the number of vessels piloted in and out of port during the years 1911-15. 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.				
			1911.	1912.	1913.	1914.*	1914-15;
Tweed River ... ..	1	2	32	9	8	8	8
Richmond River—Ballina ... ..	1	4	3	...	8	1	10
Clarence River—Yamba ... ..	1	5	10	22	5	6	14
Bellinger River ... ..	1	2	4	18	5	2	6
Nambucca River ... ..	1	2	2	20	9	6	5
Macleay River ... ..	1	4	...	13	8	1	8
Port Macquarie ... ..	1	3	7	16	8	6	...
Camden Haven ... ..	1	2	14	...	19	...	4
Manning River—Harrington ... ..	1	4	7	26	16	6	8
Forster—Cape Hawke ... ..	1	2	8	15	16	1	1
Port Hunter—Newcastle ... ..	10	23	1,113	1,231	1,194	785	1,025
Port Jackson—Sydney ... ..	10	23	1,844	1,939	2,012	1,080	1,597
Port Kembla—Wollongong ... ..	1	2	12	...	19	4	10
Kiama ... ..	1	...	...	...	...	...	...
Shoalhaven River—Crookhaven ... ..	1	3	4	21	10	6	...
Moruya ... ..	...	1	10	8	7	...	...
Twofold Bay—Eden ... ..	1	3	34	26	19	...	...

\* Six months ended 30th June, 1914.

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 tug "Alexandra" is employed 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 as to 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 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 surveying ships employed 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 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.

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 ending 30th June, 1915, 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	1,191,490	7,249	16,267	3-27	2 4 11	27,267	5-49
Sand-pump ... ..	13	2,769,227	11,269	69,887	6-06	6 4 0	74,218	6-43
Combined Grab and Sand-pump	8	702,597	9,752	19,637	6-71	2 0 3	20,802	7-10
Grab. ... ..	9	185,702	8,532	12,776	16-51	1 9 11	15,311	19-79
Total ... ..	36	4,849,016	36,802	118,567	5-87	3 4 5	137,602	6-81
Sydney Harbour Trust—								
Sand-pump and Grab ... ..	11	1,554,500	11,283	27,937	4-31	2 9 6	37,620	5-81

In the towing of dredged material from harbours and rivers fifteen tugs were engaged for the year 1914-15. For the Sydney Harbour Trust, eight tugs were engaged in towing during the year. The following statement shows the expenditure on dredging and towing services at each port for the last two years:—

Locality.	Cost of Dredging and Towing.		Locality.	Cost of Dredging and Towing.	
	1913-14.	1914-15.		1913-14.	1914-15.
	£	£		£	£
Tweed River ... ..	7,158	4,718	Newcastle Harbour ... ..	75,492	69,004
Richmond River ... ..	12,092	12,013	Lake Macquarie ... ..	1,263	5,634
Clarence River ... ..	9,550	15,686	Hawkesbury River and Brisbane Water ... ..	2,482	.....
Belling River ... ..	5,808	5,128	Cook's River and George's River ... ..	4,051	3,722
Nambucca River ... ..	7,411	3,987	Botany Bay ... ..	2,040	.....
Macleay River ... ..	2,757	1,622	Shoalhaven and Crookhaven ... ..	683	.....
Port Macquarie and Wilson River ... ..	2,668	2,859	Moruya River ... ..	1,889	1,405
Camden Haven ... ..	930	.....	Wagonga River ... ..	457	547
Manning River ... ..	7,963	8,957	Total ... ..	£ 154,441	137,602
Forster (Cape Hawke) ... ..	2,695	2,320			
Hunter River ... ..	6,491	.....	Port Jackson (Sydney Harbour Trust) ... ..	£ 37,276	37,626
Paterson River ... ..	561	.....			

## DREDGING SYDNEY HARBOUR.

During the year 1914-15 the quantity of silt removed from the bed of the port amounted to 1,554,500 tons. The Eastern channel of the harbour has been dredged to a depth of 40 feet, and the Western channel is now being deepened similarly. A new locally built bucket dredge is doing good work; the plant dredges to a depth of 45 feet, and is capable of moving 1,000 tons per hour.

## 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 at this port 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 30th June, 1915, 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		ft.	ft.	tons.			
		From outer caisson, 637					84	29½ to 32	.....
		" inner " 630							
" outer " 506									
		" inner " 484		49½	21½	.....			
Private—									
Mort's ...	Mort's Bay, Balmain.	640	69 at cope, 69 at entrance, 59 on floor.	16 ft. 6in. high water. 12 ft. 6 in. low water.	.....				
Woolwich	Parramatta River.	750 at present; but in course of extension to 850.	100 at cope, 83 at entrance, 75 on floor.	28 high water 23 low "	.....				
Floating Docks—									
Private—									
Ward's ...	Waterview Bay	163	42	11½	400				
Drake's ...	White Bay, Balmain.	150	60	7½	300				
Woolwich Pon- toon Dock.	Woolwich, Parramatta River.	195	56 between altars.	12	Dead Weights, 1,400				
Jubilee ...	Johnson's Bay.	317	38 at entrance.	13	1,200				
Small ...		100	23	7½	80				
Patent Slips—									
Commonwealth									
Government									
No. 1	Cockatoo Island.	105	Arms, 28 ... Cradle, 20 ...	9	300				
No. 2		33				Arms, 10 ... Cradle, 6 ...	4	5	
N.S.W. Government Boatshed.	Dawes' Point	82	Arms, 17 ... Cradle, 10 ...	6	100				
Private—									
Mort's No. 1	Mort's Bay, Balmain.	270	30	11 ft. forwd. 16 ft. aft.	1,500				
" No. 2		200	25	8 ft. forwd. 14 ft. aft.	800				
" No. 3		58	15	4 ft. forwd. 6 ft. 6 in. 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. 8 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.
Tweed River ... ..	115	42	10
Richmond River ... ..	214½	45	10
Clarence River ... ..	115	42	10
Macleay River ... ..	121	32	7
Manning River ... ..	123½	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 21 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, the other is capable of taking a vessel of a similar beam and 350 feet in length. During 1913 the Docks at Cockatoo Island were transferred to the Commonwealth for naval purposes.

Transactions at all Government docks since 1905 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.
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	43,989	10	772	7	1,500	10	732	...	...	8	566	...	...
1914-15	132	243,922	10	741	10	1,618	15	1,267	...	...	7	89	...	...

## 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 1910, and for each year since 1910 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
1914-15	.....	.....	7	587	4	47	11	634

Although the 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.

## 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 registration at these ports on 30th June, 1915, classified according to tonnage :—

Tonnage.	Sydney.				Newcastle.			
	Steam.		Sailing.		Steam.		Sailing.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
Under 50* ... ..	404	7,280	270	3,866	41	936	21	565
50 and under 100†	100	7,164	53	3,884	11	779	13	926
100 „ 200 ... ..	62	8,787	21	2,998	2	217	2	244
200 „ 300 .. ..	34	7,935	8	1,995	...	...	2	510
300 „ 400 ... ..	21	7,243	11	3,891	...	...	4	1,393
400 „ 500 ... ..	9	4,020	2	943	...	...	2	900
500 „ 600 ... ..	8	4,458	1	590	2	1,136	...	...
600 „ 1,000 ... ..	12	9,087	11	8,979	...	...	2	1,436
1,000 „ 1,400 ... ..	8	8,959	3	3,647	...	...	...	...
1,400 „ 1,800 ... ..	6	9,400	...	...	1	1,653	1	1,453
1,800 and over... ..	11	25,597	...	...	1	1,835	...	...
Total ... ..	675‡	99,930	380	30,793	58§	6,556	47	7,427

\* Includes under steam, Sydney, 162 motor vessels, tonnage 1,704; and under steam, Newcastle, 3 motor vessels, tonnage 56.

† Includes under steam, Sydney, 4 motor vessels, tonnage 276.

‡ Includes 166 motor vessels, tonnage 1,980.

§ Includes 3 motor vessels, tonnage 56.

The total tonnage registered at 30th June, 1915, was 144,706,—steam, 104,450; motor, 2,036; and sailing, 38,220. 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 year, since 1906, 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	668	96,712	368	31,815	57	6,462	48	8,719
1914-15	675	99,930	380	30,793	58	6,556	47	7,427

\* The figures include motor vessels. In 1915 there were at Sydney 166 motor vessels, tonnage 1,980; and at Newcastle, 3 motor vessels, tonnage 56.



The new tonnage registered in New South Wales since 1905 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 :—

Year.	Steam.		Motor.		Sailing.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
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	42	22,106	18	288	11	988	71	23,382
1913	29	8,367	16	246	29	2,220	74	10,833
1914-15	18	6,753	10	245	15	353	43	7,351

The number of vessels built outside New South Wales, included in these registrations, is as follows :—

Year.	Steam.		Motor.		Sailing.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
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	29	20,723	1	30	7	683	37	21,436
1913	13	7,210	2	50	25*	2,096	40	9,356
1914-15	6	5,586	1	23	13	325	20	5,934

\* 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 since 1905;—

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	228,968	5	21,982	15	250,950
1914	5	177,948	7	1,950	12	179,898
1914-15	3	87,096	2	2,206	5	89,302

Changes on the register by sales since 1905 are summarised as follows. Sales to foreign buyers, of course, result in removal of the vessels from the registers:—

Year.	To British Buyers.						To Foreign Buyers.					
	Steam.		Motor.		Sailing.		Steam.		Motor.		Sailing.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
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	...	...	39	4,098	2	7	...	...	4	138
1913	30	10,623	13	190	43	2,561	...	...	...	...	4	138
1914-15	16	2,328	13	305	11	758	1	1,168	...	...	1	14

#### 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 since 1905:—

Year.	Port Jackson (Sydney).		Port Hunter (Newcastle).	
	Vessels.	Tonnage.	Vessels.	Tonnage.
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*
1914†	623	1,866,331	785	1,911,010
1914-15	916	3,418,536	1,025	1,948,864

\* Figures for this year represent the multiple removals of ships, and are not comparable with previous years  
 † Half-year ended 30th June.

#### 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 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.

The following statement shows the vessels towed in and out of each port and the amount of the subsidy since 1905 :—

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.
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	...	...
1914-1915	80	89	...	9	1,560	2	1	‡	103	154	912	93	137	...	...

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.
1905	84	96	£ 420	203	205	£ 600	280	280	£ 500	84	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	48	82	540	5	8	960	112	163	500	239	239	400	832	921	7,677
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
1914-1915	13	18	960	10	61	960	48	60	900	14	57	1,020	363	586	8,361

\* 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 £900, and in 1915 £1,200 per annum.

‡ The service is conducted by the Department of Navigation.

#### QUARANTINE.

The administration of all matters relating to seaboard quarantine is 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 each year, since 1905, are shown in the following table:—

Year.	Vessels.		Persons.		
	Ex- amined.	Vessels Fumigated.	Passengers.	Crews.	Total.
1905	756	146	8,060	31,603	39,663
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	689	878	23,668	37,719	61,387
1913	773	1,016	27,474	46,354	73,828
1914-15	532	900	20,394	33,266	53,660

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 76 horses, 32 head of cattle, 38 sheep, 54 dogs, 6 goats, 14 pigs, 2 mules, were detained during the year ended 30th June, 1915.

#### 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 since 1905:—

Year.	British Vessels.				Total Tonnage.	Value of Vessels and Cargoes.	Crews and Passen- gers.	Lives Lost.
	Steam.	Motor.	Sailing.	Total.				
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	1,093	38,066	142	36
1913	3	...	4	7	372	†10,834	40	1
‡1914	5	1	3	9	687	16,677	58	7
1914-15	3	1	6	10	1,896	28,820	117	13

\* Figures for this year include one steam vessel of 41 tons, trading on the Murray River.  
 † Complete information not available. ‡ Half year ended 30th June.

The majority of the vessels reported are small coasters under 200 tons. As regards foreign shipping, inquiries as to vessels lost are made by foreign consuls. Following is the record since 1905:—

Year.	Foreign Vessels.			Total Tonnage.	Crews and Passengers.	Lives Lost.
	Steam.	Sailing.	Total.			
1905	...	1	1	1,299	14	...
1906	1	2	3	6,367	62	...
1907	1	2	3	2,293	47	...
1908	1	1	2	3,605	40	7
1909	...	1	1	1,364	22	...
1910	...	...	...	...	...	17
1911	...	1	1	1,543	20	...
1912	...	...	...	...	...	...
1913	...	...	...	...	...	...
1914-15	...	...	...	...	...	...

Particulars as to value of vessels and cargo lost are not obtainable for each year. During the years 1910 and from 1912 to 1915 there were no Consular inquiries concerning 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 by 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, 1915, amounted to £634, in addition to £58 expended on account of awards. The revenue of the Society for the year included £1,275, derived from public subscriptions and legacies, while the invested funds of the society amounted to £19,700.

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 of transactions at each of these shipping offices since 1910 :—

Year.	Engagements registered.			Discharges registered.			Licenses to ship.		
	Sydney.	Newcastle.	Total.	Sydney.	Newcastle.	Total.	Sydney.	Newcastle.	Total.
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
1914-15	32,370	4,844	37,214	31,419	4,150	35,569	2,551	395	2,946

For 1915, seamen reported as deserters from British vessels trading on foreign voyages numbered 521, viz., 395 at Sydney, and 126 at Newcastle. The wages paid to seamen through the shipping offices amounted to £157,781 of which £136,302 was paid at Sydney. Wages issued in advance notes amounted to £3,015, of which the greater part, £1,694, 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.

##### *Rivers.*

Linking up the highways in every direction are ferry services provided free by the State. At the end of 1914, there were 121 of these ferries, of which 21 were classed as national works, and 100 were controlled by municipalities and shires. 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 the year ended 36th June, 1915, was 33,258,000.

## FARES FROM SYDNEY.

The passenger fares between Sydney and Australasian ports are 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 6	2 9 0
Macleay ...	1 15 0	...	Mourilyan Harbour	10 19 0	7 10 0
Grafton ...	1 17 6	0 17 6	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	11 0 0
Jervis Bay ...	0 15 0	...			
Kiama ...	0 6 6	...	South Australia—		
Kioloa ...	1 1 0	...	Adelaide ...	£4 0 0	3 0 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	12 0 0
Merimbula ...	1 13 0	0 16 6			
Montagu Island ...	1 15 0	...	Western Australia—		
Moruya ...	0 19 3	...	Albany ...	£10—£11	7 15 0
Nambucca River ...	1 12 6	...			
Narooma ...	1 5 0	...	Fremantle ...	£10—£11	7 15 0
Nelligen (Clyde R.) ...	1 2 0	...			
Newcastle ...	0 6 0	0 3 6	Geraldton ...	£12—	6 10 0
Nowra ...	0 8 3	...		£13 2s.	
Port Kembla ...	0 6 6	...	Tasmania—		
Port Macquarie ...	1 7 6	...	Hobart ...	3 0 0	1 17 6
Port Stephens ...	0 11 0	...	Launceston ...	3 0 0	1 17 6
Tathra ...	1 13 0	0 16 6			
Trial Bay ...	1 12 6	0 17 6	New Zealand—		
Ulladulla ...	0 16 6	...	Auckland ...	7 15 0	4 10 0
Wagonga ...	1 5 0	...	Gisborne ...	8 16 0	5 1 0
Wilson River ...	1 7 6	...			
Woolgoolga ...	1 15 0	1 0 0	Napier—		
Wollongong ...	0 4 6	...	Via Auckland ...	9 8 0	5 6 0
			Via Wellington ...	8 10 6	4 16 0
Lord Howe Island ...	3 0 0	2 0 0	Wellington ...	7 15 0	4 10 0
Norfolk Island ...	6 0 0	4 0 0	Lyttelton ...	8 10 6	4 16 0
			Dunedin ...	9 8 0	5 6 0
Victoria—			Bluff ...	9 18 0	5 16 0
Melbourne ...	£2 7 6	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.
London ... ..	£70-£82	£42-£46	£16-£21
Marseilles ... ..	£66-£78	£40-£44	£15-£19
Naples ... ..	£66-£78	£40-£44	£15-£19
Southampton ... ..	£68-£78	£41-£46	£20-£24
Venice ... ..	83 10 0	.....	.....
Aden ... ..	44 0 0	34 0 0	.....
Bombay ... ..	40 0 0	30 0 0	.....
Calcutta ... ..	40 0 0	30 0 0	.....
Colombo ... ..	36 0 0	28 0 0	£8 5s.—£10 5s.
Hong Kong ... ..	£30-£40	19 10 0	15 0 0
Manila ... ..	£28 10s.—£38	£18 15s.—£25	£14 10s.—£15
Madras ... ..	40 0 0	30 0 0	.....
Penang ... ..	46 0 0	35 0 0	.....
Port Moresby ... ..	15 0 0	10 0 0	8 0 0
Sourabaya... ..	32 10 0	21 15 0	16 5 0
Samarang ... ..	33 10 0	22 5 0	16 15 0
Batavia ... ..	34 10 0	23 0 0	17 5 0
Macassar ... ..	30 10 0	20 5 0	.....
Shanghai ... ..	44 0 0	28 0 0	16 10 0
Singapore (via Brisbane) ... ..	£37 10s.—£39 10s.	26 10 0	18 15 0
„ (via Fremantle) ... ..	28 10 0	.....	18 5 0
Mauritius ... ..	£36 9s.—£51 9s.	.....	20 9 6
Port Said ... ..	£62-£74	£38-£42	£15-£19
Yokohama ... ..	47 0 0	30 0 0	18 0 0
Norfolk Island ... ..	6 0 0	4 0 0	.....
Fiji (Suva) ... ..	11 0 0	.....	6 15 0
(Levuka) ... ..	11 10 0	.....	7 0 0
New Hebrides—			
Aneityum ... ..	10 0 0	.....	5 0 0
Vila (Sandwich) ... ..	10 0 0	.....	5 0 0
Solomon Islands (Tulagi) ... ..	12 0 0	.....	8 0 0
Honolulu ... ..	32 0 0	22 0 0	12 10 0
Noumea ... ..	10 0 0	.....	.....
Samoan Islands ... ..	16 15 0	.....	10 0 0
San Francisco ... ..	45 0 0	30 0 0	18 10 0
Tonga Islands (Nukualofa) ... ..	13 10 0	.....	8 0 0
Vancouver ... ..	45 0 0	30 0 0	18 10 0
Cape Town ... ..	£30-£37	.....	£13 13s.—£17 17s.
Natal (Durban) ... ..	£30-£37	.....	£13 13s.—£17 17s.
Monte Video ... ..	50 0 0	30 0 0	17 17 0

NOTE.—Passenger service has been suspended during the war to Antwerp, Bremen, and certain other continental ports.

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, via Suez direct... ..	11,863
Albany ... ..	2,090	London, via Cape Horn ... ..	13,070
Auckland ... ..	1,281	London, via Cape of Good Hope... ..	12,500
Brisbane ... ..	503	London via Panama ... ..	12,222
Capetown ... ..	6,774	Melbourne... ..	576
Darwin ... ..	2,540	New York, via 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, via 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.
Under 100 n.h.-p. ...	£ 22	£ s. 17 10	£ s. 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	20 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 1914 were as follows :—

Sailing Vessels—	£ s.	Steamships—	£ s.
Foreign ..	£5 10s. to 6 0	Foreign ...	£5 to 8 0
Interstate ...	5 10	Interstate ...	8 0
Coast ...	6 0	Coast ...	£8 to 9 10

For Interstate and State trade the wages were as follows :—

Engineers (First)	£ s.	Mates (First)	£ s.
..	14 to 34	..	9 to 23 10
„ (Second)	15 to 23	„ (Second)	8 to 17 0
„ (Third)	14 to 19	„ (Third)	12 to 14 0

Firemen, £10; and Trimmers, £8.

In the foreign trade firemen received £5 10s. to £10, and trimmers £5 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 lb. 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 Commonwealth 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 Customs Act of 1901 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, and the Customs Tariff, 1908, provides preference rates of Customs duties for certain goods the produce or manufacture of the United Kingdom.

### 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 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, 1915, there were employed in the frozen meat trade between Australia and the United Kingdom and European countries at least 73 steamers with a total carrying capacity of 3,747,200 carcasses.

#### WAR LEGISLATION AFFECTING TRADE.

Since the commencement of the war, the Parliament of the Commonwealth has passed some necessary measures, as the war has affected considerably the trade of the State.

The Trading with the Enemy Act, 1914, makes it an offence during the continuance of the war to trade with the enemy. The Enemy Contracts Annulment Act, 1915, contains a clause declaring that every enemy contract made before or after commencement of the war is to be null and void. The Governor-General is authorised to prohibit by proclamation the exportation of goods in time of war, and, in consequence, a large number of articles have been prevented from leaving the State.

#### 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, or 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.

#### INTERSTATE COMMISSION.

The Interstate Commission Act, 1912, provides for the appointment by the Commonwealth Government of three Commissioners, who are charged with the duty of investigating any matter affecting trade and commerce.

## 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 January, 1909, was 1½d. per lb., and from January, 1912, to end of 1915, was fixed at 1d. per lb. for the first million lbs. by one manufacturer during a year, and ¾d. per lb. in excess of this amount. The bounty paid for wool tops for the year 1914-15 amounted to £7,728, 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, 1901-14, the Customs Tariff, 1908-1911, the Excise Tariff, 1908, the Excise Tariff (Starch), 1908, the Excise (Sugar) Act, 1910, and Excise Tariff, 1913.

The following statement shows the gross amounts collected in New South Wales under each division of the tariff during the year ended 30th June, 1915, 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 .. .. .	1,256,813	143	1,215	1,255,455
II.	Tobacco and Manufactures thereof .. .. .	798,080	..	105,435	692,645
III.	Sugar .. .. .	44,410	3,211	213	40,986
IV.	Agricultural Products and Groceries .. .. .	482,010	10,021	2,200	419,789
V.	Textiles, Felts, and Furs, and Manufactures thereof, and Attire .. .. .	996,612	11,890	6,692	978,030
VI.	Metals and Machinery .. .. .	771,898	8,969	10,861	752,068
VII.	Oils, Paints, and Varnishes .. .. .	144,860	6,523	1,063	135,774
VIII.	Earthenware, Cement, China, Glass, and Stone .. .. .	144,864	1,576	2,098	141,192
IX.	Drugs and Chemicals .. .. .	68,068	2,657	603	64,808
X.	Wood, Wicker, and Cane .. .. .	212,892	1,575	832	209,985
XI.	Jewellery and Fancy Goods .. .. .	138,523	3,299	772	134,452
XII.	Leather and Rubber .. .. .	185,446	5,377	1,037	179,032
XIII.	Paper and Stationery .. .. .	118,961	1,062	714	116,585
XIV.	Vehicles .. .. .	108,737	1,425	544	106,768
XV.	Musical Instruments .. .. .	44,076	298	437	43,341
XVI.	Miscellaneous .. .. .	113,328	2,968	2,423	107,937
	Customs Miscellaneous .. .. .	14,757	..	35	14,722
	<b>Total, Customs Duties .. .. .</b>	<b>£ 5,592,335</b>	<b>61,594</b>	<b>187,181</b>	<b>5,398,560</b>
	<b>Excise—</b>				
	Beer, viz. :—Ale, Porter, and other Beer .. .. .	454,856	1,674	..	453,180
	Spirits .. .. .	230,570	44	301	230,228
	Starch .. .. .	..	..	..	..
	Sugar .. .. .	27	..	..	27
	Tobacco .. .. .	225,436	..	86	225,349
	Cigars .. .. .	3,689	..	..	3,689
	Cigarettes .. .. .	515,773	..	..	515,773
	Licenses—Tobacco .. .. .	1,110	..	..	1,110
	„ Other .. .. .	945	..	..	945
	<b>Total, Excise Duties .. .. .</b>	<b>£ 1,432,406</b>	<b>1,718</b>	<b>387</b>	<b>1,430,301</b>
	<b>Total, Customs and Excise Duties .. .. .</b>	<b>£ 7,024,741</b>	<b>63,312</b>	<b>137,568</b>	<b>6,823,861</b>

The amounts collected in New South Wales from customs and excise, and the proportion per head of population during the last ten years, appear in that portion of this Year Book dealing with Public Finance.

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, though the customs revenue of New South Wales received at this port was larger than that of any other State, the figures 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 beer, spirits, and tobacco on which excise duty was paid in New South Wales during six months of 1914 and for the year ended 30th June, 1915:—

Item.	Rate of Excise Duty.	Quantity on which Excise Duty was Paid.	
		*1914.	†1915.
Beer—Product of Barley, Malt, and Hops ... ..	per gal.	gal.	gal.
2d. ... ..		513,000	420,000
5d. ... ..		.....	582,816
N.E.I. ... ..	3d.	11,422,880	9,212,240
6d. ... ..		.....	12,962,440
Brandy—Distilled wholly from Grape Wine ... ..	proof gal.		
10/- ... ..		29,654	32,834
13/- ... ..		.....	21,705
Blended wine, &c. ... ..	11/-	2,022	2,080
14/- ... ..		.....	2,964
Gin—Distilled from Barley, Malt, Grain, &c. ... ..			
12/- ... ..		205	3,100
15/- ... ..		.....	3,085
Rum—Distilled from Molasses ... ..	12/-	90,982	127,245
15/- ... ..		.....	86,165
13/- ... ..		308	120
16/- ... ..		.....	80
Whisky—Distilled wholly from Barley Malt ... ..	10/-	9,306	12,208
13/- ... ..		.....	10,078
12/- ... ..		92	.....
Spirits—N.E.I. ... ..	13/-	7,475	7,277
16/- ... ..		.....	8,535
for Industrial purposes ... ..	13/-	15,542	14,183
for making Vinegar ... ..	16/-	.....	21,051
for fortifying "Australian Wine ... ..	6d.	10,400	5,720
8d. ... ..		.....	8,730
Amylic Alcohol and Fusel Oil ... ..	8d.	24,560	2,720
16/- ... ..		.....	21,090
Sugar, Invert ... ..	per cwt.	cwt.	cwt.
3/- ... ..		133	180
Tobacco—Handmade ... ..	per lb.	lb.	lb.
9d. ... ..		52,000	305,547
Manufactured, N.E.I. ... ..	1/-	1,912,740	3,547,520
Uncovered ... ..	1/3	.....	585,632
Cigars—Handmade ... ..	3d.	43,440	47,600
1/- ... ..		.....	61,880
Cigarettes—Handmade ... ..	2/9	6,465	5,040
4/3 ... ..		.....	4,555
Machine made ... ..	3/-	1,497,373	1,378,680
4/6 ... ..		.....	1,365,822

\* Six months ended 30th June.

† Twelve months ended 30th June.



The following table shows the oversea trade at each port and customs station in New South Wales, with customs and excise revenue collected for the year ended 30th June, 1915 :—

Port or Station.	Oversea Trade.			Customs and Excise Revenue Collected.
	Imports.	Exports.	Total.	
	£	£	£	£
Sydney ... ..	26,356,948	26,473,065	52,830,013	6,772,755
Newcastle ... ..	928,728	1,622,834	2,551,562	217,068
Clarence River ... ..	.....	9,462	9,462	.....
Morpeth ... ..	.....	.....	.....	5,341
Port Stephens ... ..	.....	1,664	1,664	.....
Albury ... ..	11,802	.....	11,802	4,710
Allandale ... ..	.....	.....	.....	409
Broken Hill ... ..	25,765	.....	25,765	24,379
Corowa (Wahgunyah) ... ..	.....	.....	.....	79
New South Wales ... ..	£27,323,243	28,107,025	55,430,268	7,024,741

#### 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 1915 :—

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	13,138,834	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	27,343,423	32,161,401	16 8 7	19 6 5	35 15 0
1912	32,803,630	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
*1914	16,677,336	15,738,313	9 0 9	8 10 8	17 11 5
†1915	27,323,243	28,107,025	14 13 6	15 1 11	29 15 5

\* Six months ended 30th June.

† Twelve months ended 30th June.

Between 1904 and 1912 the annual increases in the volume of trade were considerable, with the exception of 1908 and 1909, the figures for 1912 being particularly noticeable with a record of £65,262,159, or £37 10s. 8d. per head of population. Since 1912 there has been a slight decrease.

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 and 1915 show 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 the highest for the whole period.

Difficulty in connection with freights has been a disturbing factor in trade matters during the last two years on account of war conditions.

DISTRIBUTION OF TRADE.

The table following shows the distribution of the oversea trade of New South Wales for the year ended 30th June, 1915, also the values of imports according to country of origin. It is not possible to trace exports to their ultimate destination:—

Country.	Values of			
	Imports according to Country.		Exports direct.	Total trade.
	Of Origin.	Whence imported.		
	£	£	£	£
Australian States ... ..	46,280	.....	.....	.....
United Kingdom ... ..	13,016,787	15,267,746	16,258,252	31,625,998
<b>Other British Possessions—</b>				
Aden ... ..	195	2,402	.....	2,402
Anglo-Egyptian Sudan ... ..	1	1	.....	1
Canada ... ..	612,796	944,518	362,016	1,308,534
Ceylon ... ..	425,578	430,148	59,845	489,993
Cyprus ... ..	1	.....	.....	600
East Africa ... ..	46	.....	600	83,793
Egypt ... ..	5,370	6,918	76,875	4,079
Filice Islands ... ..	4,275	3,075	1,004	1,115
Fanning Islands ... ..	.....	4	.....	626,978
Fiji ... ..	242,056	247,650	379,326	7,660
Gibraltar ... ..	.....	.....	7,660	37,092
Gilbert Islands ... ..	13,443	13,722	23,370	.....
Gold Coast ... ..	1,797	.....	.....	.....
Guiana ... ..	5,462	.....	.....	.....
Hong Kong ... ..	1,927	151,710	333,601	533,311
India ... ..	1,262,091	1,200,983	295,462	1,496,445
Lagos ... ..	46	.....	.....	1
Malay States (Federated) ... ..	31	1	.....	13,747
Malta ... ..	644	743	13,004	5,653
Mauritius ... ..	.....	.....	5,653	1
Newfoundland ... ..	2,715	1	.....	7
New Zealand ... ..	934,401	1,151,271	1,767,086	2,918,357
Nigeria ... ..	.....	.....	7	13,306
Norfolk Island ... ..	5,022	6,126	7,120	360
North Borneo ... ..	.....	.....	360	.....
Nyassa Land ... ..	3	.....	.....	.....
Ocean Island ... ..	19,161	18,695	23,546	47,241
Papua ... ..	54,828	56,003	97,204	153,207
Sierra Leone ... ..	272	.....	.....	.....
Socotra ... ..	2	.....	.....	.....
Solomon Islands ... ..	80,139	86,633	105,539	186,172
Somaliland ... ..	1	.....	.....	.....
South African Customs Union ... ..	166,793	25,550	753,499	779,049
Straits Settlements ... ..	50,329	231,731	211,588	443,319
Union Islands ... ..	540	.....	.....	.....
West Indies ... ..	26,421	.....	.....	.....
Zanzibar ... ..	1,322	.....	.....	.....
<b>Total, British Possessions</b>	<b>£17,081,275</b>	<b>19,939,631</b>	<b>20,838,788</b>	<b>40,778,419</b>
<b>Foreign Countries—</b>				
Abyssinia ... ..	813	.....	.....	.....
Alaska ... ..	3,354	.....	.....	.....
Algeria ... ..	20	.....	7	7
Amboina ... ..	25	.....	.....	.....
Arabia ... ..	6,493	.....	.....	.....
Argentine Republic ... ..	93,911	92,468	93	92,561
Asia Minor ... ..	1,519	663	400	1,063
Austria-Hungary ... ..	59,069	6,550	834	7,384
Belgium ... ..	125,930	263,510	203,527	467,037
Bismarek Archipelago ... ..	27,266	30,617	127,984	168,601
Borneo (Dutch) ... ..	78,996	59,359	292	59,651
Brazil ... ..	6,537	.....	11	11
Bulgaria ... ..	157	.....	.....	.....
Canary Islands ... ..	380	172	.....	172
Caroline Islands ... ..	.....	3	688	691
Celebes ... ..	574	219	989	1,308
Cerani ... ..	.....	.....	50	50
Chile ... ..	19,531	18,729	225,144	243,873
China ... ..	197,224	53,918	50,546	104,464
Cochin China ... ..	327	98	2,308	2,406
Columbia ... ..	7,702	.....	.....	.....
Congo (Belgian) ... ..	90	.....	.....	.....

Country.	Values of			
	Imports according to Country.		Exports direct.	Total trade.
	Of Origin.	Whence imported.		
<i>Foreign Countries—continued</i>	£	£	£	£
Congo (French) ... ..	19	.....	.....	.....
Costa Rica ... ..	317	.....	.....	.....
Cuba ... ..	25,728	.....	.....	.....
Curaçoa ... ..	1,191	.....	.....	.....
Denmark ... ..	16,596	11,549	1,424	12,973
East Africa (Portuguese) ... ..	191	.....	5,312	5,312
Ecuador ... ..	16,637	107	16,507	16,614
France ... ..	720,165	99,841	610,879	710,720
Germany ... ..	812,608	497,372	150,619	647,991
Greece ... ..	1,552	1	2	3
Guatemala ... ..	1,350	3	.....	3
Hawaiian Islands ... ..	55	2,923	115,378	118,301
Italy ... ..	245,567	200,666	570,572	771,233
Japan ... ..	667,436	660,389	1,573,184	2,233,573
Java ... ..	373,555	419,109	166,512	585,621
Kaiser Wilhelm's Land ... ..	104	98	3,241	3,339
Korea ... ..	135	.....	425	425
Ladrones Islands ... ..	.....	.....	23	23
Luxembourg ... ..	721	.....	.....	.....
Madagascar ... ..	1,310	.....	2,898	2,898
Madeira ... ..	191	3	.....	3
Manchuria ... ..	1,320	.....	2	2
Marshall Islands ... ..	1,161	2,261	5,428	7,689
Mexico ... ..	226	.....	3,855	3,855
Moluccas or Spice Islands ... ..	.....	.....	2,364	2,364
Morocco ... ..	8,646	.....	.....	.....
Netherlands ... ..	122,350	26,382	27,321	53,703
New Caledonia ... ..	34,931	37,411	158,794	193,205
New Guinea (Dutch) ... ..	523	539	1,962	2,501
New Hebrides ... ..	19,843	22,618	50,989	72,707
Nicaragua ... ..	4	.....	.....	.....
Norway ... ..	219,531	206,337	.....	206,337
Palaoa or Pelew Islands ... ..	.....	.....	2,594	2,594
Panama ... ..	58	.....	.....	.....
Persia ... ..	2,557	.....	.....	.....
Peru ... ..	2,025	.....	69,173	69,173
Philippine Islands ... ..	41,680	41,841	129,591	171,432
Pleasant Island ... ..	20,264	20,278	12,158	32,436
Portugal ... ..	17,163	3,478	10	3,483
Reunion ... ..	14	.....	.....	.....
Russia ... ..	36,774	10	114,129	114,139
Saint Thomas' Island (West Africa) ... ..	56	.....	.....	.....
Samoa (American) ... ..	873	1,278	5,698	6,971
Samoa (German) ... ..	41,732	37,241	75,238	112,479
San Domingo ... ..	61	.....	.....	.....
San Salvador ... ..	.....	.....	560	560
Siam ... ..	2,053	68	1,913	1,981
Society Islands ... ..	16,557	13,234	2,247	15,481
Solomon Islands (German) ... ..	99	.....	559	559
Spain ... ..	36,179	176	.....	176
Sudan ... ..	235	.....	.....	.....
Sumatra ... ..	130,792	931	4,187	5,118
Sweden ... ..	235,926	211,345	854	212,199
Switzerland ... ..	459,909	3,527	36	3,563
Syria ... ..	2,017	.....	154	154
Timor ... ..	.....	.....	1,566	1,566
Tonga ... ..	67,012	15,289	45,244	60,533
Tripoli ... ..	2,516	2	3	5
Tunis ... ..	.....	.....	7	7
Turkey (in Europe) ... ..	6,030	.....	16	16
United States of America ... ..	5,239,010	4,320,904	2,721,910	7,042,314
Uruguay ... ..	81	.....	726	726
Wallis Island ... ..	1,210	.....	.....	.....
West Indies, Other ... ..	129	.....	.....	.....
Total, Foreign Countries	£10,291,968	7,388,612	7,268,237	14,651,849
Grand Total ...	£27,323,243	27,323,243	28,107,025	55,430,268

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 62 per cent. were of British manufacture

or production, thus leaving only 38 per cent. of foreign origin. But approximately 56 per cent. of the total imports were shipped from the United Kingdom, 17 per cent. from British Possessions, or a total of 73 per cent. from British countries, the difference of 11 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 shipped from foreign countries represented 27 per cent. of the total. Of the exports from New South Wales, 74 per cent. were shipped to British countries, while of the total trade about 74 per cent. was 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 goods sent 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	4,284,573	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
1914*	9,611,134	2,493,575	4,572,627	16,677,336
1915†	15,367,746	4,571,885	7,383,612	27,323,243

\* Six months ended 30th June. † Twelve months ended 30th June.

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
1914*	57·63	14·95	72·58	27·42
1915†	56·25	16·73	72·98	27·02

\* Six months ended 0th June. † Twelve months ended 30th June.

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 those 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
1914*	5,897,486	2,380,711	7,460,116	15,738,313
1915†	16,258,252	4,580,536	7,268,237	28,107,025

\* Six months ended 30th June. † Twelve months ended 30th June.

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
1914*	37·47	15·13	52·60	47·40
1915†	57·84	16·30	74·14	25·86

\* Six months ended 30th June. † Twelve months ended 30th June.

Both absolutely and relatively the exports to foreign countries increased continuously until the commencement of the war, so that the proportion of goods sent to the United Kingdom became considerably less than to foreign countries. Direct communication with the various countries was largely the cause of this apparent diversion of trade, as it obviated the necessity for much transshipment, so that even gold was shipped to different countries on account of the United Kingdom. In consequence of the war the direction of the trade changed again, the percentage of exports sent to the United Kingdom in the year ended 30th June, 1915, being 57·8 as compared with 37·5 in the previous six months. 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 over 56 per cent. of New South Wales imports are shipped from the United Kingdom, where 48 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 the year ending 30th June, 1915, was 13,016,787. A classification of the principal articles is given below :—

Article.	Value.	Article.	Value.
	£		£
Ale and beer ... ..	119,230	Iron and steel ... ..	881,038
Animals ... ..	45,003	Jewellery ... ..	83,154
Apparel and soft goods—		Leather and leatherware ... ..	28,331
Apparel and attire, n.e.i. ... ..	771,745	Machines and machinery ... ..	1,035,387
Cosies, cushions, &c. ... ..	18,451	Matches and vestas ... ..	41,687
Piece goods ... ..	2,473,620	Medicines ... ..	86,694
Arms, ammunition, and explosives ... ..	228,790	Metals ... ..	33,411
Bags and purses, &c. ... ..	33,486	Metal manufactures ... ..	1,083,485
Books ... ..	191,041	Oilmen's stores ... ..	108,624
Boots and shoes ... ..	197,880	Oils ... ..	88,552
Brushware ... ..	35,056	Paints and colours ... ..	199,042
Canvas and duck ... ..	113,456	Paper ... ..	329,156
Carpets and carpeting ... ..	127,930	Perfumery ... ..	27,976
Cocoa and chocolate, &c. ... ..	61,430	Personal and household effects... ..	26,346
Coffee, &c. ... ..	11,962	Photographic materials ... ..	29,652
Confectionery ... ..	124,823	Pickles, sauces, &c. ... ..	44,483
Copper ... ..	67,065	Pipes, smoking and accessories... ..	31,137
Cordage and Twines—		Rails, &c., for railways... ..	153,990
Metal ... ..	51,917	Rubber and rubber manufactures ... ..	88,611
Sewing silks, &c. ... ..	162,788	Specie—	
Other ... ..	63,592	Gold ... ..	1,774
Cutlery ... ..	107,816	Silver ... ..	123,009
Drugs and chemicals ... ..	102,031	Spirits ... ..	443,160
Earthenware, &c. ... ..	102,733	Stationery ... ..	99,414
Electrical articles and materials	184,066	Stone, marble, slate ... ..	26,446
Fancy goods ... ..	82,109	Tin plates and sheets ... ..	215,442
Fish (all kinds) ... ..	76,694	Tobacco, &c. ... ..	39,287
Floor cloths and linoleum ... ..	188,834	Tools of trade ... ..	101,010
Furniture ... ..	24,177	Varnishes ... ..	26,319
Glass and glassware ... ..	102,397	Vehicles ... ..	293,119
Hats and caps ... ..	98,417	Vessels ... ..	87,000
Instruments ... ..	183,230	Yarns ... ..	53,638

## 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 since 1895, when the trade with foreign countries was 35·5 per cent. of the total as compared with 40·82 per cent. in 1913. In consequence of the war the percentage decreased to 26·4 during the year ended 30th June, 1915:—

Period.	Oversea Trade.			Proportion.	
	With British Countries.	With Foreign Countries.	Total.	British.	Foreign.
	£	£	£	per cent.	per cent.
1880-4	101,233,460	15,428,593	116,662,053	86·78	13·22
1885-9	98,650,074	21,948,595	120,598,669	81·80	18·20
1890-4	92,338,766	31,801,163	124,139,929	74·38	25·62
1895-9	94,239,793	51,857,686	146,097,479	64·50	35·50
1900-4	108,439,433	63,052,777	171,492,210	63·23	36·77
1905-9	147,423,307	87,567,208	234,990,515	62·74	37·26
1910	34,025,477	21,248,967	55,274,444	61·56	38·44
1911	38,117,232	21,387,597	59,504,829	64·06	35·94
1912	39,477,846	25,784,313	65,262,159	60·49	39·51
1913	38,577,237	26,613,215	65,190,452	59·18	40·82
1914*	20,382,906	12,032,743	32,415,649	62·88	37·12
1915†	40,778,419	14,651,849	55,430,268	73·57	26·43

\* Half-year ended 30th June.

† Year ended 30th June.

The aggregate values of foreign imports, classified according to country of origin, are shown below for the years 1911-15:—

Country.	1911.	1912.	1913.	1914.*	1915.†
	£	£	£	£	£
Arabia ... ..	12,708	20,286	29,865	2,858	6,493
Austria-Hungary ... ..	153,576	171,715	153,472	93,362	59,069
Belgium ... ..	372,049	365,666	456,503	189,733	125,930
Brazil ... ..	21,152	23,060	9,843	6,813	6,537
Chile ... ..	20,718	21,752	14,905	6,379	19,581
China ... ..	191,083	209,215	194,680	88,264	197,224
Cuba ... ..	37,486	32,270	23,529	20,392	25,728
Denmark ... ..	10,769	14,190	14,789	8,517	16,596
France ... ..	916,918	860,627	894,186	529,218	720,165
Germany ... ..	2,429,272	2,850,139	2,834,038	1,400,614	812,608
Italy ... ..	226,029	271,754	243,134	141,977	245,567
Japan ... ..	418,978	479,144	467,666	206,960	667,436
Netherlands ... ..	143,906	156,746	149,599	98,780	122,350
Netherlands India ... ..	370,408	844,829	378,542	268,457	583,871
New Caledonia ... ..	48,943	26,986	28,045	13,699	34,931
New Hebrides... ..	35,407	23,175	23,858	16,564	19,843
Norway ... ..	186,590	249,637	254,019	162,037	219,531
Philippine Islands ... ..	38,854	43,613	50,325	28,824	41,680
Portugal ... ..	33,801	41,603	29,828	10,093	17,163
Russia ... ..	21,875	33,225	35,212	27,560	36,774
South Sea Islands ... ..	196,872	198,169	109,342	29,486	176,878
Spain ... ..	50,928	40,913	40,197	20,244	36,179
Sweden... ..	262,642	266,859	344,833	199,459	235,926
Switzerland ... ..	401,800	482,786	469,858	227,439	459,909
Turkey... ..	17,130	15,202	26,032	12,115	6,039
United States of America ... ..	4,017,778	4,833,042	5,329,850	2,518,807	5,239,010
West Indies, Other ... ..	12,100	893	1,240	1,347	1,381
Other Foreign Countries ... ..	70,748	64,028	90,537	35,677	157,569
Total ... ..	£10,720,620	12,641,524	12,697,927	6,365,675	10,291,968

\* Half-year ended 30th June.

† Year ended 30th June.

ARTICLES OF IMPORT.

To show concisely the class of goods imported into New South Wales, oversea imports during the years 1912-15 have been summarised as shown in the table below. The figures show direct imports only, as the inter-state transfers are not available; goods of Australian produce re-imported from outside the Commonwealth, £27,239 for 1912, and £19,892 for 1913, and £46,280 in 1914-15, have been excluded:—

Articles of Import.	1912.	1913.	1914-15.*
<b>Food, Drink, Narcotics, and Stimulants—</b>			
Animal food ... ..	£ 355,355	£ 342,010	£ 392,237
Vegetable food ... ..	2,331,046	1,621,598	1,574,931
Drinks—alcoholic ... ..	884,313	927,627	813,033
„ non-alcoholic ... ..	11,853	10,558	12,531
Tobacco and other narcotics ... ..	519,871	609,531	514,442
Other stimulants and condiments ... ..	666,840	667,045	766,648
	4,769,278	4,178,369	4,073,822
<b>Live Animals and Plants—</b>			
Animals of all kinds ... ..	123,315	84,951	84,222
Plants ... ..	35,272	35,967	40,397
	158,587	120,918	124,619
<b>Textile Fabrics, Dress, and Manufactured Fibrous Materials—</b>			
Silk manufactures ... ..	421,362	409,299	648,807
Woollen manufactures ... ..	1,235,968	1,076,794	964,349
Cotton and flax manufactures ... ..	1,870,540	1,946,180	1,769,119
Manufactures of mixed materials ... ..	1,425,308	1,444,695	1,246,488
Dress ... ..	2,332,751	2,336,024	1,994,544
Manufactures of fibrous materials ... ..	509,917	883,972	905,465
	7,795,846	8,096,964	7,528,772
<b>Products of Arts and Manufactures, n.e.i.—</b>			
Books, stationery and paper ... ..	1,222,930	1,308,606	1,100,174
Musical instruments ... ..	308,516	223,690	146,743
Works of art and art materials ... ..	40,213	34,856	24,059
Fancy goods ... ..	614,893	476,145	369,286
Timepieces, jewellery, and plated ware ... ..	587,325	459,342	363,227
Surgical and scientific instruments ... ..	306,231	486,040	375,714
Machines, tools, and implements ... ..	5,173,151	5,455,313	4,630,525
Harness, vehicles, and equipment ... ..	889,415	1,010,601	686,510
Ships, boats, and equipment ... ..	598,065	252,904	92,088
Building materials ... ..	1,562,268	1,570,996	1,322,844
Furniture ... ..	281,068	272,579	130,601
Arms and explosives ... ..	309,438	398,354	284,555
Drugs, chemicals, and by-products ... ..	591,380	650,905	687,648
Glass and earthenware manufactures ... ..	418,196	473,799	380,008
Soap, candles, and paint ... ..	335,955	308,756	348,937
Other manufactures, n.e.i. ... ..	1,004,298	1,103,681	799,689
	14,243,342	14,486,567	11,742,608
<b>Staple Animal and Vegetable Substances, including Mineral Oils—</b>			
Animal substances ... ..	506,392	513,019	416,920
Vegetable substances ... ..	492,401	393,808	569,582
Oils ... ..	765,514	758,111	798,021
	1,764,307	1,664,938	1,784,523
<b>Staple Minerals and Metals, including Specie and Bullion—</b>			
Specie and bullion ... ..	1,192,439	1,093,273	425,528
Iron and steel ... ..	1,593,983	1,642,703	1,008,082
Other metals ... ..	456,984	542,963	382,449
Coal and shale ... ..	1,916	84	15,732
Stone, clay, and other minerals ... ..	70,462	93,000	82,329
	3,315,784	3,372,023	1,914,120
<b>Indefinite articles ... ..</b>	229,247	410,992	108,499
<b>Total Imports ... ..</b>	<b>£ 32,276,391</b>	<b>32,330,771</b>	<b>27,276,963</b>

\* Year ended 30th June.



In 1914-15 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, drugs and chemicals, harness, vehicles, and equipment, glass and earthenware manufactures, surgical and scientific instruments, fancy goods, timepieces, jewellery, and plated ware. 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 direct imports oversea into New South Wales from the chief British Possessions at decennial periods since 1870, and in comparison the figures for the year ended 30th June, 1915:—

Country.	1870.	1880.	1890.	1900.	1910.	1915.
Canada .. .. .	£ 1,726	£ 17,530	£ 18,784	£ 114,321	£ 356,593	£ 944,518
Union of South Africa--						
Cape Colony .. .. .	....	5	55	948	12,950	} 25,550
Natal .. .. .	....	....	....	70	7,362	
Transvaal .. .. .	....	....	....	....	....	
Ceylon .. .. .	210,114	13,668	43,702	213,195	357,522	430,148
Fiji .. .. .	....	54,135	99,853	60,831	161,894	247,650
Hong Kong .. .. .	48,808	228,526	271,730	67,928	95,450	151,710
India (incl. Burma) .. .. .	2,567	653	195,368	390,653	849,097	1,200,983
Mauritius .. .. .	325,680	207,107	5,050	76,779	1,002	....
New Zealand .. .. .	298,951	460,735	932,073	1,348,605	1,180,011	1,151,271
Straits Settlements .. .. .	....	16,045	27,148	40,391	132,245	231,731
Aden .. .. .	....	....	....	432	2,802	....
Malta .. .. .	....	....	400	373	746	....
Papua .. .. .	....	....	....	33,474	50,411	56,003
Norfolk Island .. .. .	....	1,665	1,169	1,380	770	6,126
Ocean Island .. .. .	....	....	....	....	31,369	18,695
Other British Possessions .. .. .	60	....	57	4,384	134	107,500
Total .. .. .	£ 887,906	1,000,069	1,595,398	2,353,759	3,240,358	4,571,885

\* Year ended 30th June.

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 year 1904, and for the years 1912-15.

Country.	1904.	1912.	1913.	1915.*
	£	£	£	£
Canada ... ..	131,487	356,485	359,022	612,796
Ceylon ... ..	252,609	389,253	419,395	425,578
Fiji ... ..	53,102	215,062	388,653	242,056
Hong Kong... ..	7,197	2,846	5,504	1,927
India (incl. Burma) ... ..	396,568	920,334	1,221,849	1,262,091
Jamaica ... ..	9,937	.....	.....	.....
New Zealand ... ..	820,900	1,839,004	1,457,335	984,401
Ocean Island ... ..	6,986	29,752	16,208	19,161
Papua ... ..	40,012	69,630	78,610	54,828
Straits Settlements ... ..	33,382	54,586	58,778	50,329
Union of South Africa ... ..	3,227	339,994	196,206	166,793
Other British Possessions... ..	35,499	45,696	63,856	148,248
Total ... ..	£ 1,790,906	4,292,642	4,265,416	3,968,208

\* Year ended 30th June.

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 (Oversea).

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 1914-15 Australian produce represented 93 per cent., and other produce 7 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	
1914*	14,518,309		1,220,004	15,738,313	
1915†	26,176,233		1,930,792	28,107,025	
Percentage total	{ 1914*... 1915+...		92·2 93·1	7·8 6·9	100 100

\* Half year ended 30th June.

† Year ended 30th June.

## RE-EXPORT TRADE.

The re-export trade of the State was of some importance until 1889, but 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 total value of British and foreign re-exports during the year ended 30th June, 1915, was £1,930,792. The principal items were specie £365,808, sugar £318,877, vessels £112,500, rice £104,670, piece goods £83,214, machines and machinery £70,821, metal manufactures £68,529, tobacco £61,369, instruments £56,591, tea £52,156, and spirits £47,991.

## 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 since 1908, 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
1914*	524,430	44,990	569,420
1915†	1,045,751	133,274	1,179,025

\* Six months ended 30th June.

† Year ended 30th June.

Practically the whole Australian produce is of New South Wales origin. Following are details of the most important items in the entries for 1915 of this Australian produce:—

	Quantity.	Value.
Bunker coal ... ..	tons 1,100,427	£640,667
Meats ... ..	...	129,340
Butter ... ..	lb. 503,605	25,612
Flour ... ..	...centals 61,467	22,149
Potatoes ... ..	... cwt. 42,176	14,476
Fish ... ..	... lb. 449,321	10,506
Milk, preserved ... ..	... lb. 664,051	16,026
Hay and chaff ... ..	... cwt. 147,094	59,890
Cigarettes ... ..	... lb. 22,273	13,335

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, and on 30th June of the years 1914 and 1915 :-

Article.	1911.	1912.	1913.	1914.	1915.
Stimulants—					
Ale and beer ... gal.	139,606	152,464	130,147	41,087	153,959
Spirits—					
Brandy ... ..	121,723	90,043	88,950	81,407	88,298
Gin and geneva ... ..	40,465	35,928	38,808	51,337	34,857
Liqueurs and cordials ... ..	4,368	4,117	4,723	4,167	3,508
Rum ... ..	253,217	190,763	212,878	207,045	138,946
Schnapps ... ..	38,294	40,199	43,988	33,295	48,266
Whisky ... ..	320,882	347,907	344,563	334,621	340,516
White spirits ... ..	109	99	165	768	6,510
Other ... ..	3,245	3,268	2,833	2,760	4,062
Distilled in Commonwealth ... ..	334,310	338,586	359,405	206,523	169,686
Wine—					
Sparkling ... ..	9,082	10,468	11,954	14,418	5,846
Still ... ..	20,876	21,906	19,315	26,237	16,262
Narcotics—					
Tobacco—					
Manufactured ... lb.	285,116	186,644	234,280	380,415	254,358
Unmanufactured ... ..	4,036,433	5,248,997	7,646,560	7,729,928	646,046
Cigars ... ..	54,488	22,018	35,304	21,833	29,335
Cigarettes ... ..	31,879	31,659	42,030	18,816	23,330
Sugar—					
Raw and refined ... owt.	647,476	957,493	1,290,883	491,401	115,524
Glucose ... ..	3,797	348	6,275	1,680	1,437
Other articles—					
Candles ... .. lb.	38,566	30,006	51,350	24,170	26,625
Cement ... .. owt.	14,796	6,564	13,383	36,736	300
Cocoa and chocolate lb.	58,246	138,997	189,180	152,546	75,653
Coffee and chicory ... ..	129,998	141,446	275,979	338,763	276,211
Coffee essence & prepared ..	.....	.....	18,890	21,040	3,323
Fruits, dried—					
Currants ... ..	99,980	40,246	10,745	13,259	1,255
Raisins ... ..	25,448	26,595	34,347	24,920	10,929
Dates ... ..	99,605	109,495	905,649	822,088	162,645
Other ... ..	43,740	87,753	81,554	106,360	169,810
Grain and pulse (prepared)—					
Rice ... .. cntl.	98,103	206,848	180,894	244,827	117,116
Other ... ..	10	12,979	3,133	300	3,450
Hops ... .. lb.	29,902	31,919	45,552	45,489	61,520
Iron, galvanised ... owt.	640	160	3,770	2,420	2,410
Matches ... gross boxes	35,327	98,645	63,546	30,056	7,623
Milk ... .. lb.	21,187	12,229	16,872	14,496	25,632
Salt ... .. owt.	130,658	55,133	68,607	10,614	11,885
Salt, rock ... ..	2,690	92	.....	126	300
Vinegar ... .. gal.	13,718	20,008	34,544	21,396	6,006

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.

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 onions and potatoes.

In 1914, New South Wales was represented in the United States and Canada by a Trade Commissioner, who was also Executive Commissioner to the Panama Pacific Exposition.

CHAMBERS OF COMMERCE.

Chambers of Commerce have been formed in New South Wales at sixteen important trading centres, including Sydney, Newcastle, Parramatta, Lismore, and Grafton. The membership of the Sydney Chamber of Commerce as at May, 1915, was 1,192, including 122 firms and public companies.

## LOCAL GOVERNMENT.

LEGISLATION passed in the years 1905 and 1906 gave the State of New South Wales full local government, except in the Western Land Division, which is still under State control, exclusive of a few municipalities incorporated under the Municipalities Act of 1897.

The Act of 1842, by which the City of Sydney was incorporated, was the first provision in this State for conferring municipal privileges. 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 were charged on the unimproved value of the land, and not on the annual rental. The rate levied should be not less than 1d., nor more than 2d. in the £, unless the minimum rate was more than sufficient to meet the requirements of the shire, in which case a rate of less than 1d. might be levied by permission of the Governor. The ratable value of coal-mines was 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 was the provision for suspending the operation of the State land tax when the council had 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 were 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 may 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.

During the year 1915 two important measures, viz., the *Local Government Bill (No. 2)* and the *Local Government Franchise Bill*, were introduced to Parliament, but they were not further considered.

#### 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, 1914, 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	739,210
In Country Municipalities ... ..	2,764	457,150
In Shires ... ..	180,656	649,040
Total (incorporated)... ..	183,569	1,845,400
Western Division (portion unincorporated) ...	125,893	16,628
Total ... ..	309,462	1,862,028

#### 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, and 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, the prevention of betting in public places, while 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, but under an Act passed in 1916, in the event of an equal number of votes being polled, the Governor in Council may appoint one of the aldermen to the position.

The Act of 1905 also regulated the election of the city members of the Metropolitan Board of Water Supply and Sewerage, and of the Fire Brigades Board, and extended the power of the Council as regards resump-tions, in order to provide workmen's dwellings, and further provision was 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 1914 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.

An amending Act, passed in April, 1916, empowers the Council to levy rates on persons owning pipes, wires, cables, and rails on, under, over, or through any public places under the control of the Council, excepting properties owned by the Crown. Also, under that Act, the Sydney Council may levy a general rate, not exceeding 6d. in the £, on the unimproved value of all ratable property in the city. This Act amends the 1908 Act so far as the latter relates to the land tax of 1½d. in the £ on the unimproved capital value and the city rate of 1s. 9d. in the £ on the assessed annual value.

#### 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 were 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.

A bill embodying most of the suggestions mentioned is now being prepared for presentation to Parliament.

## 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 1915. 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 levied in 1914 covered the expenses of street-lighting and street-watering.

The other municipal 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 and Consolidating Acts 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, and the valuations, therefore, cannot be compared with those of previous years.

Property in the City of Sydney was in 1914 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 1912-1914. As previously stated, however, the rating will be on the unimproved value in future:—

	1912.	1913.	1914.
	£	£	£
Unimproved capital value ... ..	23,988,480	23,837,157	27,395,826
Improved capital value ... ..	57,395,288	64,080,440	75,786,580
Assessed annual value... ..	2,582,788	2,753,408	3,271,102

## 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 1914 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 1913 and 1914 they ranged from 2½d. to 5½d., and in the country in each of the years mentioned the range was from 1d. to 12d. The following general rates were struck for the years 1913 and 1914:—

General Rate Levied.	Year 1913.		Year 1914.	
	Suburbs of Sydney.	Country.	Suburbs of Sydney.	Country.
1d. and under 2d.... ..	.....	17	.....	15
2d. „ 3d.... ..	3	22	2	19
3d. „ 4d.... ..	12	41	6	38
4d. „ 5d.... ..	20	41	24	46
5d. „ 6d.... ..	5	15	8	15
6d. and over ... ..	.....	11	.....	12
Total ... ..	40	147	40	145

The majority of suburban councils levied rates between 4d. and 5d., the next in number being between 5d. and 6d. In the country the proportions were different, as the municipalities charging 4d. to 5d. per £ were in the majority, closely followed by those from 3d. to 4d. The councils which levied 6d. and over in the £ during 1914 were Aberdeen, Bathurst, Braidwood, Hillgrove, Murrurundi, Warialda, and Wyalong, each 6d.; Scone, 6½d.; Lambton, 7d.; Broken Hill, 8½d.; Bourke, 10½d.; 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.

One hundred and two municipalities levied special and local rates on the unimproved capital value, ranging from  $\frac{1}{30}$ d. to 12d. in the £, and thirty-two on the improved capital value, ranging from  $\frac{1}{4}$ d. to 3d. in the £.

In the following table the unimproved and improved values for 1913 and 1914 are compared :—

Division.	Unimproved Value.		Improved Value.		
	1913.	1914.	1913.	1914.	Increase, 1914.
	£	£	£	£	per cent.
Sydney—City ... ..	23,837,157	27,395,826	64,080,440	75,786,580	18·3
Suburbs ... ..	28,240,971	31,979,553	73,714,823	82,978,113	12·6
Metropolis... ..	52,078,128	59,375,179	137,795,263	158,764,693	15·2
Country ... ..	20,807,126	22,573,671	50,451,471	55,682,063	10·4
Total ... ..	72,885,254	81,948,850	188,246,734	214,446,756	13·9

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.		
	1913.	1914.	Increase.
	£	£	per cent.
Sydney—City ... ..	40,243,283	48,390,754	20·2
Suburbs ... ..	45,473,852	50,998,760	12·1
Metropolis ... ..	85,717,135	99,389,514	15·9
Country ... ..	29,644,345	33,198,392	11·7
Total ... ..	115,361,480	132,497,906	14·9

The increase in the value of improvements may reasonably be taken as indicative of municipal prosperity, especially if existing industrial conditions be considered. 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 replaced by more extensive structures, which are made still more valuable by reason of the increased cost of labour and materials.

The unimproved capital value of ratable land in municipalities is £81,949,000, and in shires £103,451,000, the total being £185,400,000. 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 £195,400,000. 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 £132,498,000, or 162 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 ...	27,396,000	247	8,234 8 11	48,391,000	437	14,544 18 8
Suburbs ...	31,979,000	51	347 17 1	50,999,000	81	554 14 11
Metropolis ...	59,375,000	80	623 6 0	99,390,000	134	1,043 7 4
Country Municipalities	22,574,000	49	12 15 3	33,108,000	72	18 14 3
Shires ...	103,451,000	159	0 17 10	103,451,000	159	0 17 10
Western Division (part unincorporated).	10,000,000	601	0 2 6	10,000,000	601	0 2 6
State ...	195,400,000	105	0 19 9	245,949,000	132	1 4 10

#### 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 these reasons, 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 1914, amounted to £634,085, the City Fund contributing £517,932, the Public Markets Fund £52,055, and the Resumption Account £64,098.

The total receipts exceeded the disbursements by £27,692. Although abstracts of receipts and disbursements in respect of the Public Markets Fund and the Resumption Account are shown in the city accounts, these funds are really subsidiary to the City Fund, their balances 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 ... ..	457,480
Works ... ..	11,423
Health Administration ... ..	15,428
Public Services... ..	13,149
Municipal Property ... ..	11,139
Miscellaneous ... ..	9,313
Total ... ..	£517,932



Rates, £285,024, together with land tax, £170,653, form by far the greater part of the receipts under the heading "General Purposes." As provided by the amending Act of 1903, 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 in 1914 amounted to £606,393, viz.: City Fund, £419,970; Public Markets Fund, £71,827; and Resumptions Account, £144,596. Shown under the same headings as the receipts, the following were the disbursements of the City Fund:—

	£
General Purposes ... ..	42,873
Works ... ..	89,722
Health Administration ... ..	118,149
Public Services... ..	64,978
Municipal Property ... ..	14,960
Miscellaneous (Interest, Sinking Fund, &c.) ... ..	89,238
Total ... ..	£419,970

Salaries, which amounted to £31,636, absorbed a very large share of the expenses for General Purposes. Of the sum spent on Public Works, street maintenance accounted for £41,442, footpaths for £19,699, and wood-paving for £16,043. On city cleansing £86,154 was expended, and this was the main item in Health Administration. The large amount shown under "Miscellaneous" includes the Annual Debenture indebtedness, which in 1914 was £56,181 for interest, commission, &c., and £16,924 from Sinking Fund contributions.

The receipts and disbursements of the Public Markets Fund, as stated, were £52,055 and £71,827 respectively, showing a deficit of £19,772 on the year's transactions. Of this the Queen Victoria Markets brought in revenue to the extent of £17,568, or about 34 per cent. of the total.

The receipts and disbursements of the Resumption Account were £64,098 and £114,596 respectively, showing a deficit of £50,498, which was transferred and shown as an adjustment in the City Fund.

The next item to be considered is the Revenue Account of the Electricity Works Fund for the year 1914:—

Expenditure.		Income.	
	£		£
Generation of Electricity ... ..	71,651	Private Lighting ... ..	176,218
Distribution ... ..	57,630	Public Lighting ... ..	45,166
Management ... ..	26,486	Power Supply ... ..	113,641
Bad debts written off ... ..	572	Rentals—Meters, Motors, Lamps, &c. ... ..	14,357
Total ... ..	£156,339	Miscellaneous ... ..	764
Balance carried to Net Revenue Account ... ..	193,807		
Total ... ..	£350,146	Total ... ..	£350,146

Generation forms the largest item of expenditure, accounting for 45·8 per cent. of the whole. Distribution cost 36·9 per cent., Management 16·9 per cent., and Bad Debts written off 0·4 per cent.

The sales of current to the public for light and power amounted to £304,668, and the sales to the Council realised £30,357.

The charges against the gross profit of £193,807 carried to the Net Reserve Account were:—Interest on Debentures and Overdraft, £64,462; Interest on Balances—Company purchases, £133; Sinking Fund contribution, £13,585; Depreciation Reserve Account, £51,677; Loss during transfer, £1,100; and flotation expenses, &c., £2,911, making a total of £133,868. It will be seen from the foregoing that the net gain for the year was £59,939, which, added to the net profit from 1913, viz., £55,242, gives a total of £115,181 credited to profit and loss at the end of 1914.

Below is a summary of the balance-sheet of the Electricity Works Fund on 31st December, 1914:—

Liabilities.	£	Assets.	£
Debenture Loans... ..	1,634,500	Capital Expenditure — Land, Buildings, Machinery, Plant, &c. .... ..	1,841,578
Sinking Fund ... ..	75,052	Goodwills—Company Purchases	84,503
Reserve and Suspense Accounts	264,884	New South Wales Treasury— Sinking Fund Investments ...	75,052
Sundry Creditors... ..	33,176	Stores and Materials ... ..	135,257
Deposits (Consumers) ... ..	7,135	Consumers' Balances ... ..	60,100
Balance—Net Revenue Account	115,181	Other ... ..	24,768
Bank of New South Wales debit balance ... ..	71,330		
	£2,221,258		£2,221,258

The Loan Capital, which forms about 74 per cent. of the liabilities, returned 7.0 per cent. profit for the year; but consideration of the fact that the interest payments and Sinking Fund contribution for the year amounted to £78,180, that £51,677 was allowed for depreciation, and that the Sinking Fund is represented by an investment of £75,052 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, 1914:—

Liabilities.	£	Assets.	£
Debentures current ... ..	6,163,800	Bank Balances, Cr. ... ..	505,344
Bank Balances, Dr. ... ..	274,645	Landed Properties, Baths, and Sundries ... ..	5,046,873
Sundry Creditors ... ..	506,582	Machinery, Plant, Furniture, Stores, &c. ... ..	1,677,145
Sinking Funds Debenture In- terest Account... ..	471,403	Sundry Debtors ... ..	262,737
Improvement Account and Sun- dries ... ..	726,186	Sinking Funds (State Treasury) Investments ... ..	471,403 251,800
	£8,142,616	Flotation Expenses and Sundries	111,538
		Revenue Accounts ... ..	71,078
Excess of Assets ... ..	£255,302		£8,397,918

Notwithstanding the large Loan indebtedness the assets exceed the liabilities by £255,302. It should be noted that the Debentures include £1,654,500 borrowed in connection with Electric Lighting, and £975,500 for Public Markets, and as the proceeds of those 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 60·1 per cent. of the assets, include such large items as Public Markets, £1,256,217, Town Hall, &c., £765,996; Resumptions, £2,251,772; Electric Light Buildings, Works, &c., £343,528. The accumulated Sinking Fund, £471,403, as against a Debenture Debt of £6,163,800, 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.	1911.	1912	1913.	1914.
Area ... .. Acres	3,327	3,327	3,327	3,327
Population ... .. No.	118,800	116,400	115,900	110,700
	£	£	£	£
Unimproved Capital Value ... ..	23,940,030	23,988,480	23,837,157	27,395,826
Improved Capital Value ... ..	55,520,640	57,395,288	64,080,440	75,786,580
Assessed Annual Value ... ..	2,498,429	2,582,788	2,753,408	3,271,102
<b>City Fund—</b>				
Income—Rates ... ..	221,450	226,688	242,303	285,024
Land Tax ... ..	98,183	100,267	151,212	170,653
All other sources ... ..	92,085	102,755	61,378	62,255
Total ... ..	411,718	429,710	454,893	517,932
Expenditure ... ..	407,055	444,997	401,373	419,970
<b>Public Markets Fund—</b>				
Income ... ..	38,899	44,639	48,240	52,055
Expenditure ... ..	46,666	60,226	65,230	71,827
<b>Cattle Saleyards Fund—</b>				
Income ... ..	17,315	9,434	*	*
Expenditure ... ..	8,381	3,780	*	*
<b>Resumption Account—</b>				
Income ... ..	.....	.....	112,379	64,098
Expenditure ... ..	.....	.....	154,948	114,596
<b>Electricity Works Fund—</b>				
Income ... ..	190,289	234,325	301,637	350,146
Expenditure ... ..	161,898	197,253	244,291	287,296
Total Receipts—All Funds ... ..	658,221	718,108	917,149	984,231
Total Disbursements—All Funds ... ..	624,000	706,256	865,842	893,689
Liabilities—All Funds ... ..	4,310,441	5,654,811	7,195,657	8,142,616
Assets—All Funds ... ..	4,845,111	6,030,411	7,456,600	8,397,918
Loans outstanding ... ..	3,870,600	4,977,500	5,627,300	6,163,800
Sinking Fund ... ..	303,553	355,524	402,448	471,403

\* 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 dilapidated buildings, and opening up new streets, which must force the population outwards.

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.

## EXPENDITURE.

*Suburbs of Sydney and Country Municipalities.*

The expenditure during 1914 by the various municipalities under the Local Government Act amounted to £1,540,858, which was £149,271 less than the income. The following statement shows the expenditure allocated to the various funds in 1913 and 1914:

Funds.	1913.			1914.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
	£	£	£	£	£	£
General Fund ... ..	585,339	400,175	985,514	658,585	436,207	1,094,792
Trading Accounts ... ..	2,542	118,017	120,559	66	91,443	91,509
Special and Local Funds ... ..	53,714	245,413	299,127	51,205	248,719	299,924
Loan Funds ... ..	38,164	28,577	66,741	66,100	47,053	113,153
Reserves and Renewals Account ... ..	325	2,450	2,775	1,223	849	2,072
Gross Expenditure ... ..	680,084	794,632	1,474,716	777,179	824,271	1,601,450
Deduct Transfers... ..	38,730	26,765	65,495	35,762	24,830	60,592
Net expenditure ... ..	641,354	767,867	1,409,221	741,417	799,441	1,540,858

The greatest expenditure was naturally from the General Fund, which accounted for 68.0 per cent. of the whole, as against 66.8 per cent. in 1913.

The trading concerns of the municipalities are gas and electricity; the special and local funds relate to water supply, sewerage, sanitary and garbage, street-watering, street-lighting, old loans interest, and other miscellaneous matters.

Details of the expenditure from the General Fund are shown below:—

Source of Expenditure.	1913.			1914.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
	£	£	£	£	£	£
General Purposes—						
Rates and interest abandoned ... ..	2,307	1,629	3,936	323	616	939
Administrative expenses ... ..	53,243	59,999	113,242	54,758	61,326	116,084
Public Works ... ..	343,127	206,622	549,749	399,139	236,636	635,775
Health Administration ... ..	65,164	38,651	103,815	73,811	39,560	113,371
Public Services ... ..	84,625	48,240	132,865	11,924	49,894	141,818
Municipal Property ... ..	22,744	27,983	50,727	23,448	31,844	55,292
Transfers ... ..	11,334	14,131	25,465	13,895	14,233	27,628
Other ... ..	2,795	2,920	5,715	1,787	2,093	3,885
Total expenditure ... ..	585,339	400,175	985,514	658,585	436,207	1,094,792

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.	1913.			1914.		
	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	0·4	0·4	0·4	...	0·1	0·1
Administrative Expenses ..	9·1	15·0	11·5	8·3	14·1	10·6
Public Works ... ..	58·6	51·6	55·8	60·6	54·3	58·0
Health Administration ...	11·1	9·7	10·5	11·2	9·1	10·4
Public Services ... ..	14·5	12·1	13·5	14·0	11·4	13·0
Municipal Property ... ..	3·9	7·0	5·1	3·6	7·3	5·1
Transfers to Loan Funds ...	1·9	3·5	2·6	2·0	3·2	2·5
Other ... ..	0·5	0·7	0·6	0·3	0·5	0·3
Total ... ..	100·0	100·0	100·0	100·0	100·0	100·0

In 1914, of the expenditure by municipalities, 10·6 per cent. was on administrative expenses, and 58·0 per cent. on public works. Of the administrative expenses, salaries were the largest. The relative cost of administration in the country is high, being 14·1 per cent. of the total expenditure; the suburban municipalities spend only 8·3 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 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 1914 include—Pounds, £2,582; street-watering, £11,905; street-lighting, £72,613; and all other services, £54,718. The greatest part of the expenditure on Public Works was on roads, streets, &c., as will be seen below:—

Services.	1913.			1914.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
	£	£	£	£	£	£
Supervision ... ..	11,098	6,892	17,990	12,326	7,517	19,843
Roads, streets, culverts, &c. ...	399,502	185,090	494,592	359,763	205,476	565,239
Bridges ... ..	1,025	3,361	4,386	1,272	10,353	11,625
Drains, sewers, &c. ... ..	11,821	3,788	15,609	13,705	4,990	18,695
Ferries, wharfs, and jetties	3,663	2,320	5,983	4,064	1,792	5,856
Sundries ... ..	6,018	5,171	11,189	8,009	6,508	14,517
Total ... ..	343,127	206,622	549,749	399,139	236,636	635,775

Of the expenditure on roads, streets, &c., in 1914, the amount spent on maintenance, renewals, and repairs was £281,761; £90,983 was expended on construction, £44,805 on street and gutter cleaning, £48,253 on kerbing and guttering, £60,900 on footpaths and gutter bridges, £30,178 for interest on loans, and £8,359 on sundries.

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 similarly.

## INCOME.

The income in 1914 of all the municipalities brought under the provision of the Local Government Act was £1,690,129, including £55,718 received as endowments or grants from the Government. Under the same funds as shown in the expenditure the income for 1913 and 1914 was as follows:—

Funds.	1913.			1914.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
	£	£	£	£	£	£
General Fund ... ..	578,862	398,707	977,569	681,911	469,295	1,151,206
Trading Accounts ... ..	2,227	160,687	162,914	12	124,369	124,381
Special and Local Funds	46,617	271,175	317,792	52,402	269,006	321,408
Loan Funds ... ..	65,313	46,495	111,808	58,706	66,853	125,559
Reserves and Renewals Account ... ..	5,309	17,064	22,373	6,101	22,066	28,167
Gross Income ... ..	698,328	894,128	1,592,456	799,132	951,589	1,750,721
Deduct Transfers... ..	38,730	26,765	65,495	35,762	24,830	60,592
Net Income ... ..	659,598	867,363	1,526,961	763,370	926,759	1,690,129

Details of the items of the General Fund for 1913 and 1914 are as follows:—

Source of Income.	1913.			1914.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
	£	£	£	£	£	£
General Purposes—						
Rates levied (including interest)	476,055	302,930	778,985	559,124	338,646	897,770
Government Endowments, &c.	782	4,903	5,685	745	4,371	5,116
Sundries ... ..	9,855	7,690	17,545	12,466	8,926	21,392
Public Works* ... ..	42,849	17,291	60,140	51,068	47,186	98,254
Health Administration*	22,414	16,553	38,967	22,454	14,954	37,408
Public Services* ... ..	7,925	15,601	23,526	12,912	16,845	29,757
Municipal Property ... ..	18,180	32,759	50,939	20,348	37,849	58,197
Miscellaneous ... ..	802	980	1,782	2,704	518	3,312
Total ... ..	578,862	398,707	977,569	681,911	469,295	1,151,206

\* Including Government grants.

To the income from public works, the Government contributed £45,185 as grants for roads, streets, &c., £652 for ferries, £3,937 for Parks and Reserves, and £828 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.	1913.			1914.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
General Purposes—						
Rates levied (including interest)	82.2	76.0	79.7	82.0	72.2	78.0
Government Endowments, &c.	0.1	1.2	0.6	0.1	0.9	0.4
Sundries ... ..	1.7	1.9	1.8	1.7	1.9	1.9
Public Works* ... ..	7.4	4.3	6.2	7.5	10.1	8.5
Health Administration*	3.9	4.2	4.0	3.3	3.2	3.2
Public Services* ... ..	1.4	3.9	2.4	2.0	3.6	2.6
Municipal Property ... ..	3.1	8.2	5.1	3.0	8.1	5.1
Miscellaneous ... ..	0.2	0.3	0.2	0.4	.....	0.3
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 78·0 per cent. In the suburbs it was 82·0 per cent., and in the country 72·2 per cent. The next important source of income was from Public Works, but it should be remembered that about 46·7 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 3·2 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 3·2 per cent. in 1914. 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 1913 and 1914 are shown in the following table:—

Funds.	1913.			1914.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
Expenditure—	£	£	£	£	£	£
Water Supply ... ..	.....	78,022	78,022	.....	84,733	84,733
Sewerage ... ..	.....	10,163	10,163	.....	11,018	11,018
Sanitary and Garbage ... ..	24,230	116,329	140,559	35,312	123,059	158,371
Street Lighting ... ..	.....	22,015	22,015	.....	23,566	23,566
Street Watering ... ..	1,712	504	2,216	1,010	542	1,552
Old Loans' Interest ... ..	5,398	969	6,367	7,632	718	8,350
Cemetery ... ..	4,383	.....	4,383	5,450	.....	5,450
Miscellaneous ... ..	17,991	17,411	35,402	1,801	5,083	6,884
Total ... ..	53,714	245,413	299,127	51,205	248,719	299,924
Income—						
Water Supply ... ..	.....	87,828	87,828	.....	93,699	93,699
Sewerage ... ..	.....	11,375	11,375	.....	12,051	12,051
Sanitary and Garbage ... ..	24,916	122,925	147,841	35,378	130,405	165,783
Street Lighting ... ..	.....	23,131	23,131	.....	25,637	25,637
Street Watering ... ..	1,686	581	2,267	1,221	697	1,918
Old Loans' Interest ... ..	5,679	571	6,250	7,105	642	7,747
Cemetery ... ..	5,670	.....	5,670	6,996	.....	6,996
Miscellaneous ... ..	8,666	24,764	33,430	1,702	5,875	7,577
Total ... ..	46,617	271,175	317,792	52,402	269,006	321,408

## BALANCE-SHEET.

The financial position of the municipalities, at 31st December, 1913 and 1914, is shown by the following statement of liabilities and assets of the various funds:—

Funds.	1913.			1914.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
<b>Liabilities—</b>	£	£	£	£	£	£
General Fund .. ..	111,963	77,325	189,288	142,754	82,250	225,004
Trading Accounts ...	1,405	47,219	48,624	.....	68,365	68,365
Special and Local Funds	40,373	1,168,582	1,208,955	11,164	1,171,658	1,182,822
Loan Funds ... ..	727,319	605,107	1,332,426	794,703	641,204	1,435,907
Reserves and Renewals Account ... ..	5,056	14,620	19,676	4,878	21,323	26,201
Total ... ..	886,116	1,912,853	2,798,969	953,499	1,984,800	2,938,299
<b>Assets—</b>						
General Fund ... ..	305,354	454,116	759,470	363,096	487,820	850,916
Trading Accounts ...	466	93,333	93,799	.....	122,656	122,656
Special and Local Funds	41,636	1,279,958	1,321,594	39,191	1,300,137	1,339,328
Loan Funds ... ..	142,314	516,202	658,516	174,978	568,976	743,954
Reserves and Renewals Account ... ..	5,056	14,620	19,676	4,878	21,323	26,201
Total ... ..	494,826	2,358,229	2,853,055	582,143	2,500,912	3,083,055

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 1913 and 1914 was there an excess of liabilities. The liabilities and assets of the General Fund in the various municipalities, as at 31st December, 1913 and 1914, are shown below:—

Classification.	1913.			1914.		
	Suburbs of Sydney.	Country.	Total.	Suburbs of Sydney.	Country.	Total.
<b>Liabilities—</b>	£	£	£	£	£	£
Temporary loans ... ..	40,476	22,254	62,730	53,317	21,794	75,111
Overdrafts ... ..	.....	831	831	.....	806	806
Sundry creditors (including amounts due to other Funds) ... ..	71,487	47,401	118,888	89,279	50,879	140,158
Other ... ..	.....	6,839	6,839	158	8,771	8,929
Total ... ..	111,963	77,325	189,288	142,754	82,250	225,004
<b>Assets—</b>						
Outstanding rates (including interest) ... ..	37,066	67,621	104,687	45,039	78,040	123,079
Stores and materials ...	5,580	7,770	13,350	6,780	9,103	15,883
Bank balance and cash ...	28,754	36,653	65,407	41,326	51,035	92,361
Land and buildings ...	172,551	237,745	410,296	192,355	234,502	426,857
Plant and furniture ... ..	33,466	64,178	97,644	46,124	66,378	112,502
Other ... ..	27,937	40,149	68,086	31,472	48,762	80,234
Total ... ..	305,354	454,116	759,470	363,096	487,820	850,916



The principal asset of the municipalities consists of land and buildings, which were at the end of 1914 valued at £426,857, or 50·2 per cent. of the total assets. Outstanding rates and interest amounted to £123,079, while bank balances and cash in hand were equal to £92,361.

#### LOANS.

The total amount of loans raised during 1914 was £790,964, including £536,500 borrowed by the City of Sydney, £167,991 by the Suburbs, and £86,473 by Country municipalities, and allowing for additions and reductions of secured overdrafts. The sinking funds of the City of Sydney were increased by £68,955, of the Suburbs by £6,912, and of the Country by £972. 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 £7,750,552, and towards this amount there was at the credit of the sinking funds a sum of £506,175.

Rates of interest ranged from 3½ per cent., which was carried by £171,662, to 7 per cent., which, however, was payable only on £562; and the amount paid and due as interest on loans during the year was £308,979. The total indebtedness was £7,750,552, bearing an average rate of interest of 3·99 per cent., viz., 3·92 per cent. on the loans of the City of Sydney, 4·50 per cent. on those of the suburban municipalities, and 4·75 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 £7,750,552, the sum of £3,664,116 pays interest at 4 per cent., £2,184,215 at 3½ per cent., and £496,567 at 3¼ per cent. Of these amounts the metropolitan municipalities are responsible for £3,547,949, £2,184,215, and £490,900 respectively. The country municipalities borrowed £116,167 at 4 per cent., £133,066 at 4½ per cent., and £216,121 at 5 per cent.

The total debt per head of population living in municipalities amounted to £6 9s. 7d., without allowance being made for sinking funds, while the yearly charge for interest is 5s. 2d. 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, 1914, and the sinking funds set apart to meet them:—

Division.	Municipal Loans Outstanding.			Sinking Funds.	Interest paid and due on Loans, 1914.
	New South Wales.*	London.	Total.		
	£	£	£	£	£
Sydney—City ... ..	5,363,800	800,000	6,163,800	471,403	241,605
„ Suburbs ... ..	900,634	.....	900,634	16,619	30,340
Country ... ..	659,639	26,479	686,118	18,153	37,034
Total ... ..	£ 6,924,073	826,479	7,750,552	506,175	308,979

\* Includes £37,564 raised in Victoria.

Temporary loans, amounting altogether to £146,552, which bear interest at current bank rates, and loans payable on demand amounting to £99,085, 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 £826,479, or rather more than one-ninth of the total, and the total amount of debentures held locally was £6,924,073.

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 1914 five shires levied a rate less than 1d.

The rates levied in 1914 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.
2	d. 8	£ 2,397,566
2	2	2,570,377
1	8	824,394
23	1	26,991,470
1	1½	1,120,442
21	1½	17,412,384
2	1½	1,663,225
36	1½	22,921,517
7	1½	4,055,395
40	2	23,494,407
135	...	£103,451,177

In addition to the general rates shown above, local rates were also levied by thirty-two shires, particulars of which are shown in the following table:—

Shire.	District.	Purpose for which Levied.	Amount of Rate per £1 of u.c.v.
Apsley ... ..	Walcha ... ..	Bridge construction ... ..	pence. 0½
Berrigan... ..	Finley ... ..	Footpaths and drainage ... ..	3
Bland ... ..	Barnedman ... ..	Street improvements... ..	2
	West Wyalong ... ..	do do ... ..	2
Blaxland ... ..	Portland ... ..	Roads and streets and water supply.	4½
Blue Mountains..	Leura ... ..	Street lighting ... ..	1
Bolwarra ... ..	Lorn ... ..	Fire Brigade ... ..	0½*
	do ... ..	Street lighting ... ..	0½*
	do ... ..	Parks ... ..	0½*
	Phoenix Park... ..	Drainage ... ..	0½
Boree ... ..	Canowindra ... ..	Street improvements... ..	2
Bulli ... ..	Bulli ... ..	Street lighting ... ..	1½
Byron ... ..	Byron Bay ... ..	Roads and streets improve- ments.	2
	Brunswick Heads ... ..	do do ... ..	3
Cessnock ... ..	Cessnock ... ..	Fire Brigade ... ..	0½
	Kurri Kurri ... ..	do ... ..	0½
	Cessnock ... ..	Street lighting ... ..	2
Coolamon ... ..	Coolamon ... ..	{ Street improvements and street lighting. }	1½
	Ganmain ... ..		1½
Crookwell ... ..	Crookwell ... ..	Kerbing and guttering ... ..	2
Culcairn... ..	Henty... ..	Streets and footpaths ... ..	1½
Dorrigo ... ..	Coff's Harbour ... ..	Fire Brigade ... ..	0½
Erina ... ..	Gosford ... ..	Street lighting ... ..	1
		Drainage ... ..	2
Gilgandra ... ..	Gilgandra ... ..	Street improvements .. ..	3
Gloucester ... ..	Gloucester ... ..	Fire Brigade ... ..	0½
		Street lighting and street improvements.	2
Goobang ... ..	Trundle ... ..	Water supply ... ..	3
Hornsby... ..	Hornsby and Waitara Pennant Hills, Bee- croft, and Epping.	{ Street lighting ... .. }	0½
	Hornsby ... ..	Fire Brigade ... ..	0½
Ku-ring-gai ... ..	Wahroonga to Rose- ville.	Street lighting ... ..	0½
	do do ... ..	Fire Brigade ... ..	0½
Kyogle .. ..	Kyogle ... ..	Street improvements... ..	3½
Lake Macquarie..	Boolaroo and West Wallsend.	Fire Brigade ... ..	0½
	Boolaroo ... ..	Street improvements... ..	2
	West Wallsend ... ..	do do ... ..	1½
Lockhart ... ..	Lockhart ... ..	Additional general ... ..	3
Lyndhurst ... ..	Millthorpe ... ..	Street improvements... ..	2
Namoi ... ..	Boggabri ... ..	Bridge construction ... ..	1
	Harpary ... ..	do do ... ..	1
Sutherland ... ..	Cronulla ... ..	Additional general ... ..	1
Tintenbar ... ..	Alstonville ... ..	Roads and streets ... ..	3
Urana ... ..	Oaklands ... ..	Water supply ... ..	3
Wakool ... ..	Barham ... ..	Kerbing and guttering ... ..	2
Walgett... ..	Walgett ... ..	Fire Brigade ... ..	0½*
Warringah ... ..	Freshwater ... ..	Street lighting ... ..	0½
Wingadee ... ..	Quambone ... ..	Water supply ... ..	6

\* On I.C.V.

The unimproved capital value of the shires in 1914 was £103,451,177, 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 £606,198, and special and local rates £17,492. These figures represent the rates actually levied in respect of the year 1914, 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 1914-16 being as follows:—

52 shires in 1st class receive no endowment.				
63	1st	up to 10s. in the £ on General Rate.		
5	2nd	15s.		
8	3rd	20s.		
3	4th	25s.		
3	5th	30s.		
1	6th	not less than 40s. in the £ on General Rate.		

The highest endowment allotted in 1914 was 40 shillings in the £ to Bellingham shire, but on the whole the endowments are considerably lower than those paid in the preceding three years. In 1914 the Government paid £146,077 as endowment to the shires, and a further sum of £183,867 was paid as grants for special purposes, making the total subvention from the State £329,944.

#### 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, 1914, there were two shires which had loans current. These were Culcairn and Nepean; the original amount of the loans were £2,000 and £600 respectively, and Nepean shire had paid £50 off the loan principal. Both these loans were raised for the purpose of making improvements to roads, footpaths, &c.

#### INCOME.

The principal heads of income of shires in 1914 were as follows; for purposes of comparison the 1913 figures are attached:—

Particulars.	1913.		1914.	
	Income.	Per cent.	Income.	Per cent.
<b>General Fund—</b>	£		£	
General rates ... ..	562,820	67·3	609,580	58·3
Government endowment ... ..	134,635	16·1	146,077	14·0
Public works ... ..	62,453	7·5	197,754	18·9
Health administration ... ..	4,864	0·6	4,889	0·5
Public services ... ..	10,305	1·2	10,069	1·0
Shire property ... ..	10,159	1·2	13,738	1·3
Miscellaneous ... ..	5,372	0·6	5,171	0·5
Special and local funds ... ..	45,903	5·5	57,714	5·5
<b>Total Income ... ..</b>	<b>£ 836,511</b>	<b>100·0</b>	<b>1,044,992</b>	<b>100·0</b>

The income from public works in 1914 largely increased compared with 1913, owing to the fact that the Government grants in aid of roads, streets, bridges, &c., exceeded those of the previous year by £133,647. The income from special and local funds largely increased owing principally to the expansion in the Sanitary and Garbage Fund.

Of the total income in 1914, Government assistance, exclusive of grants for public works, provided 14·0 per cent., as against 16·1 per cent. in 1913. The principal items in public works were contributions to roads, bridges, &c., £11,956; Government grants for roads, &c., £173,223; and the receipts from ferries, including Government grants, amounting to £9,943, were £11,114. The principal item in public services was rent, &c., from public watering places, £8,128. 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, being the same proportion as in 1913.

#### EXPENDITURE.

The following statement shows the expenditure during 1914 in comparison with the previous year:—

Particulars.	1913.		1914.	
	Expenditure.	Per cent.	Expenditure.	Per cent.
General Fund—	£		£	
Rates and interest abandoned ...	3,362	0·4	1,979	0·2
Administrative expenses ... ..	91,450	10·3	95,760	9·6
Public works ... ..	707,923	79·9	801,542	80·5
Health administration ... ..	7,699	0·9	8,064	0·8
Public services ... ..	14,751	1·7	14,757	1·5
Shire property ... ..	11,251	1·3	15,277	1·5
Miscellaneous ... ..	6,613	0·7	7,296	0·7
Special and local funds ... ..	43,041	4·8	51,796	5·2
Total Expenditure ... ..	£ 886,090	100·0	996,471	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 £95,760, or 9·6 per cent. of the total expenditure. Of the administrative expenses, £36,230 were on salaries, £14,910 on advertising, stationery, printing, &c., £6,727 on valuation fees, and £15,801 on presidents' allowances and councillors' travelling expenses. The expenditure on works accounted for 80·5 per cent. of the total. The principal expenditure was £676,279 on roads, streets, culverts, &c., of which £352,003 were on maintenance, repairs, and renewals, £320,925 on construction, and £3,351 on sundries. For other public works—bridges, punts, ferries, wharfs, &c.—£38,763 were spent on maintenance and repairs, and £21,130 on construction. Supervision expenses (salaries of engineers, &c.) amounted to £48,948.

## BALANCE-SHEET.

The financial position of the shires on 31st December, 1914, was strong, as there was an excess of assets of £378,287. The combined balance-sheet of the shires on 31st December, 1914, appears as follows:—

Liabilities.		Assets.	
General Fund—	£		£
Temporary Loans ... ..	45,304	Outstanding Rates... ..	37,199
Due to Trust Fund ... ..	460	Stores and Materials ... ..	12,377
Sundry Creditors ... ..	38,389	Bank Balance and Cash ... ..	104,414
Due on Contracts ... ..	2,063	Sundry Debtors ... ..	9,715
Other ... ..	28	Land and Buildings ... ..	88,187
		Plant and Property ... ..	174,021
Total, General Fund ... ..	£86,244	Furniture, &c. ... ..	15,513
Special or Local Funds ... ..	23,473	Other ... ..	5,158
Total, all Funds... ..	£109,717	Total, General Fund ... ..	£446,584
Excess of Assets ... ..	378,287	Special or Local Funds ... ..	41,420
Total ... ..	£488,004	Total ... ..	£488,004

It will be observed that a large proportion of the assets of the General Fund—£104,414, or over 23 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 £2,996,367, equal to £1 12s. 6d. per head of the population residing in the taxable districts. This sum includes £1,488,364, rates collected by municipalities; £623,690, rates collected by shires; and £884,313, 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 ... ..	1,349,404	138,960	1,488,364	1 4 11
Shires ... ..	606,198	17,492	623,690	0 19 3
Metropolitan water and sewerage charges	798,490	.....	798,490	0 18 11
Hunter District water and sewerage charges.	85,823	.....	85,823	0 17 6
Total ... ..	£ 2,839,915	156,452	2,996,367	1 10 9

## 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. Further information regarding licenses and fees is published in the chapter of this Year Book treating of "Police and Prison Services."

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, and the operations of the Board may be extended to other districts by proclamation. At the end of 1914 the districts existing numbered 76. Particulars relating to the financial transactions of the Board will be found in the chapter of this publication dealing with "Private Finance."

The calls attended during 1915 numbered 2,428, of which 1,585 were in the Sydney district. Particulars are shown below:—

Calls.	Sydney District.	Country Districts.	Total.
False alarms ... ..	178	47	225
Chimney alarms ... ..	41	23	64
Fires—Slight ... ..	1,303	636	1,939
„ Serious ... ..	3	10	13
„ Total destruction... ..	60	127	187
Total ... ..	1,585	843	2,428

#### 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, 1915, fifty-one 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, 1915 of the waterworks completed and handed over by the Government, showing the capital debt and the sums payable annually for periods varying from 20 to 100 years:—

Municipality.	Capital Debt (as gazetted).	Annual Instalment.	Municipality.	Capital Debt (as gazetted).	Annual Instalment.
	£	£		£	£
Albury .. .. .	41,000	1,488	Jerilderie .. .. .	6,518	245
Armidale .. .. .	40,718	1,474	Junee .. .. .	42,000	1,519
Ballina .. .. .	17,652	664	Katoomba .. .. .	20,730	884
Balranald .. .. .	6,090	217	Kiama .. .. .	7,073	256
Bathurst .. .. .	55,734	2,019	Lismore .. .. .	18,526	716
Berry .. .. .	4,379	159	Lithgow .. .. .	35,732	1,441
Blayney .. .. .	10,771	389	Mittagong .. .. .	11,996	524
Bourke .. .. .	13,436	486	Moama .. .. .	7,601	275
Bowral .. .. .	872	61	Morces .. .. .	12,941	509
Casino .. .. .	12,246	456	Moss Vale .. .. .	13,000	470
Cobar .. .. .	26,911	989	Mudgee .. .. .	19,947	767
Condobolin .. .. .	8,059	297	Murwillumbah .. .. .	3,156	128
Cooma .. .. .	17,964	766	Nowra .. .. .	13,259	483
Coonamble .. .. .	10,214	387	Nyngan .. .. .	10,219	370
Cootamundra .. .. .	22,916	876	Orange .. .. .	40,322	1,507
Corowa .. .. .	14,941	549	Parkes .. .. .	22,000	796
Cowra .. .. .	15,647	699	Picton .. .. .	17,194	630
Deniliquin .. .. .	18,668	682	Quirindi .. .. .	18,807	806
Dubbo .. .. .	22,081	843	Singleton .. .. .	24,784	1,057
Dungog .. .. .	12,363	Not fixed.	Tumut .. .. .	10,238	370
Forbes .. .. .	29,021	1,257	Wagga Wagga .. .. .	41,583	1,518
Goulburn .. .. .	56,571	2,056	Warren .. .. .	5,819	256
Gundagai .. .. .	11,278	486	Wellington .. .. .	18,433	707
Gunnedah .. .. .	14,881	634	Wentworth .. .. .	4,000	145
Hay .. .. .	17,075	624	Wilcannia .. .. .	8,381	303
Hillgrove .. .. .	4,000	171			

The combined financial statements—revenue account and balance-sheet—of the municipalities which maintain waterworks are shown below:—  
The revenue account for 1914 was as follows:—

Income.		Expenditure.	
	£		£
Rates levied... .. .	63,587	Management .. .. .	14,753
Meter rents .. .. .	525	Working and maintenance .. .. .	29,389
Water sales .. .. .	23,941	Repairs and renewals .. .. .	3,974
Garden charges, &c. .. .. .	5,646	Interest payable to Government... .. .	31,370
		Other... .. .	5,247
		Balance .. .. .	8,966
Total... .. .	£93,699	Total .. .. .	£93,699

Of the expenditure, management charges accounted for 17·4 per cent., working and maintenance for 34·7 per cent., repairs and renewals 4·7 per cent., interest payable to Government 37·0 per cent., and miscellaneous items 6·2 per cent.

Rates contributed 67·9 per cent. to the income, meter rents 0·6 per cent., water sales 25·5 per cent., and garden charges, &c., 6·0 per cent.

The combined balance-sheet on 31st December, 1914, was as follows:—

Liabilities.		Assets.	
	£		£
Amount for which liable to Government .. .. .	910,165	Waterworks—plant, buildings, &c. .. .. .	947,425
Interest due to Government and unpaid .. .. .	38,346	Outstanding rates... .. .	16,592
Sundry creditors .. .. .	25,736	Bank balances and cash in hand .. .. .	23,515
Excess of Assets .. .. .	48,746	Stores and materials .. .. .	3,988
		Sundry debtors .. .. .	27,067
		Fixed deposits (including interest) .. .. .	4,406
Total .. .. .	£1,022,993	Total .. .. .	£1,022,993



The total amount advanced by the Government was £932,716, of which £22,551 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 £48,746.

## SEWERAGE AND DRAINAGE WORKS.

Only fourteen municipal councils have taken advantage of the Act providing for the construction of sewerage and drainage works in country towns, and the capital debt and annual repayments on 30th June, 1915, were as follow:—

Municipality.	Capital Debt as Gazetted.	Annual Instalment.	Municipality.	Capital Debt as Gazetted.	Annual Instalment.
	£	£		£	£
Ballina ... ..	327	20	Lismore ... ..	30,217	1,142
Blayney ... ..	429	26	Lithgow ... ..	53,176	*.....
Casino ... ..	16,383	*.....	Murwillumbah ... ..	2,264	97
Coraki ... ..	1,214	69	Narrandera ... ..	10,064	463
Forbes ... ..	1,623	59	Parkes ... ..	250	15
Hay ... ..	22,368	809	Parramatta ... ..	66,010	2,387
Katoomba .. ..	34,748	1,393	Tamworth ... ..	1,217	57

\* Not fixed.

Other sewerage systems are in existence in several places, but they have been constructed apart from the Act, and with few exceptions, the operations have been on a minor scale. The Metropolitan Board of Water Supply and Sewerage has assumed control of the works constructed by the City of Sydney and 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 1914 was as follows:—

Income.				Expenditure.			
			£				£
Rates levied ... ..			10,207	Management ... ..			1,697
Other ... ..			1,844	Working and maintenance ... ..			3,319
				Repairs and renewals ... ..			208
				Interest payable to Government... ..			5,449
				Other... ..			345
				Balance ... ..			1,033
Total ... ..			£12,051	Total ... ..			£12,051

Practically the only source of income is from rates. Of the expenditure, management charges represented 15·4 per cent., working and maintenance

30·1 per cent., repairs and renewals 1·9 per cent., interest payable to Government 49·5 per cent. and other expenses 3·1 per cent. The combined balance-sheet was as follows:—

Liabilities.		Assets.	
	£		£
Amount of Capital Debt for which liable to Government ...	167,057	Works ... ..	170,322
Due to Government as Interest	6,920	Outstanding rates ... ..	1,457
Sundry creditors ... ..	1,831	Bank balance and cash ... ..	3,341
Excess of Assets ... ..	2,073	Stores and materials ... ..	225
		Sundry debtors ... ..	2,536
Total ... ..	£177,881	Total ... ..	£177,881

## 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 eighteen municipalities.

The operations of the municipalities with gas-works in 1914 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 1913 are appended for purposes of comparison:—

Income.	1913.	1914.	Expenditure.	1913.	1914.
	£	£		£	£
Private lighting ...	51,960	56,808	Manufacture ... ..	33,904	38,268
Public lighting ...	10,818	10,914	Distribution ... ..	4,299	4,363
Sale residual products	6,941	7,312	Management expenses	9,664	10,032
Other ... ..	362	660	Public lighting ... ..	2,870	3,083
			Other ... ..	885	911
			Balance ... ..	18,459	19,037
Total ... ..	£ 70,081	75,694	Total ... ..	£ 70,081	75,694

On the total operations for 1914 there was a gross profit of £19,037, none of the municipalities showing a loss. The manufacture of gas accounted for 67·5 per cent. of the expenditure, as compared with 65·7 per cent. in 1913, and private lighting for 75·0 per cent. of the income, as against 74·1 per cent. in 1913.

The gross profit in 1914 was reduced in the Net Revenue Appropriation Account, which is not shown here, by charges amounting to £19,777. Transfers to the loan fund included £5,403 for payment of interest, and £4,133 for other purposes; and the credit balance carried forward amounted to £19,887.

The balance-sheet of the Gasworks Trading Undertaking for 1914 is given below:—

Liabilities.			Assets.		
		£			£
Due to other Funds	...	22,300	Materials, stock, &c.	...	52,553
Sundry creditors	...	15,370	Sundry debtors, including amounts		
Reserves	...	9,873	due from other funds	...	24,319
Excess of Assets	...	40,430	Fixed deposits	...	1,444
			Bank balance and cash	...	9,657
Total	...	£87,973	Total	...	£87,973

The total excess of assets amounted to £40,430, to which each municipality, with five exceptions, contributed.

The following balance-sheet of the loan fund shows the value of the assets of the Gasworks Trading Undertaking for 1914:—

Liabilities.			Assets.		
		£			£
Loans current	...	121,839	Land and buildings	...	31,055
Interest accrued not paid, &c.	...	2,151	Plant, mains, lamps, &c.	...	130,558
Excess of Assets	...	56,621	Due from other funds	...	15,974
			Investments	...	3,721
			Other	...	203
Total	...	£180,611	Total	...	£180,611

Against a total loan indebtedness of £123,990, the municipalities had assets valued at £180,611, the excess of assets being substantial. Of the assets, land, buildings, plant, &c., made up 89.5 per cent.; amounts due from other funds, chiefly trading accounts, 8.3 per cent.; and investments, &c., 2.2 per cent.

#### ELECTRICITY WORKS.

The following municipalities have erected electric lighting plants:— Sydney, Redfern, Broken Hill, Corowa, Goulburn, Inverell, Moss Vale, Narrandera, Newcastle, Penrith, Tamworth, Temora, and Young. These works were erected under separate Acts, as electric lighting may not be undertaken without special legislation.

The following accounts show the results of the operations of the electricity works in 1914 in respect of municipalities operating under the Local Government Act, Sydney electric lighting undertaking having already been dealt with.

The trading revenue account for 1913 and 1914 shows:—

Income.	1913.		1914.		Expenditure.	1913.		1914.	
		£		£			£		£
Private lighting	...	21,120	26,255	Generation	...	17,524	21,711		
Public lighting	...	9,768	10,252	Distribution	...	2,826	3,058		
Power supply	...	5,917	9,064	Management, &c.	...	6,204	4,308		
Rents of meters, &c.	...	1,469	1,965	Special charges	...	847	788		
Other	...	963	1,151	Public lighting	...	1,821	1,541		
				Other	...	289	3,446		
				Balance	...	9,726	13,835		
Total	...	£ 39,237	48,687	Total	...	£ 39,237	48,687		

Generation of electricity is the largest item of expenditure, accounting in 1914 for 62·3 per cent. of the whole. Distribution of the current cost 8·8 per cent., and management, &c., 28·9 per cent. The gross profit of this concern to the municipalities combined was £13,835.

The balance-sheet of the trading fund for 1914 is as follows:—

Liabilities.			Assets.		
		£			£
Due to other funds...	...	14,382	Materials, stock, &c. ...	...	11,249
Sundry creditors...	...	6,440	Sundry debtors ...	...	12,291
Excess of Assets...	...	13,861	Bank balance and cash...	...	11,143
Total ...	...	£ 34,683	Total ...	...	£ 34,683

The final statement is the balance-sheet of the loan fund for 1914:—

Liabilities.			Assets.		
		£			£
Loans current ...	...	138,651	Land and buildings ...	...	11,978
Interest accrued not paid	...	14,678	Steam plant ...	...	36,573
Other ...	...	4,634	Dynamos...	...	9,154
			Cables, poles, &c. ...	...	48,888
			Due from other funds ...	...	25,110
			Bank balance and cash	...	9,798
			Other ...	...	15,171
			Excess of Liabilities ...	...	1,291
Total ...	...	£ 157,963	Total ...	...	£ 157,963

#### POLLS OF RATEPAYERS.

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 on proposals to unite two or more adjoining areas; to unite part or parts of an area to the whole or part or parts of another area; for levying special or local rates, and whether such rates shall be raised on the unimproved 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 and maintenance 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 the resultant loan rate should be levied on a particular part of the municipality, and on the unimproved 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 lessees of ratable Crown land.

An analysis of the voting for the period ended 30th June, 1913, particulars of which were given in the previous issue of this publication, and which are the latest available, disclosed the fact that in the majority of instances the ratepayers evidenced a lack of interest in matters of local importance, as, on the average, the proportion of ratepayers who voted at polls was only 22 per cent.

## 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, 1914 and 1915:—

Position.	By Examination.		Without Examination.	
	1914.	1915.	1914.	1915.
Clerk .. .. .	16	26	...	7
Auditor ... ..	8	5	16	24
Engineer (full) ... ..	...	3	15	22
Engineer (interim) ... ..	1	2	15	18
Overseer... ..	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, 1915, this had increased to 2,178 miles, inclusive of trunk mains. There were 70½ miles of sewers in 1889, lengthened to 972 miles of sewers, and 54½ miles of stormwater drains in 1915.

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 being £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 reservoirs are as in the following statement:—

Dam.	Height above Sea-level.	Area.	Capacity.	Length of Dam.	Width at top.	Height.
	ft.	acres.	gallons.	ft.	ft.	ft.
Prospect ... ..	196·7	1,266½	11,029,180,000*	7,300	30	85¾
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 8,930·07 million gallons were raised at the various stations during the twelve months ended June, 1915, representing 68·13 per cent. of the total quantity discharged from Prospect. The pumping expenses, including the cost of second lifts, amounted in the aggregate to £44,514. 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 wrought-iron tank at an elevation of 223 feet above high-water, with a capacity of 1,000,000 gallons. 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,  $7\frac{1}{2}$  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.
1906	116,202	581,000	22,393,300	8,173,555,000	192	33·5
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	29,006,700	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
1915	175,758	878,800	37,548,100	13,705,062,000	210	42·7

The rate levied for water is 6d. in the £ on the assessed annual value of ratable property in the Metropolitan district, while the charge per meter is 11d. per 1,000 gallons up to 10 millions, 10d. from 10 millions to 20 millions, and 9d. over 20 millions. The revenue from the Water Service Branch during the year ended 30th June, 1915, exclusive of the country towns, was £441,966, and the expenditure, including interest on capital, £395,636. The net revenue showed a return of 4·25 per cent. on the capital debt of £6,644,289.

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 expenditure.	Interest.	Net return after paying working expenses.	Net profit after paying working expenses and interest.
	£	£	£	£	per cent.	£
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	283,410	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	3·69	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
1915	6,644,289	441,966	159,637	235,949	4·25	46,330

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; while 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, 1915:—

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 ... ..	£ 12,753	£ 1,091	£ 461	£ 237	£ 200	£ 898
Liverpool ... ..	39,694	1,750	1,435	652	529	2,616
Camden and Narellan ... ..	11,387	641	412	178	286	876
Richmond ... ..	15,878	960	574	1,078	...	1,652
Wollongong ... ..	96,221	7,593	3,479	2,796	...	6,275
Total ... ..	175,933	12,035	6,361	4,941	1,015	12,317

#### 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, Tenambit.

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, 1915, it had been increased to 389 $\frac{7}{10}$  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.
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
1915	20,709	103,545	2,859,000	1,043,547,000	138	27·6

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. The following table shows the financial position for the period 1906 to 1915:—

Year ended 30th June.	Estimated Capital Debt.	Revenue.	Expenditure.*	Return on Estimated Capital Debt.
	£	£	£	per cent.
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
1915	601,983	68,611	55,383	5·53

\* 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 Wolli 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.	£
1906	3,828,495	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
1915	5,775,094	344,489	111,809	205,928	4·02	(+) 26,752

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 1915.

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.	mils.
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
1915	124,759	624,000	972·14	53·65	429,364	915

## 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, 1915, are shown below:—

Year ended 30th June.	Capital cost—interest-bearing.	Revenue.	Working expenditure (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
1915	358,480	17,212	9,045	12,281	2·28	(-) 4,114

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 1915. As the following table shows, the length of sewers under the control of the Board on 30th June, 1915, was 63½ miles, and 6,151 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
1915	6,151	30,755	63·23	791	63·23

## 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 available 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.	Metalled, 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.

#### NUMBER OF BRIDGES AND FERRIES.

On 1st January, 1907, the date of the inception of the Local Government Act, the bridges of 20 feet span and over, including those in course of construction, numbered 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.
National Works ... ..	275	ft. *.....	.....	ft. .....	16
Municipalities ... ..	774	41,185	4,083	136,116	13
Shires ... ..	3,435	202,735	32,394	285,989	99
Western Division (unincorporated)	93	12,530	153	1,709	5
Total ... ..	4,577	*.....	36,630	423,814	133

\* 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 electrification 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:—

Year ended 30th June.	Expenditure on Services.	Endowments and Grants.			Total Expenditure.
		Shires.	Municipalities.	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	28,762	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
1915	175,726	152,831	2,806	155,637	331,363

#### 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 1914:—

City of Sydney—		£
Salaries—Road Maintenance ... ..		1,233
Maintenance of Streets ... ..		41,442
Footpaths ... ..		19,699
Woodpaving ... ..		16,043
Gullies ... ..		5,120
Street-lighting ... ..		24,822
Street Watering and Sanding ... ..		9,576
Centennial Park Streets ... ..		170
	Total ... ..	£ 118,155
Municipalities (other than Sydney)—		
Maintenance, Repairs, and Renewals... ..		281,761
Construction ... ..		90,983
Street and Gutter Clearing ... ..		44,805
Kerbing and Guttering ... ..		48,253
Footpaths and Gutter Bridges ... ..		60,900
Street-watering ... ..		13,457
Street-lighting ... ..		96,179
Other, including Tree-planting, &c. ... ..		8,359
	Total ... ..	£ 644,697
Shires—		
General Fund—Maintenance and Construction ... ..		672,928
Local Fund—		4,296
Other Expenditure ... ..		9,441
	Total ... ..	£ 686,665
	Grand Total ... ..	£ 1,449,517

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 £11,625. In the shires the maintenance, repairs, renewals, &c., of bridges cost £20,661; whilst £21,130 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 municipalities and shires 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 368 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, 86 acres, ideally situated on the shores of the Harbour, and Hyde Park, 39 acres, in the centre of the city. The total area covered is 654 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 4,060 acres of public parks and reserves, or about 4·4 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 *viâ* 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, 1914, there were 527 separate licenses issued for horse-racing, pony-racing, and trotting contests, the license fees received amounting to £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.

## MANUFACTURING INDUSTRY.

The records of manufactories in New South Wales at decennial intervals from 1871, indicating the aggregate number of establishments in operation, the number of persons engaged, 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	28,819	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
1914-15	5,268	90,301	26,161	116,462	22·1	6·5

The latest particulars of manufactories and works relate to the twelve months from 1st July, 1914, to 30th June, 1915. Previously the statistics related to the calendar year, the last in that respect being 1913. Particulars in regard to the six months from 1st January to 30th June, 1914, were not collected. In future, production statistics will cover the period of twelve months from 1st July in one year to 30th June in the next.

### 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.
			£	£	£
1905	3,700	72,175	8,031,948	5,191,350	30,028,150
1906	3,861	77,822	8,407,387	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	103,624	12,510,600	10,047,662	54,346,011
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
1914-15	5,268	116,462	16,833,973	12,654,446	68,220,573
Increase per cent. 1905 to 1915 ...	42·4	61·4	109·6	143·8	127·2

\* 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 £8,000,000, have been introduced; the salaries and wages have increased by 143 per cent., and the output by 127 per cent. Comparing the figures for 1915 with those of 1913, continued and remarkable expansion is apparent.

#### 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, which required 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.

#### BOUNTIES ON MANUFACTURED PRODUCTS.

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, 1908-15, the Iron Bounty Act, 1915, the Shale Oils Bounties Act, 1910-12, and the Wood Pulp and Rock Phosphate Bounties Act, 1912.

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.
Cigar leaf ... ..	for 10 years from 1st July, 1907 ... ..	2d. per lb.
Combed wool or tops, exported ... ..	for 2 years from 1st July, 1914 ... ..	1d. per lb. for first 1,000,000 lb. made by any one manufacturer; ½d. per lb. in excess of 1,000,000 lb. made by any one manufacturer.

Item.	Period.	Rate of Bounty.
<b>Manufacturers Encouragement Act, 1908-14 :—</b>		
Pig iron ... ..	} from 1st Jan., 1909, 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.
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**Wood Pulp and Rock Phosphate Bounties Act, 1912 :—**

Wood pulp ... ..	for 5 years from 1st Jan., 1913 ... ..	15 per cent. on market value.
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Rock phosphates (manufactured into marketable phosphatic manure) ...	for 5 years from 1st Jan., 1913 ... ..	10 per cent. on market value.
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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 1910-15, in respect of the bounties on manufactured products were as follows :—

Product.	1910.	1911.	1912.	1913.	1914.	1915.
	£	£	£	£	£	£
Combed wool or tops, exported.	4,933	8,522	16,898	13,061	12,706	7,727
Pig iron .. .. .	23,510	20,402	15,611	16,949	40,121	19,809
Puddled bar iron .. ..	1,254	2,080	671	38	.....	.....
Steel .. .. .	1,491	1,939	723	.....	7,136	.....
Galvanised sheet iron.. ..	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	.....
Cigar Leaf ... .. .	.....	.....	.....	.....	.....	36

## MANUFACTORIES IN NEW SOUTH WALES.

The following table is a summary of the most important features of the Manufactories of New South Wales in 1901, 1911, and 1914-15:—

	1901.	1911.	1914-15.
Number of Establishments... ..	3,367	5,039	5,268
Number of Employees ... { Male ... ..	54,556	82,083	90,301
... { Female ... ..	11,674	26,541	26,161
... { Total ... ..	66,230	108,624	116,462
Salaries and Wages paid to Employees. { Male ... ..	* .....	8,917,583	11,285,518
... { Female ... ..	* .....	1,130,079	1,368,928
... { Total ... ..	£ 4,945,079	10,047,662	12,654,446
Capital invested in Land, Buildings, and Fixtures ... ..	£ 7,338,628	13,140,207	16,813,303
Value of Plant and Machinery ... ..	£ 5,770,725	12,510,600	16,833,973
Value of Materials and Fuel used... ..	£ 15,637,611	34,913,564	43,910,037
Value added to Raw Materials in process of manufacture ... ..	£ 10,010,860	19,432,447	24,310,536
Total Value of Output ... ..	£ 25,648,471	54,346,011	68,220,573
Average per Factory--			
Employees ... .. No.	1,867	2,155	2,210
Land and Buildings ... ..	£ 2,180	2,607	3,192
Plant and Machinery ... ..	£ 1,713	2,482	3,195
Material and Fuel ... ..	£ 4,643	6,928	8,335
Value added in process of Manufacture ... ..	£ 2,973	3,856	4,614
Total Output ... ..	£ 7,617	10,785	12,919
Average per Employee--			
Time Worked ... .. months	11 32	11 55	11 46
Salaries and Wages { Male ... ..	£ * .....	114	131
... { Female ... ..	£ * .....	43	53
... { Total ... ..	£ 81	96	113
Value of Material and Fuel ... ..	£ 236	321	377
Value added in Manufacture ... ..	£ 151	179	209
Total Output ... ..	£ 387	500	586

\* Information not available.

The table is indicative of marked industrial progress since 1901. Under all headings healthy and continuous advances are shown. Thus the number of establishments has increased by over 37 per cent., and the number of employees by over 75 per cent. Capital invested (exclusive of working capital), which in 1901 amounted to £28,000,000, now stands at over £77,000,000—an increase of 175 per cent. The value of the output is also 100 per cent. more than in 1901. Side by side with this development, average wages have advanced by 127 per cent.

## 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 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.

The following table shows some of the principal details respecting each class of industries in the State during the year 1914-15 :-

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. ...	281	3,735	83	3,818	10-08	385,039	5,507	394,005
Oils and Fats, &c. ...	42	87	201	1,008	11-68	101,859	984	250,789
Processes in Stone, Clay, Glass, &c. ...	285	6,203	53	6,256	11-40	776,977	15,146	1,114,406
Working in Wood ...	664	8,112	73	8,185	11-62	890,237	17,776	820,117
Metal Works, Machinery, &c. ...	568	26,087	320	26,407	11-27	3,391,462	41,721	3,983,195
Connected with Food and Drink, &c. ...	767	11,685	3,765	15,390	11-32	1,709,587	25,572	3,466,183
Clothing and Textile Fabrics, &c. ...	998	7,370	17,499	24,869	11-72	1,785,377	5,724	537,980
Books, Paper, Printing, &c. ...	457	6,752	2,378	9,130	11-86	1,067,643	5,336	1,184,322
Musical Instruments, &c. ...	18	324	30	354	11-93	44,658	241	11,794
Arms and Explosives ...	7	695	5	700	12-60	81,499	332	100,372
Vehicles, Fittings, and Saddlery, &c. ...	397	3,979	101	4,080	11-78	435,016	1,534	144,008
Ship and Boat Building, &c. ...	43	4,768	2	4,770	11-56	663,916	4,156	659,228
Furniture, Bedding, and Upholstery ...	243	3,172	470	3,642	11-51	389,634	1,960	72,602
Drugs, Chemicals, and By-products ...	93	921	638	1,559	12-68	147,435	1,412	283,967
Surgical and other Scientific Instruments ...	15	94	18	112	11-52	11,198	17	4,834
Jewellery, Timepieces, and Plated Ware ...	59	637	77	714	11-88	89,769	257	58,853
Heat, Light, and Power ...	238	3,083	33	3,721	11-36	523,234	96,530	3,612,157
Leatherware, N.E.I. ...	24	407	125	532	11-62	46,886	180	12,485
Minor Wares, N.E.I. ...	76	430	345	1,275	11-91	108,990	959	102,316
Total ...	5,268	90,361	26,161	116,462	11-46	12,654,446	225,304	16,833,973

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 1914-15 :-

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. ...	109	2,294	82	2,376	10-67	285,719	3,730	274,817
Oils and Fats, &c. ...	22	536	163	702	11-83	77,620	649	198,884
Processes in Stone, Clay, Glass, &c. ...	120	3,637	30	3,667	11-46	481,375	5,982	476,757
Working in Wood ...	210	3,879	44	3,923	11-77	469,533	8,556	361,832
Metal Works, Machinery, &c. ...	402	16,963	218	17,259	11-93	2,255,760	11,959	1,705,669
Connected with Food and Drink, &c. ...	210	6,757	3,457	10,214	11-81	1,050,343	12,199	2,037,305
Clothing and Textile Fabrics, &c. ...	731	6,189	15,696	21,885	11-72	1,580,942	4,628	459,177
Books, Paper, Printing, &c. ...	257	5,419	2,268	7,685	11-67	912,622	4,715	933,264
Musical Instruments, &c. ...	13	324	30	354	11-93	44,658	241	11,794
Arms and Explosives ...	5	23	2	25	13-00	8,209	16	1,150
Vehicles, Fittings, and Saddlery, &c. ...	181	2,401	90	2,491	11-84	277,189	1,000	78,420
Ship and Boat Building, &c. ...	34	4,620	2	4,622	11-99	659,620	4,092	655,255
Furniture, Bedding, and Upholstery ...	219	2,936	465	3,401	11-53	365,111	1,809	65,344
Drugs, Chemicals, and By-products ...	82	786	623	1,419	11-82	124,968	1,103	185,841
Surgical and other Scientific Instruments ...	14	93	18	111	11-51	11,198	16	4,819
Jewellery, Timepieces, and Plated Ware ...	55	615	76	691	11-88	67,266	237	28,193
Heat, Light, and Power ...	103	2,225	20	2,254	11-88	327,341	73,235	2,233,451
Leatherware, N.E.I. ...	24	407	125	532	11-92	46,886	180	12,485
Minor Wares, N.E.I. ...	72	886	340	1,226	11-70	106,788	922	100,448
Total ...	2,863	60,975	23,847	84,822	11-60	9,198,129	135,569	9,905,168



## ESTABLISHMENTS.

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.	1911.	1912.	1913.	1914-15.
Treating Raw Material, &c. ... ..	274	256	256	272	287	297	281
Oils and Fats, &c. ... ..	48	51	48	48	45	41	42
Processes in Stone, Clay, Glass, &c. ...	240	244	252	309	297	313	293
Working in Wood ... ..	399	430	457	662	684	712	664
Metal Works, Machinery, &c. ... ..	280	301	376	509	536	553	563
Connected with Food and Drink, &c. ...	753	673	707	769	765	770	757
Clothing and Textile Fabrics, &c. ... ..	394	538	724	981	994	1,003	998
Books, Paper, Printing, &c. ... ..	286	298	335	436	426	447	457
Musical Instruments, &c. ... ..	3	6	6	12	14	13	13
Arms and Explosives ... ..	1	2	3	5	6	8	7
Vehicles, Fittings, and Saddlery, &c. ...	176	246	259	354	393	434	397
Ship and Boat Building, &c. ... ..	16	25	34	41	47	46	43
Furniture, Bedding, and Upholstery ...	87	115	119	197	220	246	243
Drugs, Chemicals, and By-products ...	28	19	48	82	87	87	93
Surgical and other Scientific Instru- ments ... ..	5	7	8	12	13	13	15
Jewellery, Timepieces, and Plated Ware	11	14	33	48	53	55	59
Heat, Light, and Power ... ..	76	106	139	191	203	216	238
Leatherware, N.E.I. ... ..	6	5	12	20	24	23	24
Minor Wares, N.E.I. ... ..	23	31	45	61	68	69	76
Total ... ..	3,106	3,367	3,861	5,039	5,162	5,346	5,268
Proportion to total for 1896 ... ..	100	108	124	162	166	172	170

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.

In 1915 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 1901-1915 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
1906	1,136	635	1,771	1,360	730	2,090	2,496	1,365	3,861
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
1914-5	2,154	709	2,863	1,832	573	2,405	3,986	1,282	5,268

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 decade 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 1915 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; clothing and textile fabrics, &c.; 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.	1913.	1914-5	1901.	1906.	1911.	1913.	1914-5
Treating Raw Material, &c. . . . .	89	82	102	106	109	167	174	170	191	172
Oils and Fats, &c. . . . .	21	20	22	21	22	30	28	26	20	20
Processes in Stone, Clay, Glass, &c. . . . .	66	73	103	111	120	178	179	206	202	173
Working in Wood . . . . .	86	114	152	201	210	344	343	480	511	454
Metal Works, Machinery, &c. . . . .	172	227	341	379	402	129	149	168	174	166
Connected with Food and Drink, &c. . . . .	160	159	188	198	210	513	548	581	572	547
Clothing and Textile Fabrics, &c. . . . .	372	495	689	714	731	166	229	292	289	267
Books, Paper, Printing, &c. . . . .	124	169	227	248	257	174	166	200	199	200
Musical Instruments, &c. . . . .	6	6	12	13	13	..	..	..	..	..
Arms and Explosives . . . . .	2	3	4	6	5	..	..	1	2	218
Vehicles, Fittings and Saddlery, &c. . . . .	93	94	142	175	181	153	165	242	259	9
Ship and Boat Building, &c. . . . .	16	27	30	35	24	9	7	11	11	9
Furniture, Bedding, and Upholstery . . . . .	99	105	180	224	219	16	14	17	22	24
Drugs, Chemicals, and By-products . . . . .	12	43	74	79	82	7	5	8	8	11
Surgical and Other Scientific Instruments . . . . .	7	8	11	12	14	..	..	1	1	5
Jewellery, Timepieces, and Plated Ware . . . . .	14	31	44	51	55	..	2	4	4	4
Heat, Light, and Power . . . . .	42	61	84	92	103	64	78	107	124	135
Leatherware, N.E.I. . . . .	5	12	19	22	24	..	..	1	1	..
Minor Wares, N.E.I. . . . .	29	42	56	64	72	2	3	5	5	4
Total . . . . .	1,415	1,771	2,510	2,751	2,863	1,952	2,090	2,529	2,595	2,405



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 1915 was 29, as compared with 12 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.	1918.	1914-15.
Treating Raw Material, &c., Pastoral Products	2,981	3,209	3,890	3,992	3,818
Oils and Fats, Animal, Vegetable, &c. ...	698	681	889	923	1,008
Processes in Stone, Clay, Glass, &c. ...	3,007	3,877	5,695	6,563	6,256
Working in Wood ...	5,108	5,205	8,181	9,293	8,185
Metal Works, Machinery, &c. ...	13,926	15,339	22,862	27,619	26,407
Connected with Food and Drink, &c. ...	11,372	11,607	14,050	15,197	15,390
Clothing and Textile Fabrics, &c. ...	14,497	19,650	26,504	26,565	24,869
Books, Paper, Printing, &c. ...	5,573	6,961	9,134	10,009	9,130
Musical Instruments, &c. ...	226	338	387	406	354
Arms and Explosives ...	11	17	33	379	700
Vehicles, Fittings and Saddlery, &c. ...	2,541	2,667	4,416	4,550	4,080
Ship and Boat Building, &c. ...	1,541	1,595	2,429	3,358	4,710
Furniture, Bedding, and Upholstery ...	2,140	2,317	3,534	4,035	3,642
Drugs, Chemicals, and By-products ...	450	1,012	1,460	1,365	1,559
Surgical and other Scientific Instruments ...	69	86	96	97	112
Jewellery, Timepieces, and Plated Ware ...	165	457	753	816	714
Heat, Light, and Power ...	1,417	1,833	2,795	3,577	3,721
Leatherware, N.E.I. ...	117	240	461	525	532
Minor Wares, N.E.I. ...	391	681	1,055	1,131	1,275
Total ...	66,230	77,822	108,624	120,400	116,462

\* Including working proprietors.

In the table 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	„
1911-1915	7.2	„ (four years).

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 two years, however, the extension of employment in most of 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.
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
1909	63,777	27,925	91,702	1914-5	84,822	31,640	116,462

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 35,980, or 74 per cent. since 1905, the increase for all other parts of the State was only 8,307 persons, or 36 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.
1905	34,756	14,086	21,355	1,978
1914-15	60,975	23,847	29,326	2,314
Increase per cent.	75·4	69·3	37·4	16·9

#### SEX AND AGE DISTRIBUTION.

The following table shows the sex and age distribution of the persons engaged in manufactories from 1907 onwards:—

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
1914-15	87,867	23,835	111,702	2,434	2,326	4,760	90,301	26,161	116,462

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 1908 :—

	1908.	1909.	1910.	1911.	1912.	1913.	1914-15.
Adults—	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
Males ... ..	73·11	72·79	73·14	73·29	74·37	75·29	75·45
Females ... ..	22·03	22·41	22·37	22·35	21·89	21·00	20·47
Total .. ..	95·14	95·20	95·51	95·64	96·26	96·29	95·92
Children under 16 years of age—							
Males ... ..	2·78	2·65	2·46	2·28	1·93	1·98	2·09
Females ... ..	2·08	2·15	2·03	2·08	1·81	1·73	1·99
Total ... ..	4·86	4·80	4·49	4·36	3·74	3·71	4·08
Grand Total.	100·00	100·00	100·00	100·00	100·00	100·00	100·00

The most satisfactory feature of this comparison is that the proportion of juvenile labour, which in 1908 was 4·86, now stands at 4·08, a decrease of over 20 per cent. Each year, to 1913, showed a decline in the proportion, but in 1914-15, owing to the decrease in adults, the proportion of juveniles increased.

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
1914-15	20·47	1·99	2·09	24·55	75·45

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 75·45 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 24·55 per cent. of the total since the year 1896.

The following table shows, at intervals since 1901, the industries in which women and girls have been employed in greatest numbers, and the proportion to every hundred males employed in the same industries:—

Industry.	Average Number of Women and Girls.					Proportion per 100 Males.				
	1901.	1906.	1911.	1913.	1914-15.	1901.	1906.	1911.	1913.	1914-15.
Food, &c.—										
Aerated waters ...	49	43	152	139	129	4	4	11	10	10
Biscuits ...	350	522	705	846	752	71	91	108	113	87
Condiments, Coffee, and Spices ...	167	224	216	237	236	42	80	102	101	95
Confectionery ...	225	388	483	489	532	39	63	64	52	53
Cornflour, Oatmeal	71	139	199	256	333	46	65	73	89	99
Jam and Fruit Canning	140	214	449	396	316	28	36	114	105	80
Meat and Fish Preserving ...	24	42	121	157	175	3	7	13	15	15
Pickles, Sauces, and Vinegar ...	58	62	174	184	184	129	172	125	102	101
Tobacco ...	428	390	755	805	978	71	62	112	116	124
Clothing, &c.—										
Dressmaking and Millinery ...	2,526	3,602	5,053	4,814	4,394	4,141	6,796	5,677	4,150	4,068
Hats and Caps ...	193	694	1,029	975	918	150	203	192	171	179
Waterproofs and Oilskins ...	290	129	98	77	68	203	403	377	233	323
Shirts, Ties and Scarfs ...	337	1,028	1,655	1,950	1,734	1,021	1,130	1,191	1,089	1,070
Slop Clothing ...	2,636	3,971	5,503	4,910	4,258	434	456	528	541	518
Tailoring ...	1,437	1,773	3,004	3,424	3,328	100	121	136	147	159
Woollen and Tweed Mills ...	72	178	389	416	576	44	111	111	116	152
Hosiery and Knitted Goods ...			180	320	416			529	533	586
Sails, Tents, and Tarpaulins ...	86	119	245	272	244	88	114	147	131	124
Boots and Shoes ...	1,118	1,589	1,593	1,559	1,471	39	50	57	58	55
Chemicals, Drugs and Medicines ...	66	199	365	329	369	20	46	79	71	72
Furnishing Drapery, Bedding, &c. ...	128	143	271	357	386	7	7	58	63	71
Printing and Book-binding ...	703	915	1,539	1,821	1,635	16	18	26	27	27
Paper, Paper Bags, and Boxes ...	148	495	754	778	719	149	118	157	154	153
Other industries ...	417	976	1,609	1,853	2,040	1	2	3	3	3
Total ...	11,674	17,835	26,541	27,364	26,161	21	30	32	29	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 1914-15 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 certificates. 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. Since 30th December, 1909, permission has not been granted, except under extreme circumstances to any girl under 14 years of age.

Of 4,760 juveniles engaged in manufacturing, 3,958 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 (26 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 during the last ten years are as follows:—

Year.	Metropolitan.		Newcastle.		Western.		Broken Hill		Goulburn.		Albury.		Total.		
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	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	53	36	...	...	...	4	...	...	...	2,511	1,340	3,851
1910	2,221	1,709	276	59	42	...	...	...	11	1	6	...	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	6	...	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
1914-15	2,287	2,114	214	131	19	6	18	...	18	1	4	2	2,560	2,254	4,814



## 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.
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
1914-15	142	8	7	...	2	...	1	...	152	8	160

## OCCUPATIONAL STATUS.

Of all the persons engaged in the manufactories in 1915, approximately 83 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 1914-15:—

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. ...	400	93	203	2,946	176	...	3,818
Oils and Fats, &c. ...	73	96	19	800	18	2	1,008
Processes in Stone, Clay, Glass, &c. ...	418	191	236	5,130	281	...	6,256
Working in Wood ...	967	417	396	6,077	328	...	8,185
Metal Works, Machinery, &c. ...	1,143	532	436	23,666	350	...	26,407
Connected with Food and Drink, &c. ...	1,057	909	750	12,007	667	...	15,390
Clothing and Textile Fabrics, &c. ...	1,602	394	41	22,098	178	556	24,869
Books, Paper, Printing, &c. ...	868	686	34	7,224	309	9	9,130
Musical Instruments, &c. ...	19	43	3	284	5	...	354
Arms and Explosives ...	21	22	6	647	4	...	700
Vehicles, Fittings, and Saddlery, &c. ...	515	177	14	3,264	104	6	4,080
Ship and Boat-building, &c. ...	139	223	45	4,221	82	...	4,710
Furniture, Bedding, and Upholstery ...	332	89	16	3,164	36	5	3,642
Drugs, Chemicals, and By-products ...	136	118	35	1,217	53	...	1,559
Surgical and other Scientific Instruments ...	23	7	...	72	9	1	112
Jewellery, Timepieces, and Plated Ware ...	72	59	1	564	18	...	714
Heat, Light, and Power ...	264	196	559	2,232	418	2	3,721
Leatherware, N.E.I. ...	39	23	2	467	1	...	532
Minor Wares, N.E.I. ...	118	36	8	1,092	20	1	1,275
Total ...	8,206	4,611	2,804	97,222	3,037	582	116,462

## CAPITAL INVESTED IN PREMISES.

In regard to the capital invested in manufacturing industries, full particulars are not available, for example, the amount invested as working capital cannot be ascertained. 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, since 1908, 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.	Value of Rented Premises, based on the rent paid, capitalised at 15 years' purchase.	Total Capital Value.	
	£	£	£	£
1908	6,508,164	3,686,340	10,194,504	9,718,842
1909	6,625,066	4,114,965	10,740,031	10,330,724
1910	7,208,392	4,594,110	11,802,502	11,578,620
1911	8,126,487	5,013,720	13,140,207	12,510,600
1912	8,833,266	5,561,760	14,395,026	13,795,195
1913	9,598,713	5,808,305	15,405,018	14,861,676
1914-15	10,889,008	5,924,295	16,813,303	16,833,973
Percentage increases, 1908-1915 ...	67·47	60·71	64·89	73·21

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 1914-15. In stating the value of land and buildings, the value of premises for which rent was paid has been included, the rent having been capitalised at 15 years' purchase.

Class of Industry.	Metropolitan District.		Country Districts.		Whole State.	
	Land, Buildings, and Fixtures.	Plant and Machinery.	Land, Buildings, and Fixtures.	Plant and Machinery.	Land, Buildings, and Fixtures.	Plant and Machinery.
	£	£	£	£	£	£
Treating Raw Material, &c.	362,241	274,817	103,264	119,188	465,505	394,005
Oils and Fats, &c. ...	205,317	198,884	32,674	51,905	237,991	250,789
Stone, Clay, Glass, &c.	605,720	476,767	344,982	637,649	950,702	1,114,406
Working in Wood ...	654,144	361,832	303,324	458,285	957,468	820,117
Metal Works, Machinery, &c.	2,295,667	1,705,962	645,591	2,277,233	2,941,258	3,983,195
Food and Drink, &c. ...	2,311,510	2,037,305	1,069,789	1,428,878	3,381,299	3,466,183
Clothing, Textile Fabrics, &c.	1,879,386	489,177	322,388	98,803	2,201,774	587,980
Books, Paper, Printing, &c.	1,224,793	933,264	198,954	251,058	1,423,747	1,184,322
Musical Instruments, &c.	57,335	11,794	.....	.....	57,335	11,794
Arms and Explosives ...	9,390	1,150	} 277,133	164,810	777,077	{ 100,372 144,008
Vehicles, Fittings, Saddlery, &c.	490,554	78,420				
Ship and Boat Building, &c.	819,355	655,255	14,449	3,973	833,804	659,228
Furniture, Bedding, &c.	455,916	65,344	26,740	7,558	482,656	72,902
Drugs, Chemicals, &c....	277,663	185,841	62,826	98,126	340,489	283,967
Surgical Instruments, &c.	31,890	4,819	} 4,995	735	175,826	{ 4,894 28,853
Jewellery, Timepieces, and Plated Ware, &c.	138,941	28,193				
Heat, Light, and Power	1,107,505	2,283,451	252,556	1,328,706	1,360,061	3,612,157
Leatherware, N.E.I. ...	62,921	12,485	.....	.....	62,921	12,485
Minor Wares, N.E.I. ...	158,542	100,448	4,848	1,868	163,390	102,316
Total ...	13,148,790	9,905,198	3,664,513	6,928,775	16,813,303	16,833,973

## 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 £16,833,973 in 1915.

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.
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	103,257	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
1914-15	3,985	16,833,973	241,452	175,133

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	8,920	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
1914-15	158,418	14,552	50,166	283	1,885

The source of the power used in 1902 and during the years 1911, 1913, and 1914-15 is given below.

Source.	Developed Horse-power.				Proportion of Total.			
	1902.	1911.	1913.	1914-15.	1912.	1911.	1913.	1914-15.
Steam ...	50,659	113,939	141,025	158,418	per cent. 82·19	per cent. 76·87	per cent. 73·26	per cent. 70·31
Gas ...	2,010	12,201	13,802	14,552	3·26	8·23	7·17	6·46
Electricity ...	8,820	20,671	35,885	50,166	14·31	13·95	18·64	22·22
Water ...	66	222	307	283	·11	·15	·16	·12
Oil ...	78	1,185	1,478	1,885	·13	·80	·77	·89
Total ...	61,633	148,218	192,497	225,304	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 1915, 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. ...	4,348	781	2,149	19	108	3,161	573	1,676	16	81	£ 47,530
Oils and Fats, Animal, Vegetable..	827	11	563	..	..	450	10	524	..	..	21,239
Processes in Stone, Clay, Glass, &c..	11,627	2,334	5,800	..	119	9,040	1,637	4,376	..	98	206,343
Working in Wood .. .. .	14,709	1,085	6,821	96	172	11,218	807	5,541	77	137	21,963
Metal Works, Machinery, &c. ...	26,847	3,200	29,741	..	282	19,276	2,613	19,620	..	212	410,267
Connected with Food and Drink, &c.	22,826	4,304	8,078	24	384	15,849	3,288	6,157	22	256	216,154
Clothing and Textile Fabrics, and Materials .. .. .	2,184	1,460	3,106	..	20	1,730	1,218	2,760	..	16	39,894
Books, Paper, Printing, &c. ...	1,481	1,275	3,912	5	264	1,020	960	3,171	2	188	32,111
Musical Instruments, &c. ...	..	75	168	..	..	..	75	166	..	..	1,456
Arms and Explosives .. .. .	439	..	24	..	..	316	..	16	..	..	3,206
Vehicles and Fittings, Saddlery &c.	321	495	911	..	214	247	337	796	..	154	16,367
Ship and Boat Building, &c. ...	3,275	44	4,491	..	4	2,755	42	1,356	..	3	18,203
Furniture, Bedding, and Upholstery	145	513	1,697	..	53	118	377	1,422	..	43	8,511
Drugs, Chemicals, and By-Products	303	272	1,180	..	3	182	224	1,004	..	2	13,878
Surgical and other Scientific Instruments .. .. .	..	1	18	..	..	..	1	16	..	..	276
Jewellery, Timepieces, and Plated Ware .. .. .	..	72	217	..	..	..	58	179	..	..	1,312
Heat, Light, and Power .. .. .	129,429	3,180	1,540	300	803	92,651	2,177	827	170	705	295,911
Leatherware, N.E.I. ...	18	115	79	..	..	9	102	69	..	..	723
Minor Wares, N.E.I. ...	404	73	655	..	..	396	53	490	..	..	4,972
Total .. .. .	219,177	19,410	71,150	444	2,421	158,418	14,552	50,166	283	1,885	1,360,847

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 1915 to £12,654,446; male workers received £11,285,518 or, £130 19s. 11d. per head; and females £1,368,928, or £52 18s. 9d. per head. A comparison of the total amount of salaries and wages paid during each year of the decennium, 1905-15, 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
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
1914-15	12,654,446	130 19 11	52 18 9	112 19 6	11·46

In 1905 the general average amounted to £77 12s. 2d. per worker; in 1905 and 1906 it was somewhat less but, since 1907 it has increased steadily, and in 1915 was 42 per cent. higher than in 1906.

The largest amount of wages is paid in the class, metal works and machinery, —£3,391,462 out of a total of £12,654,446 in 1915; 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 1915, are shown below:—

Class of Industry.	Salaries and Wages (exclusive of drawings by Working Proprietors).					
	Total Amount.			Average amount per employee.		
	1906.	1911.	1914-15.	1906.	1911.	1914-15.
	£	£	£	£ s. d.	£ s. d.	£ s. d.
Treating Raw Material, &c. . . . .	194,407	326,218	335,039	67 11 0	90 3 10	108 6 10
Oils and Fats, &c. . . . .	42,366	67,228	101,859	63 8 10	78 7 1	104 0 10
Stone, Clay, Glass, &c. . . . .	300,212	601,906	776,967	84 15 2	110 16 7	129 0 6
Working in Wood . . . . .	376,912	732,465	890,287	81 13 9	97 8 7	118 5 1
Metal Works, Machinery, &c. . . . .	1,502,331	2,728,236	3,391,462	102 10 6	121 15 4	130 18 7
Connected with Food and Drink, &c. . . . .	524,033	1,301,676	1,709,597	77 14 6	95 12 1	114 8 11
Clothing, and Textile Fabrics, &c. . . . .	907,542	1,635,509	1,735,377	48 18 5	63 17 0	74 11 7
Books, Paper, Printing, &c. . . . .	557,245	868,868	1,007,643	87 18 2	100 4 1	122 18 4
Musical Instruments, &c. . . . .	30,554	43,755	44,653	92 13 7	115 9 0	129 16 1
Arms and Explosives . . . . .	1,077	1,971	31,499	82 16 11	67 19 4	117 5 3
Vehicles, Fittings and Saddlery, &c. . . . .	179,990	301,955	433,016	76 12 6	87 12 5	117 14 7
Ship and Boat building, &c. . . . .	167,136	305,932	669,910	108 6 5	127 14 9	143 10 10
Furniture, Bedding, and Upholstery, &c. . . . .	157,333	354,308	389,634	73 4 9	106 9 0	113 18 7
Drugs, Chemicals and By-products . . . . .	62,893	124,844	147,435	67 15 5	87 15 11	97 10 2
Surgical and other Scientific Instruments . . . . .	5,589	8,202	11,188	75 10 6	94 5 0	116 12 11
Jewellery, Time-pieces and Plated Ware. . . . .	33,960	75,042	89,769	82 2 0	105 10 10	134 3 8
Heat, Light, and Power . . . . .	200,923	370,547	523,234	115 12 1	133 17 4	142 12 2
Leatherware, N.E.I. . . . .	14,213	36,739	46,886	64 12 7	83 19 10	92 13 2
Minor Wares, N.E.I. . . . .	33,005	74,101	108,990	53 1 4	73 5 11	90 0 0
<b>Total . . . . .</b>	<b>5,591,888</b>	<b>10,047,662</b>	<b>12,654,446</b>	<b>77 9 6</b>	<b>96 7 1</b>	<b>112 19 6</b>

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, with jewellery, and with leatherware, the increase since 1906 exceeds 40 and in some cases 50 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 1913, and in 1915. During the period the general average for male employees has increased by £27 Os. 8d., or 26 per cent., and for females by £15 Os. 8d., or 39·4 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, 11·46 months, was the same in 1909 and in 1914-15; and that the proportion of employees under 16 years of age was 3½ per cent. of males and 8¾ per cent. of females in the earlier year, as compared with 3½ per cent. of males and 9¼ per cent. of females in 1915:—

Class of Industry.	Average Annual Amount of Wages per Employee, excluding Working Proprietors.					
	Males.			Females.		
	1909.	1913.	1914-15.	1909.	1913.	1914-15.
Treating Raw Material, Product of Pastoral Pursuits, &c. . . . .	£ s. d. 76 18 8	£ s. d. 101 15 3	£ s. d. 109 11 8	£ s. d. 30 2 5	£ s. d. 51 12 0	£ s. d. 56 5 6
Oils and Fats, Animal, Vegetable . . . . .	93 0 4	104 12 1	117 15 1	37 6 11	48 8 11	50 19 5
Processes in Stone, Clay, Glass, &c. . . . .	103 8 6	120 8 6	120 12 10	34 8 7	43 10 11	54 13 7
Working in Wood . . . . .	90 18 10	114 2 7	118 14 8	49 16 1	60 3 11	66 8 6
Metal Works, Machinery, &c. . . . .	113 13 11	136 6 0	131 15 11	59 3 7	57 2 5	61 4 1
Connected with Food and Drink, &c. . . . .	100 16 11	125 2 8	135 3 9	37 4 1	48 0 0	50 16 7
Clothing and Textile Fabrics, &c. . . . .	98 1 11	126 2 1	129 4 0	38 5 7	51 0 7	52 13 8
Books, Paper, Printing, &c. . . . .	116 8 6	141 2 9	149 12 9	34 10 10	47 4 7	51 5 7
Musical Instruments, &c. . . . .	112 16 6	136 8 3	136 6 0	32 16 6	49 4 1	57 6 0
Arms and Explosives . . . . .	94 9 1	131 13 0	117 16 0	47 10 0	50 6 0	43 0 0
Vehicles, Fittings and Saddlery, &c. . . . .	86 17 7	111 9 5	118 19 10	41 17 6	64 1 11	70 15 8
Ship and Boat Building, &c. . . . .	125 17 10	140 6 10	143 11 6	.....	100 0 0	71 10 0
Furniture, Bedding, and Upholstery . . . . .	98 13 6	121 11 10	123 17 7	41 0 4	48 1 2	50 18 9
Drugs, Chemicals, and By-Products . . . . .	107 6 11	137 17 2	134 18 6	34 19 11	47 15 3	45 8 1
Surgical and other Scientific Instruments . . . . .	107 13 10	149 9 7	128 13 3	55 9 6	64 3 4	63 10 0
Jewellery, Timepieces, and Plated Ware . . . . .	100 7 7	130 3 5	121 19 7	42 19 8	68 0 11	69 12 3
Heat, Light, and Power . . . . .	123 18 1	140 16 1	143 7 4	59 0 10	60 12 8	62 12 1
Leather, N.B.L. . . . .	77 17 9	113 2 1	105 9 8	36 19 7	52 3 4	53 11 4
Minor Wares, N.B.L. . . . .	81 8 3	101 13 1	105 16 2	37 13 10	43 15 4	49 8 3
Total . . . . .	103 19 3	127 15 4	130 19 11	37 13 1	50 5 10	52 18 9

The following are the index levels of average annual amount of wages paid to total employees in manufactories and works during the years 1905-15. Wages in 1911=1,000 :—

Class of Industry.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914-15
Treating Raw Material, &c. . . . .	747	749	777	838	846	962	1,000	969	1,113	1,201
Oils and Fats, &c. . . . .	940	873	954	1,030	1,029	1,042	1,000	1,100	1,173	1,323
Processes in Stone, Clay, Glass, &c. . . . .	825	765	808	868	922	883	1,000	1,104	1,080	1,164
Working in Wood . . . . .	830	838	891	901	931	947	1,000	1,107	1,133	1,214
Metal Works, Machinery, &c. . . . .	858	842	873	919	922	962	1,000	1,083	1,114	1,075
Connected with Food and Drink, &c. . . . .	754	813	815	842	897	957	1,000	1,037	1,113	1,198
Clothing, and Textile Fabrics, &c. . . . .	736	766	781	850	869	923	1,000	1,033	1,125	1,168
Books, Paper, Printing, &c. . . . .	851	877	836	880	957	981	1,000	1,103	1,153	1,227
Musical Instruments, &c. . . . .	749	803	826	838	912	932	1,000	1,055	1,107	1,124
Arms and Explosives . . . . .	938	1,219	1,282	1,114	1,242	729	1,000	1,910	1,905	1,725
Vehicles, Fittings and Saddlery, &c. . . . .	834	875	967	909	981	1,078	1,000	1,217	1,262	1,344
Ship and Boat building, &c. . . . .	860	848	1,007	976	986	887	1,000	1,069	1,099	1,124
Furniture, Bedding, and Upholstery . . . . .	746	695	774	731	833	887	1,000	1,035	1,071	1,070
Drugs, Chemicals, and By-products . . . . .	770	771	814	870	899	908	1,000	1,064	1,149	1,111
Surgical and other Scientific Instruments . . . . .	1,111	801	886	789	1,000	951	1,000	1,119	1,399	1,237
Jewellery, Time-pieces and Plated Ware . . . . .	810	775	786	874	893	902	1,000	1,068	1,161	1,266
Heat, Light, and Power . . . . .	894	864	889	933	916	978	1,000	1,002	1,042	1,065
Leatherware, N.E.I. . . . .	733	769	794	823	851	878	1,000	1,167	1,188	1,103
Minor Wares, N.E.I. . . . .	731	724	834	863	943	942	1,000	1,104	1,183	1,228
Mean of all Industries . . . . .	805	804	837	879	906	943	1,000	1,085	1,138	1,172

The above table shows that wages in all industries were higher in the year 1915 than in 1911, also that with very few exceptions the wages further advanced between 1913 and 1915.

The wages in each class 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 1914-15, excluding the production of factories dealing with milk products, amounted to £64,138,695. Of this amount, £40,146,929 represent the value of materials and fuel used, the value added by the processes of treatment including salaries and wages being £23,991,766.

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 . . . . .	3,733,590	38,815,600	42,549,190	62·4
Fuel including Motive Power rented . . . . .	29,518	1,331,329	1,360,847	1·9
Salaries and wages . . . . .	144,135	12,510,311	12,654,446	18·6
<b>Total . . . . .</b>	<b>3,907,243</b>	<b>52,657,240</b>	<b>56,564,483</b>	<b>82·9</b>
Goods manufactured or work done . . . . .	4,081,878	64,138,695	68,220,573	.....
Balance which accrued to Proprietors for general purposes and for profit.	174,635	11,481,455	11,656,090	17·1

The difference between value of output and the cost of material, fuel, and wages, as shown represents the balance accruing to proprietors and manufacturers, from which is 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 £62 8s., while the workers received £18 12s., and the proprietors £17 2s. 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 Accruing to Proprietors.	
	£	£	£	£	per cent.	per cent.	per cent.	per cent.	
Treating Raw Material, Pastoral Products .. .. .	5,642,150	4,846,704	47,530	385,039	85.9	.8	6.8	6.5	
Oils and Fats, &c. .. .. .	1,176,404	861,539	21,239	101,859	73.2	1.8	8.6	16.4	
Processes in Stone, Clay, Glass, &c. .. .. .	1,891,733	361,386	206,343	776,997	19.1	10.9	41.1	28.9	
Working in Wood .. .. .	3,420,384	2,100,201	21,963	890,257	57.4	.6	26.0	16.0	
Metal Works, Machinery, &c. .. .. .	13,908,681	7,339,887	410,267	3,391,462	52.8	2.9	24.4	19.9	
Connected with Food and Drink, &c. .. .. .	24,922,078	19,674,332	216,154	1,709,597	78.9	.8	6.9	13.4	
Clothing and Textile Fabrics, &c. .. .. .	6,044,482	3,193,532	39,394	1,785,377	52.8	.7	29.5	17.0	
Books, Paper, Printing, &c. .. .. .	2,528,517	973,190	82,111	1,067,648	38.5	1.3	42.2	18.0	
Musical Instruments, &c. .. .. .	135,622	58,722	1,486	44,653	43.3	1.1	32.8	22.8	
Arms and Explosives .. .. .	135,341	23,813	3,206	81,499	17.6	2.3	58.2	21.9	
Vehicles, Fittings, and Saddlery, &c. .. .. .	1,061,414	411,068	16,367	433,016	38.8	1.4	40.8	19.0	
Ship and Boat Building, &c. .. .. .	1,034,076	247,469	18,203	689,916	23.9	1.6	64.8	9.7	
Furniture, Bedding, and Upholstery .. .. .	1,120,888	554,181	8,511	350,634	49.4	.8	34.8	15.0	
Drugs, Chemicals, and By-products .. .. .	1,239,934	737,464	13,878	147,435	59.5	1.1	11.9	27.5	
Surgical and other Scientific Instruments .. .. .	24,730	5,878	276	11,198	23.7	1.1	45.2	30.0	
Jewellery, Timepieces, and Plated Ware .. .. .	244,561	112,097	1,812	89,769	45.8	1.7	36.7	16.8	
Heat, Light, and Power .. .. .	3,017,617	662,719	295,911	523,234	21.9	9.7	17.3	51.1	
Leatherware, N.E.I. .. .. .	250,500	151,539	723	46,880	60.5	.3	15.6	20.6	
Minor Wares, N.E.I. .. .. .	421,667	233,571	4,973	108,930	55.4	1.2	25.8	17.6	
Total .. .. .	63,220,573	42,549,190	1,360,347	12,654,446	62.4	1.9	18.5	17.2	

\* 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 62.4 per cent. of the value of the output; there was, however, great diversity amongst the various classes, the proportion ranging from 17 per cent. in those industries engaged in arms and explosives 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 79 per cent. and wages only 9 per cent. of the total value, while in the latter class, the wages amount to three times the value of the materials used and represent 65 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 the period 1905 to 1915 :—

Year.	Wages.	Materials and Fuel.	Balance for Expenses and Profit.	Total.
1905	17·3	64·0	18·7	100·0
1906	16·1	65·3	18·6	100·0
1907	16·6	65·9	17·5	100·0
1908	18·0	65·7	16·3	100·0
1909	17·8	65·8	16·4	100·0
1910	17·5	65·6	16·9	100·0
1911	18·6	64·2	17·2	100·0
1912	18·9	62·9	18·2	100·0
1913	19·3	63·8	16·9	100·0
1914-15	18·5	64·4	17·1	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.	£
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
1914-15	42,549,190	1,360,847	68,220,573	24,310,536	13 11 2	12,654,446

The production per head of population has increased by £6 9s. 4d., or 89 per cent. since 1905.

With the exception of the industry in which surgical and scientific instruments are manufactured, where a marked decrease is evidenced, 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.	1910.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£
Treating Raw Material, &c....	1004·87	1013·26	1012·41	1153·19	1281·88
Oils and Fats, &c. ...	835·65	801·65	892·23	814·84	875·77
Processes in Stone, Clay, Glass, &c. ...	76·57	79·86	90·77	82·85	90·73
Working in Wood ...	195·60	231·13	254·41	258·89	259·27
Metal Works, Machinery, &c. ...	314·92	321·10	360·49	367·85	293·49
Connected with Food and Drink, &c. ...	1039·87	998·04	1035·41	1058·72	1292·43
Clothing and Textile Fabrics, &c. ...	100·46	103·14	106·12	112·68	130·02
Books, Paper, Printing, &c. ...	85·20	90·83	98·12	100·93	110·11
Musical Instruments, &c. ...	187·85	180·84	168·55	168·71	170·08
Arms and Explosives... ..	107·86	275·48	*292·23	*318·14	*163·78
Vehicles, Fittings and Saddlery, &c. ...	105·99	106·16	100·82	106·90	104·76
Ship and Boat Building, &c. ...	67·11	72·72	62·88	67·12	56·41
Furniture, Bedding, & Upholstery ...	132·68	147·40	144·41	153·65	154·50
Drugs, Chemicals, and By-products ...	341·50	349·63	362·75	413·63	481·94
Surgical and Scientific Instruments ...	81·40	80·89	77·13	88·19	54·94
Jewellery, Timepieces, and Plated Ware... ..	134·81	153·11	154·04	170·72	159·53
Heat, Light, and Power ... ..	330·30	258·62	248·53	234·97	257·63
Leatherware, N.E.I. ... ..	272·61	310·63	285·70	291·13	286·21
Minor Wares, N.E.I. ... ..	188·86	184·62	193·97	187·91	187·09
<b>Totals</b> ... ..	<b>326·58</b>	<b>321·42</b>	<b>333·41</b>	<b>348·90</b>	<b>377·03</b>

\*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 during the last five years.

Class of Industry.	1910.	1911.	1912.	1913.	1914-15.
	£	£	£	£	£
Treating Raw Material, &c. ..	171·24	167·03	186·92	192·69	195·89
Oils and Fats, &c. ...	322·55	299·31	336·47	257·17	291·29
Processes in Stone, Clay, Glass, &c. ...	166·41	190·34	213·89	201·47	211·65
Working in Wood ... ..	136·94	142·81	156·73	153·31	158·60
Metal Works, Machinery, &c. ...	194·98	212·79	241·17	229·72	233·21
Connected with Food and Drink, &c. ...	252·72	264·91	283·06	284·97	326·93
Clothing and Textile Fabrics, &c. ...	89·47	94·97	102·23	105·19	113·03
Books, Paper, Printing, &c. ...	155·07	157·67	171·54	178·25	166·83
Musical Instruments, &c. ...	176·39	197·92	204·86	219·50	212·76
Arms and Explosives ... ..	58·80	76·69	*113·75	*136·85	*146·36
Vehicles, Fittings and Saddlery, &c. ...	132·74	137·52	143·80	153·28	155·39
Ship and Boat-building, &c. ...	134·57	152·53	158·01	167·40	163·14
Furniture, Bedding, and Upholstery ...	133·93	146·03	150·33	152·19	153·26
Drugs, Chemicals, and By-products ...	279·33	274·29	289·35	338·39	313·40
Surgical and other Scientific Instruments ...	199·57	199·71	184·96	194·99	165·85
Jewellery, Timepieces and Plated Ware ...	154·42	166·35	177·72	174·94	132·98
Heat, Light and Power ... ..	498·46	502·67	497·43	522·33	553·34
Leatherware, N.E.I. ... ..	139·42	146·15	170·64	169·58	184·66
Minor Wares, N.E.I. ... ..	119·93	123·07	133·72	142·26	143·62
<b>Total</b> ... ..	<b>171·01</b>	<b>178·90</b>	<b>196·54</b>	<b>197·54</b>	<b>208·74</b>

\* 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 last five years:—

Class of Industry.	1910.	1911.	1912.	1913.	1914-15.
	percent.	percent.	percent.	percent.	percent.
Treating Raw Material, &c. ... ..	47·4	50·2	43·4	48·2	51·5
Oils and Fats, &c. ... ..	24·4	25·2	24·7	24·7	34·7
Processes in Stone, Clay, Glass, &c. ... ..	55·8	55·5	54·8	57·0	58·7
Working in Wood ... ..	61·9	62·7	63·3	68·8	68·6
Metal Works, Machinery, &c. ... ..	56·2	56·1	53·6	57·9	55·1
Connected with Food and Drink, &c. ... ..	34·9	35·0	33·9	36·2	34·0
Clothing and Textile Fabrics, &c. ... ..	63·5	64·9	64·0	65·5	63·5
Books, Paper, Printing, &c. ... ..	60·3	60·3	61·3	61·6	70·1
Musical Instruments, &c. ... ..	59·7	57·1	58·0	56·8	59·3
Arms and Explosives ... ..	78·6	77·9	*75·8	*61·8	*72·9
Vehicles, Fittings, and Saddlery, &c. ... ..	64·5	64·5	67·0	64·5	68·3
Ship and Boat-building, &c. ... ..	82·7	82·6	85·3	82·7	87·2
Furniture, Bedding, and Upholstery ... ..	66·1	63·7	67·8	69·3	69·8
Drugs, Chemicals, and By-products ... ..	27·6	31·2	31·3	28·7	30·2
Surgical and other Scientific Instruments ... ..	40·3	42·8	49·9	59·1	60·3
Jewellery, Time-pieces, and Plated Ware ... ..	57·8	59·9	59·7	65·6	68·7
Heat, Light, and Power ... ..	26·1	26·4	26·7	26·4	25·4
Leatherware, N.E.I. ... ..	49·1	54·6	53·8	55·3	47·7
Minor Wares, N.E.I. ... ..	54·7	57·1	57·5	57·8	59·5
Total ... ..	50·9	51·7	51·0	53·3	52·0

\* 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 1915 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.	
Boiling-down, Tallow Refining, &c....	33	29	480	10	Months 10·35	H.-p. 528	H.-p. 319	H.-p. 69	£ 71,993
Sausage-skin making ... ..	6	...	95	...	10·77	...	...	...	860
Tanning ... ..	77	70	1,102	7	11·93	...	...	...	92,910
Wool-scouring and Fellmongering...	54	52	1,387	64	10·13	1,342	953	119	174,598
Chaff-cutting, Corn-crushing, &c....	111	111	671	2	6·64	699	109	109	53,644
Total ... ..	281	262	3,735	83	10·08	3,161	1,676	670	394,005

#### *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	436,090	135,370	1909	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	1914-15	711,857	165,143

Exclusive of operations on stations and large farms, for which details are not available, the value of carcasses, fat, refuse, bones, &c., treated during 1915 in boiling-down works, was £621,199, and 4,000 cwt. of raw tallow were used; the output included 455,544 cwt. of raw and refined tallow, valued at £626,180; 437,032 cwt. of manure, valued at £135,493; whilst the values of hides, skins, &c., was £11,333; oils, £4,243; bones, horns, &c., £14,676; glue-pieces, sinews, &c., £10,677.

#### *Sausage-skin Making.*

For the making of sausage skins, &c., in 1914-15 there were four establishments, but no machinery was installed.

#### *Tanning.*

In tanneries, 200,893 calf and yearling hides and 334,827 other hides, and 6,761 cwt. of hide pieces, 4,068,137 pelts, and 206,014 other skins produced 14,846,946 lb. of leather, worth £1,081,847, and basils weighing 4,088,541 lb. valued at £191,861; pelts, pickled, numbered 93,645, valued at £3,260. Other skins after treatment were valued at £46,639. Of bark, 11,831 tons were used in treating these materials.

#### *Wool-scouring and Fellmongery.*

In wool-scouring works and fellmongeries 37,996,626 lb. of greasy wool and 4,499,566 skins were treated, producing 15,934,744 lb. and 16,433,191 lb. respectively, of scoured wool, valued at £1,186,360 and £1,025,776 respectively, and 4,009,057 pelts, valued at £106,832, and 93,645 pickled pelts valued at £3,260.

Included with wool-scouring works are two wool-combing factories established at Botany, near Sydney.

## II.—OILS AND FATS, &amp;c.

The industries in which oils and fats, animal and vegetable, are treated, are grouped under two heads, and particulars for each group for 1914-15 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	9	247	8	Months 11·16	H.-p. 118	H.-p. 308	H.-p. 10	£ 63,172
Soap and Candles ... ..	32	23	560	193	11·86	392	216	...	187,617
Total ... ..	42	32	807	201	11·68	450	524	10	250,789

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 working proprietors.	Quantity Manufactured.		Horse-power of Plant (full capacity).
			Soap.	Candles.	
			cwt.	lb.	H.-p.
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
1914-15	32	753	286,425	4,958,741	829

The candles manufactured in 1914-15 weighed 4,958,741 lb., valued at £115,140, while the soap manufactured included household, 235,221 cwt., valued at £327,867; toilet, 16,582 cwt., valued at £74,484; sand, 27,577 cwt., valued at £27,756; soft, 7,945 cwt., valued at £7,749, making the total value for all soap £437,856. And in addition 2,876,870 lb. of soap extract and powders valued at £28,931, and soda crystals valued at £21,032 were made. Tallow, 159,831 cwt.; alkali, 7,954,168 lb.; and other materials such as copra oil, resin, and paraffin, valued at £210,469 were used in the manufacture.

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 1914-15 were as follow :—

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.	
Bricks and Tiles ... ..	188	91	3,201	29	10-96	5,663	3,665	1,378	£ 707,074
Glass (including Bottles) ... ..	8	5	1,003	1	11-88	24	134	64	15,725
Glass (Ornamental) ... ..	20	12	248	10	11-51	8	82	...	11,438
Lime, Plaster, Cement, and Asphalt ... ..	42	21	987	4	11-89	3,682	1,535	197	310,624
Marble, Slate, &c. ... ..	16	15	378	1	11-88	20	399	68	28,690
Pottery, Earthenware, including Modelling, &c. ... ..	19	16	386	8	11-86	244	161	25	40,855
Total ... ..	293	160	6,203	53	11-40	9,040	4,376	1,730	1,114,406

With the exception of 93 horse-power derived from oil-engines, and used in brick and tile and lime, &c. works, all the "other power" used was derived from gas.

*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.
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	383,656,000	7,956
1913	217	3,665	389,435,000	10,788
1914-15	188	3,230	331,107,000	11,192

The output of bricks for 1915 was valued at £720,963.

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.

The following table gives particulars of the progress of these works :—

Particulars.	1913.	1914.	1915.
Number of Bricks manufactured	14,676,279	27,110,056	32,334,801
Used for Public Works	10,901,932	21,922,083	27,999,787
Sold to Private Purchasers	1,599,635	5,102,817	3,616,009
Balance used at Works	2,174,712	85,156	719,005
Cost of manufacture per 1,000	£ .....	1 6 10	1 5 7
Sale price per 1,000	£ 1 10 0	1 19 6	1 15 0
Proportion per cent. :—			
Disposed of to Public Works	74·4	80·86	86·59
Disposed of to Private Purchasers	10·9	18·82	11·18
On Balance at Works	14·7	0·32	2·23

*State Sand-lime 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 £3 2s. 7d. per 1,000. In 1914-15 the output was 4,362,765, and the cost of manufacture per 1,000 was £1 18s. 5d. The retail sale price per 1,000 is fixed at £1 15s. 0d.

*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	88,100
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
1914-15	36,405	46,091	410,020

*Cement Testing.*

Cement testing is done by officers of the Department of Public Works. The operations during the last four years have been as follows:—

Nature of Test.				1912.	1913.	1914.	1915.
Cement	...	...	...	244	426	307	244
Sand	...	...	...	32	64	67	33
Mechanical	...	...	...	115	255	506	546
Chemical	...	...	...	56	62	38	55
Total	...	...	...	417	807	918	878

*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. This industry has been closed, as it was found impossible to produce lime at a rate that would meet working expenses.

*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 1915 were:—Tiles, £38,253; pipes, £82,198; pottery, £53,071; terra-lignum blocks, £3,490; making a total value of £177,012.

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 in 1915.

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.		
							H.-p.	H.-p.	
Boxes and Cases	40	37	704	9	11:80	516	967	120	52,830
Cooperage	16	12	224	1	11:96	87	104	86	27,554
Joinery	156	142	2,201	14	11:63	793	1,791	596	150,489
Saw-mills...	414	414	4,764	44	10:55	9,712	2,512	203	571,525
Wood-turning, &c.	38	36	219	5	11:22	110	137	22	18,269
Total	664	641	8,112	73	11:02	11,218	5,541	1,017	820,117

Of the 8,185 persons employed in these industries, 3,923 were engaged in the metropolitan district, and 4,262 in the country, the employment in the latter district being almost wholly in connection with saw-mills, which provided work for 3,639 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 713 in 1915, and the number of establishments increased from 14 to 40.

*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 to 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, 1915, was £100. The works were destroyed by fire in 1914, and business has been practically at a standstill since then. The sales for 1914-15 were £28.

*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 River, near Sydney. The expenditure during the year 1914-15 amounted to £32,357.

*Saw-mills.*

Details concerning the saw-milling industry during the last ten years were as follow :—

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.	£
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
1909	407	4,307	10,947	370,671	1914-15	414	4,808	16,126	571,525

During 1914-15 the output of sawn timber from logs obtained from the forests of New South Wales amounted to 140,940,000 superficial feet, of which 106,750,000 superficial feet, or nearly three-fourths, were hardwoods. From imported logs 13,310,000 superficial feet of timber were sawn, of which 9,945,000 feet were softwoods. The value of the timber sawn from native logs was stated as £291,488 for softwood and £725,081 for hardwood at the works, and the imported timber when sawn £104,241 for softwood and £45,124 for hardwood.

## V.—METAL WORKS, MACHINERY, &amp;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 1914-15 :—

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.	
Agricultural Implements ... ..	24	20	588	11	11-00	88	113	112	36,494
Art Metal Works ... ..	8	7	189	3	11-66	...	66	82	31,941
Brass and Copper ... ..	28	23	275	10	12-00	26	77	41	23,080
Cutlery ... ..	12	12	51	2	11-06	...	59	...	4,331
Engineering ... ..	199	196	6,212	45	11-83	2,245	2,798	693	645,544
Galvanized Iron ... ..	46	29	744	17	11-63	6	199	151	45,664
Ironworks and Foundries ... ..	88	83	3,268	19	10-69	10,158	3,751	207	916,043
Railway Carriages and Rolling Stock	4	4	1,018	5	12-00	420	10	58	63,953
Railway and Tramway Workshops	22	22	8,537	14	12-00	1,140	2,846	1,019	896,708
Smelting and Ore Dressing ... ..	26	24	2,901	8	7-80	4,951	8,447	4	1,087,273
Stoves and Ovens ... ..	13	11	364	3	11-46	...	102	133	24,344
Tinsmithing ... ..	58	26	906	134	11-76	42	72	129	50,578
Wireworking ... ..	20	15	620	12	11-48	30	415	24	71,738
Other Metal Works (including Lead Mills) ... ..	20	17	434	34	9-77	170	665	172	80,495
Total ... ..	568	491	26,687	320	11-27	19,276	19,620	2,825	3,983,195

In 1902 there were only 13,695 persons engaged in works of this class, so that there has been an increase of 12,712, or 93 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.

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, has given 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 established 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, 1915, the property account amounted to £17,818, and the stock in hand £13,314; the sales to that date amounted to £25,705.

*Smelting and Ore Dressing.*

Smelting Works, including treatment plants in conjunction with mining plants, in 1915 numbered 26, and 2,909 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 1914-15:—

Works.	Output.					Value.
	Gold.	Silver.	Lead.	Copper.	Tin.	
	oz. fine.	oz.	tons.	tons fine.	tons.	£
Cockle Creek, Boolaroo ...	9,381	2,049,367	30,305	...	...	942,573
Port Kembla ... ..	132,467	574,094	...	20,733	...	2,365,725
Waratah ... ..	...	...	...	60	...	4,415
Woolwich ... ..	...	...	...	...	857	135,350

The output shown for the works at Waratah and Woolwich is from domestic ores only. At Port Kembla local ores, valued at £18,091, included in the above statement, yielded as follows:—Gold, 739 oz. fine; silver, 6,625 oz.; copper, 186 tons.

#### 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 employment 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 1914-15:—

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 .. .. .	21	21	200	2	Months. 11-73	H.-p. 232	H.-p. 46	H.-p. 37	£ 27,314
Butter Factories and Creameries ..	135	135	911	17	11-76	2,009	94	671	252,773
Butterine and Margarine .. .. .	5	5	72	2	12-00	20	119	30	13,900
Cheese Factories .. .. .	27	24	85	1	11-53	84	..	8	10,399
Condensed Milk .. .. .	3	3	65	8	11-73	45	..	..	23,151
Meat and Fish Preserving .. .. .	11	11	1,107	175	8-97	372	54	33	50,704
Biscuits .. .. .	7	7	658	752	12-00	394	203	10	105,970
Confectionery .. .. .	53	45	1,002	532	11-30	71	520	123	95,512
Cornflour, Oatmeal, &c. .. .. .	14	14	304	303	11-33	330	305	105	90,703
Flour-mills .. .. .	63	63	892	9	11-20	3,764	99	918	334,002
Jam and Fruit Canning .. .. .	14	11	392	316	11-64	151	119	..	38,189
Pickles, Sauces, and Vinegar ..	23	13	182	184	11-33	45	43	8	17,005
Sugar Mills and one Sugar Refinery	4	4	1,069	48	8-95	3,216	1,832	..	962,889
Aerated Waters, Cordials, &c. ..	221	209	1,265	129	11-30	277	353	322	180,525
Breweries .. .. .	27	26	1,040	5	11-99	1,293	854	56	564,327
Condiments, Coffee, Spices, &c. ..	21	21	248	236	12-00	86	125	25	26,573
Distilleries .. .. .	3	3	22	..	12-00	20	102	2	58,003
Ice and Refrigerating .. .. .	91	91	1,320	8	10-93	3,135	853	1,100	465,730
Malting .. .. .	4	4	63	..	9-73	93	18	103	28,613
Tobacco, Cigars, &c. .. .. .	11	9	785	978	12-00	64	348	1	118,606
Total .. .. .	757	719	11,685	3,705	11-32	15,849	6,157	3,566	3,466,183

*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 (688 males and 5 females in 1914-15) 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.						Males.	Females.
										Number.	Horse-power.	Butter Workers.	*Churns.	Cream Separators.	Cheese Presses.		
1904	145	271	23	14	4	2	1	465	£ 251,322	525	3,036	173	257	431	96	1,364	26
1905	153	255	36	16	3	..	..	463	277,908	546	3,179	185	289	425	104	1,342	3
1906	170	193	57	20	4	..	..	445	255,109	511	3,453	199	311	358	105	1,420	33
1907	176	140	36	16	6	..	..	374	278,380	447	3,413	213	321	274	118	1,309	36
1908	160	172	42	17	3	3	..	397	287,771	466	3,526	197	283	270	123	1,301	24
1909	163	222	43	17	4	1	..	455	286,517	524	3,909	201	291	310	131	1,398	25
1910	157	346	46	19	5	..	..	573	319,111	630	4,725	188	282	441	138	1,591	16
1911	163	629	49	19	5	..	..	865	389,585	956	5,944	185	279	715	154	1,923	28
1912	152	615	52	21	3	..	..	342	409,900	959	6,250	165	259	681	152	1,883	42
1913	142	677	50	19	3	6	..	897	435,619	1,027	6,996	133	263	752	145	1,927	22
1914-15	142	609	66	21	4	1	..	843	446,507	963	6,947	109	258	704	146	1,949	33

\* Includes combined churns and butter-workers—5 in 1911, 11 in 1912, 71 in 1913, and 74 in 1914-15.

During the year ended 30th June, 1915, the bacon factories, apart from farms, cured 13,564,630 lb. of bacon and ham, valued at £554,692, and produced lard weighing 634,373 lb., valued at £18,999; also small goods to the value of £25,460. The butter factories showed during the same period an output of 80,302,161 lb., valued at £3,894,400. Cheese factories produced 3,770,431 lb., valued at £104,657, and at condensed and concentrated milk factories 6,002,593 lb. of condensed and concentrated milk were made, the value being stated as £99,364.

Dairying operations during the first half of 1914 were effected by dry weather, especially on the North Coast, and the output of the dairy factories consequently fell below normal. The various products during this period for which returns are available were 40,215,823 lb. of butter, valued at £1,843,000; 1,603,780 lb. of cheese, valued at £43,500; and 5,702,676 lb. of bacon and ham, valued at £213,850.

As bacon, ham, 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 1915 five factories for the making of butterine and margarine at which 74 persons were continuously employed. The value of machinery, tools, and plant was stated as £13,990. The output for the year was 5,176,237 lb. of margarine, valued at £136,781.

*Meat and Fish Preserving and Refrigerating.*

There were 11 establishments and 1,282 persons employed in connection with meat and fish preserving during 1914-15. 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.				Refrigerating Works.	
	Cattle.	Sheep and Lambs.	Meat and Tongues and Sundries.		Cattle.	Sheep and Lambs.
			Quantity.	Value.		
	No.	No.	lb.	£	No.	No.
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	1,196,996
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	1,463,923
1912	50,941	616,435	2,301,418	37,079	11,552	1,191,711
1913	100,827	374,523	7,305,113	81,807	29,887	2,160,484
1914 15	103,778	415,397	7,356,501	90,293	19,280	2,417,405

\* Not available.

The output of tinned meat, etc., in 1915 was 27,281,531 lb., valued at £945,071, and other products valued at £176,836. By-products were valued at £231,681.

At the ice-works 61,560 tons of ice, valued at £99,350, were made during 1915.

*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.	£
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
1914-15	63	901	12,836,354	266,302	6,359	334,602

The value, at the mills, of flour made in 1914-15 was £2,619,072, the output of bran was 63,828 tons, valued at £394,336; pollard, 48,070 tons, valued at £296,759; and 3,176 tons of sharps and screenings, valued at £26,313; and 1,167 tons of wheatmeal, etc., valued at £14,545. Considerable quantities of oatmeal, maizena, etc., are manufactured locally.

In biscuit factories 10,674 tons of flour were used during 1915, and 33,139,234 lb. of biscuits, valued at £654,989, 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. The trading operations for the year 1914-15 resulted in a loss of £3,098.

The quantity of bread produced was 4,041,797 lb., the cost of production per 100 lb. being 9s. 4.3d. The sale price to Government Institutions per 100 lb. on old contract rates was 8s. 10d. to 10s. 1½d. The chief factor in the increase of baking sales was the large demand of the Defence Department for expeditionary military camps.

#### *Jam, Pickle, and Sauce Factories.*

The principal articles produced in jam, pickle and sauce factories during 1914-15 were 31,934,621 lb. of jams and preserves, valued at £462,945; 8,758 lb. of dried and evaporated fruit and pulp, valued at £218; 2,636,450 pints of pickles, valued at £50,029; 2,957,408 pints of sauces, valued at £64,011; and 844,969 gallons of vinegar, valued at £40,186.

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 1914-15 the following articles were produced:—1,078,693 syphons and 6,678,406 dozen bottles of aerated waters, 243,320 dozen of cordials and syrups, 624,214 dozen of hop beer, 963,580 dozen of ginger beer, and 58,069 dozen of other cordials, the total value at the factories being £726,962. The number of persons employed varies with the season of the year, the greatest number at work in 1915 being 1,725.

#### *Breweries.*

The number of breweries is decreasing, but the output shows an increase, during the last ten years. The materials used in breweries for manufacturing purposes and the actual output during the last ten years were as follow:—

Year.	Malt.	Hops.	Sugar.	Other Materials.	Ale, Beer and Stout manufactured
	Bushels.	lb.	Tons.	Centals.	Gallons.
1905	458,371	558,661	3,370	6,299	13,873,259
1906	488,982	586,433	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	19,804,543
1912	773,194	891,535	5,048	8,286	22,741,332
1913	809,171	909,116	5,218	9,404	24,212,202
1914-15	838,148	893,050	5,192	6,044	24,434,147

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.		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.	
1905	42	1,028	13,243,336	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	2,186	
1909	37	831	16,154,906	1,416	1914-15	27	1,045	23,516,877	3,965	

The total value at the breweries of the 23,516,877 gallons of ale, beer and stout made during 1914-15, and on which excise was paid, amounted to £1,148,945.

The local malt works treated 281,407 bushels of barley during 1914-15, and produced 270,518 bushels of malt, valued at £74,703.

#### 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 1914-15, the Customs Department issued 29 vigneron licenses. The greater part of the white spirit distilled from molasses is methylated; of the remainder, part is used for making rum, and part for fortifying vinegar, perfumes, &c. Almost all the white spirit distilled from wine is used for fortifying other wine. A small quantity is used for making brandy.

During 1914-15, 1,420,254 gallons of white spirit were distilled from molasses and 15,259 gallons from wine. The quantity of manufactured spirits produced was as follows:—Brandy, 1,239 gallons; rum, 149,951 gallons; rectified spirits, 516,158 gallons; and methylated spirits, 868,219 gallons.

#### 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 1,065. 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 1914-15 was valued at £320,464, and molasses at £11,826, the quantity of cane crushed being 181,606 tons:—

Year.	Sugar Mills.	Average Number of Employees.	Quantity manufactured.		Horse-power of Plant (full capacity).
			Sugar.	Molasses.	Steam.
					cwt.
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	2,885
1914-15	3	437	400,580	1,104,000	2,885

*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.		
		Males.	Females	Australian grown Leaf.	Imported Leaf.	Tobacco.	Cigarettes.	Cigars.
				lb.	lb.	lb.	lb.	lb.
1905	20	573	391	1,145,923	2,606,702	3,318,719	818,400	48,850
1906	25	649	397	1,178,183	3,056,906	4,057,965	837,835	50,326
1907	28	622	497	1,050,107	3,254,656	3,899,196	972,875	54,048
1908	28	665	674	1,039,909	3,549,966	3,916,388	1,119,269	57,716
1909	25	629	631	847,030	3,570,143	3,694,918	1,300,045	57,148
1910	25	669	763	815,809	4,130,059	3,850,154	1,548,872	73,194
1911	26	697	765	745,405	4,617,756	3,996,471	1,899,462	87,818
1912	22	694	748	760,543	5,305,654	4,170,853	2,377,554	80,537
1913	24	892	805	727,759	5,085,083	3,885,562	2,526,130	86,264
1914-15	18	785	978	924,781	5,756,052	4,523,617	2,866,233	102,260

The value at the factories of the tobacco manufactured in 1915 was £876,450; cigars, £63,486; and cigarettes, £824,056; the total being £1,763,992.

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 1914-15 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		Steam	Electricity.	Other.	
Woolen and Tweed Mills .. ..	5	5	379	576	Months. 12·00	H.-p. 1,045	H.-p. 925	H.-p. 200	£ 185,767
Hosiery and Knitting Factories .. ..	16	15	71	416	11·27	..	99	13	22,516
Boots and Shoes .. ..	103	88	2,634	1,471	11·84	125	336	603	143,619
Shoe and Slipper .. ..	99	87	822	4,258	11·43	..	354	16	59,534
Clothing (Tailoring) .. ..	362	37	2,082	3,323	11·81	..	62	1	24,318
Clothing (Waterproof and Oilskin) .. ..	4	4	21	68	12·00	..	11	..	1,300
Dressmaking and Millinery (makers' material) .. ..	201	31	105	3,885	11·80	..	75	..	15,524
Dressmaking and Millinery (customers' material) .. ..	78	12	3	559	11·72	..	18	..	3,423
Dyeworks and Cleaning .. ..	10	7	58	46	12·00	35	35	..	6,375
Furriers .. ..	3	2	35	39	11·51	..	1	25	1,890
Hats and Caps .. ..	36	31	511	913	11·63	345	290	24	86,316
Shirts, Ties, and Scarfs .. ..	45	41	162	1,734	11·73	..	195	43	22,641
Rope and Cordage .. ..	7	6	275	7	11·94	130	217	280	39,023
Sailmaking .. ..	6	3	23	5	12·00	..	5	3	720
Tents and Tarpaulins .. ..	13	12	184	239	11·92	..	81	28	11,033
<b>Total .. ..</b>	<b>998</b>	<b>881</b>	<b>7,370</b>	<b>17,499</b>	<b>11·72</b>	<b>1,730</b>	<b>2,760</b>	<b>1,234</b>	<b>587,930</b>

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 1914-15 the number was 1,896.



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 423, of whom the majority are machinists.

#### Woollen and Tweed Mills.

Although New South Wales is one of the greatest wool-producing countries in the world, only 955 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 1909, 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.		
1905	3	151	111	262	yds. 459,590	h. p. 329
1906	5	180	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
1914-15	5	379	576	955	1,718,903	2,493

During 1914-15, 2,086,788 lb. of scoured wool were used in the mills, and in addition to the tweed and cloth shown above, valued at £354,461, there were manufactured flannel, blankets, rugs, and shawls to the value of £99,745. 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
1914-15	16	71	416	487	111,475	138

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 1914-15 the boots and shoes made were valued at £1,264,715; slippers, &c., at £31,802; and uppers at £14,501. In the manufacture of boots, &c., in 1915 there were approximately 4,574,409 lb. of sole leather used, and 7,322,990 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.
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
1914-15	108	2,634	1,471	4,105	3,530,172	311,873	54,777

*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; in 1914-15 there were 1,429 persons engaged in the industry, of whom 65 per cent. were females.

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.		
					H. p.	£
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	33	570	975	1,545	786	69,396
1914-15	36	511	918	1,429	821	68,316

The hats and caps manufactured during 1914-15 numbered 2,832,919 valued at £348,229.

*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, 1915, showed stock on hand to the value of £11,463. The value of the manufactured clothing was £39,543, which clothing has been supplied to the Public Service only.

## VIII.—BOOKS, PAPER, PRINTING, &amp;c.

These industries give employment to 9,130 persons, 7,683 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. The details of each industry for the latter year are as follow :—

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	70	6	8.28	...	51	...	13,616
Paper-making, Paper-boxes, Bags, &c. ... ..	28	26	464	719	11.82	978	253	60	138,137
Photo-engraving ... ..	15	15	170	18	11.63	...	78	2	19,073
Printing and Binding ... ..	407	382	6,048	1,635	11.21	42	2,789	1,083	1,019,436
Total ... ..	457	430	6,752	2,378	11.86	1,020	3,171	1,145	1,184,322

## IX.—MUSICAL INSTRUMENTS, &amp;c.

Thirteen establishments, of which three used machinery, are engaged in the manufacture and repairing of musical instruments and sewing machines, and they employed 324 males and 30 females, full time being worked during the year. The machinery in use was 241 horse-power, of which 166 was derived from electricity, and 75 from gas; the value of the machinery and plant was £11,794. The most important of the industries is piano-making.

## 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 seven establishments, six of which use machinery, for the manufacture of explosives; these employed 695 males and 5 females during 1915, the average time worked per employee being 12.00 months. The machinery in use was 332 horse-power, represented by 316 steam and 16 electricity, and the value of machinery and plant £100,372.

## XI.—VEHICLES, FITTINGS, AND SADDLERY, &amp;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 1915 :—

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.	
Coach and Waggon Building ...	222	98	2,301	19	11-83	76	483	344	£ 80,106
Cycles and Motors ...	100	100	861	26	11-59	...	209	138	38,739
Perambulators ...	4	4	68	5	12-00	...	9	3	706
Saddlery and Harness ...	57	10	616	50	11-47	...	26	6	11,905
Spokes, &c. ...	11	11	115	1	10-89	171	69	...	12,547
Whips ...	3	...	18	...	12-00	...	...	...	5
Total ...	397	323	3,979	101	11-78	247	796	491	144,008

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, fewer 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. A description of the docks is given in the chapter "Shipping." The following table shows the details of each industry for 1914-15 :—

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.	
Docks and Slips ...	6	6	1,348	...	12-00	2,408	20	...	£ 378,747
Ship and Boat Building and Repairing...	37	24	3,360	2	11-98	347	1,336	45	280,481
Total ...	43	30	4,708	2	11-56	2,755	1,356	45	659,228

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 have been erected at Newcastle, and were opened in November, 1915. The approximate cost of the work was £130,000. The machinery is electrically driven. Work of repair and construction, amounting to £100,000, was carried out during the year for the Public Works and other Departments of the State. An average of 1,000

men are employed. A floating dock, to be used in conjunction with the establishment, is in course of erection. When the works are finally and fully equipped, the State will possess the most up-to-date establishment in Australia.

### 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 1914-15 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.				Steam.	Electricity.	Other.	
			Males.	Females.					
Bedding, Flock, and Upholstery..	29	19	483	150	Months 11·35	H.-p. 40	H.-p. 325	H.-p. 53	£ 11,490
Chair-making ... ..	16	14	197	12	12·00	...	107	10	4,118
Furnishing Drapery, &c. ... ..	15	8	53	236	12·00	...	19	...	2,529
Furniture, Cabinet-making, and Billiard Tables ... ..	157	122	2,268	19	11·43	78	934	348	51,428
Picture Frames ... ..	17	14	112	33	12·00	...	28	...	2,670
Window Blinds ... ..	9	4	54	9	12·00	...	9	4	667
Total ... ..	243	181	3,172	470	11·51	118	1,422	420	72,902

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 1914-15:—

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.				Steam.	Electricity.	Other.	
			Males.	Females.					
Baking Powder and Self-raising Flour... ..	15	14	80	131	Months 12·00	H.-p. 6	H.-p. 123	H.-p. 20	£ 9,444
Chemicals, Drugs, and Medicines.	39	26	512	369	11·76	119	211	7	206,772
Paints and Varnishes (including Fertilizers) ... ..	15	15	107	15	12·00	28	148	110	14,267
Inks, Polishes, &c. ... ..	24	14	222	123	11·18	29	522	89	52,484
Total ... ..	93	69	921	638	11·68	182	1,004	226	283,967

*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 appears 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 15, are engaged in the manufacture of optical instruments, such as spectacles, &c.; 94 males and 18 females were employed during 1915, the average time worked per employee being 11·52 months. The total average power of machinery at 12 of the establishments at which it is in use was 17 horse-power, and the value of machinery and plant £4,894.

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.	Males.	Females.		Months.	Steam.	Electricity		Other.
							H. P.	H. P.		H. P.
Electro-plating ... ..	14	14	154	11	11·85	...	76	58	10,695	
Manufacturing Jewellery...	45	34	483	66	11·88	...	103	...	18,153	
Total... ..	59	48	637	77	11·38	...	179	58	23,853	

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 1914-15 being 45 establishments with 549 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 1914-15 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.		Steam.	Electricity.	Other.	
Coke-works ... ..	13	12	478	...	10-86	1,467	360	30	191,613
Electric Apparatus ... ..	37	36	469	13	11-62	...	163	39	43,923
Electric Light and Power ... ..	129	129	1,149	12	11-06	88,695	...	2,380	1,597,624
Gas-works and Kerosene ... ..	53	41	1,480	5	11-60	1,959	270	355	1,749,724
Lamps and Fittings, &c.* ... ..	6	5	113	3	12-00	500	14	7	30,973
<b>Total... ..</b>	<b>238</b>	<b>224</b>	<b>3,683</b>	<b>38</b>	<b>11-36</b>	<b>92,651</b>	<b>827</b>	<b>3,052</b>	<b>3,612,157</b>

\* 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 £1,597,624, and the engines have a capacity of 127,551 horse-power. In 1915 the electric light produced was 33,207,442 kilowatt hours, valued at £437,773, and the power 165,555,016 kilowatt hours, valued at £929,969; coal weighing 334,592 tons was used in 1914-15 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.
1905	67	521	H.-p. 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
1915	129	1,161	127,551	1,597,624

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. The Government is still investigating various suggested schemes with a view to bringing about some practical solution of the question.

*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.	£
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	689	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
1914-15	53	1,485	6,080,270	4,300	1,749,724

During 1914-15 the quantity of coal used for gas was 416,485 tons, which, with 40,758 tons of shale, produced, in addition to the gas (valued at £953,602), 244,331 tons of coke (valued at £123,928), 5,038,090 gallons of tar (valued at £61,460), and 2,827,380 gallons of ammoniacal liquor (valued at £5,242).

*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, 437,854 tons of coal were used in 1914-15 to produce 299,458 tons of coke, valued at £235,436. Further information regarding coke is contained in the chapter "Mining Industry."

## XVIII.—LEATHERWARE.

There are 24 establishments with 407 males and 125 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 11·92 months per person. The power of the machinery in average use at 22 of the establishments was 180 horse-power, and the value of the machinery and plant was £12,485.

## 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 1915 there were 121 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 1914-15 were as follow :—

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,					Months	H.-p.	H.-p.	H.-p.	\$
Matting, &c. ... ..	12	1	142	3	12·00	...	5	...	200
Brooms and Brushware ... ..	19	17	246	29	12·00	...	30	40	5,486
Rubber Goods ... ..	8	8	260	115	12·00	386	262	...	65,897
Toys ... ..	6	6	27	6	11·24	...	13	11	1,075
Umbrellas ... ..	6	5	59	111	12·00	...	12	...	2,475
Other Industries ... ..	25	15	196	90	11·69	10	168	2	26,183
Total ... ..	76	52	980	345	11·91	396	460	53	102,816

## 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 12½ 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 year ended 30th June, 1915, was £418,102, the cost of carrying out the work being £384,357, resulting in a gross profit of £33,745. After deducting from the gross profits the charges for management, &c., there was a net profit for the twelve months of £6,597.

## 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.
<b>Working ages—</b>						
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
<b>Total ... ..</b>	<b>566,410</b>	<b>494,163</b>	<b>1,060,573</b>	<b>34·4</b>	<b>30·0</b>	<b>64·4</b>
<b>Non-working ages—</b>						
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
<b>Total ... ..</b>	<b>286,798</b>	<b>291,070</b>	<b>577,868</b>	<b>17·4</b>	<b>17·7</b>	<b>35·1</b>
Unspecified ...	4,490	3,803	8,293	·3	·2	·5
<b>Total, all ages ...</b>	<b>857,698</b>	<b>789,036</b>	<b>1,646,734</b>	<b>52·1</b>	<b>47·9</b>	<b>100·0</b>

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.

## 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 ... ..	11,100	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 ... ..	36,763	19,377	56,140	2·23	1·18	3·41
Domestic ... ..	18,898	54,483	73,381	1·15	3·31	4·46
Commercial ... ..	88,208	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.	
	Em- ploy- ing Labour.	Non- Em- ploy- ers.	Remu- nerated.	Unre- mune- rated.				
Professional .. .. .	3,041	3,324	25,870	45	333	3,940	155	36,763
Domestic .. .. .	3,304	1,168	12,732	190	696	723	82	18,863
Commercial .. .. .	12,015	10,180	57,767	610	1,891	5,273	472	88,202
Transport and Communication .. .. .	2,216	3,558	51,192	277	1,393	1,363	360	60,307
Industrial .. .. .	14,750	6,138	135,104	436	7,617	7,198	673	171,971
Primary Producers .. .. .	33,080	25,170	110,358	16,247	3,544	3,552	7,192	199,143
Independent .. .. .	..	..	..	..	..	5,507	..	5,507
Unspecified .. .. .	176	138	593	2,582	676	4,745	2,250	11,160
<b>Total .. .. .</b>	<b>68,582</b>	<b>49,676</b>	<b>393,616</b>	<b>20,387</b>	<b>16,210</b>	<b>32,307</b>	<b>11,189</b>	<b>591,967</b>

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.	
	Em- ploy- ing labour.	Non- em- ploy- ers.	Remu- nerated.	Unre- mune- rated.				
Professional .. .. .	321	4,679	11,215	63	262	2,682	155	19,377
Domestic .. .. .	1,600	1,789	47,658	812	1,466	999	159	54,483
Commercial .. .. .	879	1,694	12,102	890	312	2,119	116	18,113
Transport and Communication .. .. .	40	5	1,536	7	5	4	..	1,597
Industrial .. .. .	1,612	4,067	23,967	195	582	316	354	36,093
Primary Producers .. .. .	1,177	533	249	2,779	..	15	144	4,950
Independent .. .. .	..	..	..	..	..	3,401	..	3,401
Unspecified .. .. .	43	7	88	123	73	14	195	543
<b>Total .. .. .</b>	<b>5,672</b>	<b>12,827</b>	<b>101,815</b>	<b>4,869</b>	<b>2,700</b>	<b>9,550</b>	<b>1,123</b>	<b>138,556</b>

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.	
	Em- ploy- ing labour.	Non- em- ploy- ers.	Remu- nerated.	Unre- mune- rated.				
Professional .. .. .	3,362	8,003	37,055	108	650	6,622	310	56,140
Domestic .. .. .	4,904	2,957	60,390	1,002	2,182	1,725	241	73,331
Commercial .. .. .	12,894	11,874	69,869	1,500	2,203	7,392	588	106,320
Transport and Communication .. .. .	2,256	3,563	52,728	284	1,403	1,370	360	61,964
Industrial .. .. .	16,362	10,205	164,071	631	8,199	7,514	1,032	208,014
Primary Producers .. .. .	34,257	25,756	110,607	19,026	3,544	3,567	7,336	204,063
Independent .. .. .	..	..	..	..	..	8,903	..	8,903
Unspecified .. .. .	219	145	681	2,705	749	4,759	2,445	11,703
<b>Total .. .. .</b>	<b>74,254</b>	<b>62,503</b>	<b>495,431</b>	<b>25,256</b>	<b>13,910</b>	<b>41,857</b>	<b>12,312</b>	<b>730,523</b>

*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	·34	4·50	9·39	·77	10·16
Non-employers .. ..	49,676	12,827	62,503	3·02	·78	3·80	6·80	1·76	8·56
Assistants—									
Remunerated .. ..	393,616	101,815	495,431	23·90	6·18	30·08	53·88	13·94	67·82
Unremunerated .. ..	20,357	4,869	25,256	1·24	·30	1·54	2·79	·67	3·46
Unemployed .. ..	16,210	2,700	18,910	·99	·16	1·15	2·22	·87	2·59
Others .. ..	43,496	10,673	54,169	2·64	·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	3,359	7,831
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	4,367	10,205	20,888	5,679	26,567
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 .. ..	25,870	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	28,967	164,071	436	195	631	135,540	29,162	164,702
Primary Producers .. ..	110,358	249	110,607	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

The present war conditions have necessarily caused great changes in the occupations of the people, especially in regard to the employment of women.

### 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	1,669	117	1,786
20-24.. ..	85,138	31,317	116,455	877	51,447	52,324	1,299	86	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	38	1,184
60-64.. ..	19,380	2,720	22,100	81	13,626	13,707	562	6	568
65 and over.. ..	32,670	5,206	37,876	178	24,906	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	11,160	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.	per cent.	per cent.	per cent.
15-19 .. ..	73,088	33,324	4.03	1.46	1.85	2.75
20-24 .. ..	85,138	31,317	89.89	41.19	12.58	24.15
25-44 .. ..	244,272	46,273	98.89	37.84	14.66	22.69
45-60 .. ..	112,156	14,672	99.80	20.45	42.06	33.53
60-64 .. ..	19,380	2,720	99.80	16.59	19.31	10.63
65 and over .. ..	32,670	5,206	99.58	16.64	3.34	1.97
Unspecified .. ..	3,377	704	99.46	17.29	5.62	3.77
Total .. ..	580,807	138,013	.....	.....	.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 .. .. .	8,857	33,292	113	36,763	2,208	17,066	73	19,377
Domestic .. .. .	1,931	16,807	160	18,898	13,619	40,509	355	54,483
Commercial .. .. .	14,606	73,198	404	88,208	5,096	12,938	78	18,112
Transport and Communication .. .. .	7,094	52,846	427	60,367	266	1,326	5	1,597
Industrial .. .. .	27,505	143,452	964	171,921	14,701	21,255	137	36,093
Primary Producers .. .. .	29,309	168,566	1,263	199,143	1,213	3,709	28	4,950
Independent .. .. .	12	5,454	41	5,507	18	3,355	28	3,401
<b>Total Breadwinners .. .. .</b>	<b>83,814</b>	<b>493,616</b>	<b>3,377</b>	<b>580,807</b>	<b>37,121</b>	<b>100,188</b>	<b>704</b>	<b>138,013</b>

#### 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	7,750	5,047	385	95	54,483
Commercial ... .. .	13,504	2,172	2,376	51	9	18,112
Transport and Communication ... .. .	979	383	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
<b>Total ... .. .</b>	<b>107,297</b>	<b>16,443</b>	<b>13,445</b>	<b>670</b>	<b>158</b>	<b>138,013</b>
Dependents ... .. .	359,944	259,727	30,091	520	198	650,480
Unspecified ... .. .	362	46	35	.....	100	543
<b>Total Females ... .. .</b>	<b>467,603</b>	<b>276,216</b>	<b>43,571</b>	<b>1,190</b>	<b>456</b>	<b>789,036</b>

The distribution as breadwinners or dependents of the females in each conjugal condition group is indicated by the following percentages:—

Conjugal Condition.		Breadwinners,	Dependents,
		per cent.	per cent.
Never married ... .. .	...	22·96	77·04
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	2·8	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	·58	·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; those whose occupations were not recorded have 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	4,288	21,186	10,417	26,855	14,529	36,763	19,377
Domestic .. ..	8,721	16,507	12,689	25,000	17,704	38,249	20,128	52,690	18,898	54,483
Commercial .. ..	23,119	2,473	41,441	4,194	50,537	4,782	67,997	10,567	88,208	18,112
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	36,098
Primary Producers—										
Agricultural .. ..	45,733	6,361	60,365	6,520	66,478	7,022	75,884	1,735	77,599	1,636
Pastoral .. ..	17,169	1,666	17,333	2,385	27,212	334	31,312	595	60,724	3,266
Dairying .. ..	.....	.....	.....	.....	4,996	4,758	15,850	2,285	.....	.....
Mining .. ..	13,529	.....	18,393	.....	30,936	1	38,378	4	39,551	23
Forestry .. ..	.....	.....	.....	.....	.....	.....	.....	.....	6,368	6
Other .. ..	.....	.....	.....	.....	5,224	3	6,788	23	5,911	19
Total .. ..	169,404	35,208	259,060	52,713	377,779	83,885	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 on 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	.67	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 1905. The majority of women and girls engaged in agriculture and dairying 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. The figures for 1914-15 relate to the period ended 30th June, 1915, except for the mining industry, which relate to the calendar year 1914:—

Year.	Agricultural.		Dairying.		Pastoral.	Mining.		Manufacturing.	
	Males.	Females.	Males.	Females.		Metal.	Coal and Shale.	Males.	Females.
					Males.	Males.			
1905	62,419	5,608	19,287	14,209	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	5,385	22,374	15,424	40,405	26,402	17,356	65,953	20,514
1908	55,324	5,409	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	5,779	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
1914-15	59,944	7,875	23,435	15,917	39,131	17,493	19,977	90,301	26,161

During the period 1905-13 there was a steady increase in the labour permanently employed in all the principal industries, with the exception of agriculture and metal-mining. Employment during 1914-15 was affected by the adverse conditions of drought and war.

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. 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.
1905	131,442	38,932	170,374	72,175	206,668	35,881	242,549
1906	138,863	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	89,098	226,417	43,799	270,216
1909	146,342	36,405	182,747	91,702	229,358	45,091	274,449
1910	151,180	37,413	188,593	99,711	239,345	48,959	288,304
1911	154,378	37,017	191,395	108,624	248,274	51,745	300,019
1912	151,632	37,858	189,490	115,561	253,450	51,601	305,051
1913	153,457	38,880	192,337	120,400	259,945	52,792	312,737
1914-15	146,302	37,470	183,772	116,462	250,281	49,953	300,234

Contrasting Primary and Secondary Industries as above, it is noticeable that the Primary Industries experienced adverse periods in 1908 and 1912,

and in 1914-15, when the numbers employed showed decreases as compared with the figures for the year immediately preceding. In 1914-15 the decrease was reflected in the secondary group.

Reviewing the proportional increases under each head since 1901, 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, 1913, and 1914-15.

	1911.			1913.			1914-15.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
Primary—Rural ... ..	124	132	125	123	133	125	118	124	119
Mining ... ..	101	...	101	106	...	106	102	...	102
Total ... ..	118	132	120	119	133	121	114	124	115
Secondary—Manufacturing	151	227	164	171	234	182	166	224	176
Total ... ..	127	168	133	133	171	139	128	162	133

#### 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.

#### 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 mentioned, 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 be 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
1915	10	32	42	33

During the year 1915 no contracts were disapproved, nor were any contract immigrants refused admission; the thirty-two non-British contract immigrants admitted were American iron and steel workers, engaged to work at Newcastle.

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 years 1910-15 are shown in the following statement:—

Expenditure.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
In United Kingdom—	£	£	£	£	£
For Newspaper advertising	5,325	4,839	4,073	} 29,542	12,921
For other purposes ...	4,675	8,444	10,284		
In Australia ...	5,640	6,713	5,905	11,004	4,403
Total ...	15,640	19,996	20,262	40,546	17,324

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 grants, in the period 1906-1915:—

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	3,079	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	2,645	4,169	3,377
1915	24,501	495	825	126	250	621	1,075	584
Total ...	291,027	36,439		18,964		55,403		17,533

\* Six months—January to June.

For the financial year 1915-16 the sum of £20,000 was voted for the promotion of immigration and advertising the State, whilst an additional sum of £4,483 was voted to meet the 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 £22,800, 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 1906-1915:—

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	1,958	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	3,958	1	...	99	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
1915	1,298	369	8	...	14	7	1,320	376	1,696
Total	35,705	18,328	182	517	552	119	36,439	18,964	55,403

\* 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 from other European countries, and 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; they are brought to the State for minimum net fares of £6 for domestic servants and £8 for agriculturalists, and assistance is given in respect of their wives and families. A committee, formed in London, has raised funds to assist young women, who become unemployed on account of the war, to emigrate to Australia. The Commonwealth Government has decided to assist financially to the extent of £3 per head, and the net fare to approved persons is £2 each, which is usually advanced by the Government upon an undertaking to repay.

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.

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	485	536	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
1915	1	14	15	308	.....	53
Total ...	160	10,730	10,890	3,912	1,084	3,090

\* 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, still appear inadequate to meet the demand, and, as a further encouragement to this class of immigrant, the Government has 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, who will repay the advance in instalments extending over a period of six months. 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 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 to guarantee 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.

#### *Suspension of Immigration during War.*

At the outset of hostilities in Europe it became the duty of the British oversea dominions to refrain from all inducements to persons of military age to emigrate from the United Kingdom, and immigration to New South Wales has since been confined to domestic servants, amongst whom were a number of widows, with their children.

#### *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.

#### *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 Dépôt 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.

Arrangements have been made for the purchase of a suitable house to be used as a reception and training home for immigrant domestics.

#### 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 1915, viz., 11, were the lowest since 1906.

*Incorporation and Dissolution.*

In the thirty-four years, 1882-1915, 495 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, 1915, 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	69	27
1907-11	125	49	76
1912	26	11	15
1913	17	2	15
1914	13	3	10
1915	11	...	11
Total ...	495	275	220

The majority of unions are of comparatively recent formation, since 154 of those existent have been registered since the beginning of 1902. The total number existent at the end of 1915 represents approximately 45 per cent. of the unions formed throughout the period. The average life of all extinct unions was about 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., 1915.	Average Membership of Unions Reporting.
1907	13	9	693
1908	25	5	745
1909	27	15	767
1910	29	13	749
1911	31	7	804
1912	26	11	962
1913	17	2	1,019
1914	13	3	1,100
1915	11	...	...

*Aggregate Funds and Membership.*

The following statement shows the position of all Trade Unions for each of the four years 1911-14, as regards finances and membership:—

	1911.	1912.	1913.	1914.
Unions existent, end of year	191	209	214	219
Total income ... ..	£163,448	£199,157	£209,478	£297,314
Total expenditure ... ..	£146,959	£173,474	£183,304	£271,570
Total assets ... ..	£114,687	£151,543	£193,520	£186,568
Membership ... ..	153,504	201,144	218,005	240,798
Income per member ... ..	21s. 3d.	19s. 9d.	19s. 3d.	24s. 8d.
Expenditure per member ... ..	19s. 2d.	17s. 3d.	16s. 10d.	22s. 7d.
Amassed funds per member	14s. 11d.	15s. 1d.	17s. 9d.	15s. 6d.

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, 1914:—

Trade Unions.	No.	Membership.			Funds.	
		Aggregate.		Per Union Reporting.	Aggregate.	Per Union Reporting.
		Males.	Females			
Employers ... ..	14	2,930	154	220	£ 3,069	£ 219
Employees ... ..	205	229,629	8,085	1,160	183,499	895
Total ... ..	219	232,559	8,239	1,100	186,568	852

The following statement gives a general view of the numerical strength of all trade unions during the last five years:—

Membership.			1910.	1911.	1912.	1913.	1914.
Less than..	...	100	47	54	49	48	47
100 and less than	...	500	65	65	77	85	79
500	..	1,000	22	24	23	22	27
1,000	..	1,500	12	15	15	11	9
1,500	..	2,000	6	6	11	15	13
2,000	..	3,000	2	9	8	7	11
3,000	..	4,000	2	2	4	5	7
4,000	..	5,000	2	1	3	4	3
5,000	..	8,000	2	4	5	4	6
8,000	..	10,000	1	.....	.....	2	1
10,000	..	20,000	.....	1	2	2	2
20,000	..	25,000	.....	1	1	1	1
Exceeding	...	25,000	1	.....	.....	.....	.....
Not stated	...	...	12	9	11	8	13
Total	...	...	174	191	209	214	219

## EMPLOYERS' UNIONS.

Appended is a list of the employers' unions, showing receipts, expenditure, assets, and membership:—

Group.	Trade Unions reporting.	Receipts.	Expenditure.	Assets.	Membership.	
					Males.	Females.
		£	£	£		
Licensed Victuallers ... ..	1	1,646	1,572	255	1,093	151
Carters ... ..	1	615	503	569	385	.....
Builders, Contractors, and Tuck-pointers ... ..	4	2,603	2,682	1,244	255	.....
Farriers ... ..	1	866	772	250	445	.....
Butchers ... ..	1	755	808	334	140	.....
Bakers ... ..	1	1,008	751	384	152	.....
Tug and Lighter Owners ..	1	34	49	3	28	.....
Laundrymen ... ..	1	79	47	82	72	.....
Basket-makers ... ..	1	17	14	1	10	.....
Hairdressers ... ..	1	238	237	3	189	.....
Dairymen ... ..	1	363	358	(-) 56	161	3
Total ... ..	14	8,224	7,793	3,069	2,930	154

## EMPLOYEES' UNIONS.

*Development.*

As regards numbers, membership, and funds, trade unions of employees constitute by far the strongest group. Though numbers of the early unions formed in New South Wales were branches of British or foreign organisations, for the most part unions were of local origin and independent governance. But as the conception of unionism has undergone radical revision in recent years, so the constitution of unions has been subject to alteration in the direction of centralisation. Throughout the first decade of registration—in fact, practically till 1890—separate unions were constituted for the various branches of industries, and also for male and female workers in those branches. Since 1900 there has been apparent a movement towards consolidation of allied interests, so that few local unions retain their absolute autonomy, and the sphere of influence of most unions has extended throughout the State, or even outside it. Practically all unions, whether local, State, or federated, are affiliated with Central Councils in Sydney, Newcastle, or Broken Hill. The movement towards consolidation received an impetus during 1912 from the rearrangement of Industrial Boards under the Industrial Arbitration Act, 1912, on the basis of craft unionism, thus making allied interests subject to the oversight of one chairman; this alteration was bound to increase the tendency towards concentration.

The accumulated funds and the membership at December, 1914, are shown in the following table:—

Industrial Classification.	Funds.	Receipts.	Expendi- ture.	Membership.			Funds per member.
				Males.	Females.	Total.	
	£	£	£				s. d.
Pastoral, Agricultural, Farm- ing ... ..	15,257	24,338	21,991	22,902	39	22,941	13 4
Mining, Quarrying, and Smelting ... ..	43,607	99,655	94,219	26,857	.....	26,857	32 6
Building ... ..	18,916	20,015	18,097	22,685	.....	22,685	16 8
Engineering and Metal Working ... ..	19,833	33,156	29,569	19,233	10	19,243	20 7
Printing, Bookbinding, &c. ...	8,855	6,148	6,371	3,208	790	3,998	44 4
Clothing, Boots, Hats ...	4,845	4,276	3,319	4,079	2,531	6,610	14 8
Food, Drink and Narcotics ...	8,620	14,831	13,989	16,693	1,551	18,244	9 5
Manufacturing, n.e.i. ...	14,323	13,269	10,199	12,981	1,382	14,363	19 11
Railways and Tramways ...	23,097	23,741	20,750	47,018	.....	47,018	9 10
Other Land Transport ...	3,253	6,160	5,191	6,565	.....	6,365	10 3
Shipping and Sea Transport ...	10,584	18,704	16,940	19,933	.....	19,933	10 7
Labour Councils and Federa- tions of Employees.	1,108	1,986	1,867	.....	.....	.....	...
Eight-hour Committees ...	1,092	5,128	6,015	.....	.....	.....	...
Miscellaneous ... ..	10,109	17,683	15,260	27,675	1,782	29,457	8 4
<b>Total ... ..</b>	<b>183,499</b>	<b>289,090</b>	<b>263,777</b>	<b>229,625</b>	<b>8,085</b>	<b>237,714</b>	<b>15 5</b>

The strongest unions financially are those connected with the printing and bookbinding trades. Next in order of importance, measured by accumulated assets per member, are the mining and engineering groups.

Local unions are affiliated with the Labour Federations, which have their headquarters at Sydney, Newcastle, and Broken Hill—the three large industrial centres of New South Wales.

The numerical strength of employees' unions in 1914 is displayed in the following statement:—

Membership.	Unions.	Membership.	Unions.
Less than 100 ... ..	41	5,000 to 8,000 ... ..	6
100 to 500 ... ..	72	8,000 ,, 10,000 ... ..	1
500 ,, 1,000 ... ..	27	10,000 ,, 20,000 ... ..	2
1,000 ,, 1,500 ... ..	8	20,000 ,, 25,000 ... ..	1
1,500 ,, 2,000 ... ..	13	Not stated ... ..	13
2,000 ,, 3,000 ... ..	11		
3,000 ,, 4,000 ... ..	7	<b>Total ... ..</b>	<b>205</b>
4,000 ,, 5,000 ... ..	3		

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 1914 women unionists numbered 8,085, and represented 3·4 per cent. of the total membership. In industrial groups the women unionists were distributed as follow:—

Group.	Membership.			Percentage of Total.	
	Males.	Females.	Total.	Males.	Females.
Clothing... ..	4,079	2,531	6,610	1·72	1·06
Printing... ..	3,208	790	3,998	1·35	·33
Food and Drink... ..	16,693	1,551	18,244	7·02	·65
Manufacturing... ..	12,981	1,382	14,363	5·46	·58
Domestic... ..	4	51	55	·00	·02
Shops and Stores... ..	5,434	530	5,964	2·29	·22
Postal Employees... ..	45	85	130	·02	·04
Musicians, Theatrical Performers, &c.	1,135	324	1,459	·48	·14
Teachers... ..	541	117	658	·23	·05
Hospitals, &c... ..	530	290	870	·24	·12
Miscellaneous Workers... ..	600	350	950	·25	·15
Other Groups... ..	184,329	84	184,413	77·54	·04
Total... ..	229,629	8,085	237,714	96·60	3·40

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 did not induce industrial activity, with consequent legislation in that direction, but between 1871 and 1881 manufacturing came into prominence in the industrial life of the State; the increasing population displayed a tendency to settle in defined localities, and for some ten years, till 1892, legislative interest began to express itself in specific enactments for improved conditions in industry.

In this period world-wide interest was displayed in the question of protective legislation for the betterment of the great body of workers, and in New South Wales a new era of activity in legislation was marked by three enactments which were passed during the Parliamentary session of 1892, 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 legislation, and is being amended constantly to give concrete form to new 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.

The sequence of introduction of industrial laws in New South Wales displays the direction of attention of legislators, and indicates 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 received attention before subjects 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 empowered, under the Constitution Act, to make laws under stated conditions for the peace, order, and good government of the Commonwealth in a large number of matters.

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. This is in part attributable to the expanding popularity of protective regulation by statute law, and partly 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, but the provisions of a number of these Acts for the amelioration of the conditions of industries have been discussed in various chapters of this Year Book.

#### COMMONWEALTH INDUSTRIAL ARBITRATION.

The legislation of the Commonwealth Parliament relating to arbitration is embodied in the Commonwealth Conciliation and Arbitration Act, 1904-15, 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, 1915, there were 20 Commonwealth awards and 359 industrial agreements in force, of which 17 awards and 119 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 during a period 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.

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 of expenditure on public works the story of a congested labour market was repeated. 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, and thenceforward strikes appear 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 statutes, particularly those 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 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 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 projected machinery 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 Legislature has given much attention since 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.

#### 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 the parties, and be of great benefit in the public interest by providing simple methods for the prevention of strikes and disputes.

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.

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 two cases were taken, negotiations in other cases proving unsuccessful. The Parliamentary vote for administration lapsed on 31st December, 1894; and though the Act remained in force till 31st March, 1896, 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 to direct inquiry into the causes and circumstances of differences, 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, 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 further legislation was enacted to remove the imperfections disclosed.

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. In the year 1905 this Act was so extended by the Industrial Arbitration (Temporary Court) Act that if the Registrar or the Court was 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 a monthly average 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 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 accordingly. 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 the Registrar, to be binding as part of the agreement.

Provision was made for the registration of trade unions 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 were such employers or employees; or
- (d) where there was no trade or industrial union of employees in an industry having membership and registered as aforesaid, or where such union failed 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 were 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 was provided by the board, the Registrar had 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.

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 in the absence of co-ordinating provisions.

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 contained in the Industrial Arbitration Act, 1912; in intimate relationship with this Act is the Gas Act, 1912, providing for regulation of a specific industry. The Eight Hours Act, 1916, which is construed with the Industrial Arbitration Act, is discussed on a subsequent page.

#### *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, 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. Concerning the jurisdiction and procedure of Boards and of the Court, details are given hereafter. Where public interests are likely to be affected, the Crown may intervene to safeguard the public interest in proceedings before a Board or the Court, or appeal from an award of a Board.

In the enforcement of awards and orders, any property of a union, whether in the hands of trustees or not, is available to answer any such order.

Appeal from the Registrar or an Industrial Magistrate lies to the Court, whose decision is 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 provide 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 Boards to work of this nature, which, moreover, was not an industry or calling under the Act. The Clerical Workers Act provided 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 might fix the minimum wages and rates for overtime payable to clerks, and provide specially for aged, infirm, or slow workers; but no recognition was given to a trade or industrial union of clerical workers. In 1911, however, these workers were placed in a schedule under the Industrial Disputes Act, 1908, and an application was made for the constitution of a Wages Board. Before this case was decided, the Industrial Disputes Act was repealed, and as the clerical workers were not included in the schedule industries subject to the operation of the Industrial Arbitration Act, 1912, no further proceedings were taken. In 1915 the Clerical Workers Act was repealed, and the industry of clerks, other than articulated, solicitors, or architects, was added to the schedule of the Industrial Arbitration Act, and subsequently the Clerks' (Metropolitan) Board was constituted.

#### *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.

## JURISDICTION AND PROCEDURE OF REGULATIVE TRIBUNALS.

*Development of Jurisdiction.*

The Industrial Arbitration Act, 1901, aimed at the determination of disputes 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 award 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 thirty-one 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 June, 1916. 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, which was 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, <b>tile-layers, stone-machinists and all other employees engaged in the preparation of stone for use in the erection of buildings.</b>



Designation of Group.	Industries and Callings.
Clothing trades ...	Tailors, tailoresses, machinists, cutters and trimmers, pressers, <b>under-pressers, brushers, folders, and examiners</b> , felt and straw hat makers, <b>and buckram and other head-gear workers</b> , 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 employees, hairdressers, barbers, wig-makers, <b>hair-workers</b> , laundry employees, hospital nurses, and attendants, ambulance employees; employees of insane asylums and public charitable institutions, <b>billiard-markers, medical school laboratory and microbiology department attendants.</b>
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, <b>and all persons delivering bread, pastrycooks, assistants, and pastry packers</b> , employees in biscuit and cake factories, confectioners; butchers employed in shops, factories, slaughter-houses, and meat-preserving works, including <b>carters and other persons delivering meat</b> ; fruit preparers and canners and jam factory employees; <b>candied-peel makers, employees in meat-preserving works, poulterers, and assistants</b> ; 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 employees, malt-house and distillery employees, bottlers, washers, wine and spirit store employees, ice manufacturers, cold-storage employees, freezing and cooling chamber employees; <b>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 employees of dairymen and milk vendors</b> ; 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 employees, wood machinists, coopers; wicker, pith-cane and bamboo workers; <b>wood-carvers, pianoforte makers, billiard-table makers, loose cover cutters, carpet-cutters and fixers, and box and case makers, employees in box and case factories, and sawyers wherever employed</b> ; workers engaged in the manufacture, assembling, or repair of new and second-hand furniture, including chairs, couches, and other wood articles for sitting accommodation, fittings, show-cases, wood mantelpieces, sewing machines, pianofortes, piano-players, gramophones, musical instruments and organs, and in wood-turning (other than in saw-mills and in the coachmaking industry), but excepting wood machinists; workers engaged in wood-finishing (bespoke polishing); piano-tuners; workers engaged in upholstering, in the planning, measuring, fixing, and sewing of floor-coverings, in the cutting of loose covers (other than in the coachmaking industry) and of furnishing drapery; and in the manufacture or preparation of material for, or repair of, cushions, mattresses (other than wire), quilts, and similar goods; and yardmen, carters, grooms, and labourers employed in connection with any such callings.

Designation of Group.	Industries and Callings.
Government Railways.	The employees of the Chief Commissioner of Railways and Tramways engaged on and in connection with the railways of the State.
Government Tramways.	The employees of the Chief Commissioner of Railways and Tramways employed on and in connection with the tramways of the State.
Government employes.	The employees 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 employees, and all employees on Government dredges; <b>assistants and attendants in the microbiological and other public bureaux of scientific investigation and research; nurses, attendants, and other employees in industrial homes, hospitals for the infirm, for the sick, and for the insane; health and sanitary inspectors; masters, officers, engineers, and all other shipboard hands employed in connection with the State trawling enterprise.</b>
Iron and ship building trades.	Engineers, smiths, boilermakers, iron-ship builders, angle-iron smiths, fitters, turners, pattern-makers, ironmoulders, blacksmiths, 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, <b>wire-workers, wire-fence, nail and tubular gate makers, persons engaged in or in connection with wire-making, wire-drawing, or galvanising, iron-pipe makers, moulders, grinders, dressers, and polishers of any metal, and brassfinishers, canlster makers, metal-ceiling employees and sheet-metal fixers; employees engaged in the manufacture of metallic bedsteads, metallic cots, metallic chairbeds, 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 piano-frame makers, ship joiners, and ship carpenters, and all other persons engaged in the iron and ship-building trades; oxy-acetylene welders, electric welders, sheet-metal workers; and all labourers and assistants employed in connection with any such callings.</b>
Leather trades ...	Boot, shoe, and slipper makers, coachmakers, coachpainters, coach-trimmers, and wheelwrights, saddle, harness, portmanteau, and bag makers, leather makers, <b>leather workers, 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.</b>
Labourers ...	Persons engaged in the construction of railways, tramways, roads, bridges, and water conservation and irrigation works, and <b>river and harbour and reclamation 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; jumpermen, pick, shovel, axe, and moyle men, grave-diggers, scabblers, spawlers, nappers, fencers, grubbers, and cleaners with the exception of persons of the foregoing occupations who are engaged as general farm or station hands; employees of Trustees of Commons, and of contractors with municipal and s ire councils; and all labourers and assistants employed in connection with any such callings.</b>

Designation of Group.	Industries and 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 and repairers, 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, mackintosh makers, oilskin makers, animal-rug makers, camp-bed makers, quilt makers, umbrella makers, and flag makers; persons employed in the manufacture of varnishes, lacquers, and stains; 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, apparatus in the nature of clockwork, electroplate ware, spectacles, optician employees (mechanical), metal badge workers, wholesale drug factories' employees; persons engaged in or in connection with the manufacture of chemicals, patent manures or fertilisers, 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; persons, including machinists, making and covering boxes, cartons, packets, containers, shelf, stock, or fixture receptacles out of wood, card-board, paste-board, straw-board, leather-board, manilla paper, or two or more of such materials in combination or with any similar material; persons, including machinists, preparing material for and making playing, picture, or other cards: 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.
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, process artists, lithographic artists, designers, writers, plain mechanical or geographical draughtsmen, metal, stone, or wood engravers, die-cutters, illuminators, and photo-lithographers, 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.

Designation of Group.	Industries and Callings.
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, and employees engaged in the reception, sale, or delivery of goods, warehouse employees, employees in any branch of the process of photography, employees in dental workrooms, and theatrical employees; vaudeville artists, employees in public and private dispensaries, and clerks, other than articled, solicitors', or architects' clerks.
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-boats, boatmen, divers, divers' attendants, puntmen and punt and lighter hands, turnstile hands, ticket and change hands, 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, gatekeepers, 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, on the recommendation of the Court, as to the employers' and employees' representatives, and their jurisdiction. 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 of any of its inmates who are deemed to be employees, the board shall make due allowance in its award as to the wages of such persons. The board may exempt such institution from any terms of the award, where the food, clothing, lodging, and maintenance provided by the institution, together with the money paid by the institution to such employees or inmates as wages, are at least equal in value to the value of their labour.

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 reference to the board by the Court or by the Minister; or by 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 may enter, for inspection, premises used in the industry, conduct its proceedings in public or in private, and in respect of witnesses may compel attendance and evidence as under section 174 of the Parliamentary Electorates and Elections Act, 1912. Advocates or agents appearing before the board must have been actually engaged in one of the industries or callings in respect of which proceedings are taken.

In the 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.

#### *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, 1915, 242 Boards had been constituted under the Industrial Arbitration Act, 1912, which was operative from 18th April, 1912; of these 23 were dissolved; of the remainder, the majority lapsed by effluxion of time on 10th July following, and were provisionally reconstituted pending an investigation of the Board system by the Court of Industrial Arbitration. These were dissolved some five months later, and a new series of Industrial Boards came into operation on 21st December, 1915.

The number of awards of Boards for the year ended 30th June, 1915, was 115, and 96 variations were made; while the awards of the Court numbered 2, and variations and amendments 89; the number of awards in force at 30th June, 1915, was 252. Awards numbering 576, including 253 variations, were made by the Boards during the period 1912-15; and 168 variations were made by order of the Court of Industrial Arbitration.

*Cost of Industrial Boards.*

Fees, in addition to fares, payable to members of Boards and Committees, as determined by Regulation of 23rd October, 1912, are as follow:—

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.

The cost of Industrial Boards during the three years ended June, 1915, is shown in the following summary:—

Year ended 30th June.	Boards at end of Year.	Cost of Industrial Boards.				Average Cost.	
		Fees.	Allowances.	Other.	Total.	Per Award.	Per Board.
1913	195	£ 11,116	£ 1,648	£ 889	£ 13,653	£ 115	£ 66
1914	211	11,922	1,655	878	14,455	59	67
1915	219	7,978	737	439	9,154	43	41

## 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	1912	44
1903		1908	12	1913	36
1904	18	1909	28	1914	50
1905	6	1910	21	1915	33
1906	13	1911	27		

The noticeable increase in the number of industrial agreements made since 1905, as compared with previous years, reflects the measure of encouragement afforded to voluntary collective bargaining.

At 31st December, 1915, seventy-two agreements were in force, to which twenty-seven unions had been contracting parties; following is the number of agreements current arranged according to the industries concerned:—

Industries.	Agreements.	Industries.	Agreements.
Biscuit-making ... ..	4	Mining—Coal ... ..	3
Butchering... ..	1	Municipal and Shire Employees	2
Butterine and Margarine making	1	Nail and Barb Wire Working	2
Caretaking and Cleaning	1	Printing ... ..	13
Carters ... ..	1	Rubber Working ... ..	1
Catering ... ..	1	Saw Milling ... ..	1
Coal-lumping ... ..	1	Shearing ... ..	1
Electrical Trade ... ..	1	Shipping ... ..	10
Engine-driving and Firing	1	Shop Assistants ... ..	2
Do do (Colliery)... ..	18	Smelting ... ..	1
Farrying ... ..	1	Theatrical Employees ... ..	1
Hospital Employees ... ..	2		
Labourers ... ..	1	Total ... ..	72
Meat-preserving ... ..	1		

#### 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	...
1915	...	...	628	1

During the year ended 30th June, 1915, there were 1,162 cases in respect of strikes, and 628 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, 1915:—

Classification.	1913-14.		1914-15.	
	Cases.	Con- victions.	Cases.	Con- victions.
Non-payment of wages awarded ...	114	35	137	40
Non-payment of fines and subscrip- tions to union ... ..	136	41	312	157
Breach of award or industrial agree- ment ... ..	1,333	995	1,168	955
Failure to keep time-sheets and pay- sheets of employees ... ..	712	671	725	690
Failure to exhibit copy of award ...	485	451	587	29
Obstructing inspector ... ..	4	4	9	6
Failure to give notice of change affecting employment ... ..	...	...	9	6

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; but the range of his 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, 1915, 3,231 complaints as to breaches of awards, &c., were received at the Investigation Office; 2,612 prosecutions were initiated; and 2,361 convictions were recorded. The penalties in fines amounted to £2,325.

##### *Factory Inspection.*

The provisions of the Factories and Shops Acts are applicable only in localities specifically proclaimed as factory districts. On 1st July, 1915, these provisions were applied to the whole of the State, and proclamations relating to the six factory districts described below were revoked.

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, and Broken Hill 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 embraced 34,434 square miles.

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 33, of whom 7 are women; 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.

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 restrictions providing that the existing employment of non-unionists should not be prejudiced, and that preference should not be 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 be found usually 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 permeating the awards of

boards, &c., is the stipulation of an adequate living wage; and the minimum male 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 in the Court of Industrial Arbitration by his Honor Judge Heydon at 48s. per week; in a further pronouncement in December, 1915, the Court expressed the view that the wage of ordinary labourers should be 52s. 6d. per week, and on 18th August, 1916, the minimum was raised further to 55s. 6d. 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.	1915.
Boundary riders ... per week	s. d. s. 15 0 to 20	s. d. 16 3	s. d. 20 0	s. d. s. 20 0 to 25	s. s. 20 to 25
Bush carpenters ... ,,	15 0 ,, 30	21 3	25 0	25 0 ,, 30	30 ,, 35
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	25 ,, 30
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 110
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 25s.-30s. per week in 1915. 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 1895-1914, 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.		1914.	
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 3½	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	*1 3	„ *1 6
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
Labourers ... „	s. d.		s. d.		s. d.		s. d.		s. d.	
	7 6		7 6		7 6		9 6		9 6	

\* Rate per hour.

The wages of metal miners were increased by 1s. per day as from 13th September, 1915.

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.						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	63s.-80s.		
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.	1915.
<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 3
Plasterers ... ..	7 0	9 6	10 0	11 0	13 6
Painters ... ..	7 0	9 0	9 4	10 0	12 0
Boilermakers... ..	8 0	10 3	10 3	10 4	12 3
Labourers and navvies ... ..	6 0	6 10	7 0	8 0	9 6
<i>Females, per week, with board and lodging.</i>					
Domestic :—	s. d.	s. d.	s. d.	s. s.	s. s.
Housemaids ... ..	10 0	11 3	12 0	14 to 16	15 to 20
Laundresses ... ..	14 0	18 9	18 0	20 ,, 25	20 ,, 30
Nursemaids ... ..	7 6	7 0	10 0	10 ,, 12	12 ,, 15
General servants ... ..	11 6	11 0	15 0	10 ,, 20	10 ,, 25
Cooks ... ..	14 0	20 0	17 0	17 ,, 25	25 ,, 40

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 clauses of the Factories and Shops Act, 1912, embodying the Minimum Wage Act, 1908, as 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.

#### *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 30th June, 1915, 511 applications were granted for permits to pay less than award rates to aged, infirm, and slow workers, and 88 were refused. The number of permits cancelled was 5, and 70 applications for permits were withdrawn.

## 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; subsequently a forty-eight hour week became the standard of custom for the majority of trades. 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.

*Statutory Limitation.*

In factories in New South Wales 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.

*Eight Hours Act, 1916.*

This Act, which is construed with the Industrial Arbitration Act, 1912, regulates the hours of work and the payment of overtime, and must be observed by the Court of Industrial Arbitration and by the Industrial Boards in making awards, and by parties in making industrial agreements. The working hours are limited as follows:—

Mining Industries—workmen underground—Coal: Fireman, examiner, &c., 96 hours in 14 days; men engaged in handling and transit of coal, 48 hours in 6 days; others, 8 hours during 24. Metalliferous: 8 hours during 24 hours, or 88 hours in 14 days. In underground occupations a shift may not exceed 6 hours if, during 4 hours, the temperature is above 81 degrees Fahrenheit.

Other Industries.—(1) 8 hours per day on 6 days, (2) 48 hours per week, or (3) 96 hours in 14 days—as determined by agreement or award.

Overtime in excess of the above may be permitted by the terms of an award or agreement, must be paid for at prescribed rates, or it may be prohibited or restricted in any industry by the Court of Industrial Arbitration. The number of days or hours to be worked may be increased by award if the Court or Board consider that in the public interest an increase should be allowed. Subject to this provision the ordinary time of work in any industry or calling as fixed by agreement, award, or well-established practice, at the commencement of the Act, may not be exceeded in any future award or agreement.

The operation of the Eight Hours Act may be suspended by proclamation for any time during the war.

*Standardisation by Award.*

The majority of industrial 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 forty-eight hours is prescribed, the workers are regarded generally as unskilled, the chief groups being carters and shop assistants.

#### *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; and 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; but in September, 1909, the Commission reported adversely. In August, 1910, the Saturday Half Holiday Act was passed, 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.

#### 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 many cases in awards of industrial 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.

An amendment of the Apprentices Act was made in 1915 to protect the interests of apprentices enlisting for active naval or military service.

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 specialties.

An important contributory factor in the decline of apprenticeship in New South Wales is the facility with which highly remunerative wages may be obtained in unskilled trades.

Generally, wages or industrial boards have exercised control over apprenticeship in individual trades, but a Royal Commission in 1911-12 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.

The recent re-organisation of the technical education system, as described in the chapter relating to Education, was effected with the primary object of providing for the efficient training of apprentices.

#### OUTWORKERS.

Under section 16 of the Factories and Shops Act, 1912, 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 applies only to shearing sheds where at least six shearers are employed and is administered in conjunction with the inspectorial work under the Factories and Shops Act, &c. During the year ended 31st March, 1916, 1,420 stations were visited, 1,831 huts inspected, of which 1,708 were regarded as satisfactory; the new huts built numbered 29.

## 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 11·8 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 suspension 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 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	136
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
1915	220	5	...	225	89	314

\* 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 since 1913. 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	732,295	179,478	911,773
1915	225	89	314	66,211	28,135	94,346	309,507	160,700	470,207

\* 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	43,005
1911	8	7,984	176,688	63	12,326	180,533
1912	1	500	21,000	109	30,664	74,969
1913	8	8,977	274,387	152	31,549	92,386
1914	8	8,989	709,612	305	66,267	202,161
1915	10	8,172	213,455	304	86,174	256,752

\* 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, and 596,567 working days were lost. The dislocation involving the greatest loss of time during the year 1915 took place at the Sydney Harbour Colliery, when the miners, being dissatisfied with new award rates, ceased work in June; 37,680 days had been lost up to the end of the year, and the dispute had not been settled. During the month of March dislocations involving losses ranging from 32,340 to 11,025 working days occurred at several coal mines in the northern and southern districts. In non-mining industries a dispute occurred between the street newspaper vendors and the proprietors of two evening newspapers, being a protest against an increase in wholesale prices. It lasted about two months and 15,000 days were lost. In disputes regarding wages sleeper-cutters in the North Coast, South Coast, and Western Plains lost 28,700 working days, and liquor trade employees in Sydney, Newcastle, and Maitland lost 24,000.

*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	...
1915	137	88	...	35	54	...	172	142	...

\* July-December.

The number of workers affected by dislocations lasting one day or less during 1915 was 53,743, and the loss of working days 47,243. Thus these brief dislocations accounted for approximately 55 per cent. of the total number under review, 57 per cent. of the workers involved, and 10 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 1915:—

Duration in Days.	Dislocations.	Workers involved.	Working days lost.
No ordinary time lost ... ..	2	9	.....
Under 1 day ... ..	35	12,358	5,815
One day ... ..	135	41,378	41,378
Over 1 and not exceeding 7 ...	104	26,761	84,783
" 7 " " 14 ...	16	8,441	84,375
" 14 " " 21 ...	3	811	14,308
" 21 " " 28 ...	4	1,125	28,400
" 28 " " 35 ...	2*	286	7,171
" 35 " " 42 ...	3	824	33,428
" 42 " " 49 ...	3	1,055	50,715
50 days ... ..	1	300	15,000
72 " " " " ...	1	290	20,880
83 " " " " ...	1*	173	15,359
86 " " " " ...	1	20	1,715
92 " " " " ...	1	250	24,400
157 " " " " ...	1*	240	37,680
192 " " " " ...	1*	25	4,800
Total ... ..	314	94,346	470,207

\* One 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 1915 in the non-mining industries were the result of disagreement as to wages and in the mining in relation to working conditions. The following statement shows the causes, the workers affected, and the time lost as the result of 314 dislocations during 1915:—

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 .. .. .	56	17,202	160,821	36	14,479	124,479	92	31,681	285,300
Hours .. .. .	22	6,241	25,139	5	2,188	4,805	27	8,429	30,034
Employment of persons or classes of persons.	44	9,706	26,811	28	7,348	19,679	72	17,054	46,490
Trade unionism .. ..	9	2,585	3,396	1	....	....	10	2,585	3,396
Working conditions.. ..	64	18,318	79,722	16	3,499	10,808	80	21,817	90,530
Sympathy .. .. .	1	250	250	2	601	799	3	851	1,049
Miscellaneous .. ..	29	11,909	13,368	1	20	40	30	11,929	13,408
Total.. .. .	225	66,211	309,507	89	28,136	160,760	314	94,346	470,207

*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
1915	291	23	...	314

\* July-December.

*Results of Settlements.*

Of the 314 recorded dislocations in 1915, 171, or 55 per cent., resulted in resumption of work with modified conditions, more or less in accordance with the workers' claims. In 136, or 43 per cent., no modifications were granted, while the results of the remaining 7 cases were not recorded. The following statement affords a comparison of the results for the years 1907 to 1915:—

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	169
1914	120	158	35	313
1915	171	136	7	314

\* 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 1915, 45 per cent. of the workers involved, and 35 per cent. of the time lost, was in respect of dislocations in which no modifications were granted:—

Year.	Modification.			No Modification.		
	Disloca- tions.	Workers involved.	Working days lost.	Disloca- tions.	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	69	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	31,668	329,581	39	7,429	32,269
1914	120	23,822	286,308	153	40,205	613,465
1915	171	51,063	306,188	136	42,355	162,441

\* 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 1911-14, and the accident rate per 10,000 employees:—

Accidents.	Number.				Rate per 10,000 Employees.			
	1911.	1912.	1913.	1914.	1911.	1912.	1913.	1914.
Fatal ... ..	3	3	13	8	·38	·35	1·46	·94
Permanent disablement ...	5	2	1	5	·63	·23	·11	·59
Partial disablement ... ..	91	105	99	96	11·44	12·36	11·15	11·32
Temporary incapacitation ...	405	405	375	320	50·90	47·66	42·24	37·73
Total ... ..	504	515	488	429	63·35	60·60	54·96	50·58

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 was performed by the Department of Public Works until April, 1916, when it was transferred to the Department of Labour and Industry.

The construction of high buildings, particularly of steel and concrete, involves considerable risk of accident. Five fatalities were reported in connection with cranes and hoists during 1914-15 and seven persons were seriously injured; with one exception these accidents occurred in connection with building operations in the city. One scaffolding fatality occurred in Newcastle. In connection with lifts, one fatality and seven minor mishaps were reported in the metropolitan district and one fatality in Newcastle.

*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 1914 is shown as 5.18.

## 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.

The use of white phosphorus in the manufacture of matches is prohibited by the White Phosphorus Matches Prohibition, 1915.

## 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.
Professional ... ..	388	262	per cent.	per cent.
Domestic ... ..	696	1,466	1.06	1.35
Commercial ... ..	1,891	312	3.68	2.69
Transport and Communication ...	1,398	5	2.14	1.72
Industrial ... ..	7,617	582	2.32	.31
Primary Producers ... ..	3,544	...	4.43	1.61
Unspecified ... ..	676	73	1.78	.....
Total ... ..	16,210	2,700	6.06	13.44
			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 1914 particulars were not supplied by 49 employees' unions. Returns were received from 127 unions, of which 96, with a total membership of 95,962, were affected by unemployment at 31st December, 1914; at that date 13,028 members were unemployed, 6,824 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 ... ..	13	11,425	241	687	928	926	...	1	...	1
Clothing ... ..	5	2,948	77	...	77	67	...	10	...	...
Engineering and Metal Work- ing ... ..	16	14,732	143	1,013	1,156	732	2	102	249	71
Food and Drink ... ..	11	9,013	209	592	801	708	...	26	...	67
Land Transport (exclusive of Railways and Tramways)	5	5,686	41	38	79	76	...	3	...	...
Mining and Smelting ... ..	11	17,021	4,612	2,829	7,441	6,994	...	59	376	12
Pastoral ... ..	1	400	33	...	33	...	...	...	33	...
Printing, Bookbinding, &c. ...	8	3,998	33	176	209	203	...	...	...	6
Shipping and Sea Transport	1	570	...	40	40	40	...	...	...	...
Manufacturing, n.e.i. ... ..	12	10,457	747	374	1,121	964	...	...	...	157
Miscellaneous ... ..	13	19,712	68	1,075	1,143	1,037	...	...	...	106
Total ... ..	96	95,962	6,204	6,824	13,028	11,747	2	201	658	420

The amount of out-of-employment benefits provided by trade unions cannot be stated, as particulars are not available. One friendly society, the Sydney Clerks and Warehousemen's Benefit Association endeavours to regulate clerical labour; during 1914 the mean membership was 945 and the out-of-employment benefits amounted to £496.

## RELIEF OF UNEMPLOYMENT.

*Labour Exchanges, &c.*

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.

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. At this period 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. In 1899 a Board of four commissioners was constituted to deal with the question of unemployment and in the following year the Labour Bureau and the Pitt Town farm were placed under their control. 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 Depot 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.

The Labour Commission was terminated in 1905 and a Director of Labour was appointed; since the institution of a Department of Labour and Industry Government measures for the relief of unemployment are conducted by a branch of the Department.

In 1914 drought severely affected the pastoral and wheat-growing areas of the State, and a general dislocation of trade and industry supervened upon the outbreak of war. Special measures were taken to mitigate the effects of unemployment; in some industries, notably in railway construction and other public works the working hours were reduced in order to give employment to a larger number of persons, and clearing operations and wheat cultivation were commenced on a large area acquired for this purpose at Woodlands; the diversion of employees to military and naval forces and the increased activity in industries connected with war services also afforded a large measure of relief. In addition to the State Labour Branch and the Women's Employment Agency, 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 employees 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 Women's Employment Agency was opened in Sydney in May, 1914, a former office for the registration of women workers was closed in January, 1906, after an existence of nearly four years. The operations of the employment agencies during the last ten years are shown below:—

Year ended (30th June.)	Registrations.			Persons sent to Employment.		
	Men.	Women.	Total.	Men.	Women.	Total.
1906	1,618	537	2,155	3,934	479	4,413
1907	2,565	...	2,565	3,628	11	3,639
1908	4,027	...	4,027	3,237	...	3,237
1909	3,409	...	3,409	3,320	...	3,320
1910	3,720	...	3,720	3,907	...	3,907
1911	5,136	...	5,136	3,972	...	3,972
1912	2,696	...	2,696	3,345	...	3,345
1913	3,021	...	3,021	3,165	...	3,165
1914	8,750	574	9,324	7,382	32	7,414
1915	11,977	3,583	15,560	8,808	1,979	10,787

#### *Training and Relief.*

Since 1910 the Pitt Town Farm has been maintained primarily as an agricultural training farm for city and oversea youths; in consequence of the war there has been considerable difficulty in obtaining students, and arrangements are being made to accommodate women for training in farm work. Particulars relating to the operations of the farm 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 an order 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, which contain three rooms, were erected on a site at Randwick; the approximate original cost being £10 each, and the rental from 1s. 6d. to 2s. 6d. per week. During 1915 the canvas used in the construction was replaced with galvanised iron, and the rentals were increased to 4s. 6d. per week. As a comparatively small number

of Government workmen made application for the dwellings, they were made available to other applicants. In December, 1915, the number in residence was 320, of whom 206 were children.

### 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 1915 returns were received from 467 employers, who employed an average number

of 94,046 males, and 3,782 females to whom the Act applied. Compensation amounting to £12,072 was paid in respect of 52 deaths; 76 cases of non-fatal accidents were settled by the payment of lump sums amounting to £5,426, and in 5,778 cases of disablement £27,073 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 ... ..	2,826	26 weeks and less than 52 ... ..	53
2 weeks and less than 3 ... ..	903	1 year and less than 2 ... ..	5
3 " " 4 ... ..	517	2 " " 5 ... ..	3
4 " " 13 ... ..	1,169	Not stated " ... ..	148
13 " " 26 ... ..	154		
		Total... ..	5,778

The particulars disclosed by the returns received during the last three years are compared in the following statement:—

Particulars.	1913.	1914.	1915.
Returns Received ... ..	488	448	467
Approximate average number of employees to whom Act applies—			
Males ... ..	77,088	123,707	94,046
Females ... ..	3,774	2,384	3,782
Compensation—			
Cases—Deaths ... ..	62	65	52
Disablement—Weekly payments ... ..	6,061	6,250	5,778
Lump sums ... ..	156	136	76
Total ... ..	6,279	6,451	5,906
Amount—Deaths ... ..	£ 14,797	£ 15,256	£ 12,072
Disablement—Weekly payments ... ..	30,275	30,159	27,073
Lump sums.. ... ..	9,079	8,043	5,426
Total... ..	54,151	53,458	44,571

#### *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 1915 numbered 185, the number at the end of the year being 174.

The gross revenue for the year 1915 was £57,936, a decrease of £8,868 as compared with the previous year. The shrinkage in revenue is attributed to a decrease in the labour employed. The total amount deducted from

wages was £22,980, representing an average year's contribution from 23,477 persons, as compared with 27,653 in 1914. The contributions by mine-owners amounted to £11,497. The Government subsidy for the year 1915 was £11,497, and interest received on investments amounted to £12,046.

The funds invested at 31st December, 1915, amounted to £330,000, of which £309,000 was invested in New South Wales Funded Stock bearing interest at 3½ to 4 per cent., and £21,000 in Treasury Bills at 4½ per cent. The expenditure for the year was £52,947, or £2,479 less than in 1914.

Particulars relating to the beneficiaries during the year 1915 are shown in the following statement:—

Beneficiaries.	Claims existing, 31st Dec., 1914.	Claims allowed, 1915.	Benefits Determined.				Claims existing on 31st Dec., 1915.
			By Death.	By Marriage.	By Age.	Other-wise.	
<b>Fatal Accidents—</b>							
Widows ... ..	346	27	...	13	...	...	360
Fathers ... ..	11	...	...	...	...	...	11
Mothers ... ..	45	1	1	...	...	...	45
Sisters and Guardians ...	19	...	...	...	...	1	18
Children ... ..	550	53	2	...	67	...	534
<b>Disablement—</b>							
Persons permanently disabled ... ..	299	48	13	...	...	17	312
Children ... ..	266	96	...	...	33	25	304

The benefits paid during the year amounted to £51,330, viz., funeral allowances £478, extended benefits in respect to fatal accidents £18,133, and relief to disabled persons £32,719.

The number of deaths resulting from accident in 1915 was 41, and of disablements 4,511, of which 26 deaths and 3,467 disablements occurred in or about coal and shale mines. The accidents, fatal and non-fatal, since 1901, are shown below:—

Period.	Annual Average Number of Employees.	Fatal Accidents.		Non-fatal Accidents.	
		Annual Number.	Per 1000 Employees.	Annual Number.	Per 1000 Employees.
1901-5	21,607	60	2.78	3,484	161.24
1906-10	26,554	55	2.06	5,538	208.55
1911	28,034	65	2.32	6,024	214.88
1912	29,392	76	2.59	6,211	211.31
1913	31,261	72	2.30	6,184	197.82
1914	27,653	50	1.81	5,557	200.95
1915	23,477	41	1.75	4,511	192.15



*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. Particulars regarding war pensions in connection with military and naval services are shown in the chapter "Social Condition."

*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.

## 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 relating to land settlement :—

Balranald Irrigation ... ..	1902
Barren Jack Dam and Murrumbidgee Canals Construction ...	1906
Closer Settlement ... ..	1902, 1904, 1906, 1907, 1909, 1912, 1914
Closer Settlement Promotion ... ..	1910
Crown Lands Consolidation ... ..	1913
Crown Lands Amendment ... ..	1916
Department of Agriculture ... ..	1907
Dividing Fences... ..	1902
Drainage Promotion ... ..	1901, 1902
Forestry ... ..	1909
Government Savings Bank ... ..	1902, 1903, 1906, 1913
Hay Irrigation ... ..	1902 (2)
Inclosed Lands Protection ... ..	1901
Irrigation ... ..	1912-1916
Labour Settlements ... ..	1902
Local Government ... ..	1906, 1908
Mining ... ..	1906, 1907
Murrumbidgee Irrigation ... ..	1910 (2)
Pastures Protection ... ..	1902, 1904, 1906, 1912
Prickly-pear Destruction ... ..	1901
Returned Soldiers Settlement ... ..	1916
Western Lands ... ..	1901, 1905, 1908, 1909

### 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 :—

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 attain 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, reverted 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, 1915, in the Eastern Division was 4,082 acres, at a rental of £399 per annum, the subdivisions being as follows:—

	No.	Area. acres.	Rent. £
Pastoral ... ..	5	3,980	47
Agricultural ... ..	17	92	23
Ninety-nine Year ... ..	38	10	329
<b>Total ... ..</b>	<b>60</b>	<b>4,082</b>	<b>399</b>

In addition to the above, there were two water races, aggregating about 15 miles, with a rental of £4.

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
<b>Total ... ..</b>	<b>1,027,538</b>

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, 1915, was 26,606,768 acres. A classification of reserves according to the purpose for which used is shown below:—

Class of Reserves.	Area. acres.
Travelling Stock ... ..	6,137,758
Water ... ..	2,517,069
Mining ... ..	1,337,082
Forest ... ..	6,606,017
Temporary Commons ... ..	537,603
Railway ... ..	322,150
Recreation and Parks ... ..	229,381
Pending Classification and Survey ... ..	4,662,313
From Conditional Purchase, within Gold-fields ... ..	824,679
Miscellaneous ... ..	3,432,716
<b>Total ... ..</b>	<b>26,606,768</b>

The extent of land set apart for timber conservation amounts to 6,606,017 acres; for routes and camping-places for travelling stock 6,137,758 acres have been reserved, 3,709,195 acres being in the Western Division; water reserves embraced 2,517,069 acres, of which 1,606,117 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,  $1\frac{1}{2}$ 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 £494,290 in the financial year 1914-15.

#### 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.

#### *Territorial Divisions.*

Under these Acts 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 now in force, 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;
- (12) Week end;
- (13) Town lands.

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.

In 1908 an Amending Act (providing for conversions other than conditional leases) was passed, under which homestead selections and homestead grants, settlement leases, non-residential conditional purchases, special leases, Church and School lands leases may be converted, under certain conditions, into all or portion of the following tenures, viz. :—Conditional purchase lease,

conditional purchase or a conditional purchase and conditional lease. In the case of special leases, and of Church and School lands leases, it is also allowable to convert the whole or part into a homestead selection, a settlement lease or a conditional lease. Also, the holder of any residential lease, including any additional residential leases held by virtue thereof, may apply to purchase the same at any time after expiry of the first five years of the lease. A further Amending Act, in 1912, provides for the conversion of settlement purchases and homestead selections into homestead farms.

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.

A residential conditional purchase may be taken up by males over age 16, or by 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.
		acres.	acres.
Residential ... ..	Eastern ... ..	40	1,280
" ... ..	Central ... ..	40	2,560
Non-residential... ..	Eastern ... ..	40	320
" ... ..	Central ... ..	40	320
Special area ... ..	Eastern ... ..	.....	320
" ... ..	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 five years to run (unless with a right to purchase the freehold) must not exceed a home-maintenance area. By this is meant 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. Homestead farms and Crown leases also may be acquired as additional areas in certain circumstances.



Under the Crown Lands Amendment Act of 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; at least one-tenth of the survey fee must be lodged with the application unless such fee has been paid by a previous holder and stamp duty must be paid. Deposit and survey fee may be dispensed with in connection with an application for a holding within a classified area if such be lodged during the first week the land becomes available, but must be subsequently paid as directed by the Land Board. 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 in certain circumstances 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, or elsewhere within reasonable distance. In certain cases a wife may carry out residence on her husband's holding, or, conversely, a husband may carry out residence on his wife's holding. 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.*

Holders 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, at an upset price of not less 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 five 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. Crown Lands available for conditional purchase (unless otherwise notified in the *Gazette*) are also available for homestead farm, and land may be set apart for homestead farms to be acquired only as additional areas.

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, the same (except boundary fencing) being 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 a 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. Suspensions or remissions may be granted for such periods as determined by the Land Board. In certain cases a wife may carry out residence on her husband's holding, or, conversely, a husband may carry out residence on his wife's holding.

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 5s. 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. Males under 16 years, females under 18 years, are disqualified from applying. A married woman may, in certain cases, apply, provided her husband has not acquired a suburban holding. 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.

#### *Week-end Leases and Leases of Town Lands.*

Under the Crown Lands Amendment Act, 1916, which came into force on 23rd June, 1916, week-end leases may be obtained, and leases of town lands may be offered at auction or by tender. Both these leases are in perpetuity, and neither carries any condition of residence.

#### *Week-end Leases.*

This tenure created by the Crown Lands Amendment Act, 1916, is a lease in perpetuity, and is subject to payment of rent at the rate of  $2\frac{1}{2}$  per cent. of the capital value; to the effecting of substantial improvements worth £1 per acre within five years from confirmation, and to the performance of such special conditions as may be notified. Residence is not necessary. The minimum rent is £1. Anyone, not a female not judicially separated, nor under 21 years, may apply.

Persons who already hold land within areas defined in notification setting apart the land for week-end leases, are in special circumstances disqualified.

Transfers may be made at any time with the Minister's consent, but must be to a qualified person, except in cases of devolution under a will or intestacy. The consideration for a transfer must not exceed the capital value of the improvements on the land.

#### *Leases of Town Lands.*

Crown lands within the boundaries of any town may be leased by public auction. The lease is perpetual, and the area included must not exceed half an acre. The amount bid at auction or offered by tender (not being less than the upset value) is the capital value on which the annual rent at the

rate of  $2\frac{1}{2}$  per cent. is based for the first period of twenty years. The capital value for each subsequent twenty years' period is determined by the Land Board.

The lease may contain such covenants and provisions as may be gazetted prior to sale or tender. Residence is not necessary.

No person is allowed to hold more than one lease, unless with the permission of the Minister on recommendation by the Land Board.

#### *Land for Returned Soldiers.*

Facilities are provided for acquiring lands under the Crown Lands Acts by soldiers absent at the war. In such cases application and declaration may be made in the name, and on behalf of the absentee, by a person duly appointed and authorised under power of attorney.

Under the Returned Soldiers' Settlement Act, 1916, special provision is made for the settlement of returned soldiers on Crown lands or on lands acquired under the Closer Settlement Acts. Under the first-mentioned Act land may be set apart for disposal to returned soldiers only, and the Minister may assist settlers thereunder with respect to clearing, fencing and general improvements of the land, erection of building, purchase of implements, stock, and other things necessary to satisfactorily occupy and develop the land.

#### *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) 16 years or over, if a male, or 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 three 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 Commissioners 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 lands are not 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 were 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.

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, unless as otherwise provided. 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 by 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 Minister. 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; or homestead farm.



*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 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 one snow lease 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, and lands are specially set apart by notification in the *Gazette* as available for Crown lease. Crown lands available for conditional purchase (unless otherwise specified in the *Gazette*) are also available for Crown lease. Land may be set apart for Crown lease to be acquired only as additional areas. 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, 1915, were classified as follows:—

Class of Holding.	Leases issued.	Area.	Annual Rental.
	No.	acres.	£
Pastoral Leases ... ..	300	40,316,109	50,917
Homestead Leases ... ..	1,117	10,369,917	22,671
Improvement Leases ... ..	116	1,950,875	1,040
Scrub Leases ... ..	3	17,431	25
Inferior Lands Leases ... ..	4	209,950	48
Settlement Leases ... ..	8	40,050	130
Artesian Well Leases ... ..	29	296,631	395
New Special Leases ... ..	285	539,518	1,472
Special Leases (Conversion) ... ..	62	9,766	330
Residential Leases... ..	1	10	1
Occupation Licenses ... ..	104	7,172,676	2,106
Homestead Selections and Homestead Grants ..	35	24,805	127
Section 32, Western Lands Act Leases... ..	289	2,780,083	2,164
Part VII, ,, ,, ... ..	372	9,254,932	8,580
Preferential Occupation Licenses ... ..	5	19,741	22
Permissive Occupancies ... ..	51	1,108,706	677
Conditional Leases .. ..	83	111,431	499
	2,864	74,222,631	91,204

#### 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, 1915, the only settlements in existence were those at Bega and Wilberforce. At Bega an area of 1,036 acres is attached to the settlement, and on the date specified there were 27 men enrolled, the total population being 145. 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 409 acres has been granted for settlement. On 30th June, 1915, there were 9 men enrolled, the total population being 43. Loans from the Government amount to £2,479, the value of improvements, exclusive of crops, being £1,550.

#### 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, 1915:—

Name of Settlement Purchase Area.	Lands comprised in Settlement Areas.			Price paid for Acquired land.	
	Acquired land.	Adjoining Crown land.	Total.	Total.	Per Acre.
Myall Creek, Inverell ... ..	acres. 53,929	acres. 19,373	acres. 73,302	£ 138,866	£ s. d. 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
Boree 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	34,885	4 0 1
Larras Lake, Molong ... ..	11,538	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
Tuppai, 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
Cole 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 ... ..	45,006	.....	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, 26,147 acres have been reserved for roads and other purposes, and 748,549 acres have been divided into 1,611 farms, the average area per farm being 46½ 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, 1915.	Area allotted.	Capital value of Farms allotted.
		Acquired Lands.	Crown Lands.	Total.			
Myall Creek .. .. .	No. 134	£ 138,589	£ 24,967	£ 163,556	No. 134	Acres. 67,003	£ 163,556
Gobbagombalin .. .. .	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 .. .. .	24	50,292	1,236	51,528	24	12,265	51,528
Boree Creek .. .. .	30	67,006	527	68,133	30	17,034	68,133
Peel River .. .. .	289	488,580	126	488,706	289	97,415	488,706
Mungery .. .. .	62	117,497	81,062	199,459	62	95,111	199,459
Coreen and Back Paddock ..	63	150,173	3,849	154,022	63	38,853	154,022
Brookong .. .. .	20	43,155	341	43,496	20	12,006	43,496
Piallaway and Walhallow ..	38	63,485	1,371	64,856	38	12,631	64,856
Everton .. .. .	18	19,886	11,571	31,457	18	12,806	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	11,484	57,140
North Logan .. .. .	58	57,966	676	58,642	41	11,211	57,919
Hardwicke .. .. .	21	26,857	276	27,133	21	6,172	27,133
Tuppal .. .. .	117	232,110	2,862	234,472	117	49,573	234,472
Nangus .. .. .	17	31,067	485	31,552	17	7,649	31,552
Gunningbland .. .. .	19	38,792	118	38,910	19	12,889	38,910
Tibbereenah .. .. .	75	51,324	868	52,192	75	12,713	52,192
Wandary .. .. .	18	37,985	642	38,627	18	9,076	38,627
Crowther .. .. .	22	53,687	694	54,381	22	10,677	54,381
Cole Park, Malton, & Rossville	19	14,644	5,808	20,452	19	3,847	20,452
Bibbenluke .. .. .	31	62,108	1,289	63,397	31	16,137	63,397
Maharatta .. .. .	48	81,321	993	82,314	46	19,666	80,115
Warrah .. .. .	83	209,994	..	209,994	83	44,818	209,994
Boorabil .. .. .	8	19,630	3,219	22,849	4	4,565	11,649
Total .. .. .	1,611	2,685,660	163,254	2,848,914	1,588	742,606	2,834,792

Up to 30th June, 1915, the total farms allotted were 1,588, containing 742,606 acres, of the capital value of £2,834,792, representing an average cost to the settler of £3 16s. 2d. per acre and of £1,768 per farm.

Of the above number, 38 farms, with 19,887 acres and valued at £88,373, have been converted into homestead farms, leaving 1,550 farms allotted under the Closer Settlement Act in existence, the area of which is 722,719 acres and the capital value £2,746,419.

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 on 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.

Under the Closer Settlement (Amendment Act, 1914), instead of the Government Savings Bank advancing the purchase money, the Minister for Lands is authorised to pay same from the Closer Settlement Fund, or to issue a negotiable certificate covering the amount. In the latter case the principal is repayable by seven equal quinquennial payments, with interest at 4 per cent. per annum, payable half-yearly.

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, 1915, 968 farms, of a total area of 379,728 acres, were applied for, the amount involved being £2,018,042. Of this number, 800 farms, embracing an area of 306,689 acres, at a cost of £1,659,202, were allotted and finally dealt with at 30th June, 1915.

The transactions for each year were as follows:—

Year.	Estates.	Farms.	Area.	Amount Advanced.
			acres.	£
1910-11	4	26	10,785	54,131
1911-12	31	209	84,280	418,941
1912-13	36	274	107,791	599,145
1913-14	32	183	62,598	361,351
1914-15	18	108	41,235	225,634
Total ...	121	800	306,689	1,659,202

Of the estates shown to have been dealt with during the year 1914-15, there were two containing 13 farms with an area of 5,273 acres, which were settled by certificates and cash from the Closer Settlement Fund, to the extent of £24,471.

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. Resumptions under the Commonwealth Act are also included.

The following statement shows the area of such resumptions and purchases which were made during the past eight 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	16	27	3	31	14,542	0	7
1915	19,107	3	8	17	0	10	19,124	3	18

Resumptions and purchases, and the purposes thereof, during 1914-15 were :—

	Area.				Area.		
	a.	r.	p.		a.	r.	p.
Defence ... ..	673	3	39	Public School sites ...	187	2	29
General Purposes... ..	6,536	0	7	Railways, Tramways, and Quarries ... ..	3,185	2	0
Irrigation ... ..	8,470	1	29	Observatory site ... ..	6	1	5
Postal ... ..	8	3	29	Total ... ..	19,124	3	18
Material for use Federal Territory ... ..	56	0	0				

The area and the purposes for which land was dedicated during 1914-15 were as follows :—

	Area.				Area.		
	a.	r.	p.		a.	r.	p.
Fire Brigade Stations... ..	3	0	2	Public Recreation ... ..	14	2	3½
General Cemetery ... ..	19	3	30	Public Reservoir ... ..	2	3	39
Hospital for the Insane (Addition) ... ..	0	3	31	Public Roads... ..	135	2	14½
Literary Institutes ... ..	2	2	10½	Public School sites ... ..	81	1	32½
Mechanics' Institute, Hall or other Institution for Public Amusement ... ..	0	0	20½	Reserve for Travelling Stock and Camping ... ..	2	0	0
Public Hall ... ..	0	2	10½	Show Ground (Addition) ... ..	9	0	19
Preservation of Water Supply ... ..	124	0	31	Show Ground and Race-course ... ..	115	0	0
Public Library ... ..	0	1	0	Total ... ..	512	1	4½

#### 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, 1915, there were 14,914,918 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 Crown Lands Act of 1861—		
To May 24, 1884 ... ..	136,389	14,982,120
Under 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 subsequent amending Acts to year ended 30th June, 1909	89,175	16,281,251
During years ended 30th June, 1910 to 1915 ... ..	6,781	970,198
Total to 30th June, 1915 ... ..	287,429	40,721,589

In 1908 the Conversion Act was passed, and subsequent to 1909 the number of selections have been reduced by forfeitures, cancellations, conversions into homestead selections, &c., and increased by conversions from various other tenures under the Crown Lands Act, so that the land wholly alienated, or in process of alienation, by conditional purchase, on 30th June, 1915, amounted to 34,300,152 acres, contained in 215,007 purchases. Included in the foregoing are 124,103 completed purchases, covering 16,264,942 acres, upon which deeds have now been issued, and the balance represents the number of purchases still in force, but upon which the conditions, payments, &c., have not yet been fulfilled, viz., 90,904, with an area of 18,035,210 acres.

Applications and confirmations in regard to homestead selections and homestead grants issued, from the year 1895 to 30th June, 1915, are as follow :—

Year.	Homestead Selections.				Homestead Grants Issued.	
	Applications.		Confirmations.		No.	Acres.
	No.	Acres.	No.	Acres.		
1895 to 1910 ... (Year ended 30th June)	9,059	3,582,134	7,059	2,555,805	4,028	1,628,177
1911 ... ..	359	98,155	294	76,651	287	123,086
1912 ... ..	537	119,278	466	94,641	196	88,517
1913 ... ..	65	19,595	106	30,879	175	55,377
1914 ... ..	19	4,941	22	5,707	231	39,231
1915 ... ..	30	16,983	18	7,233	198	59,919
Total ... ..	10,099	3,841,086	7,965	2,770,916	5,115	1,994,307

After making allowance for conversions to and from other tenures, forfeitures, &c., the number of homestead selections and grants in existence on 30th June, 1915, was 3,788, of an area of 1,365,719 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, 1915, the Crown has dedicated 236,136 acres for public and religious purposes, the dedications during the last year covering 513 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, 1915, 605 applications, embracing 467,873 acres, were lodged; 437 applications, covering 327,098 acres, were confirmed, the rental value being £14,691. The area held as homestead farms on 30th June, 1915, was 748,918 acres.

For suburban holdings during the year 1914-15, 563 applications, embracing 10,499 acres, were received, and 477, covering 9,299 acres, were confirmed, the annual rental value being £1,058. The area held under suburban holdings on 30th June, 1915, was 30,717 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:—

	acres.
Area granted and sold by private tender and public auction at prices ranging from 5s. to 20s. per acre, prior to the year 1862 ... ..	7,146,579
Area sold by auction and other forms of sale, 1862 to 30th June, 1915, inclusive ... ..	14,914,918
Area sold under system of conditional purchase for which deeds issued, 1862 to 30th June, 1915, inclusive ... ..	16,264,942
Area granted under Volunteer Land Regulations of 1867 ... ..	172,198
Area dedicated for public and religious purposes, less resumptious, 1862 to 30th June, 1915... ..	236,136
Homestead selections and grants existing on 30th June, 1915 ... ..	1,365,719
Homestead farms ... ..	748,918
Suburban holdings ... ..	30,717
Lands (acquired and Crown) alienated for Closer Settlement to 30th June, 1915 ... ..	1,029,408
	41,909,535
<i>Less—</i>	acres.
Alienated and dedicated lands within Federal Capital Territory.. ... ..	173,451
Area acquired for Closer Settlement, to 30th June, 1915	991,845
	1,165,296
Total area alienated, 30th June, 1915 ... ..	40,744,239
Area in process of alienation under system of conditional purchase standing good on 30th June, 1915 (exclusive of Federal Capital Territory) ... ..	18,035,210
	58,779,449

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.

The progress of alienation and of conditional settlement by purchase and lease at various periods from 1861 to 30th June, 1915, is shown in the following table:—

Year.	Area Alienated to end of year.	Area Conditionally Purchased, standing good at end of year.	Area under Leases with right to convert.	Total Area placed beyond State control.
	acres.	acres.	acres.	acres.
1861	7,146,579	.....	.....	7,146,579
1871	8,630,604	2,280,000	.....	10,910,604
1881	22,406,746	12,886,879	.....	35,293,625
1891	23,775,410	19,793,321	11,234,131	54,802,862
1901	27,934,627	20,044,703	13,980,942	61,960,272
1906	33,470,512	16,499,823	15,807,249	65,777,584
1911	38,501,167	15,614,036	25,352,311	79,467,514
1912	39,116,872	16,529,008	25,244,590	80,890,470
1913	39,710,671	17,307,305	24,698,103	81,716,079
1914	40,173,511	17,837,702	23,809,707	81,820,920
1915	40,744,239	18,035,210	23,593,570	82,373,019

AREA LEASED AT 30TH JUNE, 1915.

The area leased to pastoral tenants and others at the end of June, 1915, amounted to 121,012,668 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 .. .. .	1,136,475	Snow Land .. .. .	11,549
To outgoing Pastoral Lessees	964,081	Special .. .. .	648,509
Occupation License .. .. .	6,976,493	Inferior Land .. .. .	104,524
Conditional .. .. .	16,061,102	Artesian Well... .. .	71,680
Conditional Purchase... .. .	549,772	Western Lands .. .. .	74,222,631
Homestead .. .. .	351,374	Permissive Occupancy .. .. .	1,400,502
Annual .. .. .	3,184,830	Prickly Pear .. .. .	47,329
Settlement .. .. .	6,316,739	Mining Act .. .. .	201,900
Improvement .. .. .	5,181,979	Other .. .. .	17,449
Scrub .. .. .	1,991,066		
Crown .. .. .	1,563,684	<b>Total .. .. .</b>	<b>121,012,668</b>

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, 58,779,449 acres, and the area leased, 121,012,668 acres, making a total of 179,792,117 acres, there remained a balance of 18,266,763 acres, representing the area of country neither alienated nor leased, and including roads, reserves for public purposes, travelling stock routes and water.

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 .. .. .	16,061,102
Conditional Purchase Leases .. .. .	549,772
Settlement Leases .. .. .	6,316,739
Special Leases .. .. .	648,509
Residential Leases on Mineral Fields... .. .	13,366
Church and School Land Leases .. .. .	4,082
<b>Total .. .. .</b>	<b>23,593,570</b>

The areas under long contracts of lease, in some cases with right of renewal, are given below:—

	acres.
Crown Leases .. .. .	1,563,684
Pastoral Leases .. .. .	1,136,475
Leases to outgoing Pastoral Lessees .. .. .	964,081
Homestead Leases .. .. .	351,374
Scrub Leases and Inferior Land Leases .. .. .	2,095,590
Artesian Well Leases .. .. .	71,680
Snow-land Leases .. .. .	11,549
Improvement Leases .. .. .	5,181,979
Western Land Leases .. .. .	65,921,508
Other Leases .. .. .	249,230
<b>Total .. .. .</b>	<b>77,547,150</b>

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. As has been shown previously, the area which had been placed practically beyond State control at the end of June, 1915, was as follows:—

Area alienated ... ..	acres.
Area conditionally purchased standing good ... ..	40,744,239
Area under Lease with right to convert... ..	18,035,210
	23,593,570
Total area placed practically beyond State control ... ..	<u>82,373,019</u>

Adding together 82,373,019 acres practically beyond State control, and 77,547,150 acres of land leased on long contracts, a total of 159,920,169 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. The balance is 38,138,711 acres; of this 2,969,080 acres represent the water area, and a considerable area, probably 3 or 4 million acres, must be deducted for roads and for useless land, leaving perhaps 32 million 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.

#### AREAS FOR SETTLEMENT, 1914-15.

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, 1,577,283 acres were made available during the year 1914-15, for the classes of holdings specified below:—

	acres.
For Crown Lease ... ..	1,067,009
Homestead Farms ... ..	420,186
Suburban Holdings ... ..	10,222
Additional Holdings ... ..	34,248
Irrigation Farms and Allotments ... ..	4,352
Area acquired (Closer Settlement) ... ..	41,235
Conditional Purchase and Conditional Lease ... ..	31
Total... ..	<u>1,577,283</u>

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.					
	1912-13.		1913-14.		1914-15.	
	No.	Area.	No.	Area.	No.	Area.
		acres.		acres.		acres.
Conditional Leases ... ..	1,850	780,773	1,050	576,400	787	326,717
Conditional Purchase Leases ...	41	17,904	47	27,649	46	27,453
Homestead Selections or Grants ...	176	70,703	179	73,623	81	33,062
Settlement Leases ... ..	94	308,863	99	347,889	50	179,798
Non-residential Conditional Purchases ... ..	4	548	8	966	7	639
Special Leases ... ..	269	36,791	265	34,435	234	30,984
Settlement Purchases ... ..	34	17,533	6	1,980	7	3,889
Church and School Lands Leases ...	2	1,537	...	.....	1	5
Improvement Leases ... ..	7	4,045	5	3,200	1	640
Conditional Purchases ... ..	1	224	4	3,352	...	.....
Scrub Leases ... ..	...	.....	1	640	...	.....
<b>Total ... ..</b>	<b>2,478</b>	<b>1,238,921</b>	<b>1,664</b>	<b>1,070,134</b>	<b>1,214</b>	<b>604,087</b>

Class of Holding.	Applications confirmed.					
	1912-13.		1913-14.		1914-15.	
	No.	Area.	No.	Area.	No.	Area.
		acres.		acres.		acres.
Conditional Leases ... ..	1,781	784,556	1,272	584,234	778	320,853
Conditional Purchase Leases ...	50	18,155	41	24,204	46	26,382
Homestead Selections or Grants ...	105	76,306	182	78,846	90	39,044
Settlement Leases ... ..	166	544,345	88	319,441	60	210,814
Non-residential Conditional Purchases ... ..	4	324	6	604	9	999
Special Leases ... ..	232	26,845	206	21,107	186	23,431
Settlement Purchases ... ..	19	9,944	6	4,001	10	4,446
Church and School Lands Leases ...	2	2,154	...	.....	...	.....
Improvement Leases ... ..	1	600	...	.....	2	638
Conditional Purchases* ... ..	...	.....	5	2,558	...	.....
Conditional Leases*... ..	...	.....	4	3,560	...	.....
<b>Total ... ..</b>	<b>2,450</b>	<b>1,463,229</b>	<b>1,810</b>	<b>1,038,555</b>	<b>1,181</b>	<b>626,607</b>

\* Conversions under Section 194, Crown Lands Consolidation Act, 1913.

## REVENUE FROM PUBLIC LANDS, 1911-15.

The following statement shows the Revenue received from Public Lands during the years ended 30th June, 1911 to 1915, and also the Revenue per capita :—

Head of Revenue.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
<b>ALIENATION—</b>	£	£	£	£	£
<b>Auction and Special Sales—</b>					
Auction Sales ... ..	83,058	83,764	63,001	43,762	31,630
Improved Purchases ... ..	3,825	1,225	3,149	2,427	2,753
Newcastle Pasturage Reserve Sales ... ..	1,061	996	904	619	619
Miscellaneous Purchases ... ..	11,049	13,631	25,801	18,233	10,698
<b>Total ... ..</b>	<b>£ 98,993</b>	<b>99,616</b>	<b>92,855</b>	<b>65,041</b>	<b>45,700</b>
<b>Conditional Purchases—</b>					
Deposits and Improvements (Acts, 1884 and 1889) ... ..	135,392	70,930	62,303	42,063	25,782
Instalments and Interest (Acts of 1875, 1884, and 1889) ... ..	537,226	595,805	660,703	721,470	715,697
Interest (Act of 1861) ... ..	21,614	13,894	17,094	17,279	16,131
Balances (Acts, 1861, 1875, 1884, and 1889) ... ..	186,592	146,593	133,013	101,210	71,231
Homestead Selections (Improvements and Rent) ... ..	62,917	48,577	40,768	43,409	38,621
<b>Total ... ..</b>	<b>£ 943,741</b>	<b>880,799</b>	<b>918,881</b>	<b>925,436</b>	<b>867,462</b>
<b>OCCUPATION—</b>					
<b>Pastoral Leases—</b>					
Pastoral ... ..	749	706	720	735	769
Conditional ... ..	199,214	201,450	207,043	211,662	201,526
Conditional Purchase ... ..	21,544	22,692	20,729	20,704	16,987
Occupation Licenses ... ..	29,871	26,952	25,051	23,060	21,242
Homestead ... ..	1,688	1,771	1,551	1,114	1,085
Annual and Snow ... ..	34,297	33,547	40,607	37,405	35,639
Scrub and Inferior ... ..	9,896	9,853			
Settlement ... ..	106,736	85,331	79,147	72,238	67,743
Improvement ... ..	49,501	49,644	46,203	40,947	37,693
Artesian Well ... ..	198	198	144	144	118
Church and School Land ... ..	632	471	515	406	399
Western Land Division ... ..	82,265	83,364	89,613	84,662	87,488
Blockholders Act of 1901 ... ..	15	7	...	...	...
Leases under 18th Section, Land Act, 1903 ... ..	11,451	9,645	10,146	9,934	9,160
Crown Leases ... ..	...	1,017	4,059	7,268	11,748
Suburban Holdings ... ..	...	77	940	1,881	2,693
<b>Total ... ..</b>	<b>£ 548,057</b>	<b>526,725</b>	<b>526,468</b>	<b>512,160</b>	<b>494,290</b>
<b>Mining—</b>					
Mineral Leases ... ..	17,490	17,739	18,796	19,682	15,426
Leases of Auriferous Lands ... ..	2,544	1,892	1,837	1,755	1,668
Deposits—Gold and Mineral Dredging Act, 1899 ... ..	987	945	821	834	793
Miners' Rights ... ..	2,913	2,777	3,004	2,780	2,484
Business Licenses ... ..	784	764	691	656	565
Residential Leases ... ..	1,661	1,679	1,703	1,611	1,816
Royalty on Minerals ... ..	77,613	89,423	103,851	110,893	99,345
Fees—Warden's Courts and Department of Mines ... ..	1,889	1,689	1,715	1,959	1,439
Other Receipts ... ..	4,698	3,552	5,015	5,032	3,842
<b>Total ... ..</b>	<b>£ 110,579</b>	<b>120,460</b>	<b>137,433</b>	<b>145,202</b>	<b>127,378</b>

Head of Revenue.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
<i>OCCUPATION (continued)</i> —	£	£	£	£	£
Miscellaneous Land Receipts—					
Timber Licenses, &c. ... ..	84,460	94,560	96,929	98,972	88,908
Rents, Special Objects ... ..	43,499	43,064	44,546	47,174	52,800
Fees on Preparation and Enrolment of Title-deeds ... ..	7,355	6,823	5,346	4,609	3,742
Survey Fees ... ..	30,823	24,297	27,428	23,992	22,623
Fees on Transfer of Leases ... ..	2,415	2,919	2,254	2,742	2,653
Quit Rents and Other Receipts	26,194	22,471	27,859	33,479	24,254
Total ... ..	£ 194,737	194,134	204,362	215,968	194,980
Gross Revenue ... ..	£ 1,896,107	1,821,734	1,879,999	1,863,807	1,729,810
Refunds ... ..	£ 57,190	56,275	44,051	34,920	31,729
Net Revenue ... ..	£ 1,838,917	1,765,459	1,835,948	1,828,887	1,698,081

REVENUE PER CAPITA.

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Auction and Special Sales ... ..	0 1 3	0 1 2	0 1 0	0 0 9	0 0 6
Conditional Purchases ... ..	0 11 6	0 10 4	0 10 4	0 10 1	0 9 4
Pastoral Occupation ... ..	0 6 8	0 6 3	0 5 11	0 5 7	0 5 4
Mining Occupation ... ..	0 1 4	0 1 5	0 1 7	0 1 7	0 1 5
Miscellaneous Land Receipts ... ..	0 2 4	0 2 3	0 2 4	0 2 4	0 2 1
Gross Revenue ... ..	£ 1 3 1	1 1 5	1 1 2	1 0 4	0 18 8
Refunds ... ..	£ 0 0 8	0 0 8	0 0 6	0 0 5	0 0 5
Net Revenue ... ..	£ 1 2 5	1 0 9	1 0 8	0 19 11	0 18 3

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 ten 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	285,616	2,767	797,666	121	18,791	12	3,234	4,541	1,105,307
1910	1,206	184,097	1,001	150,074	57	8,196	22	8,357	2,286	350,724
1911	801	116,177	752	98,813	49	6,547	147	43,934	1,749	265,471
1912	584	99,604	626	84,597	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	236	31,525	26	2,238	47	27,649	559	92,955
1915	181	20,794	166	24,357	15	1,024	46	27,453	408	73,628

Inclusive of conditional purchase leases as shown above, for the year 1914-15, there were in all 1,118 applications, covering an area of 418,554 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 ten 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	268	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
1915	30	16,983	6	8,459

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 subsequent to 1912. 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	548	12,704
1914	468	284,640	836	697,425	762	15,885
1915	605	467,873	628	643,189	563	10,499

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, 1915, inclusive, are given hereunder:—

Year.	Lots.	Total Area.	Amount realised.	Average Price per Acre.
				£ s. d.
	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	434	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
1915	68	95	6,007	63 4 7
Total ... ..	70,666	9,677,037	11,357,009	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 State 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, and 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 7,630 purely agricultural holdings in 1914-15, 3,937 were in the Coastal Division, and 1,233 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 which consist 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 concentrated in this district than in any other part of New South Wales outside the metropolitan area. Settlement extended gradually 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.

Since the last issue of the Official Year Book, a change has been made in the statistical year, and for the season under review, the particulars of rural settlement relate to the year ended 30th June, 1915, and not to the calendar year as formerly.

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 30th June, 1915, and are exclusive of parks and reserves within the boundaries of Sydney and suburbs :—

Size of Holding.	Number of Holdings.	Area occupied.			Area for—	
		Alienated.	Crown Lands attached to alienated holdings.	Total.	Crops.	Grazing, &c.
acres.		acres.	acres.	acres.	acres.	acres.
1— 50 ...	24,858	307,256	158,422	465,678	49,756	415,922
51— 100 ...	5,500	434,061	141,477	575,538	43,147	532,391
101— 500 ...	12,958	2,974,119	1,152,001	4,126,120	120,284	4,005,836
501— 1,000 ..	2,012	1,395,216	546,483	1,941,699	27,704	1,913,995
1,001— 3,000 ...	974	1,544,827	577,739	2,122,566	18,260	2,104,306
3,001— 5,000 ...	147	567,844	375,420	943,264	4,073	939,191
5,001—10,000 ...	88	607,776	456,900	1,064,676	2,215	1,062,461
Over 10,000 ...	43	965,916	644,205	1,610,121	4,013	1,606,108
Coastal Division...	46,580	8,797,015	4,052,647	12,849,662	269,452	12,580,210

The total area of this Division is 22,355,401 acres, of which 8,797,015 acres of alienated land are occupied in holdings of one acre and upwards, and 4,052,647 acres of Crown lands are held in conjunction with the alienated, making a total of 12,849,662 acres. Of this area, 269,452 acres are under crop, and the remainder is used for grazing and other purposes. In addition there are holdings consisting of Crown lands only, particulars of which are given for each division at the end of this chapter.

Holdings under 51 acres represent 53·4 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 269,452 acres, being 203 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.

On 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 30th June, 1915 :—

Size of Holding.	Number of Holdings.	Area Occupied.			Area for—	
		Alienated.	Crown Lands Attached to Alienated Holdings.	Total.	Crops.	Grazing, &c.
acres.		acres.	acres.	acres.	acres.	acres.
1— 50 ...	6,879	100,068	166,006	266,074	18,053	248,021
51— 100 ...	1,885	147,574	215,603	363,177	21,181	341,996
101— 500 ...	6,567	1,723,390	2,404,138	4,127,528	183,400	3,944,128
501— 1,000 ...	1,967	1,382,133	1,483,039	2,865,172	85,118	2,780,054
1,001— 3,000 ...	1,435	2,374,129	1,594,587	3,968,716	85,838	3,882,878
3,001— 5,000 ...	277	1,076,510	795,176	1,871,686	21,117	1,850,569
5,001—10,000 ...	235	1,623,610	711,741	2,335,351	29,206	2,306,145
Over 10,000 ...	143	2,698,944	928,677	3,627,621	25,268	3,602,353
Tableland Division ...	19,388	11,126,358	8,298,967	19,425,325	469,181	18,956,144

## 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 this branch of rural industry.

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 on the Western Slopes at 30th June, 1915, may be gathered from the following table :—

Size of Holding.	Number of Holdings.	Area Occupied.			Area for—	
		Alienated.	Crown Lands attached to alienated Holdings.	Total.	Crops.	Grazing, &c.
acres.		acres.	acres.	acres.	acres.	acres.
1— 50 ...	5,367	66,770	67,277	134,047	18,453	115,594
51— 100 ...	1,035	81,544	54,320	135,864	29,474	106,390
101— 500 ...	4,806	1,400,763	1,037,474	2,438,237	447,987	1,990,250
501— 1,000 ...	2,565	1,790,556	1,265,365	3,055,921	493,395	2,562,526
1,001— 3,000 ...	1,984	3,321,729	1,441,665	4,763,394	633,906	4,129,488
3,001— 5,000 ...	349	1,348,100	520,367	1,868,467	170,449	1,698,018
5,001—10,000 ...	286	1,967,625	685,325	2,652,950	175,803	2,477,147
Over 10,000 ...	164	3,535,457	694,489	4,229,946	133,349	4,096,597
Western Slopes...	16,556	13,512,544	5,766,282	19,278,826	2,102,816	17,176,010

## 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 30th June, 1915:—

Size of Holding.	Number of Holdings.	Area Occupied.			Area for—	
		Alienated.	Crown Lands attached to Alienated Holdings.	Total.	Crops.	Grazing, &c.
acres.		acres.	acres.	acres.	acres.	acres.
1— 50 ...	1,907	21,423	211,850	233,273	4,897	228,376
51— 100 ...	309	24,657	59,691	84,348	5,828	78,520
101— 500 ...	2,136	694,442	926,153	1,620,595	247,094	1,373,501
501— 1,000 ...	2,433	1,722,927	2,065,058	3,787,985	498,856	3,289,129
1,001— 3,000 ...	2,127	3,503,510	4,011,607	7,515,117	627,057	6,888,060
3,001— 5,000 ...	379	1,442,223	1,202,138	2,644,361	137,059	2,507,302
5,001— 10,000 ...	284	1,916,065	1,727,464	3,643,529	121,569	3,521,960
Over 10,000 ...	320	11,127,557	4,840,968	15,968,525	125,753	15,842,772
Western Plains and Riverina ...	9,895	20,452,804	15,044,929	35,497,733	1,768,113	33,729,620

#### 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 30th June, 1915, is illustrated by the figures given below:—

Size of Holding.	Number of Holdings.	Area occupied.			Area for—	
		Alienated.	Crown Lands attached to alienated Holdings.	Total.	Crops.	Grazing, &c.
acres.		acres.	acres.	acres.	acres.	acres.
1— 50 ...	629	6,431	1,204,023	1,210,454	697	1,209,757
51— 100 ...	70	5,771	792,053	797,824	194	797,630
101— 500 ...	190	51,174	8,102,523	8,153,697	1,208	8,152,489
501— 1,000 ...	121	84,700	12,210,101	12,294,801	1,364	12,293,437
1,001— 3,000 ...	101	171,634	14,687,292	14,858,926	1,246	14,857,680
3,001— 5,000 ...	42	164,989	9,396,525	9,561,514	1,029	9,560,485
5,001— 10,000 ...	39	262,523	7,389,777	7,652,300	628	7,651,672
Over 10,000 ...	31	857,913	6,969,343	7,827,256	717	7,826,539
Western Division ...	1,223	1,605,135	60,751,637	62,356,772	7,063	62,349,689

The proportion of land alienated is little more than 2 per cent. of the total area, being an aggregate of 1,605,135 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, 60,751,637 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 DIVISIONS.

The following table shows the number and area of alienated holdings in New South Wales, and is a summary of the particulars given in the foregoing tables for the five principal divisions of the State:—

Size of Holding.	Number of Holdings.	Area occupied.			Area for—	
		Alienated.	Crown Lands attached to alienated Holdings.	Total.	Crops.	Grazing, &c.
acres.		acres.	acres.	acres.	acres.	acres.
1— 50 ...	39,640	501,948	1,807,578	2,309,526	91,856	2,217,670
51— 100 ...	8,799	693,607	1,263,144	1,956,751	99,824	1,856,927
101— 500 ...	26,657	6,843,888	13,622,289	20,466,177	999,973	19,466,204
501— 1,000 ...	9,098	6,375,532	17,570,046	23,945,578	1,106,437	22,839,141
1,001— 3,000 ...	6,621	10,915,829	22,312,890	33,228,719	1,366,307	31,862,412
3,001— 5,000 ...	1,194	4,599,666	12,289,626	16,889,292	333,727	16,555,565
5,001— 10,000 ...	932	6,377,599	10,971,207	17,348,806	329,421	17,019,385
Over 10,000 ...	701	19,185,787	14,077,682	33,263,469	289,100	32,974,369
Total, N.S.W. ...	93,642	55,493,856	93,914,462	149,408,318	4,616,645	144,791,673

## ALL HOLDINGS.

In addition to the alienated holdings—with or without Crown Lands attached—there were at 30th June, 1915, 7,569 holdings consisting of Crown Lands only, the total area thus occupied being 25,263,995 acres, of which 191,982 acres were under crops, the balance of the area being utilised mainly for grazing purposes.

The total number of holdings of one acre and upwards was therefore 101,211, aggregating 174,672,313 acres—comprising 55,493,856 acres of alienated lands and 119,178,457 acres of Crown Lands.

Since 1912 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.	1915.*	1912.	1915.*	Holdings.		Area.	
					1912.	1915.*	1912.	1915.*
acres.			acres.	acres.				
1— 50	39,677	41,084	501,199	517,137	40·38	40·59	·29	·30
51— 100	8,084	8,158	629,909	648,474	8·23	8·06	·36	·37
101— 500	24,299	24,702	6,277,671	6,436,948	24·73	24·41	3·60	3·68
501— 1,000	9,549	10,086	6,776,643	7,181,583	9·72	9·97	3·88	4·11
1,001— 3,000	10,069	10,472	17,317,947	17,979,635	10·25	10·35	9·92	10·29
3,001— 5,000	2,480	2,531	9,578,039	9,752,748	2·52	2·50	5·49	5·59
5,001— 10,000	1,942	2,022	13,155,684	13,739,046	1·98	1·99	7·54	7·87
10,001— 20,000	964	968	13,097,932	13,174,831	·98	·96	7·50	7·54
20,001— 50,000	703	721	21,180,029	21,516,509	·71	·71	12·13	12·32
50,001— 100,000	225	213	15,668,791	14,818,593	·23	·21	8·97	8·48
Over 100,000 ...	265	254	70,393,994	68,906,809	·27	·25	40·32	39·45
Total ...	98,257	101,211	174,577,838	174,672,313	100·00	100·00	100·00	100·00

\*Year ended 30th June.

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 two years was 1,982,175 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 ended 30th June, 1915, 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...	501,948	84,635	16·86
51— 100...	693,607	93,235	13·44
101— 500...	6,843,888	953,226	13·93
501— 1,000...	6,375,532	1,054,393	16·40
1,001— 1,500...	4,268,642	597,485	13·99
1,501— 3,000...	6,647,187	737,378	11·09
3,001— 5,000...	4,599,666	329,750	7·17
5,001— 10,000...	6,377,599	325,504	5·11
Over 10,000 ..	19,185,787	288,909	1·51
Total ...	55,493,856	4,464,515	8·05

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 8·05 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 8·05 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, 1905, when the closer settlement policy was operating actively, and at 30th June, 1915, is given below, also the proportions in each series:—

Size of Holding.	Number of Holdings.		Alienated Area.		Percentage in each series.			
	1905.	1915.	1905.	1915.	Holdings.		Area.	
					1905.	1915.	1905.	1915.
acres.			acres.	acres.				
1— 50...	32,413	39,640	488,622	501,948	42·02	42·33	1·00	·90
51— 100...	9,217	8,799	729,306	693,607	11·95	9·40	1·50	1·25
101— 500...	22,268	26,657	5,508,402	6,843,898	28·87	28·47	11·31	12·33
501— 1,000...	6,735	9,093	4,725,720	6,375,532	8·73	9·71	9·70	11·49
1,001— 1,500...	2,391	3,477	2,949,188	4,268,642	3·10	3·71	6·05	7·69
1,501— 3,000...	1,996	3,144	4,225,260	6,647,187	2·59	3·36	8·68	11·98
3,001— 5,000...	798	1,194	3,086,162	4,599,666	1·03	1·28	6·33	8·29
5,001— 10,000...	598	932	4,280,967	6,377,599	·78	·99	8·78	11·49
Over 10,000 ...	720	701	22,734,915	19,185,787	·93	·75	46·65	34·58
Total ...	77,136	93,642	48,728,542	55,493,856	100·00	100·00	100·00	100·00

The number of holdings has increased in the ten years from 77,136 to 93,642, or by 21·4 per cent., and the area from 48,728,542 acres to 55,493,856 acres, or by 13·9 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 1905, and 30th June, 1915. 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.	
	1905.	1915.	1905.	1915.
acres.	acres.	acres.		
1— 50 ...	1,881,648	2,309,526	1·27	1·54
51— 100 ...	2,108,807	1,956,751	1·42	1·31
101— 500 ...	17,323,964	20,466,177	11·65	13·70
501— 1,000 ...	20,180,611	23,945,578	13·57	16·03
1,001— 1,500 ...	11,760,861	13,850,666	7·91	9·28
1,501— 3,000 ...	20,098,966	19,378,053	13·51	12·97
3,001— 5,000 ...	16,248,004	16,889,292	10·93	11·30
5,001— 10,000 ...	15,045,261	17,348,806	10·12	11·61
Over 10,000 ...	44,030,630	33,263,469	29·62	22·26
Total ...	148,678,752	149,408,318	100·00	100·00

#### 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 30th June, 1915, 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 ... ..	31,260	9,158	2,538	3,624	966	47,546
Tableland ... ..	10,317	1,946	961	6,164	1,265	20,653
Western Slopes ... ..	11,069	1,214	530	3,743	1,516	18,072
Western Plains and Riverina ...	6,528	395	242	2,730	2,889	12,784
Western ... ..	661	56	14	492	933	2,156
New South Wales... ..	59,835	12,769	4,285	16,753	7,569	101,211

The majority of holders own the land they occupy; the total number of occupiers of alienated lands, with or without attached Crown lands, was 93,642, of whom 59,835, or 63·9 per cent., occupy their own freeholds; and of 16,753 holdings which are partly Crown leases, 15,258 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 30th June, 1915:—

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	7,318,333	1,478,682	8,797,015	4,052,647	485,887	13,335,549
Tableland .. ..	*26,831,246	10,248,717	877,641	11,126,358	8,298,967	1,025,281	20,450,606
Western Slopes .. ..	24,251,881	12,951,647	580,897	13,512,544	5,766,282	1,778,506	21,087,331
Western Plains and Riverina.	45,827,854	19,862,956	589,348	20,452,804	15,044,929	6,258,723	41,756,456
Western .. ..	80,368,498	1,550,082	55,053	1,605,135	60,751,637	15,715,699	78,072,371
New South Wales..	198,634,880	51,931,735	3,562,121	55,493,856	93,914,462	25,263,995	174,672,313

\* Including 576,000 acres, the approximate area of the Federal Capital Territory.

Of the total area occupied, 31·1 per cent. is freehold, and 68·9 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 47·6 per cent. of the land occupied is freehold.

Tenancy, as understood in older settled communities, has made comparatively little progress in this State, 93·6 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 year ending 30th June, 1915, 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, including Holdings consisting of Crown Lands only.
	acres.	acres.	acres.
Coastal .. ..	189	276	280
Tableland .. ..	574	1,002	990
Western Slopes .. ..	816	1,164	1,165
Western Plains and Riverina .. ..	2,067	3,587	3,266
Western .. ..	1,312	50,897	36,212
New South Wales .. ..	593	1,596	1,726

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	1906	625
1885	778	1907	611
1890	787	1908	608
1895	699	1909	602
1900	663	1910	596
1901	658	1911	592
1902	654	1912	593
1903	641	1913	591
1904	635	1914-15	593
1905	632		

#### 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 55,493,856 acres. The leased areas amounted to 119,178,457 acres, making 174,672,313 acres more or less removed from settlement; and, exclusive of the Federal Capital Territory, leaving a balance of only 23,386,567 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—			Total Area in Holdings
	Alienated Lands.	Crown Lands.		
		Attached.	Separate.	
Coastal ... ..	39·35	18·13	2·17	59·65
Tableland ... ..	42·59	32·13	3·97	78·69
Western Slopes ... ..	55·71	23·77	7·37	86·85
Western Plains and Riverina ... ..	44·63	32·83	13·66	91·12
Western ... ..	1·99	75·59	19·55	97·13
New South Wales ... ..	27·93	47·28	12·68	87·89

Thus slightly less than 88 per cent. of the total area contained within the boundaries of the State is occupied in holdings of 1 acre and upwards. The highest proportion of absolute alienation, 55·71 per cent. of the area of the Division, has taken place in the Western Slopes; and the lowest, 1·99 per cent., in the Western Division; but taking the total area of holdings, the Western Division shows the maximum proportion of its area—97·13 per cent.—removed from immediate further settlement; the high proportions of 91·12 per cent. for the Western Plains and Riverina, and 86·85 for the Western Slopes show that there is but little land now available in these Western Districts for rural occupations.

#### PROGRESS OF ALIENATION.

Excluding from consideration land held simply under lease from the Crown, there were in the State of New South Wales on the 30th June, 1915, 93,642 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 :—

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	1915*	93,642	55,493,856

\* 30th June.

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.
		acres.			acres.
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	(June) 1915	0·8	1·1

The subjoined table shows the number of alienated holdings at quinquennial intervals since 1895. In the classification of holdings according to size, as shown in this and 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.	1915.*
acres.					
1 — 50 ...	22,722	28,155	32,413	37,272	39,640
51 — 100 ...	8,274	8,929	9,217	9,159	8,799
101 — 500 ...	18,743	20,504	22,268	25,323	26,657
501 — 1,000 ...	5,629	6,105	6,735	7,911	9,098
1,001 — 1,500 ...	1,581	1,939	2,391	2,922	3,477
1,501 — 3,000 ...	1,718	1,792	1,996	2,488	3,144
3,001 — 5,000 ...	680	733	798	985	1,194
5,001 — 10,000 ...	503	579	598	738	932
Over 10,000 ...	679	703	720	705	701
Total ...	60,529	69,439	77,136	87,503	93,642

\* 30th June.

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 74 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 1915 they numbered 48,031, showing an advance of 43 per cent., which is considerably lower than the rate of increase, 67 per cent., in the holdings of 1,501 acres and upwards, which numbered 3,580 in 1895 and 5,971 in 1915.

The area of the alienated holdings, as returned by occupiers, in quinquennial periods since 1895 is given below:—

Size of Holding.	1895.	1900.	1905.	1910.	1915.*
acres.	acres.	acres.	acres.	acres.	acres.
1 — 50 ...	409,896	468,563	488,622	503,677	501,948
51 — 100 ...	658,212	707,865	729,306	722,604	693,607
101 — 500 ...	4,596,173	5,067,934	5,508,402	6,346,299	6,843,888
501 — 1,000 ...	3,905,383	4,262,043	4,725,720	5,526,680	6,375,532
1,001 — 1,500 ...	1,963,409	2,396,373	2,949,188	3,589,526	4,268,642
1,501 — 3,000 ...	3,659,282	3,805,618	4,225,260	5,270,697	6,647,187
3,001 — 5,000 ...	2,639,264	2,844,111	3,086,162	3,771,576	4,599,666
5,001 — 10,000 ...	3,571,026	4,098,686	4,280,967	5,120,548	6,377,599
Over 10,000 ...	20,919,276	22,392,051	22,734,915	21,312,847	19,185,787
Total ...	42,321,926	46,043,244	48,728,542	52,164,454	55,493,856

\* 30th June.

## 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
1914-15	54,669,911	823,945	55,493,856	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 101,211 holdings, inclusive of 7,569 which consist of Crown Lands only, 33·7 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 52 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 1907-1915:—

Division.	Single-purpose Holdings.				Dual-purpose Holdings.			Residential, Mining, &c.
	Agriculture.	Dairying.	Grazing.	Total.	Agriculture, with Dairying, or with Grazing.	Other.	Total.	
Coastal .. ..	3,937	3,629	8,613	16,179	11,427	2,123	13,555	17,812
Tableland .. ..	1,233	113	6,038	7,384	7,860	342	8,202	5,067
Western Slopes ..	1,062	23	3,218	4,303	9,616	325	9,941	3,828
Western Plains and Riverina..	1,279	28	3,635	4,942	6,002	109	6,111	1,731
Western .. ..	119	8	1,130	1,257	106	4	110	789
Total, 1914-15..	7,630	3,801	22,634	34,065	35,011	2,908	37,919	20,227
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	22,371
„ 1909 .. ..	7,034	3,432	21,612	32,128	32,703	2,233	34,936	23,882
„ 1910 .. ..	6,677	3,493	21,770	31,940	33,332	2,757	36,139	25,690
„ 1911 .. ..	6,814	3,157	22,011	31,982	34,539	2,973	37,567	26,795
„ 1912 .. ..	7,175	3,331	22,641	33,647	34,097	2,336	36,933	27,677
„ 1913 .. ..	7,420	4,018	22,447	33,885	35,090	2,333	37,923	28,103
„ 1914-15 ..	7,630	3,801	22,634	34,065	35,011	2,908	37,919	20,227



In the seven and a half years, 1907-1915, the increase in the total number of rural holdings as recorded above was nearly 17 per cent., the number of holdings returned as dual-purpose holdings having increased by 14½ per cent., while the single-purpose holdings have increased by slightly more than 5½ per cent.

## EXTENT OF CULTIVATION.

The total area under crops for 1914-15 season, in all classes of holdings, was 4,808,627 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 ...	200,596	68,272	584	1,627	271,079	13,064,470	2·0
Tableland ...	410,780	57,036	1,365	2,340	471,521	19,979,085	2·3
Western Slopes ...	1,932,138	84,103	86,575	56,474	2,159,290	18,898,041	10·2
Western Plains and Riverina ...	1,652,152	54,538	61,423	128,237	1,896,350	39,860,106	4·5
Western ...	4,666	234	2,183	3,304	10,387	78,061,984	·0
New South Wales	4,200,332	264,183	152,130	191,982	4,808,627	169,863,686	2·7

The area under crops on freehold lands represented 87·3 per cent. of the total area of rural holdings under crop, or 7·5 per cent. of the holdings of alienated lands; the area of leasehold lands under crop as compared with the total leasehold area was 7·4 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 1905. The figures include the cropped area of Crown lands, 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.	
	1905-6.	1914-15.	1905-6.	1914-15.
acres.	acres.	acres.		
1 — 50 ...	110,893	91,856	3·91	1·91
51 — 100 ...	128,461	99,824	4·53	2·08
101 — 500 ...	788,210	999,973	27·77	20·80
501 — 1,000 ...	584,119	1,106,437	20·58	23·01
1,001 — 1,500 ...	258,840	609,680	9·12	12·68
1,501 — 3,000 ...	295,782	756,627	10·42	15·73
3,001 — 5,000 ...	140,014	333,727	4·93	6·94
5,001 — 10,000 ...	137,703	329,421	4·85	6·35
Over 10,000 ...	314,891	289,100	11·10	6·01
On holdings consisting of Crown lands only ...	79,168	191,982	2·79	3·99
Total ...	2,838,081	4,808,627	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 501 to 1,000, 1,001 to 1,500, and 1,501 to 3,000 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 :—

Season.	Area double cropped.	Actual area under crop on—	
		Alienated lands.	Crown lands.
	acres.	acres.	acres.
1898-9	2,000	2,137,306	67,194
1901-2	1,842	2,162,666	113,862
1906-7	2,446	2,604,812	219,399
1911-12	2,852	3,335,489	293,681
1912-13	3,557	3,462,923	274,346
1913-14	3,060	4,229,243	339,598
1914-15	3,244	4,465,515	344,112

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 :—

Season.	Area under Sown Grasses on—		Total.
	Alienated land.	Crown lands.	
	acres.	acres.	acres.
1896-7	333,229	50,787	384,016
1901-2	452,201	15,638	467,839
1906-7	669,173	28,458	697,631
1911-12	1,059,956	59,808	1,119,764
1912-13	1,100,229	52,220	1,152,449
1913-14	1,175,753	58,702	1,234,455
1914-15	1,200,715	50,738	1,251,453

The area of alienated holdings ringbarked, partially cleared, and under native grasses in 1914-15, was approximately  $37\frac{1}{4}$  million acres, and on Crown lands nearly  $33\frac{1}{2}$  million acres.

## HOLDINGS IN AREA SERIES.

Below will be found, for the year 1914-15, the number of holdings of various sizes 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.	acres.	acres.	acres.	acres.	acres.
1— 50 ... ..	29,657	7,067	1,264	1,652	39,640
51— 100 ... ..	5,170	1,788	443	1,398	8,799
101— 500 ... ..	15,070	3,335	1,543	6,709	26,657
501— 1,000 ... ..	5,206	367	494	3,031	9,098
1,001— 1,500 ... ..	2,020	105	181	1,171	3,477
1,501— 3,000 ... ..	1,625	68	186	1,265	3,144
3,001— 5,000 ... ..	521	24	75	574	1,194
5,001—10,000 ... ..	388	14	63	467	932
10,001—15,000 ... ..	84	...	16	164	264
15,001—20,000 ... ..	37	1	8	79	125
20,001—30,000 ... ..	33	...	7	108	148
30,001—40,000 ... ..	8	...	2	41	51
40,001—50,000 ... ..	5	...	1	29	35
Over 50,000 ... ..	11	...	2	65	78
Total ... ..	59,835	12,769	4,285	16,753	93,642

The total number of occupiers of freeholds only is 59,835, the proportion to the total number of occupiers being fairly constant in each size of holdings. Tenants of private lands, who number 12,769, 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 4,285. The persons who occupy alienated areas with Crown lands attached number 16,753, and nearly 47 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 in 1913 and 1914-15 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.	1913. (31st December.)		1915. (30th June.)	
	Holdings.	Percentage of Total.	Holdings.	Percentage of Total.
Freehold ... ..	58,376	62·9	59,835	63·9
Private-rented ... ..	13,040	14·0	12,769	13·6
Combined freehold and private-rented ... ..	4,433	4·8	4,285	4·6
Combined alienated and Crown land ... ..	17,033	18·3	16,753	17·9
Total ... ..	92,882	100·0	93,642	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 30th June, 1915 :—

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	399,517	102,431	1,807,578	2,309,526	·27	·07	1·21	1·55
51— 100	529,430	164,177	1,263,144	1,956,751	·35	·11	·85	1·31
101— 500	5,854,424	989,464	13,622,289	20,466,177	3·92	·66	9·12	13·70
501— 1,000	5,873,604	501,928	17,570,046	23,945,578	3·93	·34	11·76	16·03
1,001— 1,500	3,981,797	286,845	9,582,024	13,850,666	2·67	·19	6·41	9·27
1,501— 3,000	6,227,492	419,695	12,730,866	19,378,053	4·17	·28	8·52	12·97
3,001— 5,000	4,303,333	296,333	12,289,626	16,889,292	2·88	·20	8·22	11·30
5,001— 10,000	5,999,958	377,641	10,971,207	17,348,806	4·02	·25	7·34	11·61
10,001— 15,000	3,048,592	134,269	4,699,261	7,882,122	2·04	·09	3·15	5·28
15,001— 20,000	2,076,813	113,530	2,072,342	4,262,685	1·39	·07	1·39	2·85
20,001— 30,000	3,514,958	109,380	3,162,308	6,786,646	2·35	·07	2·12	4·54
30,001— 40,000	1,734,631	23,489	703,454	2,461,574	1·16	·02	·47	1·65
40,001— 50,000	1,537,185	11,579	1,652,202	3,200,966	1·03	·01	1·10	2·14
Over 50,000 ...	6,850,001	31,360	1,788,115	8,669,476	4·58	·02	1·20	5·80
Total ...	51,931,735	3,562,121	93,914,462	149,408,318	34·76	2·38	62·86	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 30th June, 1915 :—

Size of Holding.	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.
acres.						
1— 15	28,589	30·52	133,451	·24	464,624	·51
16— 50	11,051	11·80	368,497	·66	1,342,954	1·43
51— 100	8,799	9·39	693,607	1·25	1,263,144	1·34
101— 500	26,657	28·45	6,843,888	12·33	13,622,289	14·50
501— 1,000	9,098	9·71	6,375,532	11·49	17,570,046	18·71
1,001— 1,500	3,477	3·71	4,268,642	7·69	9,582,024	10·20
1,501— 2,000	1,537	1·64	2,684,489	4·84	3,737,332	3·98
2,001— 3,000	1,607	1·71	3,962,698	7·14	8,993,534	9·58
3,001— 4,000	728	·88	2,550,475	4·60	7,111,096	7·57
4,001— 5,000	466	·49	2,049,191	3·69	5,178,530	5·51
5,001— 7,500	642	·68	3,881,879	6·99	8,425,165	8·97
7,501— 10,000	290	·30	2,495,720	4·50	2,546,042	2·71
10,001— 15,000	264	·28	3,182,861	5·74	4,699,261	5·00
15,001— 20,000	125	·13	2,190,343	3·95	2,072,342	2·21
20,001— 30,000	148	·15	3,624,338	6·53	3,162,308	3·37
30,001— 40,000	51	·05	1,758,120	3·17	703,454	·75
40,001— 50,000	35	·03	1,548,764	2·79	1,652,202	1·76
Over 50,000 ...	78	·08	6,881,361	12·40	1,788,115	1·90
Total ...	93,642	100·00	55,493,856	100·00	93,914,462	100·00

It is one of the features of the table, that whilst the holders of estates exceeding 1,000 acres constitute but 10·13 per cent. of the total number of occupiers, the land held represents 74·03 per cent. of the total alienated area. This is still more accentuated in the case of 78 holdings of 50,001 acres and upwards, which represent only 0·08 per cent. of the total number of holdings, but embrace 12·40 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 on 30th June, 1915, was 93,914,462 acres, attached to 16,753 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 7,569, representing 25,263,995 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 ... ..	966	485,887	1,627
Tableland... ..	1,265	1,025,281	2,340
Western Slopes ... ..	1,516	1,778,505	56,474
Western Plains and Riverina ... ..	2,889	6,258,723	128,237
Western ... ..	933	15,715,599	3,304
New South Wales ... ..	7,569	25,263,995	191,982

## 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 Volume relating to Commerce.

Owing to a recent change in the Statistical year, the majority of the figures quoted in this chapter relate to the period from July, 1914, to June, 1915. The influence of the European war therefore has been felt over almost the whole of the period under review, and consequently abnormal increases and decreases will be frequently observed.

### VALUES OF LOCAL INDUSTRIES.

During the year ended 30th June, 1915, the total value of production from the principal industries, though less than that of either the years 1912 or 1913, on account of droughty conditions, reached £72,313,000. For many years the pastoral industry was the chief source of the wealth of the State, the production of 1914-15 being £18,848,000. The production from the manufacturing industry has increased very rapidly since 1906, and during the last three years has exceeded the pastoral, the value in 1914-15 being £23,992,000.

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.	Manu- facturing. (Value add- ed to raw materials.)	Total, all Industries.
	£	£	£	£	£	£	£	£
1891	14,725	3,615	2,735	.....	753	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	22,231	6,568	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	5,753	2,089	1,303	11,229	22,464	74,100
1913	20,738	12,738	5,455	2,416	1,400	11,651	23,482	77,520
1914-15	18,848	10,031	6,231	2,301	1,307	9,603	23,992	72,313

\* 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
1914-15	10 2 5	5 7 9	3 6 11	1 18 9	5 3 2	12 17 8	38 16 8

\* Poultry and bee farming included with dairying in 1901 and previous years.

The exceptionally dry season during 1914-15 caused a relative decrease in all the above industries except dairying, the aggregate value of production showing a decrease on the year 1913 of £4 Os. 2d. per head of population.

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	1909	58,956	37 7 7
1881	25,180	32 18 3	1910	63,793	39 9 5
1891	36,066	31 11 7	1911	66,201	39 15 4
1901	38,814	28 7 11	1912	74,100	42 12 5
1906	53,734	36 3 11	1913	77,520	42 16 10
1907	59,302	39 1 4	1914-15	72,313	38 16 8
1908	56,143	36 6 5			

These figures show that since 1871 the aggregate value of production has increased by nearly 57 million pounds, and the value per head of population, by £8 11s. 5d. From the primary industries alone the return in 1914-15 was £48,321,000, equal to £25 19s. 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 to 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 to the bountiful returns which it yields.

The steady progress of the value of production from the various industries during the last eleven years may be seen in the following statement, which gives the average annual value during quinquennial periods since 1904.

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.		
	1904-1908.	1909-1913.	1914-15. one year.	1904-1908.	1909-1913.	1914-15. one year.
Pastoral ... ..	£ 18,271	£ 19,936	£ 18,848	£ s. d. 12 5 11	£ s. d. 11 17 2	£ s. d. 10 2 5
Agricultural ... ..	6,876	10,869	10,031	4 12 6	6 9 4	5 7 9
Dairying ... ..	3,386	5,041	6,231	2 5 7	3 0 0	3 6 11
Poultry, Bees, Rabbits } ... ..	1,432	2,134	2,301	0 19 3	1 5 4	1 4 9
Forestry, Fisheries ... ..	1,235	1,220	1,307	0 16 7	0 14 6	0 14 0
Mining ... ..	7,946	9,629	9,603	5 6 11	5 14 6	5 3 2
Total Primary ... ..	39,146	48,829	48,321	26 6 9	29 0 10	25 19 0
Manufacturing ... ..	11,910	19,284	23,992	8 0 3	11 9 5	12 17 8
Total, all Industries	51,056	68,113	72,313	34 7 0	40 10 3	38 16 8

Taking the annual average for the quinquennium 1899-1903 as 100 in each case, the average for all industries for the 1904-08 period was 133, for the quinquennium 1909-1913, 177, and for the year 1914-15, 188. The dairying industry shows the largest relative increase, then the manufacturing industry :—

Industry.	1899-1903.	1904-1908.	1909-1913.	1914-15 one year.
Pastoral ... ..	100	142	155	147
Agricultural ... ..	100	111	175	162
Dairying, Poultry, &c. ... ..	100	152	226	268
Forestry, Fisheries ... ..	100	170	167	179
Mining ... ..	100	137	166	165
Total, Primary ... ..	100	136	170	168
Manufacturing ... ..	100	123	200	249
Total, all Industries ... ..	100	133	177	188



## 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. Since the report of the Commission was published, progress has been made in the direction of establishing modern methods of food supply and distribution, especially as regards fish and meat.

## FISH SUPPLY.

*Conditions of Fishing Industry.*

In the section relating to Fisheries it is shown that, although the sea-board 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 far from satisfactory. Supplies are irregular and inadequate; there is no effective system of distribution; and as a result prices are high. The Commission mentioned above recommended (a) the development of the deep-sea fisheries, which now furnish only one-tenth of the Sydney supply, and (b) the improvement of the conditions under which the inshore fisheries in river estuaries and coastal inlets are conducted.

*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 Port Macquarie on the north and Jervis Bay on the south are connected by rail. The fish are taken to the point of shipment in the fishermen's boats, then washed, packed in cases with ice, except in the case of short distances in winter, and consigned to agents in Sydney. For sea carriage the capacity of the cases varies from 252 lb. to 640 lb. of fish, exclusive of ice; fish carried by rail are packed in cases of a capacity of 65 lb. to 80 lb. In some instances the cases are the property of the agents, who charge a small rental for their use, but the leading fishermen now own sufficient for their requirements.

The packing and handling of fish have greatly improved; smaller cases are employed for sea transit, and more finely crushed ice for packing; while, despite some pilfering, the fish are generally cared for better on the steamers than formerly. Iceworks and cool storage are needed at some of the centres, though the supply is improving yearly, and shelter-sheds for fish and ice have been erected. The undesirable practice of unpacking fish on the Sydney wharves into baskets still prevails.

The quantity of fish supplied is restricted by the want of regular and frequent communication with 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, though of late the abnormally high price of meat, and the excellent prices realised for inferior kinds of fish, have largely stimulated their shipment.

*Fish Markets.*

There are two fish markets in Sydney, the Municipal Fish Markets and the Commonwealth Co-operative Fish Exchange, Redfern. The former is controlled by the Sydney Municipal Council, which acts as selling agent, although private agents are allowed to conduct business in the Council's

building. The Co-operative Fish Exchange is owned and controlled by a private company, most of the agents operating on its premises being shareholders.

Fish are 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 made by an officer of the Council and by 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 of 9d. per basket 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 consist mainly of 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, but the more distant suburbs are supplied only by hawkers and basketmen, and their visits are intermittent and uncertain.

#### *Price 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 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 attributed to general prosperity, to the high cost of meat food, 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 ("Lobster").*

The crayfishing industry admits of extensive development, and there is an increasing demand for this article of diet, the number marketed in 1915 being 148,260, 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 merchants 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.

Oyster culture differs from other branches of the fishery industry as to trade conditions, and is apparently more remunerative, and oyster leases form an important source of revenue to the Department of Fisheries.

#### *Preserved Fish.*

There is a permanent demand for preserved 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.

Fish preserving has not proved successful in New South Wales, owing partly to lack of experience of persons engaged, and partly to irregularity of supplies.

#### STATE TRAWLING.

During 1915 the Government trawling scheme came into active operation. Three modern steam steel trawlers, using the otter-trawl net, are engaged regularly in trawling operations along the coast near Sydney, and their catches are landed several times a week at a central receiving depôt at Woolloomooloo Bay, where there are cold storage facilities. The fish are cleaned, and distributed by light delivery cars to retail depôts situated in various parts of the Metropolitan area.

Although the initial work is largely of an exploratory nature, yet during the twelve months ended 31st July, 1916, two million pounds weight of fish were caught and sold to the public at prices below those charged in private shops.

There are now five State fish shops at which are offered for sale Deep-sea (or Tiger) Flathead, Leatherjacket, John Dory, Nannygai, Morwong, Boarfish, Sea Perch, Barracouta, Gurnard, Skate, and Ray. Fish are also sold prepared as flake, fillets, and in various other ways, including smoked. Varieties of fish not known previously among general consumers have been placed successfully on the market.

Government graded rabbits are sold in the State fish shops, as well as oysters.

The following prices were charged in July, 1916, in the State fish shops. The rate is at per lb., except where otherwise stated :—

<i>Fresh.</i>		Cucumber Fish.....	Smoked Barracouta
Skate .....	} 3d.	Flathead (salt or fresh).	„ Mullet .....
			„ Sawfish.....
			„ Trevally... } 6d.
Ray .....	} 3½d.	„ Kingfish (steaks 7d)	„ Tailer .....
Sawfish .....		„ Red Cod.....	„ Skate .....
Salmon .....		„ Skinned Gurnards..	„ Gurnard, 7d.
Gurnard.....	} 4d.	„ Garfish .....	„ Leatherjacket, 8d.
Barracouta.....		„ Sergeant Baker .....	„ Flathead, 9d.
Blackfish.....		„ Bream .....	„ Gurnard fillets, 10d.
Gurnet-perch .....	} 4d.	„ Giant Boar-fish .....	„ Schnapper, 1s.
Mullet .....		„ Gurnard fillets .....	
Butterfish .....		„ Jewfish (heads 2d. per lb.).	
Spotted Rock Cod (or Thetis fish).	} 5d.	„ Black Rock Cod (fillets 10d. lb.).	<i>Sundries.</i>
Sea Perch .....		„ Murray Cod (heads 3d., fillets 10d.lb.)	Prawns, 7d.
Tailer .....		„ Red Bream .....	Pippies, 3d. doz.
Trevally.....	} 5d.	„ Schnapper (heads 2d. per lb.).	Fish Sausage, 7d.
Leatherjacket (salt or fresh).		„ Whiting.....	Smoked Fish Sausage, 1½d. each.
John Dory.....			Roes (fresh), 9d.
Jackass Fish.....		„ (smoked), 1s.	
Morwong .....		Crayfish (“Lobster”) 1s. to 1s. 6d. each.	
Nannygai .....			
Silver Dory .....			
Short Boar-fish.....			
Eels .....			
		<i>Smoked.</i>	
		Smoked Flake .....	5d.

The first experiment being considered successful, the Government has ordered four additional trawlers to be built at Walsh Island Dockyards, and tenders are being called for a wooden general fishing vessel.

Extensive trawling grounds have already been discovered, and with the advent of further trawlers, it will be possible to map out other grounds which so far have not been exploited.

In order to rescue the fishing industry generally from the previous unorganised condition, whereby the working fishermen obtained but a poor and precarious return for their labour, while the consuming public were forced to pay high prices for a poor supply, the State has undertaken to erect a chain of coastal receiving depôts north and south of Sydney, at which fishermen's catches will be received into cold storage to be distributed by rail, road, or water. In this connection a large fish-carrying vessel of special design is now being built. Many thousands of baskets of fish annually go to waste at present for lack of proper handling and distributing facilities, and the proposed State scheme is designed to obviate this great loss. At present depôts are under construction at Newcastle and Port Stephens, while others are to be constructed immediately.

When the coastal depôts are in operation and the extra trawlers are in commission, the State will secure the distribution of fresh fish to all attainable parts of the State, and will erect preserving works for any surplus that may remain. A plant for the manufacture of fish meal for poultry and pig feed, manure, oil, etc., is on hand and will be erected in due course.

An interesting new industry established in connection with the State trawling industry is that of net braiding. Six female net braiders are employed constantly making trawl nets for the State vessels, the pure Manila twine used being made locally. This twine takes a greater breaking strain than the best imported British.

## MEAT SUPPLY.

*Production and Sources of Supply.*

In the chapter relating to Pastoral Industry particulars are supplied 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, have 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 that 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.

## METROPOLITAN MEAT INDUSTRY BOARD.

The Meat Industry Act, 1915, which came into force on 1st March, 1916, created the Metropolitan Abattoir Area (comprising the County of Cumberland), and placed all operations in connection with the sale, slaughter, and inspection of cattle and with the sale of meat in that area, under the control of a Board of three members, known as the Metropolitan Meat Industry Board.

Under the provisions of the Act the Board may—

- (1) Establish, maintain, and conduct abattoirs, or saleyards for the sale of cattle, or markets for the sale of meat, in any part of the Metropolitan Abattoir Area.
- (2) Establish, maintain, and conduct works for canning, preserving, chilling, or freezing meat.
- (3) Take delivery of cattle, and slaughter the same, either on its own behalf or on behalf of any other person.
- (4) Purchase cattle or meat.
- (5) Sell cattle or meat, either on its own behalf or on behalf of any other person.
- (6) Export meat on behalf of any person, and sell the same in any place on behalf of such person, and enter into all contracts and do all things that may be necessary or expedient in that connection.
- (7) Deliver or contract to deliver to any person any meat, either from a public abattoir, meat market, or from any other place.

- (8) Make arrangements with regard to the purchase, collection, and disposal of offal or other matter, and apply any manufacturing process thereto, and convert it into a merchantable article and sell the same.

The Act vests in the Board the land and buildings contained in the Public Abattoir at Glebe Island, the Stock Saleyards at Flemington, the new Public Abattoir at Homebush Bay, and the Meat Distributing Depot at Pyrmont.

The new Public Abattoir at Homebush Bay was opened officially in April, 1915, when advantage was taken of an offer by a leading firm of exporters to slaughter export mutton for Imperial army requirements. Owing to the shortage of supplies and the consequent stoppage of export, operations were discontinued on 22nd May, 1915.

On 1st July, 1916, the Abattoir was again brought into operation, when the slaughter of cattle, calves, and pigs was transferred from Glebe Island. Operations at the Glebe Island Abattoir are now confined solely to the slaughter of sheep, which also will be transferred in due course to the new Abattoir.

The following table shows the slaughtering at the Sydney Abattoir, Glebe Island, during each month of the year 1915-16. For comparison the number slaughtered during the preceding year is given:—

Year.	Cattle.	Sheep.	Pigs.	Calves.
1915—				
July ... ..	9,458	68,925	5,931	4,094
August ... ..	7,781	85,108	5,674	3,942
September ... ..	6,744	109,007	4,811	5,170
October ... ..	8,486	176,223	4,582	4,629
November ... ..	9,418	200,951	5,826	4,425
December ... ..	8,137	142,207	6,227	4,150
1916—				
January ... ..	7,835	100,791	3,683	2,940
February ... ..	7,980	87,741	4,396	3,325
March ... ..	7,956	103,465	5,278	3,332
April ... ..	8,103	72,395	5,837	2,420
May ... ..	10,217	88,273	6,567	3,724
June ... ..	8,679	74,724	6,072	3,396
Total for year ...	100,794	1,309,810	64,884	45,547
„ 1914-15 ...	195,028	2,116,844	65,718	48,148

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 Metropolitan Meat Industry Board.

Auction sales are held twice each week, and 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 being at the rate of 1d. per head for sheep, and 6d. for cattle.

The following table shows the number of stock yarded annually at the Flemington Cattle Saleyards :—

Year.	Sheep.	Cattle.	Year.	Sheep.	Cattle.
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
1911	3,407,835	193,953	1916*	2,317,602	158,453

\* Year ended 30th June.

The following table shows the slaughtering at the State Abattoir and Meatworks, Homebush Bay, each week of the first two months during which the works were in operation for killing for local consumption :—

1916.				Cattle.	Calves.	Pigs.	Sheep.
July	8	...	...	...	782	346	...
"	15	...	...	...	673	830	...
"	22	...	...	30	583	1,217	...
"	29	...	...	40	758	1,190	...
August	5	...	...	1,055	430	1,236	1,336
"	12	...	...	1,413	662	1,377	1,108
"	19	...	...	1,503	699	1,390	1,702
"	26	...	...	1,796	804	1,607	2,362
September	2	...	...	1,622	749	1,374	1,626

The new Pig and Calf Saleyards and Markets were opened on 2nd July, 1916, and superseded the Sydney Municipal Small Stock Markets in Sussex-street.

These markets are provided with ample railway siding accommodation, and with every facility for the conduct of the business.

The weekly yardings since the opening are shown hereunder :—

				Figs.					Calves.
July	4	...	...	1,104	July	5	...	...	491
"	11	...	...	972	"	12	...	...	428
"	18	...	...	1,073	"	19	...	...	438
"	25	...	...	1,192	"	26	...	...	489
August	1	...	...	903	August	2	...	...	379
"	8	...	...	1,215	"	9	...	...	441
"	15	...	...	1,168	"	16	...	...	443
"	22	...	...	1,509	"	23	...	...	461
"	29	...	...	1,142	"	30	...	...	480

The Meat Distributing Depôt is situated on the main Darling Harbour railway line, and is intended as a temporary distributing depôt for the city meat supply, pending the provision of more extensive accommodation elsewhere.

The new saleyards are in course of construction in the vicinity of the new Abattoir area, and will supersede the present Stock Saleyards at Flemington.

The plans provide for 70,000 sheep and from 5,000 to 6,000 cattle.

A separate railway service will be provided to meet the requirements of these yards ; they are well advanced, and will probably be completed before the end of 1917.

*Meat.*

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 1905 to 1915 :—

Stock.	1905.	1910.	1913.	1914.	1915.
Sheep.	s. d.	s. d.	s. d.	s. d.	s. d.
Cross-breds—					
Extra prime wethers ...	19 7	17 9	20 3	23 10	31 0
Prime wethers ... ..	17 1	14 9	18 0	20 6	26 3
Good ,, ... ..	15 9	11 9	14 9	17 2	20 0
Medium ,, ... ..	14 9	8 6	11 3	14 2	15 3
Extra prime ewes... ..	18 8	15 9	17 3	21 10	28 0
Prime ewes... ..	16 7	14 6	15 3	19 7	23 9
Good ,, ... ..	15 6	10 0	12 6	16 6	18 7
Medium ewes ... ..	13 10	7 3	9 6	13 3	14 5
Merinos—					
Extra prime wethers ...	19 6	18 6	21 3	22 9	28 0
Prime wethers ... ..	17 0	15 3	18 6	19 5	24 3
Good ,, ... ..	15 9	11 9	14 9	16 0	18 9
Medium ,, ... ..	13 8	8 0	11 6	12 7	13 6
Extra prime ewes... ..	15 11	14 3	19 3	19 3	24 9
Prime ewes .. ... ..	13 4	12 0	16 6	17 3	20 7
Good ,, ... ..	12 4	9 9	13 6	14 3	16 2
Medium ewes ... ..	10 10	6 6	10 6	11 2	12 0
Lambs—					
Extra prime woolly ...	16 5	14 3	18 0	18 3	22 0
Prime woolly ... ..	14 10	11 3	15 3	15 11	18 10
Good ,, ... ..	13 4	8 3	11 9	13 0	14 10
Medium ,, ... ..	10 11	5 0	8 3	9 9	10 7
Cattle.					
Bullocks—	£ s.	£ s.	£ s.	£ s.	£ s.
Extra prime ... ..	11 8	10 11	12 7	14 11	24 15
Best... ..	9 15	8 15	10 18	13 3	21 18
Good trade beef ... ..	8 18	7 12	9 2	11 9	18 13
Medium ... ..	7 18	5 0	7 5	9 7	16 13
Cows—					
Extra prime ... ..	8 11	7 7	8 4	10 3	15 18
Best... ..	7 9	5 15	6 9	8 17	13 5
Good trade beef .. ...	6 14	4 9	5 9	6 18	10 9
Medium ... ..	5 18	3 3	3 13	5 0	7 14
Meat.	s. d.	s. d.	s. d.	s. d.	s. d.
Best beef, per 100 lb. ...	22 11	22 3	25 9	32 3	53 10



Apart from fluctuations, due to weather conditions, such as drought, which affected the prices of the period 1902-4, the prices of fat stock varied little from 1900 to the middle of 1912. 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 continued dry weather, as well as the abnormal conditions in Europe, caused prices to rise in 1914; and the upward tendency was maintained until August, 1915, when the market became gradually easier, although extremely high prices were still ruling at the end of the year.

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	7 $\frac{1}{8}$	to 2 $\frac{1}{4}$	2	to 3 $\frac{1}{4}$	1909	1 $\frac{1}{4}$	,, 2 $\frac{3}{8}$	1 $\frac{1}{4}$	,, 3 $\frac{1}{4}$
1902	1 $\frac{7}{8}$	,, 5 $\frac{1}{2}$	2	,, 7	1910	1 $\frac{1}{4}$	,, 2 $\frac{1}{2}$	1 $\frac{1}{4}$	,, 3 $\frac{1}{4}$
1903	2 $\frac{1}{2}$	,, 3 $\frac{1}{4}$	2 $\frac{1}{4}$	,, 5	1911	1 $\frac{5}{8}$	,, 2 $\frac{3}{8}$	1 $\frac{1}{2}$	,, 3
1904	2 $\frac{1}{8}$	,, 3 $\frac{1}{2}$	1 $\frac{5}{8}$	,, 3 $\frac{1}{8}$	1912	2	,, 4 $\frac{3}{4}$	1 $\frac{1}{2}$	,, 5
1905	1 $\frac{5}{8}$	,, 3	1 $\frac{1}{2}$	,, 3 $\frac{1}{2}$	1913	2	,, 3 $\frac{1}{4}$	1 $\frac{3}{4}$	,, 3 $\frac{1}{2}$
1906	1 $\frac{7}{8}$	,, 2 $\frac{1}{2}$	1 $\frac{3}{8}$	,, 3 $\frac{1}{8}$	1914	2 $\frac{1}{2}$	,, 4 $\frac{3}{8}$	2	,, 4 $\frac{1}{2}$
1907	1 $\frac{7}{8}$	,, 3	1 $\frac{5}{8}$	,, 3 $\frac{3}{8}$	1915	2 $\frac{3}{4}$	,, 7 $\frac{1}{4}$	3	,, 9 $\frac{1}{4}$
1908	1 $\frac{5}{8}$	to 3 $\frac{1}{2}$	1 $\frac{1}{2}$	to 3 $\frac{5}{8}$					

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  $\frac{1}{2}$ d. 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 $\frac{1}{2}$	to 3	1 $\frac{1}{2}$	to 2	3 $\frac{1}{2}$	to 4
1902	4	,, 5	6	,, 7	2 $\frac{1}{2}$	,, 5	1 $\frac{1}{2}$	,, 2	3 $\frac{1}{2}$	,, 4
1903	4	,, 5	6	,, 7	2 $\frac{1}{2}$	,, 3	1 $\frac{1}{2}$	,, 2	3 $\frac{1}{2}$	,, 4
1904	4	,, 5	6	,, 7	2 $\frac{1}{2}$	,, 3	1 $\frac{1}{2}$	,, 2	3 $\frac{1}{2}$	,, 4
1905	4	,, 5	6	,, 7	2 $\frac{1}{2}$	,, 3	1 $\frac{1}{2}$	,, 2	3 $\frac{1}{2}$	,, 4
1906	4	,, 5	6	,, 7	2 $\frac{1}{2}$	,, 3	1 $\frac{1}{2}$	,, 2	3 $\frac{1}{2}$	,, 4
1907	4 $\frac{1}{2}$	,, 5	6	,, 7	3		1 $\frac{3}{4}$	,, 2	4	
1908	4 $\frac{1}{2}$	,, 5	5 $\frac{1}{2}$	,, 7	3		1 $\frac{3}{4}$	,, 2	4	
1909	4	,, 5	6	,, 7	2 $\frac{1}{2}$	to 3	1 $\frac{1}{2}$	,, 2	3	to 4
1910	4	,, 5	6	,, 7	2 $\frac{1}{2}$	,, 3	1 $\frac{1}{2}$	,, 2	3	,, 4
1911	4 $\frac{1}{2}$	,, 5	6 $\frac{1}{2}$	,, 7	2 $\frac{1}{2}$	,, 3	1 $\frac{1}{2}$	,, 2 $\frac{1}{2}$	3 $\frac{1}{2}$	,, 4
1912	4 $\frac{1}{2}$	,, 5 $\frac{1}{2}$	6 $\frac{1}{2}$	,, 7 $\frac{1}{2}$	3	,, 3 $\frac{3}{4}$	2 $\frac{1}{2}$	,, 3	4	,, 5
1913	4 $\frac{1}{2}$	,, 5 $\frac{1}{2}$	7	,, 8 $\frac{3}{4}$	3 $\frac{1}{2}$	,, 4	3	,, 3 $\frac{3}{4}$	4 $\frac{1}{2}$	,, 5
1914	5 $\frac{1}{4}$	,, 6	8	,, 9	4 $\frac{1}{4}$		3 $\frac{3}{4}$	,, 4	5 $\frac{1}{4}$	,, 6 $\frac{1}{4}$
1915	7 $\frac{1}{2}$	,, 12 $\frac{1}{2}$	9 $\frac{1}{2}$	,, 16 $\frac{1}{2}$	5	to 8	4	,, 7 $\frac{1}{2}$	6 $\frac{1}{2}$	,, 9

*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, by 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.

Since the outbreak of war, permits for the export of meat must be obtained from the Collector of Customs.

*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. Proclamations have been issued periodically, extending the period of operation of the Act, the latest, issued on 1st December, 1915, being to the effect that the Act was to remain in force until the 30th June, 1916.

The prices fixed by the Board of Control for meat taken into cold storage up to 30th June, 1916, 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.	per lb.		per lb.	per lb.	per lb.
	d.	d.		d.	d.	d.
Wether ... ..	4½	4½	Ox—Sides ... ..	4¾	4¾	4¾
Ewe ... ..	4¾	4	Hinds ... ..	5¾	5½	5½
Teg ... ..	4¾	4½	Fores ... ..	4¾	4½	4½
Lamb ... ..	5½	5½	Cow—Sides ... ..	4¾	4¾	...
			Hinds ... ..	5½	4¾	...
			Fores ... ..	4¾	3¾	...

Up to the end of February, 1916, the quantity of meat requisitioned under the authority of the Act and shipped from Sydney was 53,061,503 lb., consisting of 1,126,138 carcasses of mutton and lamb, and 53,180 quarters and 1,809 buttocks of beef; the value was £1,159,657 (inclusive of freight, extra storage and interest). No further shipments had been made up to the end of June, 1916.

## 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 quality of the bread is good, and the conditions of production satisfactory.

The price of bread was fixed ordinarily by the Master Bakers' Association. About 160 of the Sydney master bakers are members of the Association, but the price was 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 higher than the price obtainable for export, 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. The prices of bread and of food products generally are now regulated under Commonwealth supervision, as provided by war legislation.

*Prices of Bread.*

The price of bread as fixed by the Master Bakers' Association at various times from 1900 to 1913, and since then by the Necessary Commodities Control Commission, 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.		
		£	s.	d.
1900 ... ..	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
*1915—July ... ..	5	17	5	0
*1915—October ... ..	4	11	17	6
*1916—March... ..	†3½	11	5	0

\* Fixed on recommendation of Necessary Commodities Control Commission.  
† Price over counter; ‡d. if delivered.

The cost of manufacture and distribution, as distinguished from the cost of material, is an important factor in 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, Tasmania, 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 America from October to December, and from Italy from December to March.

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 the following averages have been compiled :—

Vegetables.	1913.	1914.	1915.
Cabbages... per doz.	6s. to 7s.	5s. to 6s.	6s. to 8s.
Cauliflowers ,,	7s. to 10s.	6s. to 8s.	6s. to 8s.
Peas ... per bush.	6s. 3d.	5s. 6d.	6s. 6d.
Beans ... ,,	6s.	3s. to 4s.	5s. to 6s.

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 1915 :—

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
1915	7 1 6	12 10 6	6 9 0	10 15 6	8 3 0	7 14 6

\*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, of which 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. 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 elimination 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 bearing on 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, the Pure Food Act 1908, and the Dairy Industry Act of 1915. 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. There are now 19,400 registered dairymen in the State, and the cattle in their dairy herds number 665,000—about 100,000 of these being out of milk.

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 Dairy Industry Act, 1915, was passed to regulate the manufacture, sale, storage, transit, and export of dairy produce, including margarine, and for prescribing standards; to provide for the testing, blending, mixing, and grading of cream, and for the grading and branding of butter.

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 louvered 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.

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 three-tenths of the total price paid by the consumer.

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	1910	6 ,, 9	4-5	5
1902	6 ,, 10	4-5	5-6	1911	6 ,, 9	4-5	5
1903	6 ,, 10	5	5	1912	6 ,, 9	5	6
1904	5 ,, 6	3-4	4-5	1913	6 ,, 9	5	6
1905	5½ ,, 7	4	4	1914	8 ,, 11	5	6
1906	6 ,, 7	4	4	*29-7-15	11d.	5½	6
1907	6½ ,, 9	4-5	4-5	*4-9-15	9d.	5	6
1908	6 ,, 12	5	5	*10-1-16	9d.	5	6
1909	7 ,, 10	5	5	*16-6-16	1s.	...	6

\* Prices fixed by Necessary Commodities Control Commission.

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 1s. 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.

#### PROTECTION AND STANDARDISATION OF FOODS.

Prior to the passing 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.

#### 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, and until 3rd July, 1916, so far as it affects pigs and calves, 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 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 vegetable market has 288 stalls which are occupied by the *bond fide* grower, who brings his own produce to market, and conducts the sale by private treaty; the charges are on the dues 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. 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.

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.

#### *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, 1909 to 1915. 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.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Wheat ...bush.	0 4 9½	0 3 10	0 3 6	0 4 1	0 3 7	0 4 2	0 5 5
Flour ... ton	11 2 0	9 14 6	8 9 10	9 8 11	8 12 9	9 9 8	13 7 0
Bran ...bush.	0 0 11½	0 0 10½	0 0 11¾	0 1 2¼	0 0 11	0 1 1	0 1 3¼
Pollard ... ,,	0 1 1	0 0 10¼	0 0 11¾	0 1 3¼	0 0 11¼	0 1 1	0 1 5½
Barley ... ,,	0 3 1	0 3 0¾	0 2 9	0 4 4	0 2 11¾	0 2 11	0 5 5½
Oats ... ,,	0 2 5½	0 2 5½	0 2 8	0 3 6½	0 3 0	0 3 0	0 4 7
Maize ... ,,	0 4 2¼	0 2 11¼	0 3 0	0 4 8	0 4 1¼	0 3 11½	0 5 2¼
Potatoes... ton	5 17 0	6 12 2	6 1 3	8 12 9	4 16 6	4 14 8	7 9 1
Onions ... ,,	6 16 6	4 16 3	4 7 9	12 4 3	7 18 9	9 2 10	7 19 0
Hay—							
Oaten or Wheaten ton	4 2 0	3 17 6	4 15 3	6 6 6	4 15 3	4 17 2	8 4 8
Lucerne ,,	3 19 0	3 1 7	3 5 0	4 18 9	4 19 0	4 9 4	5 16 7
Chaff ... ,,	4 10 6	4 4 0	4 4 3	5 14 0	4 7 9	5 3 6	7 3 8
Butter ... lb.	0 0 10	0 0 11½	0 0 10¾	0 1 0	0 0 11	0 0 11½	0 1 2¾
Cheese ... ,,	0 0 7	0 0 6¼	0 0 7¼	0 0 8½	0 0 7	0 0 7½	0 0 9½
Bacon ... ,,	0 0 8½	0 0 7½	0 0 7	0 0 8½	0 0 9½	0 0 9½	0 0 10½
Eggs ... doz.	0 1 1	0 1 0½	0 1 0½	0 1 2¼	0 1 2¾	0 1 1	0 1 4¼
Milk ... gal.	0 0 10½	0 0 10	0 0 9¾	0 0 11¼	0 0 11	0 0 11¾	0 1 0
Poultry—							
Fowls ... pair	0 4 3	0 4 10	0 4 8	0 5 0	0 4 10	0 5 5	0 5 6
Ducks ... ,,	0 4 3	0 3 1	0 3 3	0 3 3	0 4 4	0 4 5	0 3 11
Geese ... ,,	0 5 3	0 6 2	0 5 8	0 6 3	0 7 0	0 6 8	0 6 4
Turkeys.. ,,	0 14 0	0 12 8	0 11 3	0 15 9	0 11 0	0 11 2	0 13 3
Bee produce—							
Honey ... lb.	0 0 3	0 0 3½	0 0 2½	0 0 3	0 0 3½	0 0 3¾	0 0 4¼
Wax ... ,,	0 1 2	0 1 2	0 1 1½	0 1 2½	0 1 2¾	0 1 2½	0 1 4

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 1915 are quoted for the more important articles of New South Wales agricultural production :—

Month.	Wheat (Milling).	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 ...	5 6	11 17 6	17·2	17·5	4 3½	4 8½	6 10 0
February ...	5 6	11 17 6	18·0	19·2	4 11½	4 5½	7 0 0
March ...	5 6	11 17 6	18·0	19·2	5 2	4 10	8 0 0
April ...	5 6	11 17 6	18·0	19·2	5 5½	5 7½	9 1 6
May ...	5 6	11 17 6	18·0	19·2	5 6	5 9½	9 14 6
June ...	5 6	11 17 6	19·0	20·2	5 5	5 3½	10 8 3
July ...	5 6	14 2 6	20·4	21·6	5 4½	5 4½	10 10 9
August ...	5 6	17 5 0	16·2	17·7	5 2	5 2½	8 0 0
September ...	5 6	16 19 0	11·2	13·2	3 11	5 0½	5 15 9
October ...	5 6	16 17 6	9·6	13·2	3 3	4 10½	9 0 0
November ...	*4 8	11 17 6	9·6	15·6	3 3½	†5 4½	8 5 9
December ...	5 2	11 17 6	9·6	15·6	3 3	†5 9	6 10 0

	Potatoes (Local).	Butter (Good Brands).	Cheese.	Bacon (Sides).	Lard (Bulk).	Eggs.	
	per ton. £ s. d.	per lb. d.	per lb. d.	per lb. d.	per lb. d.	Country Consignments. per doz. s. d.	Suburban New Laid. per doz. s. d.
January ...	6 0 0	12½	5½	10	7½	1 0½	1 5½
February ...	3 10 0	12½	6½	10½	7½	1 3	1 5½
March ...	4 3 3	12½	6½	10	7½	1 4½	1 9½
April ...	5 8 3	13½	7	9½	7½	1 8	2 3
May ...	4 0 0	13½	8½	8½	8½	1 8½	2 2½
June ...	8 3 0	15½	9½	9½	10½	1 9½	2 1
July ...	8 17 0	17½	9½	10½	11½	1 6	1 7
August ...	7 2 6	19	11	10½	11½	1 2½	1 3
September ...	5 18 0	15½	11	11	11½	1 0½	1 1
October ...	10 6 9	15	11	12	11½	1 1½	1 2½
November ...	11 5 0	15	11	12	10½	1 2½	1 3½
December ...	14 15 0	16	10	12	10½	1 4½	1 5

\* New wheat. † Imported.

Of barley and oats, the bulk are imported, and the prices of these cereals during the year 1915 call for little notice. Maize, on the contrary, is largely of local growth, and its price varied from 4s. 5½d. in August to 5s. 9½d. in May.

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, which continued until July, 1915, when prices showed a downward tendency till the end of the year.

Root crops show very great range; thus locally-grown potatoes varied between £3 10s. in September and £14 15s. per ton in December.

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, except in 1914 and 1915, when it was fixed by law.

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.	1910.	1911.	1912.	1913.	1914.	1915.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Beef ... .. lb.	0 0 2½	0 0 2¾	0 0 2¾	0 0 3¼	0 0 3¾	0 0 5½
Mutton ... .. „	0 0 2½	0 0 2½	0 0 3	0 0 3	0 0 3½	0 0 4¾
Wool—Greasy ... .. „	0 0 9½	0 0 9	0 0 9	0 0 9¾	0 0 9½	0 0 9½
Scoured ... .. „	0 1 3¾	0 1 3	0 1 3¼	0 1 5	0 1 4	0 1 4½
Sheepskins with Wool ... .. bale	20 0 0	17 15 0	19 16 0	22 17 0	20 18 0	21 4 7
Hides ... .. each	1 2 0	1 2 3	1 4 0	1 9 4	1 8 0	1 12 0
Leather ... .. bale	33 0 0	34 0 0	34 16 8	39 19 9	47 15 4	50 2 0
Hair ... .. lb.	0 1 4½	0 1 3½	0 1 8	0 1 6½	0 1 5½	0 1 4½
Bones ... .. cwt.	0 9 3	0 12 1	0 13 9	0 11 5	0 9 4½*	†
Horns ... .. 100	2 2 11	2 2 10	2 11 6	2 7 0	2 2 2*	†
Hoofs ... .. cwt.	0 6 3	0 8 3	0 10 0	0 9 0	0 7 8*	†
Tallow ... .. „	1 10 0	1 8 6	1 9 3	1 10 3	1 8 4	1 12 5
Glue-pieces ... .. „	0 7 7	0 9 8	0 10 8	0 11 5	0 13 0½*	†

\* Average of prices January–July only. † Not available.

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 1915 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 influence of the war may still be seen in the prices for 1915, all products except hair showing a decided increase.

The following statement shows the fluctuations during 1915 in the price 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. s. d.	per ton. £ s. d.	per cwt. s.	per cwt. s.	per lb. d.	per lb. s. d.	per cwt. s. d.
January ...	52 0	14 15 9	†139½	...	10	1 3	32 0
February ...	*	*	132	...	10	1 3	35 0
March ...	*	*	136	...	11	1 4	37 0
April ...	*	*	132	...	10¼	1 4	37 0
May ...	*	*	137	...	11	1 4	37 0
June ...	*	*	140	..	11¾	1 6	38 6
July ...	*	*	142	139½	10	1 6	37 6
August ...	*	*	‡	‡	9	1 7	33 0
September ...	*	*	‡	‡	10¾	1 8	35 0
October ...	*	*	‡	‡	11	1 4	34 0
November ...	*	*	‡	‡	12¾	1 5½	37 0
December ...	*	*	‡	‡	13½	1 7½	42 4

\* On account of the European war no quotations were given. † Average top price for Australian Butter (Finest Quality) only. No separate quote received for N.S. Wales Butter. ‡ No quotations.

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.	1910	1911.	1912.	1913.	1914.	1915.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Silver ...oz.	0 2 1	0 2 0½	0 2 4	0 2 3½	0 2 1¼	0 1 11½
Copper ...ton	56 3 4	54 18 4	72 10 0	68 13 4	60 16 8	73 0 0
Tin ...,,	153 3 4	188 1 8	209 1 8	202 5 0	153 0 0	164 17 1
Lead ...,,	12 13 4	13 3 4	17 3 4	18 15 0	19 1 8*	22 19 2
Coal ...,,	0 10 8	0 10 8	0 10 8	0 10 9	0 10 7	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, but in 1915 prices of copper, tin and lead again rose owing to the increased demand for war purposes. 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	1,365	1,451	1,302
1915	1,620	1,686	1,464

The fluctuations in the prices of the same series during 1915, 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 ...	1,413	1,512	1,276
February ...	1,446	1,483	1,345
March ...	1,567	1,611	1,463
April ...	1,597	1,644	1,434
May ...	1,578	1,646	1,399
June ...	1,702	1,746	1,526
July ...	1,646	1,648	1,514
August ...	1,729	1,838	1,414
September ...	1,689	1,787	1,425
October ...	1,682	1,764	1,474
November ...	1,737	1,865	1,600
December ...	1,801	1,933	1,677

## SYDNEY RETAIL PRICES.

The following table shows the average retail prices in Sydney of various commodities at intervals from 1890 to 1910. The quotations are based on the prices charged in the shops throughout the metropolitan district.

Commodity.	1890.	1895.	1900.	1905.	1910.
	s. d.	s. d.	s. d.	s. d.	s. d.
Bread ... .. 2 lb. loaf	0 3½	0 2½	0 3	0 2½	0 3½
Tea ... .. lb.	1 6	1 6	1 4	1 3	1 3
Coffee ... .. "	2 0	1 9	1 6	1 6	1 6
Sugar ... .. "	0 3½	0 2½	0 2½	0 2½	0 2½
Rice ... .. "	0 4	0 2½	0 2½	0 2½	0 2½
Oatmeal ... .. "	0 3	0 2	0 2½	0 2½	0 2½
Starch ... .. "	0 5	0 4	0 3½	0 5	0 5
Soap ... .. "	0 3½	0 2	0 3	0 3½	0 3½
Potatoes ... .. cwt.	6 0	4 3	6 9	10 6	7 6
Butter ... .. lb.	1 0	1 0	0 11	1 1	1 1
Cheese ... .. "	0 8	0 8	0 7½	0 8	0 9
Eggs ... .. doz.	1 6	1 0	0 11	1 0	1 3
Bacon ... .. lb.	1 0½	0 7½	0 7½	0 9	0 10
Beef, fresh ... .. "	0 4	0 3	0 3½	0 5½	0 5½

Since the beginning of 1911 particulars are available regarding a larger number of articles, and returns of prices are now collected monthly. The mean of the monthly prices during 1911 and subsequent years is shown in the following statement:—

Article.	Average Prices.				
	1911.	1912.	1913.	1914.	1915.
	s. d.	s. d.	s. d.	s. d.	s. d.
Bread ... .. per 2 lb. loaf	0 3½	0 3½	0 3½	0 3½	0 4½
Flour ... .. 25-lb. bag	2 8	2 10½	2 10	2 10	4 0½
Tea ... .. lb.	1 3½	1 3½	1 3½	1 3½	1 5
Coffee ... .. "	1 5	1 5½	1 5½	1 6	1 6
Cocoa ... .. ¼ lb.	0 4½	0 4½	0 4½	0 4½	0 4½
Sugar ... .. lb.	0 2½	0 2½	0 2½	0 2½	0 2½
Rice ... .. "	0 2½	0 2½	0 3	0 3	0 3
Sago ... .. "	0 2½	0 2½	0 2½	0 2½	0 2½
Jam (Australian) ... .. "	0 4½	0 4½	0 5	0 5	0 5½
Oatmeal ... .. 5 lb.	1 0½	1 2½	1 2½	1 1½	1 5½
Raisins ... .. lb.	0 6½	0 6½	0 6½	0 6½	0 6½
Currants ... .. "	0 7	0 7½	0 7½	0 7½	0 7½
Starch ... .. "	0 5½	0 5½	0 5½	0 5½	0 5½
Blue ... .. doz. squares	0 9	0 9	0 9	0 8½	0 9½
Candles ... .. lb.	0 7	0 6½	0 6½	0 6½	0 6½
Soap ... .. "	0 3	0 3½	0 3½	0 3½	0 3
Potatoes ... .. 14 lb.	1 0½	1 10½	1 0½	1 1½	1 5½
Onions ... .. lb.	0 1	0 2½	0 1½	0 1½	0 1½
Kerosene ... .. gal.	0 11½	0 11½	1 0½	1 0½	1 1½
Milk ... .. qt.	0 4½	0 5	0 5½	0 5½	0 5½
Butter ... .. lb.	1 1½	1 3½	1 1½	1 2½	1 5
Cheese—New ... .. "	0 8½	0 10½	0 9½	0 10	1 0
Matured ... .. "	0 10	1 0½	0 10½	0 11½	1 0½
Eggs—New laid ... .. doz.	1 6½	1 8½	1 8½	1 7½	1 11
Fresh ... .. "	1 3½	1 5½	1 5½	1 4½	1 7½
Bacon—					
Middle cut ... .. lb.	0 10½	0 11½	1 0½	1 0½	1 3
Shoulder ... .. "	0 7	0 7½	0 8½	0 8½	0 10½
Ham ... .. "	1 1	1 0	1 2	1 1½	1 3½
Beef (fresh)—					
Sirloin ... .. lb.	0 4½	0 5	0 5	0 5½	0 9½
Ribs ... .. lb.	0 3½	0 4½	0 4½	0 5	0 8
Flank ... .. "	0 3½	0 4	0 4	0 3½	0 7½
Gravy beef ... .. "	0 3	0 3½	0 3½	0 3½	0 6½
Steak—Rump ... .. "	0 7	0 7	0 7½	0 8½	1 0½
Shoulder ... .. "	0 3½	0 3½	0 3½	0 4½	0 7
Buttock ... .. "	0 4	0 4	0 4	0 4½	0 7½
Beef (corned)—					
Round ... .. "	0 4	0 4½	0 4½	0 5	0 7½
Brisket with bone ... .. "	0 2½	0 2½	0 2½	0 3½	0 5½
Mutton—					
Leg ... .. "	0 3	0 3½	0 3½	0 4½	0 6½
Shoulder ... .. "	0 2½	0 3	0 3½	0 3½	0 5½
Loin ... .. "	0 3½	0 4	0 4	0 5½	0 6½
Neck ... .. "	0 3	0 3½	0 3½	0 4	0 5½
Chops—Loin ... .. "	0 4½	0 5	0 4½	0 6	0 7½
Leg ... .. "	0 4	0 4½	0 4½	0 5½	0 7½
Neck ... .. "	0 3½	0 3½	0 4	0 4½	0 6½
Lamb—					
Fore-quarter ... .. each	1 9	2 2	2 5	2 8½	†3 3
Hind-quarter ... .. "	2 9	3 2½	3 6½	3 11½	†4 5
Pork (fresh)—					
Leg ... .. lb.	0 7½	0 8	0 8½	0 9½	0 11
Loin ... .. "	0 7½	0 8	0 8½	0 9½	0 11½
Belly ... .. "	0 6½	0 7	0 8	0 7½	0 9½
Chops ... .. "	0 8½	0 8½	0 9	0 10½	0 11½

† Mean of months January to July. From August to December the averages were: Forequarter, 7d. per lb., hindquarter, 7½d.

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 1915 are shown below :—

Article.	Jan.	Feb.	Mar.	Apl.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Bread ... ..	2 lb. loaf	4	4	4	4	4	4½	5	5	5	4	4
Flour ... ..	25 lb. bag	41½	43½	44½	44½	44½	45	46	42	42	44½	44½
"    Self-raising ... ..	2 lb. bag	5½	5½	5½	5½	5½	5½	6	8½	7½	8	6½
Tea ... ..	1 lb.	15½	15½	15½	16	16½	17	17½	18	18	18	18
Coffee ... ..	"	18	18	18	17½	17½	17½	17½	17½	17½	18	17½
Cocoa ... ..	½ lb.	4½	4½	4½	4½	4½	4½	4½	4½	4½	4½	4½
Sugar ... ..	lb.	2½	2½	2½	2½	2½	2½	3	3	3	3	3
Rice ... ..	"	3	3	3	3	3	3	3	3	3	3½	3½
Sago ... ..	"	2½	2½	2½	2½	2½	2½	2½	2½	2½	2½	2½
Jam (Australian) ... ..	"	5	5	5	5	5	5	5½	5½	5½	5½	5½
Oatmeal ... ..	5 lb.	10½	17½	18½	18½	18½	18½	18½	18½	17½	17	17
Raisins ... ..	lb.	6½	6½	6½	6½	6½	6½	6½	6½	6½	6½	6½
Currants ... ..	"	7	7	7	7	7	7	7	8	8	8	9½
Starch ... ..	"	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½	5½
Blue ... ..	doz. squares	8½	9½	9½	9½	9½	9½	9½	9½	9½	9½	9½
Candles ... ..	lb.	6½	6½	6½	6½	7	7	7	7	7	7	7
Soap ... ..	"	3½	3½	3	3	3	3	3	3	3	3	3
Potatoes ... ..	14 "	13	11½	13½	13	13	15½	18	16½	18	21½	27½
Onions ... ..	lb.	1½	1½	1½	1½	1½	1½	1½	1½	1½	1½	1½
Kerosene ... ..	gal.	12½	12½	13½	13½	13½	13½	13½	13½	13½	13½	13½
Milk ... ..	qrt.	5	5	5	5	5	5	5	5	5	5	5
Butter ... ..	lb.	15	15½	15½	15½	15½	16½	18½	22½	17½	17½	16½
"    Cheese—												
New ... ..	"	9½	9½	9½	10½	12½	12½	13½	14	14	14	13½
Matured ... ..	"	10	10½	10½	11	12½	13	14½	14	14	14	13½
"    Eggs—												
New laid ... ..	doz.	23½	21	22½	32½	30½	33½	24½	19½	15½	16½	17½
Fresh ... ..	"	18½	18	19½	25½	23½	24½	21½	17½	14½	15½	16½
"    Bacon—												
Middle cut ... ..	lb.	14	13½	14	13½	12½	13½	14½	15½	16	17½	17
Shoulder ... ..	"	8½	8½	9½	8½	8½	9½	9½	10½	11½	12½	13½
Ham ... ..	"	14½	14½	14	13½	12½	13½	14	15	15½	17½	18½
"    Beef (fresh)—												
Sirloin ... ..	"	7½	7½	7½	8	8½	9	10	12½	12½	12½	11
Ribs ... ..	"	6	5½	6	6	7	8	9	10	10	10	8½
Flank ... ..	"	5	5	4½	5½	6½	7	8	9	9	8	8
Shin (without bone) ... ..	"	4	4	4	4	5	6	7	8	9	8	7
Gravy beef ... ..	"	4	4	4	4	5	6	7	8	9	8	7
"    Steak—												
Rump ... ..	"	10	9½	9½	10	10½	12	13	16	15	13½	12
Shoulder ... ..	"	4½	4½	4½	5½	5½	6	8	9	9	8	7
Buttock ... ..	"	5½	4½	5½	5½	5½	6	8	9	9	8	8
"    Beef (corned)—												
Round ... ..	"	5½	5½	6	6	6	7	8	9	9	9	9
Brisket (with bone) ... ..	"	4	3½	4	4	4	5	6	7	7	6	6
"    Mutton—												
Leg ... ..	"	4½	5	5	5½	6	6	7	8	7	6	6
Shoulder ... ..	"	4	4	4	4	5	5	6	7	6	5	6
Loin ... ..	"	5	5	5	5	5	5	6	7	6	6	6
Neck ... ..	"	4	4	4	4	5	5	6	7	6	5	6
"    Chops—												
Loin ... ..	"	6	6	6	7	8	8	8	9	8	7	8
Leg ... ..	"	6	6	6	6	7	7	7	8	8	7	8
Neck ... ..	"	5	4	4	5	6	6	7	7	7	6	6
"    Lamb—												
Forequarter ... ..	each	36	34	36	36	37	43	49	*8	6	6	6
Hindquarter ... ..	"	51	47	48	51	52	55	65	*8	7	7	7
"    Pork (fresh)—												
Leg ... ..	lb.	11	10½	10½	9½	10	9	10	12	12	12	12
Loin ... ..	"	11	10½	10½	9½	10	9	10	10	12	12	12
Belly ... ..	"	9	8	9	9	8	8	10	10	12	12	12
Chops ... ..	"	11	11	11	11	11	11	11	14	13	12	12

\* Per lb. from August onwards.

The average prices of the main grocery lines showed a slight increase throughout the year. The price of flour increased gradually until August, as a result of an increase in the price of wheat, but fell again in November.

The price of oatmeal was raised in March, but was lowered considerably in October.

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 about the same as in the corresponding months of 1914 until June, when a sharp rise occurred, and prices increased till the end of the year, when the rate reached 2d. per lb.

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 1915.

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 prices of butter usually advance at the beginning of winter, when supplies decrease, and drop with the approach of spring weather. High prices ruled throughout 1915 owing to drought, especially during July and August.

The prices of cheese were much higher than in 1914; during the latter half of the year, instead of seasonal decreases, very high prices were recorded.

The price of hams was advanced considerably 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 provides 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. The following commodities have been considered by the Commission, and prices fixed, but as the prices are shown in the various tables preceding, it is not necessary to repeat them here:—wheat, flour, bread, biscuits, oatmeal, butter, cheese, hams, bacon, pork, pigs, milk, cream, condensed milk, sugar, jam, tinned fruit, wine and spirits, plum puddings, rice, cordials, baking powder, bran, pollard, sharps, chaff, hay, oil (kerosene, benzine, &c.) and gas.

The Act operated until 20th July, 1916, when the Commonwealth Government appointed the Commonwealth Prices Adjustment Board, under the Commonwealth War Precautions Act, which assumed the control of prices of foodstuffs, necessary commodities and services, thereby superseding the New South Wales Commission. A Commissioner was appointed in each State to collect evidence for submission to the Federal Board. On his advice the Board will recommend to the Ministry the prices and rates to be fixed. With a few exceptions, such as wheat, bread, flour, bran and pollard, the prices already proclaimed by the State Commission were allowed to remain operative.

#### *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, with subsequent amendments, was in operation until 31st December, 1915.

The Governor, by notification in the *Gazette*, could declare that any wheat was acquired by the Crown, and the wheat became 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 were 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 was to be paid if so determined by the Commissioners appointed under the Necessary Commodities Control Act.

The administration of the Act was entrusted to a Board of five persons appointed by the Governor, who were 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.

The Necessary Commodities Control Commission regulated the price of wheat until the 15th December, 1915, and the control has since been in the hands of the Australian Wheat Board, consisting of the Commonwealth Prime Minister and the Ministers of Agriculture of New South Wales, Victoria, South Australia, and West Australia. On the above date, the price was fixed at 5s. 3½d. per bushel, f.o.b. Sydney, and on 22nd March, 1916, a reduction was made to 4s. 10¾d., f.o.b. Sydney, or 4s. 9d. on trucks. These prices were still in operation at the end of June, 1916. The State Wheat Office has charge of all wheat operations, and, though it is not now compulsory for farmers and others to hand over a wheat to the Government, the export is prohibited, except through the State Wheat Office.

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, the increase being more pronounced since the outbreak of war.

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, was not more than £2 8s. per week.

The weekly expenditure was apportioned amongst the various items as follows:—

	£	s.	d.
Food and groceries ... ..	1	2	0
Rent... ..	0	12	0
Other expenditure ... ..	0	14	0
	£2	8	0

On the 17th December, 1915, a further pronouncement concerning the living wage was made by Mr. Justice Heydon in the Court of Industrial Arbitration, wherein the view was expressed that the minimum wage for ordinary labourers should be 1s. 1½d. per hour, or 8s. 9d. per day, or £2 12s. 6d. per week.

This judgment was further amended on the 20th August, 1916, when the Judges of the same Court fixed the minimum living wage at £2 15s. 6d. per week, an advance of 3s. on the previous award, which in its turn was 4s. 6d. above that fixed in February, 1914.

As a result of comparisons of inquiries as to the cost of living in several countries, it has been estimated that the salary of a typical worker's family of two adults and two dependent children is spent in the following proportions:—

Food and groceries ... ..	46 per cent.
Rent ... ..	25 „ „
Clothing ... ..	13 „ „
Fuel and light ... ..	5 „ „
Miscellaneous ... ..	11 „ „
Total	<u>100 per cent.</u>

Applying these percentages to the £2 15s. 6d. living wage, the average amounts spent under the several heads would be:—

	£	s.	d.
Food and groceries ... ..	1	5	6½
Rent ... ..	0	13	10½
Clothing ... ..	0	7	2½
Fuel and light ... ..	0	2	9½
Miscellaneous ... ..	0	6	1
Total	<u>£2</u>	<u>15</u>	<u>6</u>

The following table shows the variations in the cost, in Sydney, of food and groceries since July, 1914, the month before the outbreak of war. The prices in July, 1914, are taken as a basis and called 100, and the 41 commodities for which the price levels are computed are those in everyday consumption. In the statement meat is distinguished from other food and groceries, and the two groups are combined:—

Month.	Meat.	Other food and Groceries.	Meat, other food and groceries combined.	Month.	Meat.	Other food and Groceries.	Meat, other food and groceries combined.
1914.				1915.			
July .....	100	100	100	August ...	178·9	125·2	139·1
August .....	98·9	100·1	99·8	September	166·8	121·5	133·2
September	97·1	99·0	98·5	October ...	160·1	124·7	133·8
October ...	98·5	98·0	98·1	November	144·3	121·3	127·3
November	95·3	97·2	96·7	December	153·5	121·8	130·0
December	99·7	103·7	102·7	1916.			
1915.				January...	155·0	119·8	128·8
January ...	107·1	104·2	104·9	February	162·0	122·6	132·8
February...	106·1	103·3	104·0	March ...	167·2	118·8	131·3
March .....	107·3	105·2	105·7	April .....	165·7	116·7	129·3
April .....	113·8	106·2	108·2	May .....	166·4	118·6	131·0
May .....	128·6	106·1	111·9	June .....	167·6	118·7	131·3
June .....	140·8	109·4	117·5	July ... ..	170·6	120·7	133·6
July .....	158·1	116·0	126·9	August ...	166·1	119·6	131·6

From the above table it will be seen that the effects of the war were not felt by housekeepers until early in 1915, and since that time the levels have tended upwards, except where seasonal variations occurred in prices of commodities.

Detailed particulars of the prices from which the price levels were computed are given on pages 811 and 812.

It must be borne in mind that these price levels relate to food and groceries only, and in estimating the increased cost of living the percentages must be applied only to that proportion of the total family expenditure which is expended on food and groceries, and not to the total family expenditure.

Rents generally are lower than before the war, and, although many other items of expenditure have increased to a certain extent, they have not advanced, on the average, so much as food.

In order that the increase in the cost of living may be further studied, particulars are given below showing the advance since 1911, which year may be considered to represent a fair average for the previous decade. The same procedure has been followed as in the case of the table relating to the war period, except that the prices used are the average of the twelve monthly figures during each year. The basis of the table is the year 1911, the price-level for which is called 100.

The figures are based on Sydney prices; but, in the light of several special investigations into the cost of living in certain country towns as compared with Sydney, it may be assumed safely that a corresponding relative increase has occurred in country towns where no abnormal conditions prevail.

Columns are included showing the fluctuations in rents, also the price levels of food, groceries, and rent combined.

Year.	Meat.	Other Food and Groceries.	Meat, other Food and Groceries combined.	Rent.	Food and Rent combined.
1911	100	100	100	100	100
1912	113·0	113·9	113·7	108·8	111·5
1913	114·8	106·2	108·0	114·7	111·0
1914	136·6	107·2	113·4	117·6	115·3
1915	196·0	121·7	137·2	111·7	125·8

From the figures given in this and preceding tables, it will be seen that the great increase in the cost of living in recent years is due, in a large measure to the price of meat, which, in four years, almost doubled.

Information regarding Housing and Rental Values has already been given in the chapter of this Year Book on "Social Condition," but additional particulars are given below, showing the actual average amounts paid by tenants of various types of houses in Sydney and suburbs during each of the past four years. The figures represent the average predominant rents paid

for each class of house, as the range of rents varies considerably according to the locality, position and class of building rented.

Class of House.	1912.	1913.	1914.	1915.
	s. d.	s. d.	s. d.	s. d.
Under 3 rooms and kitchen..	11 3	12 0	12 6	12 3
3 rooms and kitchen ...	13 3	14 3	15 6	14 6
4 " " " ...	17 3	18 6	18 6	18 0
5 " " " ...	20 6	21 9	22 0	20 9
6 " " " ...	25 0	26 0	26 6	25 0

It has been established that the average householder usually spends about a quarter of his income on rent, and, therefore, any fluctuation in rents will exert a large influence on the cost of living. During the ten years prior to the outbreak of war, rents in Sydney and suburbs increased by about 40 per cent., but the war has had a steadying effect, and the past two years have shown a slight decrease.

In Sydney and suburbs, dwellings occupied by the labouring classes yield rents as follows:—Three rooms and kitchen, 14s. to 17s. per week; four rooms and kitchen, from 17s. 6d. to 21s. per week; and five rooms and kitchen, from 20s. to 23s. 6d. per week.

Dwellings of more than five rooms are seldom occupied by labouring class families, unless there are adult sons and daughters who contribute to the family earnings. The rents vary in the suburbs in accordance with the class of people which constitutes the population.

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.

## 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 climates 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 these 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 this 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 1914-15 an area of 6,060,080 acres, including grassed lands, was under cultivation, of which the area under crops was 4,808,627 acres, and the area sown with grasses was 1,251,453 acres.

The progress of cultivation in quinquennial periods since 1881 is shown in the following table:—

Seasons ended June.	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	2,252,649	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	4,589,718	3,737,269	2·75	2·10
1914	5,803,296	4,568,841	3·15	2·48
1915	6,060,080	4,808,627	3·25	2·58

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 1914-15 the area amounted to 6,060,080 acres, an advance of 1,622,856 acres, or 36.6 per cent., since 1911. 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. A further substantial advance will be recorded for the 1915-16 season, as owing to the abnormal conditions due to the European war an area of 5,172,000 acres was sown with wheat alone.

Prior to the season of 1914-15 the general collection of statistics relating to primary products was carried out during the first quarter of the year, and the season was regarded as ending on 31st March. The productions of late crops—maize, potatoes, fruit, &c.—were ascertained at a later date, generally in July and August, and were included with the returns for the season ended in March of that year.

The statistical year now ends at 30th June, so that the collection of the statistics for the 1914-15 season was not commenced until July, 1915.

With regard to pastoral returns, the stock figures relate to the animals depastured on or about 30th June, instead of 31st December, and particulars of production in respect of the season as a whole—wool, dairy produce, &c.—are now shown for the year ended 30th June, instead of for the calendar year as formerly.

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 three years 1911-13 was about  $2\frac{3}{4}$  acres per head, but it has since advanced to  $3\frac{1}{4}$  acres per inhabitant. The following statement shows, in decennial periods to 1910 and for the period 1910-14, the relative increases in population and in area under crop:—

	1870-80.	1880-90.	1890-1900.	1900-10.	1910-14.
Increase per cent. in population ...	50.0	50.0	21.6	20.1	11.4
Increase per cent. in area under crop	98.1	35.5	186.8	38.3	42.2

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 four years of the period reviewed the rate of increase of the crop was nearly four times faster than that of the population.

The following statement of the area under crops in the seasons 1904-5, 1909-10, and 1914-15 shows the districts in which the greatest advances have been made:—

Division.	Actual Area under Crops.			Index Numbers. (1904-5=100).	
	1904-5.	1909-10.	1914-15.	1909-10.	1914-15.
<b>Coastal—</b>	acres.	acres.	acres.		
North Coast ... ..	105,418	105,726	91,169	100	86
Hunter and Manning ... ..	98,944	112,148	98,516	113	100
Cumberland ... ..	45,266	43,821	37,333	97	82
South Coast ... ..	48,662	56,348	44,061	116	91
<b>Total ... ..</b>	<b>298,290</b>	<b>318,043</b>	<b>271,079</b>	<b>107</b>	<b>91</b>
<b>Tableland—</b>					
Northern ... ..	71,955	78,844	74,856	110	104
Central ... ..	231,522	245,513	325,022	106	140
Southern .. ..	58,264	62,651	71,643	108	123
<b>Total .. ..</b>	<b>361,741</b>	<b>387,008</b>	<b>471,521</b>	<b>107</b>	<b>130</b>
<b>Western Slopes—</b>					
North ... ..	247,859	314,928	487,050	127	196
Central ... ..	374,843	511,921	735,114	137	196
South ... ..	408,636	574,809	937,126	141	229
<b>Total ... ..</b>	<b>1,031,378</b>	<b>1,401,658</b>	<b>2,159,290</b>	<b>104</b>	<b>209</b>
<b>Western Plains—</b>					
North ... ..	10,911	9,656	28,808	88	264
Central ... ..	250,362	255,788	447,468	102	179
<b>Total ... ..</b>	<b>261,273</b>	<b>265,444</b>	<b>476,276</b>	<b>102</b>	<b>182</b>
<b>Riverina ... ..</b>	<b>702,141</b>	<b>787,082</b>	<b>1,420,074</b>	<b>112</b>	<b>202</b>
<b>Western Division ... ..</b>	<b>18,150</b>	<b>15,629</b>	<b>10,387</b>	<b>86</b>	<b>57</b>
<b>All Divisions ... ..</b>	<b>2,672,973</b>	<b>3,174,864</b>	<b>4,808,627</b>	<b>119</b>	<b>180</b>

It is evident from these figures that during the ten years between 1905 and 1915 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 1904-5 has taken place in the South-western Slope, and amounts to 528,490 acres. Taken as a whole, the Western Slopes show an advance of 1,127,912 acres. The districts which show the heaviest proportions of the total cultivation are the Riverina, with 29.5 per cent, and the Western Slopes, with an aggregate of 44.9 per cent. in its three divisions. The remaining 25.6 per cent. of the total cultivation is distributed over the Coastal, Tableland, Western Plains, and Western Division, only 0.2 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 total area under crops, in conjunction with the total area, and the area in occupation, in each division during the season 1914-15:—

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.
<b>Coastal—</b>	acres.	acres.	acres.	acres.	per cent.	per cent.
North Coast ... ..	5,409,370	4,171,136	91,169	870,415	1·7	2·2
Hunter and Manning ... ..	10,390,920	6,219,385	98,516	152,277	·9	1·6
Cumberland ... ..	1,070,989	531,094	37,333	3,633	3·5	7·0
South Coast ... ..	5,484,122	2,413,934	44,061	180,754	·8	1·8
<b>Total ... ..</b>	<b>22,355,401</b>	<b>13,335,549</b>	<b>271,079</b>	<b>1,207,079</b>	<b>1·2</b>	<b>2·0</b>
<b>Tableland—</b>						
Northern ... ..	8,928,487	7,527,274	74,856	14,353	·8	1·0
Central ... ..	8,989,259	6,403,337	325,022	5,282	3·6	5·1
Southern ... ..	7,913,500	6,514,995	71,643	2,461	·9	1·1
<b>Total ... ..</b>	<b>25,831,246</b>	<b>20,450,606</b>	<b>471,521</b>	<b>22,096</b>	<b>1·8</b>	<b>2·3</b>
<b>Western Slopes—</b>						
North ... ..	9,813,555	8,742,012	487,056	4,905	5·0	5·6
Central ... ..	6,252,567	5,122,296	735,114	2,519	11·8	14·3
South ... ..	8,185,759	7,193,023	937,126	8,389	11·4	13·0
<b>Total ... ..</b>	<b>24,251,881</b>	<b>21,057,331</b>	<b>2,159,290</b>	<b>15,813</b>	<b>8·9</b>	<b>10·3</b>
<b>Western Plains—</b>						
North ... ..	10,030,901	8,164,235	28,808	250	·3	·4
Central ... ..	16,029,850	15,257,424	447,468	833	2·8	2·9
<b>Total ... ..</b>	<b>26,060,781</b>	<b>23,421,659</b>	<b>476,276</b>	<b>1,083</b>	<b>1·8</b>	<b>2·0</b>
Riverina ... ..	19,767,073	18,334,797	1,420,074	5,322	7·2	7·7
Western Division ... ..	80,368,498	78,072,371	10,387	60	...	...
<b>All Divisions ... ..</b>	<b>198,634,880</b>	<b>174,672,313</b>	<b>4,808,627</b>	<b>1,251,453</b>	<b>2·4</b>	<b>2·8</b>

Only 2·4 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 3·05 per cent., and represents about 3·25 acres per head of population. The proportion of the cultivation area on alienated holdings is only 8 per cent. of the total area of alienated rural lands in holdings of 1 acre and over; of the area in occupation, 55,493,856 acres are alienated and 119,178,457 acres are leased from the Crown. The area of Crown lands under crops amounted to only 344,112 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 4,200,332 acres, or 87·3 per cent., were cultivated by owners, and 608,295 acres, being 12·7 per cent., were cultivated by tenant occupiers, including Crown land lessees.

In addition to the area shown as cultivated and under sown grasses, 70,886,847 acres were ringbarked and partly cleared and under native grasses; and 2,136,754 acres were ready for cultivation on alienated holdings, consisting of 1,582,199 acres which had been cropped previously, 381,243 acres of new land cleared and prepared for ploughing, and 173,312 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.	1914-15.	1880-1.	1900-1.	1910-11.	1914-15.
Wheat ... ..	acres. 253,137	acres. 1,530,609	acres. 2,128,826	acres. 2,758,024	40·2	62·6	62·9	57·3
Maize ... ..	127,196	206,051	213,217	143,663	20·2	8·4	6·3	3·0
Barley ... ..	8,056	9,435	7,082	4,831	1·3	·4	·2	·1
Oats ... ..	17,922	29,383	77,991	43,476	2·9	1·2	2·3	·9
Hay ... ..	131,153	466,236	638,577	785,944	20·9	19·1	18·9	16·3
Green food ...	21,383	78,144	179,382	949,619	3·4	3·2	5·3	19·7
Potatoes ...	19,095	29,408	44,452	30,418	3·0	1·2	1·3	·6
Sugar-cane ...	10,971	22,114	13,763	11,421	1·7	·9	·4	·3
Vines ... ..	4,800	8,441	8,321	7,985	·8	·3	·2	·2
Orchards ...	} 24,565	{ 46,234 7,764	47,354 9,813	52,979 10,502	} 3·9	{ 1·9 ·3	1·4 ·3	1·1 ·2
Market-gardens								
Other crops ...	10,902	12,948	17,239	12,979	1·7	·5	·5	·3
Total ...	629,180	2,446,767	3,386,017	4,811,871	100	100	100	100

Since 1900 the figures include the areas double-cropped, viz., 1,203 acres, 4,096 acres, and 3,244 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 57 per cent. of the whole area under cultivation, but this does not represent its true relationship to the other crops, since an area of about 800,000 acres, which, under normal conditions, would have been harvested for grain, was "eaten-off" by stock on account of drought. Consequently, the area under green fodder crops during 1914-15 reached nearly 950,000 acres, as compared with 146,000 acres in the previous season. During the same time the proportion under maize has decreased from 20 per cent. to 3 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.				
	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
Wheat ... ..	18,261	18,263	19,469	21,453	20,419
Maize ... ..	20,951	18,472	18,187	16,831	14,856
Barley ... ..	1,447	1,445	1,869	2,159	2,511
Oats ... ..	13,187	12,754	13,483	14,683	14,112
Potatoes ... ..	8,081	7,271	6,865	7,293	5,776
Tobacco ... ..	94	115	148	162	120
Sugar-cane ... ..	927	1,168	764	739	714
Grapes ... ..	1,679	1,514	1,437	1,471	1,352
Fruit—Citrus ... ..	4,799	4,735	4,827	5,033	5,303
Other ... ..	9,325	9,110	8,960	9,365	8,967
Market Garden Produce ...	3,598	3,368	3,581	3,373	2,972
Total Cultivated Holdings	43,323.	47,810	48,943	50,955	49,269

Until 1913-14 the increase in wheat holdings is pronounced, but during the following season ploughing operations were restricted considerably owing to the inadequate rainfall in various districts, and there was a falling-off in the number of wheat holdings. During 1915-16 the number of wheat holdings increased to 22,252. 1913-14 marks the commencement of 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—about one-fourth—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.		
	1912-13.	1913-14.	1914-15.	1912-13.	1913-14.	1914-15.
	£	£	£			
Wheat ... ..	5,238,580	5,988,200	3,274,450	42·2	44·3	32·6
Maize ... ..	873,300	763,770	767,030	9·2	7·4	7·7
Barley ... ..	61,400	61,670	9,970	·3	·5	·1
Oats ... ..	223,210	214,130	111,350	1·8	1·9	1·1
Hay and straw ... ..	3,260,810	3,220,170	3,643,650	21·4	27·6	36·3
Green food... ..	360,380	348,820	513,000	4·3	3·0	5·1
Potatoes ... ..	338,710	348,930	277,270	5·1	2·9	2·8
Sugar-cane... ..	140,920	179,820	190,130	1·5	1·2	1·9
Grapes ... ..	90,010	91,060	74,800	·8	·8	·7
Wine and brandy... ..	63,670	46,490	45,120	·7	·5	·5
Fruit—Citrus ... ..	239,040	219,820	257,870	3·0	2·1	2·6
„ Other ... ..	305,660	244,950	233,130	3·8	2·6	2·3
Market-gardens ... ..	369,480	401,060	405,280	3·6	3·1	4·0
Other crops ... ..	251,620	251,760	228,710	2·3	2·1	2·3
Total ... ..	11,816,790	12,377,650	10,031,760	100	100	100

The value of agricultural production in the season 1914-15 was not so high as in that of the two preceding seasons, owing to drought conditions, but the enhanced values due to the war largely compensated growers for diminished production.

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 1914-15 being £6,918,100, or 68·9 per cent. of the total. The return of wheat for the season 1914-15 shows a total crop of only 12,830,530 bushels, valued at £3,274,450, the diminished production being due to the dry weather conditions which prevailed over a wide area of the State. It is gratifying to record that during the 1915-16 season the value to the farmers of the grain crop alone—taking only 3s. per bushel—was £10,098,500, or £67,000 in excess of the total value of all crops produced in the previous season. 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 value of green food is much higher than usual owing to the abnormally large area of wheat fed-off on account of the dry weather.

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 June.	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
1915	4,803,627	10,031,760	2 1 9

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. For the season 1914-15 the return per acre (£2 1s. 9d.) is the lowest since 1904-5. As previously indicated, the effects of the drought were very severely felt throughout the agricultural districts, and many crops failed absolutely, whilst others gave a very meagre return. In numerous instances the wheat and other cereal crops barely covered the ground, and they were practically valueless, even when eaten-off by stock. These failures reduced considerably the average value obtained per acre, although the high prices of all agricultural products partially counterbalanced the diminished production.

#### AVERAGE VALUE PER ACRE.

The average value per acre of various crops during the seasons 1913-15 are shown below in comparison with the average for the last ten years:—

Crop.	Average Values per Acre.			Average value for 10 years, 1906-15.
	19121-913.	1913-1914.	1914-1915.	
Grain—	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Wheat ... ..	2 7 0	1 17 4	1 3 9	1 16 2
Maize ... ..	4 19 0	4 17 0	5 6 9	4 11 8
Oats ... ..	2 12 5	2 1 5	2 11 3	2 5 10
Hay ... ..	3 8 2	3 19 7	4 11 6	3 13 1
Potatoes ... ..	9 18 6	9 0 2	9 2 4	10 19 8
Sugar-cane ... ..	22 19 3	29 0 3	31 12 6	22 13 10
Vineyards ... ..	20 14 7	18 15 6	17 15 0	16 18 7
Orchards ... ..	14 8 3	12 19 0	13 19 2	11 13 10
Market-gardens ... ..	37 10 6	37 16 2	38 11 10	32 12 2

SHARE-FARMING.

The division of the profits between the owners of the land and the farmers (called share-farming) has reached important dimensions. The system is applied to dairy-farming also, especially in the coastal districts north of county Cumberland, but in comparison with the area cultivated, the area for dairies is inconsiderable. During 1914-15, 283 share dairy-farmers were employed on 144 holdings, of which 5,393 acres were under fodder crops chiefly, and 83,825 acres were used for grazing and other purposes. In addition, 1,068,187 acres were cultivated by 4,213 farmers on 2,090 holdings devoted to the production of crops alone.

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 1914-15 were as follow:—

Division.	Number of—		Area farmed on shares.	Area for grain only.						
	Holdings.	Share Farmers.		Wheat.	Maize.	Making Barley.	Other Barley.	Oats.	Rye.	Broom Millet.
Coastal—			acres.	acres.	acres.	acs.	acs.	acs.	acs.	acs.
North Coast ...	7	14	774	...	558	...	...	...	...	...
Hunter and Manning	14	21	2,878	333	389	...	47	10	...	35
Metropolitan ...	1	1	18	...	...	...	...	...	...	...
South Coast ...	1	2	312	...	128	...	...	...	...	...
Total ..	23	38	3,982	333	1,075	...	47	10	...	35
Tableland—										
Northern ...	20	36	2,473	741	604	59	4	285	...	...
Central ..	153	276	52,042	39,783	131	...	...	325	25	...
Southern ...	17	27	3,766	2,837	...	...	...	217	...	...
Total ..	190	339	58,281	43,361	735	59	4	827	25	...
Western Slopes—										
North ...	264	586	97,840	74,355	155	...	...	180	...	24
Central ...	392	710	161,519	125,883	...	85	20	610	...	...
South ...	546	1,168	331,499	250,235	1,025	70	90	3,009	...	...
Total	1,202	2,464	590,858	450,473	1,180	155	110	3,799	...	24
Western Plains—										
North ...	18	27	3,062	2,454	...	...	...	...	...	...
Central ...	200	359	103,194	84,195	...	...	...	60	...	...
Total	218	386	106,256	86,649	...	...	...	60	...	...
Riverina ...	457	986	314,203	197,992	...	88	...	320	...	...
Western Division	...	...	...	...	...	...	...	...	...	...
Total, N. S. Wales...	2,090	4,213	1,073,530	778,808	2,990	302	161	5,016	25	59

In addition to the grain shown in the preceding table, the following crops were also cultivated:—

Division.	Hay.			Green food.	Potatoes.	Other root crops	Grapes and other Fruit.	Kitchen Garden Produce.	Pumpkins and Melons, &c.	Tobacco.
	Wheaten.	Oaten.	Lucerne.							
	acres.	acres.	acres.	acres.	acres.	acres.	acres.	acres.	acres.	acres.
Coastal—										
North Coast ...	...	...	2	197	12	4	1	...	...	...
Hunter and Manning	110	24	770	1,096	27	4	12	3	18	...
Metropolitan ...	...	18	...	...	...	...	...	...	...	...
South Coast ...	12	61	...	103	8	...	...	...	...	...
Total ...	122	103	772	1,396	47	8	13	3	18	...
Tableland—										
Northern ...	259	323	4	11	183	...	...	...	...	...
Central ...	6,948	2,533	296	1,250	608	...	66	70	...	7
Southern ..	141	531	20	...	17	...	2	1	...	...
Total ...	7,348	3,387	320	1,261	808	...	68	71	...	7
Western Slopes—										
North... ..	2,218	...	68	20,497	1	1	2	...	5	334
Central ...	12,919	836	67	21,099	...	...	...	...	...	...
South... ..	29,784	3,495	244	43,506	...	...	41	...	...	...
Total ...	44,921	4,331	379	85,102	1	1	43	...	5	334
Western Plains—										
North... ..	411	...	...	197	...	...	...	...	...	...
Central ...	7,250	...	...	11,689	...	...	...	...	...	...
Total ...	7,661	...	...	11,886	...	...	...	...	...	...
Riverina ...	25,653	566	...	89,572	...	...	12	...	...	...
Western Division	...	...	...	...	...	...	...	...	...	...
Total, N. S. Wales...	85,705	8,387†	1,471	189,217*	856	9	136	74	23	341

\* Includes 184,872 acres of wheat, 276 acres of maize, 156 acres of barley, 1,276 acres of oats, 66 acres of rye, 557 acres of sorghum, 4 acres of cane, 130 acres of rape, and 1,880 acres of lucerne.

† Includes 85 acres of barley hay.

#### 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 1914-15 the total area sown with wheat increased by

380,000 acres, but the area harvested for grain—2,758,024 acres—was 447,373 acres less than in 1913-4, and represented only 57 per cent. of the whole area under cultivation, as compared with 70 per cent. in the previous year. Owing to the dry season, the wheat crops on 815,561 acres—mainly intended for grain—failed to mature, and in consequence were eaten-off by stock, or otherwise used as green food.

During the previous eight seasons the area similarly treated—although reaching 128,813 acres in 1907-8—did not exceed 56,590 acres annually over the whole period.

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 season 1907-8 and 1915-16 in comparison with 1897-8:—

Division.	Area under Wheat for Grain.			Proportion in each District.		
	1897-8.	1907-8.	1915-16.	1897-8.	1907-8.	1915-16.
	acres.	acres.	acres.	per cent.	per cent.	per cent.
Coastal ... ..	16,192	4,940	12,537	1·6	·4	·3
Tableland—						
Northern ... ..	20,686	6,362	6,920	2·1	·4	·2
Central ... ..	80,318	62,587	86,156	8·1	4·5	2·0
Southern ... ..	22,421	4,990	12,734	2·2	·4	·3
Total ... ..	123,425	73,939	105,810	12·4	5·3	2·5
Western Slopes—						
North ... ..	59,330	172,907	458,313	6·0	12·4	10·8
Central ... ..	102,136	273,025	698,678	10·3	19·6	16·5
South ... ..	198,268	274,950	964,451	19·9	19·9	22·8
Total ... ..	359,734	720,882	2,121,442	36·2	51·9	50·1
Western Plains ...	31,589	142,979	596,396	3·2	10·3	14·1
Riverina ... ..	460,474	445,537	1,397,434	46·4	32·0	33·0
Western Division...	1,936	1,894	1,455	·2	·1	.....
All Divisions ...	993,350	1,390,171	4,235,074	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 1916, however, the proportions in each district changed considerably. The Tablelands, for instance, now include only 2·5 per cent. of the whole area, as against 12·4 per cent. in 1898, and the Riverina 33 per cent., as against 46·4 per cent., while the Western Slopes have increased from 36·2 per cent.



to 50·1 per cent., and the Western Plains from 3·2 per cent. to 14·1 per cent. The largest relative increase in area has been in the Western Plains, where it is now more than eighteen times the area of 1898. The North-western Slope is next, followed closely by the 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 83 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.	1915-16.	1897-8.	1907-8.	1915-16.
	bushels.	bushels.	bushels.	bushels.	bushels.	bushels.
Coastal ... ..	329,274	23,996	108,110	20·3	4·9	8·6
Tableland—						
Northern ... ..	300,215	90,728	63,566	14·5	14·3	9·2
Central ... ..	933,296	479,404	1,378,044	11·6	7·7	16·0
Southern ... ..	242,556	42,176	206,815	10·8	8·5	16·2
Total... ..	1,476,067	612,308	1,648,425	12·0	8·3	15·6
Western Slopes—						
North ... ..	1,208,859	1,070,344	5,788,460	20·4	6·2	12·6
Central ... ..	1,398,967	2,033,284	11,975,140	13·7	7·4	17·1
South ... ..	1,849,521	2,482,004	17,588,525	9·3	9·0	18·2
Total ... ..	4,457,347	5,585,632	35,352,125	12·4	7·7	16·7
Western Plains ... ..	563,066	611,852	6,029,350	17·8	4·3	10·1
Riverina ... ..	3,725,421	2,306,188	24,177,095	8·1	5·2	17·3
Western Division ... ..	8,936	15,908	8,285	4·6	8·4	5·7
All Divisions ... ..	10,560,111	9,155,884	67,323,390	10·6	6·6	15·9

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 1915-16, 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.	1915-16.	1907-8.	1915-16.
Coastal ... ..	50.5	77.4	7.3	32.8
Tableland—				
Northern ... ..	30.7	33.5	30.2	21.2
Central... ..	77.9	107.3	51.4	147.7
Southern ... ..	22.6	56.8	17.3	85.3
Total ... ..	59.9	85.7	41.5	111.7
Western Slopes—				
North ... ..	291.4	772.5	88.5	478.8
Central... ..	267.3	684.0	145.3	856.0
South ... ..	138.7	486.4	134.2	951.0
Total ... ..	200.4	589.7	125.3	793.1
Western Plains ... ..	452.1	1,888.0	108.8	1,070.8
Riverina ... ..	96.8	303.5	101.9	649.0
Western Division ... ..	97.8	75.2	178.0	92.7
All Divisions .. ..	139.9	426.3	86.7	637.5

A great proportion of the immense area of the State, hitherto devoted exclusively to pastoral pursuits, consists of land which could be utilised profitably 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 confined formerly to small farmers, is 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.

GOVERNMENT WHEAT-MARKETING SCHEME, 1915-16.

Owing to the extraordinary conditions arising out of the state of war, the marketing of Australian wheat of the 1915-16 season presented unusual difficulties. The quantity of wheat available for export was the largest on record, and shipping space has been, and still is, difficult to obtain. The Governments of the Commonwealth and of the wheat-producing States—New South Wales, Victoria, South Australia, and Western Australia—therefore decided to assume control of the crop, and to arrange for receiving, financing, shipping, and marketing the wheat. The Minister for Agriculture in each State controls the State organisation appointed to receive the wheat and load it on ship.

Questions of shipping and finance as affecting the general scheme are arranged by a Central Committee, consisting of the Prime Minister of the Commonwealth and the State Ministers for Agriculture, with the assistance of an advisory board representing the wheat-exporting firms, the firms acting as Government agents in the States, the Commonwealth chartering agents, and the associated banks of Australia.

The internal State organisation to carry out the scheme is arranged by the State Governments. Agents have been appointed to receive the wheat at various centres on behalf of their respective Governments, to issue certificates showing the quantity and quality, to store, to consign to shipping ports, and to ship the grain. Arrangements were made in the first instance for a part-payment to holders of certificates on the basis of 3s. per bushel f.o.b. at the principal ports of shipment—being 2s. 6d. per bushel to the farmer, and 6d. per bushel to the expenses account for railway freight and other handling charges—the difference between the amount thus received and the average price for all the wheat exported from the States, less expenses, including interest, will be paid to holders of certificates at the close of the season.

The selling is entrusted to a London board, consisting of the High Commissioner for Australia, the Agents-General of the States concerned, in co-operation with the London representatives of the principal Australian wheat-buying firms. Selling commission and charges are at fixed rates, and the returns for the sales of each cargo are credited to the exporting State. Provision is made for supplying millers with wheat.

After all the exportable wheat from a State has been sold and its wheat account credited with the proceeds, the amount remaining will be divided amongst the farmers *pro rata* on the quantities delivered to the Government agents, this being a further payment for their wheat.

In New South Wales the firms which have hitherto purchased and handled the wheat have been appointed as Government agents. Commission is payable at the rate of 3½d. per bushel, which covers cost of receiving, sampling, stacking, protecting, trucking, storing at port, and loading on ship. The agents are responsible to the Government for the weight and condition of the wheat they receive; they provide bags, and undertake all necessary re-bagging at country or port stacks.

The flour-millers have been appointed as Government agents also to receive wheat for trade requirements, and to issue certificates. The millers receive commission at the rate of 1½d. per bushel, and pay the Government fortnightly for the wheat they use.

On delivery at the country station or mill siding, the farmer receives a certificate on which he may obtain at the local bank an advance at the rate of 2s. 6d. per bushel f.a.q. wheat; arrangements were made in September, 1916, for a further advance of 6d. per bushel.

Similar arrangements will be made for the disposal of the Australian wheat crop for the 1916-17 season.

#### 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 supplies the machinery and horses necessary to work the land, also the necessary labour, 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 ten seasons ending with 1914-15 is shown below:—

Season.	Area.	Season.	Area.
	acres.		acres.
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
1909-10	364,579	1914-15	1,019,385

Of the area cultivated on the shares system in 1914-15, 578,527 acres were in the Western Slopes and 312,415 acres in the Riverina Division.

Further particulars regarding wheat-growing on the shares system will be found on pages 827 and 828.

EXTENSION OF WHEAT CULTIVATION.

The progress of wheat-growing for many years was slow and irregular, and it was not until 1878 that the area exceeded 200,000 acres. During the next eight years the area increased by 100,000 acres, and in 1886 it was 337,730 acres. Since then the area has fluctuated considerably, but the general tendency has been to advance, and in 1898 1,319,503 acres were reaped for grain. In 1910 the two-million acres mark was reached, and three years later the area increased to 3,205,397 acres. A large area failed during 1914 on account of the dry weather, but the area harvested for grain in 1915—4,235,074 acres—was over 1,000,000 acres in advance of the figures for 1913, and was the highest on record.

The season of 1914-15 was a period of low production; but as in the case of the drought of 1902-3, it was followed by a season of abundance. In 1915 the ploughing season proved favourable, and in consequence of the war in which the Empire is engaged, farmers increased their wheat areas to such an extent that with an opportune rainfall, and especially in the South-western Slope and Riverina divisions, the resultant harvest exceeded the previous highest production in 1913-14 by over 77 per cent., and was nearly two-and-a-half times greater than the average annual production during the quinquennial period ended with 1914-15. The average yield—15.9 bushels per acre—is the highest since 1903-4, and is 5 bushels above the average of the previous ten years.

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	1906-7	1,866,253	21,817,938	11.69
1880-1	253,137	3,717,355	14.69	1907-8	1,390,171	9,155,884	6.59
1885-6	264,867	2,733,133	10.45	1908-9	1,394,056	15,483,276	11.11
1890-1	333,233	3,649,216	10.95	1909-10	1,990,180	28,532,029	14.34
1895-6	596,684	5,195,312	8.71	1910-11	2,128,826	27,913,547	13.11
1900-1	1,530,609	16,173,771	10.56	1911-12	2,380,710	25,088,102	10.54
1901-2	1,302,070	14,808,705	10.64	1912-13	2,231,514	32,487,336	14.56
1902-3	1,279,760	1,585,097	1.24	1913-14	3,205,397	38,020,381	11.86
1903-4	1,561,111	27,334,141	17.51	1914-15	2,758,024	12,830,520	4.65
1904-5	1,775,955	16,464,415	9.27	1915-16*	4,235,074	67,323,390	15.90
1905-6	1,939,447	20,737,200	10.69				

\* Advance figures—subject to revision.

Apparently 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 1.24 bushels in the season 1902-3. During the whole period there were only eight seasons when the yield fell below 10 bushels per acre, the drop in each case being due to drought conditions, and 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, to the use of fertilisers, and to more economical harvesting appliances; furthermore rust, smut, and other forms of disease in wheat have been less frequent and less general in recent years.

During the month of July in each year inquiries as to the area under wheat are made by the Statistician, the particulars for each grower being entered in specially prepared books, which contain details of the actual area under wheat, and the production 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 required also 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 tabulation the results are published, and the books are returned to the collectors during October for revision and necessary amendment. 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 would be misleading, if based solely on the yields obtained either in 1914 or in 1915. Owing to the disturbed conditions in Europe, the returns for a number of countries for these years are simply estimates

based upon fragmentary data, and do not give an accurate indication of the productivity of the various countries to which they relate.

In Australia, also, wheat production during the 1914-15 season was considerably below normal, owing to the widespread effects of drought.

For these reasons, therefore, particulars of the latest annual production, together with the average production during the last three years, are shown in the following table:—

Country.	Production.		Country.	Production.	
	1915.	Average 3 years (1913-1915).		1915.	Average 3 years (1913-1915).
	bushels.	bushels.		bushels.	bushels.
New South Wales	67,323,000	39,391,000	Canada ... ..	336,258,000	243,085,000
Victoria ... ..	58,521,000	31,799,000	Austria-Hungary	230,934,000	211,193,000
South Australia ...	34,135,000	18,200,000	Italy ... ..	170,541,000	184,796,000
Western Australia	23,191,000	13,049,000	Argentina ... ..	178,221,000	159,839,000
Queensland ... ..	2,000,000	1,785,000	Germany ... ..	160,000,000	159,006,000
Tasmania ... ..	1,162,000	632,000	Spain ... ..	139,298,000	122,596,000
			Roumania ... ..	89,241,000	73,916,000
Total, Australia	186,332,000	104,856,000	United Kingdom	76,358,000	66,385,000
			Turkey—In Europe	18,000,000	18,000,000
			In Asia ... ..	35,000,000	35,000,000
New Zealand ... ..	6,633,000	5,681,000	Bulgaria ... ..	46,212,000	42,374,000
			Egypt ... ..	39,148,000	36,802,000
United States ... ..	1,011,505,000	888,634,000	Algeria ... ..	34,654,000	33,834,000
Russia ... ..	833,965,000	806,272,000	Japan ... ..	23,669,000	24,467,000
British India ... ..	383,376,000	352,700,000	Chile ... ..	19,092,000	19,660,000
France ... ..	258,102,000	287,264,000	Persia ... ..	16,000,000	15,333,000
			Belgium ... ..	8,000,000	12,247,000

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 the conduct of ploughing operations 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 annual 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 also must 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—especially in the districts of scanty rainfall—has enabled farmers to secure profitable returns with a precipitation much less than that required formerly; consequently 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. Of this increase 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 on the average from 65 to 70 per cent. of the 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 for this period drops to 50 or 60, and in the northern wheat country ranges from 45 to 55 per cent.

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, the majority of the farmers do not obtain results by any means the maximum 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 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, and 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 the system 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; and his wheats, which rank amongst the most prolific grain varieties, are largely cultivated throughout the State. 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.

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 deals with:—

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. *Millers' 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, 1916:—

Class of Wheat.		1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.
Farrer wheats, strong flour varieties.	Strength	50.9	52.6	54.5	51.9	53.2	52.5	53.3	51.0	54.1	53.0
	Gluten	11.5	15.6	16.9	14.1	13.2	13.8	14.5	14.3	14.4	13.8
Farrer wheats, medium strong flour varieties.	Strength	47.3	47.1	49.5	47.5	47.1	46.8	47.0	46.0	44.9	49.0
	Gluten	10.2	15.0	17.8	12.1	13.3	12.6	12.2	12.9	10.0	14.6
Farrer wheats, all kinds ..	Strength	49.8	50.8	53.4	49.7	49.9	49.8	48.4	48.2	47.0	48.7
	Gluten	11.1	15.4	17.1	13.4	13.3	13.2	14.6	14.4	13.5	14.8
Weak flour wheats .. ..	Strength	46.9	46.5	48.7	49.1	45.8	44.9	45.0	45.2	45.7	47.8
	Gluten	9.2	13.4	12.3	14.2	11.3	10.4	11.8	10.1	12.3	11.5
Wheats at R. A. S. Show Strong white.	Strength	48.4	52.5	53.5	50.0	53.4	52.7	53.1	52.8	53.8	52.5
	Gluten	9.3	12.2	11.9	13.8	12.5	13.4	15.3	13.2	13.1	14.0
Wheats at R. A. S. Show Soft white.	Strength	45.4	46.4	49.2	47.8	47.0	45.2	47.0	46.2	46.7	46.0
	Gluten	8.3	10.2	8.6	12.1	11.0	10.6	11.2	11.3	12.9	13.3
F.A.Q. for New South Wales	Strength	46.1	48.5	48.0	48.0	45.0	45.0	46.0	45.0	47.0	45.0
	Gluten	9.4	10.6	12.2	10.4	10.2	11.9	11.9	11.5	12.9	11.4
Millers' flour .. ..	Strength	48.0	49.9	49.9	48.5	46.7	47.9	47.4	49.8	47.4	44.9
	Gluten	9.9	14.6	15.6	10.2	9.8	11.4	11.4	11.5	12.0	12.4

INCREASE IN THE WHEAT YIELD.

It has been shown that the area under wheat for grain is 4,235,074 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 15.9 bushels per acre is rather low, as will be seen from the table below.

The averages shown are based on the latest available returns:—

Country.	Average yield per acre (1913-15).	Country.	Average yield per acre (1913-15).
	bushels.		bushels.
United Kingdom ... ..	33.03	United States ... ..	16.29
Germany ... ..	*32.32	Italy ... ..	15.35
Canada ... ..	21.26	India ... ..	11.73
France ... ..	18.78	Russia ... ..	11.45
Hungary ... ..	*17.06	Argentina ... ..	9.82

\* No Official Statistics available for 1914-15.

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 in many of the outlying districts are being replaced gradually, and it is confidently expected that the yield will be considerably increased. The lack of system in farming is almost necessarily prevalent amongst pioneers in new countries, and in many instances the settlers have begun with insufficient capital and with very little practical knowledge.

#### FALLOWING.

During the last seven or eight seasons excellent object lessons have been furnished 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.

Farmers' Wheat Experiment Plots have been conducted by the Department of Agriculture for the last six seasons, and the results compared with the average yield for the State are most instructive:—

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
1914-15	4 39	13 0

#### 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	1883	5 1½	5 2	1900	2 9	2 8
1866	8 4½	8 0	1884	4 3	4 3	1901	2 7	2 7
1867	4 3	4 4	1885	3 10½	3 7½	1902	3 2	3 2½
1868	5 9	5 9	1886	4 3½	4 5	1903	*	*
1869	4 9	4 10	1887	3 10	3 11	1904	3 0½	3 0¾
1870	5 0	5 1½	1888	3 6	3 6½	1905	3 4½	3 3¾
1871	5 7½	5 9	1889	4 9	5 3	1906	3 1½	3 2½
1872	5 0½	5 3	1890	3 6	3 6	1907	3 0½	3 1½
1873	5 1	5 8½	1891	3 7½	3 10	1908	4 4	4 5½
1874	6 9	6 1½	1892	4 9	4 9	1909	4 0½	4 6½
1875	4 7½	4 6	1893	3 6½	3 6	1910	4 1¼	4 1
1876	5 1½	5 6	1894	2 11	2 8	1911	3 7¾	3 5
1877	6 1½	6 6	1895	2 7	2 7	1912	3 9¼	3 8½
1878	6 1½	5 7½	1896	4 4½	4 5	1913	3 6½	3 7
1879	5 0	4 9½	1897	4 8	4 6½	1914	3 8	3 9½
1880	4 8	4 9	1898	4 0	4 0	1915†	5 6	5 6
1881	4 1	4 3	1899	2 7½	2 9	1916†	5 1¾	5 0¼
1882	5 5	5 6						

\* No sales. † Officially fixed.

In February, 1916, the official f.o.b. price per bushel of wheat for flour for home consumption was 5s. 3½d., but this price was reduced to 4s. 10¼d. on 25th March. Millers handling their own supplies obtained the wheat at 1½d. per bushel less than the f.o.b. price.

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 1908-9-10 the prices were higher than in any year since 1897. During the period 1911-14 the prices were considerably lower than those of the previous three years, but in 1915 and 1916, owing to the abnormal conditions due to drought and war, prices were higher and regulated by the Government and varied from 4s. 10¼d. to 5s. 6d. per bushel.

The average values of wheat in the United Kingdom for the years 1910 to 1914 are shown below:—

Country of Origin.	Average Value per Quarter.				
	1910.	1911.	1912.	1913.	1914.
	s. d.	s. d.	s. d.	s. d.	s. d.
Australia ... ..	37 2	34 10	38 5	37 6	36 6
Canada ... ..	36 9	34 10	35 2	34 8	37 5
United States ... ..	37 3	34 9	35 9	35 1	37 3
India ... ..	35 5	33 7	37 0	36 6	39 5
Argentina ... ..	34 11	33 4	35 6	35 8	34 1
Russia... ..	35 7	33 4	37 6	33 11	33 6
United Kingdom ... ..	31 8	31 8	34 9	31 8	34 11

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 WHEAT.

Wheat-growing ranks as one of the important industries of the State, and various attempts have been made to secure data to form an accurate estimate of the cost of wheat production. The question has always excited considerable interest, but as the cost, either for grain or for hay, depends largely upon the area cultivated and the methods of culture, the experiences of individual farmers have caused a wide diversity of opinions. The subject is of far-reaching importance, both to the producer and to the consumer, and merits careful consideration.

From inquiries made several years ago, when the system of fallowing was not so extensive as at the present time, it appeared, after taking into account the various producing factors—preparation of the soil, different methods of harvesting, and variations in railway and other freights—that the cost of landing wheat in Sydney ranged from 2s. to 2s. 6d. per bushel on the basis of a 10-bushel crop. This did not include any allowance for interest on capital, nor for rent. But the increased cost of labour and machinery, and the adoption of improved methods of cultivation during recent years, necessitate a re-casting of the estimate.

In actual practice much depends upon the farmer's methods. One person will perform the same class of work with less expenditure of labour and money than another, and as the cost varies according to the return, it is impossible to reconcile the statements of costs which have been published from time to time. For this reason reference has been made to data prepared and published by the Department of Agriculture as a result of the experience gained in connection with the various experiment farms, and from other sources.

The average yield of grain during the ten years ended 1914-15 is just under 11 bushels per acre. This average is based on the returns from all areas, whether they be fallowed or unfallowed, manured or unmanured.

The proportion of new and fallowed land utilised for wheat is increasing steadily, and now represents about one-third of the total area sown.

During recent years fallowing has proved of great benefit for increasing the production, and in connection with a large number of trials extending over a period of five years on private farms, the average yield was 21½ bushels per acre. This is about twice the average yield obtained throughout the State, but it does not follow that the cost of sowing and harvesting a crop on fallowed land is double the cost of an ordinary crop of half the size on unfallowed land.

Wheat-growing is a business undertaking, and as such it should be conducted on well-devised lines, taking advantage of any method which tends to reduce the cost of production or to increase the output.

For the purposes of this inquiry it is assumed that modern methods are employed, and that the land is fallowed. The items of expenditure for harrowing and cultivation are therefore greater than would be the case if the land were ploughed, worked, and sown in one season.

Rent or interest on the capital value of the land must be included, and as this item varies with the value of the land, the value of the land may, for convenience, be assumed to be £6 per acre, so that in the case of fallowed land it is necessary that two years' rent at 5 per cent. be debited against the crop. Cartage, although not strictly coming within the scope of an estimate of cost of production, must, however, be considered in its relationship to the profitableness of wheat culture. This charge varies in proportion to the distance from the railway, but 1s. per ton per mile may be taken as a basis, and this is equal to about 2¼d. per bushel for a distance of about 7 miles.

Under normal conditions the following is the cost of producing an acre of wheat for grain on fallowed land, the estimated yield being 20 bushels per acre, the data being as deduced by the Department of Agriculture:—

	per acre.		
	s.	d.	s. d.
Ploughing, once ... ..	6	0	} 12 6
Harrowing—3 times at 9d. ... ..	2	3	
Disc-cultivating, once ... ..	2	6	
Spring-tooth cultivating, once ... ..	1	9	
Drilling ... ..	1	6	} 8 0
Seed (45 lb. at 5s. per bushel) ... ..	3	9	
Superphosphates (½ cwt. at 5s. per cwt.)... ..	2	6	
Pickling seed... ..	0	3	
Harvesting with Harvester ... ..	3	0	} 6 6
Bags—7 per acre at 6d. ... ..	3	6	
	<hr/>		
	27	0	
Two years' Rent at 6s. ... ..	12	0	} 15 9
Cartage to Rail at 2½d. per bushel ... ..	3	9	
	<hr/>		
			42 9

If the land were unfallowed the following expenditure would be saved:—

	per acre.		
	s.	d.	s. d.
Two harrowings at 9d. ... ..	1	6	
Disc-cultivating ... ..	2	6	
3½ bags at 6d. ... ..	1	9	
Cartage ... ..	1	10	
One year's rent ... ..	6	0	
	<hr/>		
			13 7

During the ten years ended with 1914-1915 the average return to farmers has been nearly 3s. 4d. per bushel at country railway stations. Applying an average of, say, 3s. 3d. per bushel—to leave a safe margin—to the returns from fallowed and unfallowed land, the following results are obtained:—

Fallowed Land.		Unfallowed Land.	
	£ s. d.		£ s. d.
Total receipts—20 bushels at 3s. 3d. ...	3 5 0	11 bushels at 3s. 3d. ...	1 15 9
Less expenses ... ..	2 2 9	Less expenses (42s. 9d. — 13s. 7d.) ... ..	1 9 2
	<hr/>		<hr/>
Profit (2 years) ... ..	1 2 3	1 year ... ..	0 6 7
Equals per annum ... ..	0 11 1½		

From the foregoing it will be seen that the profit from fallowed land for one year is 11s. 1½d. per acre as compared with 6s. 7d. per acre for unfallowed areas.

Wheat is purchased largely as on trucks at country railway sidings, so that the purchaser would have to pay the freight to Sydney, and other charges incidental to handling and shipping. This additional charge is assessed at about 4½d. per bushel, but naturally it varies in accordance with the length of train haulage.

Apart from these charges is 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, which are regulated solely by the London parity. The cost for exportation includes charges for freight, transshipment, insurance, and selling charges, and varies also with the type of vessel and other conditions, but always assists to raise the cost by at least another 1s. per bushel.

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.				
	1911-12.	1912-13.	1913-14.	1914-15.	1915-16.
	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.
3·25 millimetre mesh ...	0 5·5	0 0	0 0	0 0	0 0
3·00 " " ...	2 6·5	0 11·75	1 7	0 12	0 10½
2·75 " " ...	12 9·4	7 0	10 8·5	12 1·5	5 8½
2·50 " " ...	18 13·1	22 1·5	20 14·75	17 0·25	18 11½
2·25 " " ...	19 8·8	24 15·75	23 2·25	21 2·75	26 3¼
2·00 " " ...	5 2·9	5 3	5 0	7 3	5 11½
Broken and pinched grain	2 1·2	1 8	2 8	1 8·5	3 8½
Oats, whiteheads, &c. ...	0 8·6	0 12	0 7·5	0 12	0 10½
	61 8	62 4	64 0	60 8	61 0

The f.a.q. standard of New South Wales for the 1915-16 harvest has been fixed at 61 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	62¾
1902-1903	None fixed—drought.		1911-1912	1st " 1912	61¾
1903-1904	23th Jan., 1904	61	1912-1913	31st Jan., 1913	62¾
1904-1905	19th " 1905	59½	1913-1914	19th " 1914	64
1905-1906	24th " 1906	62	1914-1915	15th Feb., 1915	60¾
1906-1907	24th " 1907	62¼	1915-1916	21st " 1916	61

*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 from rain and 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			

The abnormal conditions during 1914 and 1915 render further comparisons practically useless, but the above 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 the wheat-producing States of Australia.

The annual production cannot yet be compared with that of the United States, Canada, or other large wheat countries, but it is increasing rapidly.



and has already reached the stage when the adoption of the elevator system is necessary for its development.

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 3 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 Argentine 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 Canada, but it is increasing rapidly, and additional wheat tracts are being continually developed.

The most recent investigations made on behalf of New South Wales were in 1913. A report on the elevator system in North America was obtained from the New South Wales Government representative in the United States, and the President of the Burrell Engineering and Construction Company of Chicago, U.S.A., visited the State to report upon bulk-handling in New South Wales.

In the latter report it was recommended that two terminal elevators be erected, one at Sydney and one at Newcastle; that 1,000 box cars be provided 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 was estimated 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 1914-15, 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 ... ..	53,524	37·3	1,356,621	25·3
Hunter and Manning ... ..	31,196	21·7	726,042	23·3
Cumberland ... ..	2,529	1·8	91,986	36·4
South ... ..	10,966	7·6	352,959	32·2
Total ... ..	98,215	68·4	2,527,608	25·7
Tableland—				
Northern ... ..	19,609	13·6	334,134	17·0
Central ... ..	5,114	3·6	116,118	22·7
Southern ... ..	651	0·4	10,584	16·3
Total ... ..	25,374	17·6	460,836	18·2
Western Slopes... ..	19,775	13·8	183,768	9·3
Western Plains, Riverina, and Western Division... ..	299	0·2	2,613	8·7
All Divisions... ..	143,663	100·0	3,174,825	22·1

The North Coast, the most important maize-growing district in the State, yielded in 1914-15 over 42 per cent. of the total production, although the average yield was only 25·3 bushels per acre. After the North Coast, the Hunter and Manning district shows the largest area under crop. On the North Coast, the best counties were Clarence and Dudley, which gave 30·3 and 28·0 bushels per acre respectively. In 1914-15 the average yield on the Tableland was 18·2 bushels per acre, compared with 25·6 for 1913-14. On the Western Slopes the yield was only 9·3 bushels per acre, the corresponding figure for 1913-14 being 22 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 large 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	1914-15	143,663	3,174,825	22·1

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 four years have been below the average for the decennial period ended 1915.

The rainfall during the 1914-15 season was distributed most unfavourably in the north coastal districts, and the total absence of the usual monsoonal rains adversely affected the maize crops generally. The area planted with the cereal was the lowest since 1886-7, and the production—with the exception of the drought year 1902-3—was also the lowest since the same season.

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 1914-15 the Department of Agriculture continued the work of maize-breeding on the State farms, with a view to raising improved pure seed maize. To prevent crossing, only one variety is grown on each farm, except at Grafton, where an early and late variety may be grown without risk. Maize differs from most other crops in being readily cross-fertilised, and the initial work in breeding consists largely in eliminating the impurities represented by previous crossing with other varieties.

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 Central and South-western Slopes, and Riverina. The area under crop for grain in 1915-16 was 61,500 acres, which produced 1,410,000 bushels, being 22.9 bushels per acre, as compared with 43,476 acres, which yielded 513,910 bushels in the previous year. A dry season was responsible for the largely diminished acreage and production in 1914-15, and except on the tablelands, the results were very disappointing. During the 1915-16 season, wheat was in such demand owing to the European war and also to the depletion of local stocks, due to the low production in the previous year, that the cultivation of oats—in common with other cereals—was not engaged in to anything like the usual extent. The season, however, was favourable, and the area sown for grain shows an advance of nearly 50 per cent. as compared with the previous season, and the quantity of grain produced was nearly three times as large. The southern tableland gave the best average, with 27.2 bushels per acre. In the whole Tableland division 16,550 acres were under crop, and yielded 397,400 bushels, or 24 bushels per acre; on the South-western Slope, 17,760 acres gave 415,000 bushels, or 23.4 bushels per acre, while in the Riverina the production was 420,600 bushels from 18,270 acres, or 23 bushels per acre. These three divisions accounted for about 87 per cent. of the total production. In the remainder of the State there were only 8,920 acres under cultivation, which yielded 177,000 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	1905-6	38,543	883,081	22.9
1895-6	23,750	374,196	15.8	1906-7	56,431	1,404,574	24.9
1896-7	39,530	834,633	21.1	1907-8	75,762	851,776	11.2
1897-8	28,605	543,946	19.0	1908-9	59,881	1,119,558	18.7
1898-9	19,874	278,007	14.0	1909-10	81,452	1,966,586	24.1
1899-0	29,125	627,904	21.6	1910-11	77,991	1,702,706	21.8
1900-1	29,383	593,548	20.2	1911-12	71,047	1,155,226	16.3
1901-2	32,245	687,179	21.3	1912-13	85,175	1,674,075	19.7
1902-3	42,992	351,758	8.2	1913-14	103,416	1,835,405	17.7
1903-4	51,621	1,252,156	24.3	1914-15	43,476	513,910	11.8
1904-5	40,471	652,646	16.1	*1915-16	61,500	1,410,000	22.9

\* Advance figures—subject to revision.

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 has exceeded 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 1915-16 being 2,021 acres—as compared with 981 acres in the previous season—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-two 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	1905-6	9,519	111,266	11.7
1895-6	7,590	96,119	12.7	1906-7	7,879	152,739	19.1
1896-7	6,453	110,340	17.1	1907-8	11,890	75,148	6.3
1897-8	5,151	99,509	19.3	1908-9	9,507	166,538	17.5
1898-9	4,459	64,094	14.4	1909-10	15,091	272,663	18.1
1899-0	7,154	132,476	18.5	1910-11	7,082	82,005	11.6
1900-1	9,435	114,228	12.1	1911-12	10,803	129,008	11.9
1901-2	6,023	103,361	17.2	1912-13	16,916	289,682	17.1
1902-3	4,557	18,233	4.0	1913-14	20,610	303,447	14.7
1903-4	10,057	174,147	17.3	1914-15	4,861	48,500	9.6
1904-5	14,930	266,781	17.9	*1915-16	6,030	97,000	16.1

\* Advance figures—subject to revision.

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 14.6 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 1914-15 was 2,853 acres with a yield of 12·5 bushels per acre. During the 1915-16 season it was estimated that 2,060 acres produced 22,000 bushels. 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 £23,000 per season. In 1914-15 owing to unfavourable conditions, the area under broom millet and the average production per acre were much smaller than in previous years, and 2,027 acres yielded 10,400 cwt. of fibre and 6,580 bushels of seed, valued at £14,560 and £1,580 respectively. The average yield of fibre during the last ten seasons was 7 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.	1909-10.	1910-11.	1911-12.	1912-13.	1913-14.	1914-15.
AREA.						
	acres.	acres.	acres.	acres.	acres.	acres.
Wheaten ... ..	380,784	422,972	440,243	704,221	534,226	569,431
Oaten ... ..	178,968	142,805	147,710	182,955	211,606	161,320
Barley ... ..	1,844	1,014	1,246	1,708	1,395	1,179
Lucerne ... ..	68,995	70,559	63,824	56,420	52,479	52,582
Rye, &c. ... ..	73	1,227	1,126	1,762	1,424	1,432
Total ... ..	630,664	638,577	654,149	947,066	801,130	785,944

**PRODUCTION.**

	tons.	tons.	tons.	tons.	tons.	tons.
Wheaten ... ..	565,549	467,669	423,262	779,500	588,127	354,531
Oaten ... ..	255,781	193,064	155,653	212,266	256,814	147,420
Barley ... ..	2,451	1,128	1,201	2,108	1,552	1,112
Lucerne ... ..	157,331	179,860	147,423	112,761	107,045	108,934
Rye, &c. ... ..	89	1,359	935	1,640	1,509	1,238
Total ... ..	981,201	843,080	728,474	1,108,275	955,047	613,235

**AVERAGE PRODUCTION PER ACRE.**

	tons.	tons.	tons.	tons.	tons.	tons.
Wheaten ... ..	1·49	1·11	·96	1·11	1·10	0·62
Oaten ... ..	1·43	1·35	1·05	1·16	1·21	0·91
Barley ... ..	1·33	1·11	·96	1·23	1·11	0·94
Lucerne ... ..	2·28	2·55	2·31	2·00	2·85	2·07
Rye, &c. ... ..	1·22	1·17	·83	·93	1·06	0·86
All varieties ... ..	1·56	1·32	1·11	1·17	1·19	0·78

In 1914-15 about 72·5 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 about 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.

During 1915-16 the area cropped for hay increased considerably, and the preliminary results of the harvest show—excluding lucerne for which returns are not yet available—that 1,041,468 acres produced 1,460,610 tons, or slightly more than 28 cwt. per acre. 897,098 acres were cut for 1,240,980 tons of wheaten hay, and 216,000 tons of oaten hay were obtained from 143,000 acres.

#### 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	1914-15	949,619	1,251,453

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.

The largely-increased area under green food during 1914-15 was due entirely to the dry season, as the crops on considerable areas failed to mature either for grain or for hay. No less than 815,561 acres sown with wheat were fed-off by stock, or otherwise used for green feed.

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 1914-15 there were 49,595 acres grown for green food, and if these be added to the area previously shown as being under hay, viz., 52,582 acres, there were altogether 102,177 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.				
	1910.	1911.	1912.	1913.	1914-15.
	tons.	tons.	tons.	tons.	tons.
Coastal ... ..	18,125	12,099	8,222	6,633	8,333
Tableland ... ..	2,328	1,649	608	920	1,060
Western Slopes ... ..	2,654	3,097	4,527	3,450	700
Western Plains and Riverina ... ..	6,409	3,632	5,162	7,863	870
Western Division ... ..	100	...	...	...	...
Total ... ..	29,616	20,477	18,519	18,366	10,963

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 1914-15, the quantity made was only 10,963 tons. This amount was made on 83 farms, and was valued at £17,714; 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	23,855	48,754	2·04	1913-14	38,725	106,849	2·76
1905-6	26,374	50,386	1·91	1914-15	30,418	40,709	1·34

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 2·38 tons per acre, and the highest 3·11 tons per acre, in 1906-7. The small production during 1914-15 was due mainly to the effects of the dry season.

The average wholesale prices per ton of potatoes at Sydney during the season 1914-15 are shown below:—

Month.	Local.	Victorian.	Tasmanian.	Month.	Local.	Victorian.	Tasmanian.
1914.	£ s. d.	£ s. d.	£ s. d.	1915.	£ s. d.	£ s. d.	£ s. d.
July ...	4 5 9	.....	5 12 0	January ...	6 0 0	.....	7 7 9
August ...	4 0 0	.....	6 6 8	February...	3 10 0	.....	5 0 0
September...	3 8 9	.....	6 8 9	March ...	4 3 3	5 17 6	7 3 9
October ...	3 16 3	.....	6 15 0	April ...	5 8 3	6 1 8	7 5 0
November...	4 10 0	.....	7 0 0	May ...	4 0 0	6 10 0	7 3 9
December ...	10 2 6	.....	10 15 0	June ...	8 3 0	8 5 0	8 7 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 1,255 acres were planted with onions, turnips, mangel-wurzel, carrots, sweet potatoes, arrow-root, and artichokes. The area under turnips was 416 acres, which yielded 1,203 tons, or 2.90 tons per acre. The probable reason for the small attention paid to the growth of onions, of which there were 284 acres, yielding 1,154 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 532 acres, and the estimated yield 2,060 tons. In many cases pigs were turned in on the crops. Of mangel-wurzel there were only 11 acres under cultivation, which yielded 84 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 9 acres in the Hunter River district and 25 in the Riverina District, 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 of dried leaf.		Season.	Area.	Production of dried l af.	
		Total.	Average per acre.			Total.	Average per acre.
	acres.	cwt.	cwt.		acres.	cwt.	cwt.
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
1909-10	1,096	6,498	6.8	1914-15	1,563	10,065	6.4

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 1914 was 17.80 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 either newly planted, or over which it was unfit for the mill, and was, therefore, 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
1905-6	10,313	11,492	21,805	201,998	19·59
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
1914-15	6,012	5,409	11,421	181,606	30·21
†1915-16	6,030	5,392	11,422	157,748	26·17

\* Exclusive of areas cut for green food or plants since 1910.

† Advance figures—subject to revision.

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 1915-16 there were only 11,422 acres, only one acre more than in the previous season.

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 1914-15 was 6,012 acres, with a total yield of 181,606 tons, or an average of 30·21 tons per acre.

Preliminary returns for the 1915-16 season show that 6,030 acres were cut for crushing, the production of cane being 157,748 tons. The average yield per acre was 26·17 tons, or about 4 tons per acre less than in the previous season, the diminished yield being due to dry weather.

The county of Clarence is the principal centre of cultivation, containing 4,787 acres devoted to the production of sugar. The yield obtained in 1914-15 from 2,514 acres of productive cane amounted to 73,838 tons, showing an average of 29·37 tons per acre. In the county of Rous cane is grown on 4,171 acres. The yield in the county of Rous was 69,929 tons, or an average of 31·02 tons per acre, cut on an area of 2,254 acres. In the county of Richmond the area under sugar-cane was 2,463 acres, of which 1,244 acres were cut, giving a total yield of 37,839 tons of cane, or an average of 30·42 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 1914-15 on 713 holdings, 538 of which had areas ranging up to 25 acres; 152 plantations ranged from 26 to 50 acres, 22 from 51 to 100 acres, and only 1 had an area 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 was, in 1914-15, about 17s. 10d. 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.

#### 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	1904-5	8,840	5,298	928,160	175
1865-6	2,126	1,243	168,123	135	1905-6	8,754	5,279	831,700	157
1870-1	4,504	2,371	342,674	145	1906-7	8,521	4,951	1,140,000	230
1875-6	4,459	3,163	831,749	263	1907-8	8,483	4,644	778,500	168
1880-1	4,800	2,907	602,007	207	1908-9	8,251	4,472	736,262	165
1885-6	5,247	2,876	555,470	193	1909-10	8,330	4,561	808,870	177
1890-1	8,044	3,896	842,181	216	1910-11	8,321	4,354	805,600	185
1895-6	7,519	4,390	885,673	202	1911-12	8,231	4,260	850,210	200
1900-1	8,441	4,534	891,190	197	1912-13	8,163	4,403	719,100	163
1901-2	8,606	4,889	868,479	178	1913-14	8,153	4,498	561,100	125
1902-3	8,790	5,041	806,140	160	1914-15	7,985	4,113	549,140	134
1903-4	8,940	5,101	1,086,820	213					

The total production has fluctuated much during the last ten years, the total area planted being now 7,985 acres, of which 4,113 acres yielded 549,140 gallons of wine. The total number of vineyards in 1915 was 1,352.

The average area of each vineyard was nearly 6 acres, and the area planted with vines still in an unproductive stage was 1,229 acres. The average yield in 1914-15 was 134 gallons per acre, and during the last ten years 171 gallons. Wine produced in New South Wales during the year 1914-15 was valued at £43,470, and brandy distilled by vignerons for fortifying purposes at £1,650.

During the 1914-15 season the grape crop in the Murray district practically failed on account of the dry weather. Large areas of diseased vines were rooted out and have been replanted with other varieties on phylloxera resistant stocks. The area under vines has been increased considerably on the Murrumbidgee irrigation area, advancing from 60 acres in 1912-13 to 219 acres in 1913-14, and 450 acres in 1914-15.

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 Cumberland. The extent of country devoted to this branch of the industry in 1914-15 included 2,186 acres, with a production of 2,667 tons of grapes, an average of 1.22 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 1914-15 there were 457 acres cultivated for drying purposes, and the yield was 3,843 cwt., comprising 2,013 cwt. of sultanas, 578 cwt. of raisins, and 1,252 cwt. of currants. 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.	bushels.	bushels.
1890-1	8,737	2,551	11,288	924,960	106
1895-6	8,759	3,197	11,956	595,494	68
1900-1	11,013	3,952	14,965	648,628	59
1901-2	11,670	4,091	15,761	725,455	62
1902-3	12,550	3,657	16,207	509,239	41
1903-4	13,418	3,310	16,728	784,154	58
1904-5	14,486	2,918	17,404	791,838	55
1905-6	15,054	2,795	17,849	886,493	59
1906-7	15,173	2,582	17,755	783,749	52
1907-8	16,430	2,087	18,517	1,295,721	79
1908-9	16,570	2,040	18,610	784,758	47
1909-10	17,214	2,644	19,858	1,250,107	73
1910-11	17,465	2,643	20,108	1,478,306	85
1911-12	17,271	3,152	20,423	1,682,310	97
1912-13	17,213	3,360	20,573	1,534,000	89
1913-14	16,643	3,800	20,443	1,153,980	69
1914-15	16,675	5,237	21,912	1,445,624	87

In 1890-1 the area under citrus fruit was 11,288 acres; in 1914-15 this had increased to 21,912 acres, of which 16,675 were productive. The latest production was equal to 87 bushels 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 1914-15 was 5,303, 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 productiv. 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
1905-6	25,189	3,577	28,766	189,195	7 10 0
1910-11	20,498	6,748	27,246	271,930	13 5 4
1911-12	19,602	8,166	27,768	373,807	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
1914-15	18,500	12,567	31,067	233,130	12 12 0



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 1914-15 was greater than in any season since 1903-4.

At the Murrumbidgee Irrigation Settlement fruit trees are being planted very extensively, especially peaches, apricots, and oranges. Whilst the area of citrus trees has increased from 60 acres in 1912-13 to 428 acres in 1914-15, the area under other fruit has advanced during the same period from 152 acres to 1,511 acres, the great majority of the trees still being in the unproductive stage.

About two-fifths of the area devoted to fruit culture is in the county of Cumberland, the actual acreage in 1914-15 being citrus, 11,099 acres; other, 8,055 acres. For the year 1914-15, production of fruit other than citrus was valued at £13 9s. 8d. per acre, as compared with £12 12s. 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.	1913-14.			1914-15.		
	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 ... ..	242,643	866,843	bushels. 661,217	312,643	851,564	bushels. 848,670
Lemons ... ..	33,921	231,330	180,597	50,628	247,790	209,013
Mandarins ... ..	59,915	398,298	310,318	94,647	397,033	386,096
Other citrus ... ..	2,076	2,178	1,8	798	2,123	1,845
Apples ... ..	406,921	535,797	495,898	411,743	534,278	519,003
Peaches and Nectarines ... ..	244,919	501,926	354,054	311,628	488,246	379,673
Pears ... ..	93,898	127,064	152,537	122,032	131,124	125,778
Cherries ... ..	80,606	139,638	41,748	74,994	109,126	59,172
Apricots ... ..	28,970	87,532	86,572	53,222	85,570	61,137
Plums and Prunes ... ..	66,102	125,731	133,465	75,151	122,702	109,070
Quinces ... ..	7,318	38,375	41,984	9,119	34,179	33,738
Persimmons ... ..	1,386	5,714	8,377	1,637	5,690	6,633
Passion Fruit ... ..	.....	.....	38,897	.....	.....	52,295
All other ... ..	11,556	16,423	21,376	20,478	18,804	16,753

For 1914-15 the number of passion-fruit vines was stated as 151,529, of which 120,721 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 1914-15 there were in the State 2,972 holdings, comprising 10,502 acres, cultivated as market-gardens, the average size of each garden being 3·1 acres. The value of the production for the year was £405,280. 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	243,678	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	362,480	37 10 0
1913-14	3,373	10,607	401,060	37 16 2
1914-15	2,972	10,502	405,280	38 11 10

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 1914-15 there were 507 acres, outside market-gardens, under cultivation for tomatoes, which yielded 101,148 half-cases, or 200 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 1914-15 there were 346 acres under crop for peas and beans, which gave a total yield of 10,010 bushels, being 28·9 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 1914-15 was 2,912 acres, and the yield 12,493 tons, being 4.29 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 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.

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, 1915:—

- 1,735,769 cases and half-cases of fruit, tomatoes, and cucumbers.
- 191,150 bunches of bananas.
- 1,001 crates of cauliflowers and cabbages.
- 823,385 bags of vegetables.
- 1,748 cwt. of plants and nuts.

Of the above, 33,312 cases of fruit, 715 bags of potatoes, and 595 bags of other vegetables were infected with disease.

Under the Quarantine Act, 335,015 bunches of bananas, 29,352 cases of pines and bananas, 158,795 centals of fruit, 1,107,774 centals of cereals, seed, pulse, &c., 106,346 centals of vegetables, bulbs, &c., 22,351 centals of nuts, and 135,576 plants were examined. Fruit and grain to the extent of 21,476 centals were condemned, in addition to which 20,352 plants, including 20,000 vines imported from France, were also quarantined.

Under the Commerce Act, 71,513 packages of canned and fresh fruit, 26,492 bags of potatoes, 5,272 bags of maize and seed, and 350 packages of plants were passed for export.

#### 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 during the 1914-15 season was £5,159,959, or an average of £1 1s. 6d. per acre cultivated.

Division.	Area farmed.	Value of machinery.	Value per acre.
	acres.	£	£ s. d.
Coastal ... ..	271,079	576,934	2 2 7
Tableland ... ..	471,521	685,225	1 9 1
Western Slopes ... ..	2,159,290	2,144,332	0 19 10
Western Plains and Riverina ...	1,896,350	1,698,167	0 17 11
Western Division ... ..	10,387	55,301	5 6 6
<b>Total ... ..</b>	<b>4,808,627</b>	<b>5,159,959</b>	<b>1 1 6</b>

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	2,645,950	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	575,637	1,514,636	6,724,082
1913	5,029,938	617,109	1,744,891	7,391,938
1914-15	5,159,959	589,593	1,864,034	7,613,586

\* 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 four 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:—

Season.	Area farmed. acres.	Value of Machinery. £	Persons Employed.			Machinery, per acre. £	Persons employed per acre.
			Males.	Females.	Total.		
1904-5	2,672,973	2,459,346	63,111	5,742	68,853	.92	.024
1905-6	2,838,081	2,557,262	62,419	5,008	67,427	.90	.024
1906-7	2,824,211	2,645,980	63,448	5,715	69,163	.94	.021
1907-8	2,570,137	2,599,156	57,327	5,385	62,712	1.01	.024
1908-9	2,713,971	2,851,974	55,324	5,409	60,733	1.05	.022
1909-10	3,174,864	3,042,364	59,541	4,770	64,311	.96	.020
1910-11	3,381,921	3,414,621	59,091	5,228	64,319	1.01	.019
1911-12	3,629,170	4,859,037	56,476	3,496	59,972	1.34	.017
1912-13	3,737,269	4,633,809	57,209	2,848	60,057	1.24	.016
1913-14	4,568,841	5,029,938	59,337	2,699	62,036	1.10	.014
1914-15	4,808,627	5,159,959	57,602	3,356	60,958	1.07	.012

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 1914:—

Division.	Total Area Manured.	Quantities of Manure used.	
		Natural (Stable-yard, &c.).	Artificial (Superphosphates, Bone-dust, &c.).
Coastal—	acres.	loads.	cwt.
North Coast ... ..	409	357	542
Hunter and Manning ... ..	1,927	12,848	5,863
County of Cumberland ... ..	18,511	124,642	88,055
South Coast ... ..	7,042	13,192	9,466
Total ... ..	27,889	151,039	103,926
Tableland—			
Northern ... ..	625	1,506	447
Central ... ..	83,899	8,671	42,971
Southern ... ..	17,534	3,917	9,339
Total ... ..	102,058	14,094	52,757
Western Slopes—			
North ... ..	330	30	180
Central... ..	153,408	420	60,925
South ... ..	734,439	2,000	324,648
Total ... ..	888,177	2,450	385,753
Western Plains and Riverina—			
North ... ..	.....	.....	.....
Central... ..	120,079	887	43,863
Riverina ... ..	1,192,728	3,953	517,365
Total ... ..	1,312,807	4,840	561,228
Western—			
East of Darling ... ..	271	1,588	510
West of Darling ... ..	37	1,077	.....
Total ... ..	308	2,665	510
Total, New South Wales ... ..	2,331,239	175,088	1,104,174

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 1914 was only 48·5 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:—

Season.	Total Area cultivated.	Total Area Manured.	Manures used—		Area Manured, per cent. of Total cultivated.
			Natural.	Artificial.	
	Acres.	Acres.	Loads.	cwt.	
1907-8	2,570,137	423,678	144,021	276,120	16·5
1908-9	2,713,971	509,262	216,078	310,899	18·8
1909-10	3,174,864	826,197	189,008	433,187	26·0
1910-11	3,381,921	1,030,536	186,204	500,312	30·5
1911-12	3,629,170	1,407,853	178,689	676,409	38·8
1912-13	3,737,269	1,643,788	170,312	779,123	44·0
1913-14	4,568,841	2,226,742	166,753	1,010,596	48·7
1914-15	4,808,627	2,331,239	175,088	1,104,174	48·5

The area on which natural manure only is used is comparatively small, and during 1914-15 the area treated in this manner was only 7,000 acres, the quantity applied in this manner being 55,620 loads. In conjunction with 76,788 cwt. of artificial fertilisers, however, 119,468 loads of natural manure were used on 18,498 acres, the balance of the area manured—2,305,741 acres—being treated with 1,027,386 cwt. of artificial fertilisers only.

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.

#### HAWKESBURY AGRICULTURAL COLLEGE.

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, horse, sheep, 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 the Summer School. In July, 1915, there were 121 regular students in attendance, and 1,107 acres out of the total of 3,430 acres attached to the College were under cultivation.

Dairy cattle of the Jersey and Red Poll breeds, and Romney Marsh sheep, are bred; also, stud pigs of various strains, which are distributed to farmers throughout the Commonwealth and New Zealand. In the poultry section the egg-laying competitions attract a large number of competitors.

#### EXPERIMENT FARMS.

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, breeding of horses, dairy cattle (notably Jerseys), swine (Berkshire), sheep, and poultry. The area under cultivation is 1,225 acres out of 3,406 acres. The course is for two years; a fee of £15 is charged for the first year, and £10 for the second year. During 1915 there were 51 students in attendance.

At Bathurst, particular attention has been devoted to the orchard, and to mixed farming and irrigation. A system of soil culture has been adopted by which a fodder crop rotates with a cereal crop, and a short summer fallow is allowed before sowing the cereal. Experiments with the cross-breeding of sheep are conducted, and a dairy herd of Kerry cattle is maintained. Of the total area of 691 acres, 515 are cleared and under crop. There were 38 students in attendance in 1915, the fees charged being similar to those at Wagga.

Wollongbar Farm, with an area of 734 acres (main farm 264 acres, Duck Creek 470 acres) is utilised in dairy-farming suitable for the North Coast district. Grasses and fodder plants are grown, the breeding of dairy cattle (Guernsey) and pigs is conducted; and at the Duck Creek (Branch) Farm sugar-cane and maize are cultivated.

At the Grafton Experiment Farm, area 1,075 acres, accommodation has been provided with the view of training apprentices in mixed farming suitable for sub-tropical districts; special attention is given to maize in establishing new varieties, and to experiments regarding methods of cultivation and fertilisation. Pigs, poultry, and Ayrshire dairy cattle are bred; and potatoes, fodder crops, and fruit are grown. A flock of Romney Marsh sheep was tested at Grafton for a period of several years, but the results were not profitable, and the sheep were transferred to the Hawkesbury College.

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. Extensive improvements have been made, and all the buildings are now of the most modern design; the dairy herds are Shorthorns and Holsteins. An interesting experiment was made recently in converting paspalum grass into stock silage. The present area of the farm is 403 acres.

The Glen Innes Farm, area 1,073 acres, is utilised for mixed farming and fruit-growing suitable for the Northern Tablelands. The stock includes pure-bred Lincoln sheep and Ayrshire cattle.

Cowra Farm, with an area of 1,011 acres, is the principal wheat breeding experiment station. A herd of Jersey dairy cattle is located at Cowra, also a flock of Border Leicester sheep.

At Pera Bore Experiment Farm, area 66 acres, experiments have been made with bore water in agriculture, and with methods of neutralising the chemical constituents in artesian water. Citrus fruits are cultivated, and a small flock of merino sheen is maintained.

The Yanco Experiment Farm was established in 1908 in connection with the Murrumbidgee irrigation scheme, for the purpose of testing the suitability of the soil and climate for the various crops to be grown under



irrigation. The area of the farm is 2,045 acres, of which 653 acres are irrigable, including 63 acres of orchard and a mother stock vineyard. A large portion of the farm is devoted to raising crops for the breeding stock and the working horses. Ostrich-farming and mule-breeding are important features of the work at this farm; a number of imported ostriches and donkeys are stationed there. The dairy cattle are pure-bred Jersey, and the pigs Berkshire.

In March, 1911, an Experiment Farm, with an area of 1,945 acres, was opened at Coonamble in connection with dry-farming. Wheat cultivation and sheep-farming are combined, and results indicate that profitable crops can be obtained on the black-soil plains by early sowing of quick-maturing varieties on well fallowed land. An artesian bore has been sunk, and experiments in connection with the growth of crops by means of irrigation with bore-water are being carried out.

The Trangie Experiment Farm, with an area of 9,736 acres, was established in 1914; part of the area which has a frontage to the Main Western Railway will be devoted to wheat experiments on a large scale, and the remainder will be used for the purpose of a stud merino farm.

#### DEMONSTRATION FARMS AND ORCHARD.

Demonstration Farms have been established in various parts of the State, with the object of demonstrating the commercial results of scientific principles which have been proved at the Experiment Farms. Demonstration Farms are in operation at Nyngan, Temora, Condobolin, and Forest Vale, also a Demonstration Orchard at Dural.

At the Nyngan Demonstration Farm, established in 1909, part of the area is used for experiments relating to problems of dry-farming which had been conducted previously at Coolabah. Investigations are carried on also in connection with merino sheep, with the object of raising a strain specially suitable for farmers and small landholders in the dry western areas. Six Swiss milch goats imported in 1914 are located at the Nyngan Farm. The area of the farm is 6,427 acres. The operations at Coolabah were abandoned on account of its distance from any railway.

The Temora Demonstration Farm, established in May, 1912, is situated in the Riverina wheat belt, on a branch of the Main Southern Railway, and has an area of 1,606 acres. The conditions are specially suitable for the production of seed wheat.

The Condobolin Demonstration Farm has an area of 1,348 acres, and is situated on a branch of the Main Western Railway. This farm is used to demonstrate modern methods of dry-farming and the use of suitable varieties of wheat, the soil being typical of a large portion of the western districts of the State. Operations were commenced in September, 1912.

Forest Vale Demonstration Farm has been established in connection with the Government share-farming area at Forest Vale, *via* Condobolin. Suitable methods of cultivation, &c., are to be demonstrated for the benefit of the tenants on the share-farms. The area of the Demonstration Farm is about 1,500 acres.

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.

#### VITICULTURAL STATIONS.

Operations at the Hunter Valley Viticultural Station, Raymond Terrace, were transferred during 1913 to an area of 100 acres at Narara, in the

Gosford district. 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, area 224 acres, there is a mother-stock vineyard to supply the necessary material for the propagation of vines at the Narara nursery, also experimental blocks of wine and table grapes.

#### EMU PLAINS IRRIGATION FARM.

The Emu Plains Irrigation Farm was acquired in 1914, and is utilised for vegetable growing and general farm work, by prison labour, to supply the needs of the various Government institutions. The area of the farm is 107 acres, and the greater portion will be watered by sprinklers, flooding, or furrow systems. An overhead system of irrigation has been installed to test its value for crops and vegetables.

#### NORTH BANGAROO STUD HORSE FARM.

This is a property of 4,914 acres which has been acquired at North Bangaroo, near Canowindra, for the breeding of high-class Clydesdale horses for the various Experiment Farms, &c., and for sale to farmers.

#### GOVERNMENT AGRICULTURAL TRAINING FARM, PITT TOWN.

This farm is controlled by the State Labour Branch of the Department of Labour and Industry. At 31st December, 1915, there were on the farm 10 students and 26 men. The number of students decreased considerably on account of the war, although special efforts were made to bring the advantages of the farm under the notice of lads who were possibly desirous of farm training. The lack of students has restricted farming operations, and this led to the initiation of a scheme of farm training for women, which it is hoped will counterbalance the shortage of male labour by the addition of female trainees. During July, 1916, four women students entered upon their training course.

#### 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 or farms for twelve months to receive practical and theoretical training in farming. From April, 1911, to 30th June, 1916, 2,164 boys arrived, 1,268 having been sent out as workers, 772 as trainees at Pitt Town Farm, and 124 as students and apprentices at Agricultural Colleges and Experiment Farms. 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 the term.

Recently the Trustees have 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 to sign

an undertaking to repay £8 in instalments extending over a period of eighteen months. In a number of cases where boys have been without means the Trustees paid the whole of the passage money on condition that £6 would be refunded out of the first year's wages.

The lads generally have kept their agreements very loyally, and the refunds to date amount to £2,877.

The original capital was £80,122, and with accrued interest, £12,381, the fund increased to £92,503. Of this amount £40,000 was donated towards the establishment of the Royal Australian Naval College at Jervis Bay. The total cost of management of the fund for seven years has been only £841. Other payments include passage money, £9,480; fees for students and apprentices at Pitt Town Training Farm and Government Experiment Farms, £4,590; loan to British Immigration League towards purchase of an immigrants' home at the Glebe, £5,342. The balance in hand at 30th June, 1916, was £32,163.

#### GOVERNMENT WHEAT FARM.

Wheat farming on an extensive scale has been undertaken by the Department of Agriculture at Tottenham. An area of 27,641 acres had been cleared at the end of March, 1915. Traction engines are employed in the ploughing, and approximately 11,000 acres were sown with wheat.

#### 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 districts, 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 farmer carries out the work without cost to the Department other than for seed, manure, and supervision, and 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 1914-15 the number of plots cultivated was 195, and the total area was 991 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 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 presents 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 authorised specially 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 at 30th June, 1915, there were 102 branches, with 3,669 members.

#### 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 main-

taining a high standard of products and other exhibits, and by making the people familiar 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, 1915, there were 170 Agricultural Societies registered for subsidy, and during that year 136 societies received subsidies amounting to £17,447. The membership of the subsidised societies was 28,843, the members' subscriptions amounted to £23,721, and the total value of prize money was £47,807, of which £34,867 was the basis for subsidy.

From 1879 to June, 1915, the sum of £575,007 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, 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 30th June, 1915, 13,740 advances (total value, £3,918,978) had been made to settlers, equivalent to £285 per loan, of which 7,880, representing £1,404,899, were repaid, leaving 5,860 advances current at that date, the average balance of principal being £429 per loan.

The operations of the bank, relating to advances to settlers, since 1911, have been as follow:—

Year.	ADVANCES MADE.			REPAYMENTS.		BALANCES REPAYABLE.		
	Number.	Total Amount.	Average.	Number.	Total Amount.	Number.	Total Amount.	Average.
		£	£		£		£	£
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
1914*	602	333,035	558	260	89,186	5,436	2,297,981	423
1915†	860	387,715	451	436	171,617	5,860	2,514,078	429

\* Half-year ended 30th June. † Year ended 30th June.

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.

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 Jul., 1907, during which bounty may be paid.	Rates of Bounty.	Maximum amounts payable in any one year.
	Years.		£
Cotton, Ginned ... ..	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	"  "  "  "  "	1,600
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 completely 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.

Country newspapers are supplied weekly with notes of the investigations and educational operations of the Department regarding improved methods of agriculture, dairying, stock-raising, &c. Efforts have been made by means of these notes to encourage methods of improvement in many phases of primary production; fallowing, rotation in cropping, and the cultivation of maize have been specially treated.

The revenue and expenditure of the Department of Agriculture for the year ended 30th June, 1915, were as follows:—

<i>Revenue.</i>		£	<i>Expenditure.</i>		£
Agricultural College, Experiment Farms, &c. ... ..		30,442	Departmental ... ..		450,613
Wheat Area Establishment Store Account ... ..		4,719	Subsidies and Grants ... ..		17,447
Repayments for Seed-wheat ... ..		171	Miscellaneous ... ..		2,247
Fees for fumigation, &c. ... ..		7,257	Agricultural College, Experiment Farms, &c. ... ..		94,750
Botanic Gardens, &c. ... ..		221			£65,057
Miscellaneous ... ..		233	<i>Less Refunds</i> ... ..		8,223
Stock Branch, &c. ... ..		4,074			556,834
Forestry ... ..		87,387	Forestry ... ..		47,292
		134,504	Stock and Brands, Pastures Protection ... ..		43,279
<i>Less Refunds</i> ... ..		235	Botanic Gardens, &c. ... ..		35,324
			Commercial Agents ... ..		3,125
<b>Total</b> ... ..		<b>£134,269</b>	<b>Total</b> ... ..		<b>£685,854</b>

The Departmental expenditure included £340,510 for the relief of necessitous farmers, to whom seed-wheat and fodder were advanced on deferred payment, £47,172 for clearing land and wheat-growing at Woodlands and Trangie, and £5,379 for the purchase of the homestead block at Woodlands.

#### AGRICULTURAL EDUCATION AND EXPERIMENTS.

In order to obtain a thorough knowledge of local conditions and to afford an education in agriculture on scientific bases, the Government has established an agricultural college, experiment farms, and farmers'

experiment plots; and has engaged experts to guide and assist the farmers. The agricultural training at the University and in State schools, including the Hurlstone Agricultural High School, has been described in the chapter relating to Education.

The Government agricultural and experiment farms consist of the Hawkesbury Agricultural College, eleven experiment farms, three demonstration farms, a demonstration orchard, two viticultural stations, and an irrigation farm.

Farm schools are in operation at three experiment farms, the number of students at 30th June, 1915, being: Wagga, 26; Bathurst, 17; and Yanco 3.

Farm-apprentice schools have been established at Wollongbar, Cowra, Glen Innes and Grafton farms, and at the Dural Demonstration Orchard; the course enables students to qualify as farm labourers and small farmers; the fee is £5 for six months, and a second half-year's training may be given in return for the apprentices' labour.

Schools of instruction for dairy factory-workers are held periodically in dairying districts; during the year 1914-15 six schools for cream graders and testers were held; 98 students attended; 48 certificates of competency in milk and cream testing were issued, and 26 in cream-grading.

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.

The total area of experiment farms is 36,064 acres, of which 6,390 acres were under cultivation during the season 1914-15, the areas for various crops being as follows:—

	acres.
Cereals and hay ... ..	2,894
Fruit-trees and vines ... ..	439
Green fodder ... ..	1,541
Sown grasses and forage plants ... ..	1,412
Root and other crops ... ..	104

Much of the remaining area allotted to these farms is cleared partially; portion of it is under fallow, and portion ready for ploughing.



## 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 liable to dry seasons which affect extensive areas. A large portion of the State receives an adequate and regular rainfall, but there is a considerable extent of country where 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.

### *Control of Water Conservation and Irrigation Works.*

At the beginning of the year 1913 all the water conservation and irrigation works within the State of New South Wales were placed under the control of a Commissioner for Water Conservation and Irrigation. These works include the Murrumbidgee Irrigation Areas, the irrigation settlements at Hay and Wentworth, the former administered by a trust and the latter by the Minister for Agriculture; water conservation works which had been controlled by the Public Works Department; and water trusts and artesian bore trusts operating under the Water Act.

### *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 irrigation season; 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; large branch canals and a series of subsidiary canals and distributing channels through the area to be irrigated; concrete checks and regulators throughout the entire system; and meters for measuring the flow to each farm. Roadways to serve each farm, and a general surface drainage system, are also included in the scheme.

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, and to allow a supply of water during the summer months to augment the natural flow of the river for the benefit of riparian holders downstream. The reservoir will have a capacity of nearly 33,613 million cubic feet—771,641 acre-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 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 sluice-way 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 upstream. During the winter freshets the wickets are lowered, thus affording a clear waterway in the river channel.

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 (1,000 cubic feet per second) has been recommended by the Public Works Committee. There are two main branch canals, viz., the Gogeldrie Canal, which offtakes at 47 miles from Berembé and runs approximately parallel to the Narrandera-Hay railway through the Yanco Area, and the Mirrool Branch Canal, 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 200,000 acres, which it is anticipated may be worked profitably in small blocks devoted to mixed farming, dairying, and stock raising, or fruit and vegetable growing, tobacco culture, &c. In addition there is a large area 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 about 6,000 farms and 100,000 people. With the aid of irrigation the soils and climate of these areas are suitable for the production of apricots, peaches, nectarines, prunes, pears, plums, almonds, melons, cantaloupes, and citrus fruits, also wine and table grapes, raisins, sultanas, figs, olives, and most varieties of vegetables. There is every probability that the cultivation of apples and walnuts will also be successful. Other products include wheaten and oaten hay, maize, lucerne, and fodder crops, such as sorghum and millets. Dairying, pig-raising, mixed farming, and ostrich farming are already being undertaken by settlers on the areas.

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 as outlined above is now under the control of the Water Conservation and Irrigation Commission.

The lands acquired for irrigation to date include the North Yanco Estate, the Gogeldrie holding, and various holdings in the Brobenah and Mirrool Creek districts—the total area acquired to 30th June, 1915, being about 322,000 acres, at an estimated cost of £865,585.

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, is served by an extension of the railway from Barellan. Farms varying in size from 2 acres to 200 acres have been made available. The small 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.

The "water right" or number of "acre-feet" of water allotted to each holding is definitely specified when a subdivision is notified. An "acre foot"

of water means such a quantity 12 inches deep as would cover an area of 1 acre with water. The cost of water is 5s. per acre-foot, and additional water may be obtained at a similar rate. The 50-acre farm is the largest "all-irrigable" unit, but to suit the requirements of dairymen and other stock farmers, blocks of larger areas are being made available. These comprise non-irrigable or "dry" areas in addition to the irrigable portion, to which is attached a statutory water right. Some of these mixed farms are 200 acres and upwards in extent. Areas of non-irrigable or "dry" land are being made available for the depasturing of stock or for wheat-growing, and these will be leased either as additional holdings for the individual, or in some cases, as commons for the joint use of the 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. A married woman, not judicially separated from her husband or subject to any other statutory disqualification, may (a) acquire by way of transfer, with the consent of the Minister, out of her own moneys, a lease within an irrigation area; (b) continue to hold a lease which she held before her marriage; and (c) hold a lease which may devolve on her by will or intestacy of a deceased person. The tenure is perpetual leasehold.

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.

Assistance is granted to settlers in connection with the erection of homesteads, barns, and outbuildings, the degree of assistance varying according to the size of the holding; repayments may be spread over a number of years.

Assistance is also granted for the construction of head ditches, grading, also such agricultural work as is necessary thereto, and up to a limit varying with the size of the block, the cost being repayable on terms; repayments for this form of assistance may be spread over a period of years. Fencing posts are available for purchase on terms. Fruit-trees and vines may be bought at the Government nursery, and terms for the repayment are fixed, having regard to the period which will elapse before the settler will obtain revenue from his cultivation work. Lucerne seed is supplied during the first planting season on terms, to a maximum value of £10, according to the settlers' requirements; and limited assistance is also given in connection with the purchase of horses for farm work.

A settler who adopts dairying as a temporary expedient while trees or vines are maturing, or as a permanent revenue producer, is assisted in the purchase of dairy stock; the amount of help given depends, *inter alia*, 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. Provided the settler makes good use of this assistance, and gives the cows proper care and attention, further assistance may be granted, the second lot of cows being supplied without deposit, but on the condition that repayment must be made during a period of twelve months. In cases where repayments are spread over several years, interest is charged on unpaid balances at the rate of 5 per cent. per annum. Pedigree bulls may be leased, and machinery and implements may be hired up to the limit of the Commissioners' plant.

The Government Savings Bank Commissioners have statutory powers to grant loans upon a mortgage or irrigation farm leases, and many settlers have already obtained monetary assistance in this manner. Concessions in railway fares and freights are made on New South Wales railways to *bona fide* applicants for land.

The actual terms on which assistance is granted by the Commission are subject to alteration as may be deemed necessary, but the information given above outlines the system at present adopted.

The annual charge for water supply is 5s. per acre-foot; but this charge is reduced to one-half for the first year, and is then increased yearly by 6d. per acre, so that a settler is not required to pay the full charge until he is in the sixth year of occupation.

Townships have been established at the centres of the Yanco and Mirrool Irrigation areas; the Commissioner is empowered to construct streets, and to provide water supply, sanitary, and other services, and has made full use of most of these powers for the benefit of residents. Factories for the manufacture of the settlers' products are operated by the Commissioners. The butter factory, equipped with modern plant, is capable of dealing with the product of 10,000 cows; the output during 1914-15 was 184,681 lb.

A vegetable and fruit canning factory also has been provided, the vegetables and fruits being purchased from the settlers. The products meet with a ready sale, and the output is increasing rapidly, both of canned fruits and vegetables, as well as of jam, sauces, and other commodities. As an adjunct to the canning factory, a pulping plant has also been installed at Mirrool, the idea being to forward the pulp to the central cannery for working up during the slack season. A bacon factory and abattoirs have been erected, and although operations are for the present confined to slaughtering for the butchers operating in the district and bacon curing, they may, as the settlement develops, be extended to include the chilling of fat lambs for the local market or freezing them for export. It is expected that for some years the plant will be capable of treating not only the pigs raised on the settlement, but considerable numbers from districts in the Riverina outside the irrigation areas.

The Mirrool settlement being situated over 30 miles from Leeton, settlers carrying on dairying have been under great disadvantages owing to the difficulty attending the transport of cream; consequently a cheese factory has been opened at Mirrool. Experiments already carried out have proved that a good marketable cheese can be produced on the irrigation areas.

One of the most important departmental undertakings on the irrigation areas is undoubtedly the State Nursery. For some years past the Leeton Nursery has been supplying trees to settlers, and this year a second nursery is being established at Mirrool. Every effort is made to supply only the best trees, free from disease; and as a safeguard the budding wood from proven trees in the Leeton Nursery and at Yanco Experiment Farm is used as much as possible.

A State experiment farm is in operation, and various commercial crops are treated on settlers' farms as to their fitness for local cultivation.

The methods of treatment and the marketing of the different products are being investigated, and the experience thus gained is at the disposal of settlers, free information and instruction being afforded by the Government officials on all agricultural matters and irrigation methods. An electric power-station has been erected near Yanco Siding; electric light and power are supplied to the various factories, business people, and residents of Leeton and Yanco, and the supply is available for settlers when the number of applicants in any centre warrants the connections.

On the 31st December, 1915, 881 farms were held, representing a total area of 40,546 acres. The revenue payable by these farms for rent and water rates is £28,146 17s. 6d.

In addition, 118 township and village blocks are in occupation, the annual rentals for which amount to £1,070 14s.; and 272 miles of roads, 305 miles of reticulation channels, and 217 miles of drains have been constructed. In the matter of cultivation, the following particulars indicate the extent of the work performed by the settlers:—1,210 acres under stone fruits, 225 under vines, 327 under citrus, 2,210 under lucerne, 10,350 under other fodder crops, and 450 acres under vegetables. The estimated population of the irrigation area is about 5,000 persons, and although the settlement is only in its fourth year it is estimated that the production this season has had a gross value of £100,000.

#### *Other 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, 1,364 acres have been subdivided into 92 irrigable blocks, 1,361 acres being held under lease in eighty-eight blocks. With the exception of 1,290 acres, which will be reserved as a common, the balance of the area is being made available mainly as grazing leases. During 1914-15, 1,178 acres were under cultivation, the greater part being devoted to fruit, including oranges, peaches, nectarines, pears, grapes, sultanas, and currants. In this area is instituted a dual system of irrigation and intense cultivation of small areas, and the results of the experiment will be regarded with interest, as of exceptional value from an educational standpoint. The pumping machinery consists of a suction-gas plant, supplying two engines of about 55 brake horsepower each, working two centrifugal pumps, with an average combined capacity of about 4,600 gallons per minute. With eight pumpings during the 1914-15 season, 166,514,600 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 annual rent at present varying from 1s. to 10s. per acre, the rate for water which may be fixed from time to time by the Commissioner, at present varies from 10s. to 30s. per acre per annum. 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 total weight of dried fruits produced on the area is as follows:—

Dried Fruit.	1912-13.	1913-14.	1914-15.
	cwt.	cwt.	cwt.
Apricots ... ..	127½	260	130
Nectarines ... ..	11½	16	3½
Pears ... ..	8	43	133½
Peaches ... ..	517½	768	653½
Lexias ... ..	520	568½	313
Currants ... ..	1,454	1,539½	532½
Sultanas ... ..	1,462½	1,772½	1,406½
Elemes ... ..	146	150	.....
Total ... ..	4,217	5,117½	3,178

In addition to the above, about 30 tons of currants were sent to Mildura, and 2,000 cases of fresh fruit were forwarded to Melbourne. It has been

proved beyond doubt that the Wentworth Area is eminently suited to the growth of citrus fruit, and some of the finest oranges grown in New South Wales are produced on this area.

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 997 acres by 80 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 may be fixed from time to time, and at present is £1 per acre per annum. The pumping machinery is similar to that at Wentworth, the capacity of the pumps being 4,000 gallons per minute. During 1914-15 season 130,454,544 cubic feet of water were supplied.

Dairying is the principal industry; the cultivation of fruit is not extensive owing to the distance from market.

#### *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 on 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 that the advantages and benefits to be derived from private works of water supply and irrigation are being more and more realised is shown by the increasing number of applications for licenses made yearly. During the year ended 31st December, 1915, 248 applications were made for new licenses, 2 applications for amended licenses, and 109 for the renewal of existing licenses. At the date mentioned approximately 960 licenses were in force.

#### *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-five artesian wells; (b) six 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 5,439,809 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 30th June, 1915:—

Bores.	Flowing.	Pumping.	Total.	Total Depth.
				feet.
For Public Watering-places, Artesian Wells, &c.	123	31	154	316,459
For Country Towns Water Supply ... ..	3	.....	3	4,354
For Improvement Leases ... ..	39	3	42	66,287
Total, Government Bores ... ..	165	34	199	387,100
Private Bores... ..	223	64	287	416,840

The average depth is 1,945 feet in the case of Government bores, and of private bores, 1,452 feet.

Of the wells at the end of June, 1915, the depth is stated in 486 cases, ranging from 89 to 4,338 feet. There is a preponderance of wells from 1,000 to 2,000 feet in depth, but neither the shallow wells under 500 feet, nor the very deep wells over 3,000 feet are so numerous in proportion as in Queensland. The two deepest wells in New South Wales are those at Boronga, in the county of Stapylton, with a depth of 4,338 feet and a daily outflow of 1,044,749 gallons; and at Dölgelly, in the parish of Careunga, in county Stapylton, with a depth of 4,086 feet, and an outflow of 592,588 gallons per day. The largest outflow is stated to be that at the Boobora bore, in the county of Stapylton, which yields 1,062,133 gallons a day, and has a depth of 3,225 feet. The flowing bores yield about 56 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 531 bores which have been sunk, 388 are flowing, and give an aggregate discharge of 99,350,000 gallons per day; 98 bores give a pumping supply, the balance of 45 being failures; the total depth bored represents 862,553 feet.

The flow from seventy 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 39,047,267 gallons per day, watering an area of 4,304,898 acres by means of 2,632 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; and 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 noticeable, and action has been taken to find whether this observed decrease is due to loss in supply under pressure, or to local causes, such as lateral leakage.

As a result of the investigation it appears that the decrease in flow in the original bore was due to loss of pressure head, and was not attributable to local causes.

#### *Shallow Boring.*

Water has been obtained from shallow bores by private enterprise in a very large number of districts, particularly west of the Dividing Range; generally speaking, these bores have not exceeded 200 feet in depth, and in many cases failure in respect of either quantity or quality is due possibly to the insufficient depth of the bores. There is also a large area of country in various localities which has not yet been tested for underground water at shallow depths.

For many years the question of the exploration by the Government of underground water, which could be reached at sufficiently shallow depths to provide a water supply for small settlers at a reasonable cost, has been under consideration, but until three years ago no definite action had been taken. In the latter part of 1912 the shallow-boring policy for settlers now in operation was formulated, and actual boring operations commenced early in 1913. The regulations under which the work is being carried out, briefly stated, provide for defined areas being declared shallow-boring districts with a boring centre. In the first instance a certain time is given within which applications for bores are received from settlers within the district. On the expiration of the time allowed, the sinking of the bores for those settlers whose applications have been approved by the Commissioner is undertaken in such order as to minimise the cost of transport from one site to another. The applicant is responsible for the transport of the plant to his holding, and must provide the necessary wood and water during the progress of the work. The Commissioner supplies all plant, material, casing, tools, labour, &c. The applicant, on signing an agreement for the hire of the plant, has the option of either paying cash for the completed work or availing himself of a system of time payment, without interest, spread over a period of five years. Every effort is made to carry out the work as expeditiously as possible compatible with good workmanship; but the settler is safeguarded against any excessive cost by the regulations, which provide that the completed cost shall not be less than a minimum of 7s. 6d. per foot, nor greater than a maximum of 11s. per foot. The maximum depth is 500 feet, as it is considered that the cost at this depth at the maximum price charged would be as much as a settler could afford to pay for a permanent water supply. It is not intended that the scheme should be wholly self-supporting, because failure to strike water in test bores means that the Government will have to bear the expense; but in regard to bores put down for individual settlers in tested country, the scheme promises to be payable.

Operations commenced with one plant only. The number has been increased gradually, until eight are now at work, and steps are being taken to purchase thirteen others.



Many applications have been received from settlers wishing to take advantage of the liberal conditions offered under the regulations, so that even when the thirteen plants referred to are all at work they will probably be insufficient to cope with the demand. Out of thirty bores undertaken up to the present, one was abandoned, as it was found impossible to recover lost tools, and another was a failure. Of the remaining twenty-eight bores completed, the cost to the settler has been about half the cost charged by private contractors, while in all the latter bores a small profit has been made after charging the settler the minimum cost.

There is no doubt that the added value of the holdings represented by the bores already put down is considerably in excess of their cost, and as fairly conclusive evidence of this it might be stated that in several instances the Government Savings Bank has made the settler a sufficient advance to enable him to pay the total cost in cash.

In addition to the work under the Shallow-boring Regulations outlined above, three additional plants are engaged in sinking bores on Crown lands in the Pilliga Scrub for the Lands Department. The primary object of these bores is to supply water for sleeper-getters, but later on, when the required timber has been taken out, it is proposed to offer the lands for settlement, when the bores will be taken over by the incoming settlers. Under this scheme three bores have been completed and three are in progress, making in all thirty-three sunk by the Commission, out of which two were failures.

The fact that of the bores put down in the Pilliga Scrub six are giving a flowing supply is of special interest as indicating the possibility of tapping a small and hitherto unknown artesian basin.

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, 311 private bores have been undertaken in New South Wales, of which twenty-four were failures. The yield of the flowing bores is estimated at over 43 million gallons per day. No data are available regarding the pumping bores.

#### *Projected 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 dams at Cumberoona and at other sites 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 of the riparian States. Pending the results of the investigation of the dam foundations of the proposed storage sites, 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.

#### *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 Boolaboolka, 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. The question of establishing a small irrigation area in the vicinity of Lake Menindie has also received attention.

#### *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. A proposal is also 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 of about 5,000 acres adjacent to the lake. The possibility of regulating the amount of water lost in numerous effluent creeks is being considered, so that the best use may be made of the Lachlan River water.

#### *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. Smaller schemes for the construction of storage dams at White Rock and on Campbell's River, at Bathurst, have also received consideration. The run-off from this catchment is somewhat uncertain, and before giving consideration to the construction of any State irrigation scheme, further investigation is necessary.

*Hunter River.*

A scheme is being investigated for 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 are under consideration 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.

*Namoi and Peel Rivers.*

Pumping by private irrigators under the Water Act is increasing at such a rapid rate that in the case of some of the rivers, such as the Peel and the Hunter, it will not be possible to supply the pumps in dry seasons until head storage works have been constructed. Surveys have been completed for a storage dam on the Peel River, near Bowling Alley, and similar investigations are in progress for a dam on the Namoi River above Manilla.

*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 rate of 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 compensation water, and 80 million gallons daily for irrigation purposes in the Hawkesbury Valley. The waters made available by this project will be used upon an area of probably about 30,000 acres in the vicinity of the Nepean and Hawkesbury Rivers. Surveys have been made and details have been prepared of this scheme, which has been submitted to the Public Works Committee.

## 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	237,622	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 1911, also at 30th June, 1915 :—

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
1915	733,341	2,477,592	33,009,038	286,704

In addition to the live stock shown above, at the 30th June, 1915, there were 41,204 goats (including 7,360 Angora), 1,698 camels, 118 donkeys, 129 mules, and 576 ostriches. Since 1891 the sheep have diminished in number to the extent of nearly 29 millions, but the other classes of stock show increases—horses 264,000, cattle 248,000, and swine 33,000. The latest particulars of rural industry relate to the eighteen months ended 30th June, 1915. Previously the pastoral and dairying statistics were for the calendar year,

the latest in that respect being for 1913. In future these statistics will cover the yearly period from 1st July to 30th June. 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.	† 1915.
<b>SHEEP—</b>					
Coastal District .. .. .	964,759	1,097,471	1,316,580	1,433,037	1,422,006
Table-land .. .. .	7,036,733	8,859,069	8,842,352	8,961,344	7,243,886
Western Slopes .. .. .	10,968,344	11,671,524	11,675,425	11,198,621	8,267,052
Western Plains and Riverina .. .. .	18,541,961	14,573,523	15,998,096	16,048,376	11,516,012
Western Division .. .. .	10,806,993	5,522,953	6,299,668	7,305,909	4,560,082
Unclassified .. .. .	.....	127,559	.....	.....	.....
Total .. .. .	48,318,790	41,357,099	44,132,421	44,947,287	33,009,038
<b>DAIRY COWS IN MILK—</b>					
Coastal District .. .. .	238,530	284,099	355,233	492,242	348,894
Table-land .. .. .	82,487	70,224	66,745	70,571	33,128
Western Slopes .. .. .	46,578	39,732	49,002	48,689	26,829
Western Plains and Riverina .. .. .	26,372	19,790	21,178	24,137	15,597
Western Division .. .. .	6,216	3,990	2,657	2,906	1,725
Total .. .. .	400,183	417,835	494,820	633,525	426,173
<b>OTHER CATTLE.</b>					
<i>Coastal—</i>					
Dry Cows .. .. .	} 612,797	} 637,282	160,919	136,790	233,775
Heifers (springing) .. .. .			25,052	23,755	53,576
*All other .. .. .			709,484	915,602	786,610
Total .. .. .	612,797	667,282	836,055	1,076,147	1,073,961
<i>Tableland—</i>					
Dry Cows .. .. .	} 541,493	} 500,974	26,440	31,207	49,398
Heifers (springing) .. .. .			7,213	5,178	12,885
*All other .. .. .			468,374	549,374	394,015
Total .. .. .	541,493	500,974	502,227	586,259	456,298
<i>Western Slopes—</i>					
Dry Cows .. .. .	} 403,294	} 305,789	25,199	26,112	34,381
Heifers (springing) .. .. .			7,051	3,849	8,475
*All other .. .. .			365,980	422,273	214,296
Total .. .. .	403,294	305,789	398,230	452,234	257,152
<i>Western Plains and Riverina—</i>					
Dry Cows .. .. .	} 199,817	} 114,327	15,400	20,153	21,795
Heifers (springing) .. .. .			4,367	3,437	4,623
*All other .. .. .			204,901	302,103	158,370
Total .. .. .	199,817	114,327	224,677	325,693	184,793
<i>Western Division—</i>					
Dry Cows .. .. .	} 68,579	} 41,247	4,921	4,331	4,898
Heifers (springing) .. .. .			1,058	1,407	973
*All other .. .. .			87,056	109,640	73,244
Total .. .. .	68,579	41,247	93,935	115,373	79,215
<i>New South Wales—</i>					
Dry Cows .. .. .	} 1,825,980	} 1,629,619	172,883	218,593	344,247
Heifers (springing) .. .. .			45,341	37,626	80,537
*All other .. .. .			1,836,895	1,836,895	2,296,492
Total .. .. .	1,825,980	1,629,619	2,055,124	2,555,511	2,051,419
<b>HORSES—</b>					
Coastal District .. .. .	160,235	160,704	171,485	207,074	225,293
Table-land .. .. .	115,314	112,294	110,077	126,602	129,789
Western Slopes .. .. .	108,493	110,845	130,947	179,728	187,214
Western Plains and Riverina .. .. .	85,622	77,650	97,009	140,140	157,787
Western Division .. .. .	40,922	25,223	28,244	35,400	33,248
Total .. .. .	510,636	486,716	537,762	689,004	733,341

\* Including heifers, other than "springing."

† At 30th June.

## 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
1863	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	1915*	33,009,038

\* 30th June.

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 1915. In the former year there were only 13,187 holdings, but at 30th June, 1915 they numbered 24,964, although the sheep had decreased by nearly 29 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 1915 only 3. The sheep in flocks of over 20,000 comprised 62 per cent. of the total in 1891, but only 19.6 per cent. in 1915, while for 1891 the flocks under 2,000 comprised 9.3 per cent. of the total sheep compared with 27.6 per cent. in 1915. 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.	1915.†	1891.	1901.	1911.	1915.†
1—1,000 .. ..	7,606	11,809	17,773	18,445	2,794,751	3,797,114	5,252,546	4,891,856
1,001—2,000 .. ..	1,954	2,351	3,510	2,965	2,979,168	3,560,819	5,149,618	4,204,160
2,001—5,000 .. ..	1,696	1,722	2,735	2,242	5,493,942	5,519,008	8,554,299	6,831,785
5,001—10,000 .. ..	686	729	847	725	4,943,221	5,210,117	5,977,233	5,604,056
10,001—20,000 .. ..	495	465	507	403	7,056,580	6,666,429	7,142,273	5,609,980
20,001—50,000 .. ..	491	344	296	155	15,553,774	10,552,373	8,737,927	4,480,045
50,001—100,000 .. ..	186	76	53	26	12,617,266	4,835,547	3,434,693	1,658,488
100,001 and over .. ..	73	12	6	3	10,392,774	1,588,103	697,693	333,069
Total .. ..	13,187	17,499	25,727	24,964	61,831,416	41,857,999*	44,047,287	33,009,928

\* Includes 127,559 sheep in unclassified flocks.

† 30th June.

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 10 per cent. of the number of sheep depastured—equal to slightly more than five-sixths 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 f e d. 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 over 16 per cent. of the entire flocks.

The following table gives the number of sheep in each State of Australia at latest dates for which particulars are available, together with the proportion of the total owned in each:—

State.	Sheep.	Proportion owned in each State.
	No.	per cent.
New South Wales ... ..	33,009,038	47·36
Victoria ... ..	10,545,632	15·13
Queensland ... ..	15,950,154	22·88
South Australia ... ..	3,674,547	5·27
Northern Territory ... ..	70,200	0·10
Western Australia... ..	4,831,727	6·93
Tasmania ... ..	1,624,450	2·33
Commonwealth ... ..	69,705,748	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 the year ended 30th June, 1915, the sheep imported from Great Britain numbered 35, the breeds being 29 Lincoln, and 6 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 1914, the numbers of merino and cross-breeds were as shown below; the figures are based on returns collected for assessment purposes by the Chief Inspector of Stock, and are apparently below the actual number depastured:—

Class of Sheep.	Rams.	Ewes.	Wethers.	Lambs.	Total.
Merino ... ..	413,743	15,381,302	8,395,566	5,069,810	29,260,421
Other Breeds—					
Coarse Wool ... ..	129,960	3,090,431	1,443,723	2,071,697	6,735,811
Total ... ..	543,703	18,471,733	9,839,289	7,141,507	35,996,232

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 18·7 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 instruction 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	131,500	49,024,500
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	366,591,900	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	13,755,600	33,000	13,788,600
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
1914*	130,310,000	1,500,000	131,810,000	5,244,000	60,000	5,304,000
1915†	314,765,000	4,170,000	318,935,000	12,058,000	170,000	12,228,000

\* Six months—January to June.

† Year ended 30th June.

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 since the 13th September, 1910, the subsequent figures 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 and a half years at 350,000,000 lb., a rise of 1d. per lb. in the market price means an addition of £1,456,000 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	40,338,700
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	43,179,065
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	38,454,612
1898	41,220,440	1906	41,704,814	1914	34,547,358

WOOL SALES.

Formerly almost all the wool was shipped on the grower's account and sold in London, but during recent years over 85 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	1,294,373	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	779,397	91.34
1914-15	732,810	553,269	549,955	75.05
1915-16	810,515	688,207	707,046	84.12

Of the wool sold in Sydney during the 1915-16 season, 9,627 bales were the product of other Australian States. On the other hand 113,110 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 95¼ per cent. and 4¼ per cent. respectively ; only 13·31 per cent. of the wool was scoured.

The great bulk of wool sold in New South Wales is merino, and during 1915-16 it represented 86 per cent. of the total wool sold at Sydney.

Of the wool sold in Sydney during the last season, only 123,528 bales were purchased for the Continent of Europe, as compared with 629,305 bales in 1913-14. On the other hand, the requirements for military purposes caused largely increased purchases for the United Kingdom, and 234,266 bales were bought for the English manufacturers. Other purchases included 243,587 bales for America, 70,709 bales for Japan, China, and India, the balance 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 5	17 0 0
1915	12 10 0	19 0 0
1916	14 16 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.	
	1914-15.	1915-16.	1914-15.	1915-16.	1914-15.	1915-16.	1914-15.	1915-16.
	per lb.	per lb.	per lb.	per lb.	per lb.	per lb.	per lb.	per lb.
Greasy—	d. d.	d. d.	d. d.	d. d.	d. d.	d. d.	d. d.	d. d.
Fleece .. ..	14½ to 18	16½ to 23	11½ to 14½	14½ to 16½	9 to 11½	11½ to 14½	7 to 8½	9 to 11
Pieces .. ..	11½ „ 13½	12 „ 18	9½ „ 11½	10 „ 11½	7½ „ 9½	8 „ 9½	6 „ 7½	6½ „ 7½
Bellies .. ..	8 „ 11½	9 „ 14½	6½ „ 7½	7½ „ 8½	4½ „ 6½	6 „ 7½	3 „ 4½	4½ „ 5½
Lambs' .. ..	13 „ 15	16 „ 18½	10½ „ 12½	12½ „ 15½	8 „ 10½	10½ „ 12½	5½ „ 7½	7½ „ 10½
Crossbred—								
Fine .. ..	14 „ 18	17½ „ 22	12½ „ 13½	14½ „ 17½	10½ „ 12	12 „ 14½	8½ „ 10½	9½ „ 11½
Coarse .. ..	9½ „ 12½	12 „ 15	8½ „ 9½	10 „ 11½	7 „ 8	9 „ 9½	5 „ 7	7 „ 8½
Scoured—								
Fleece .. ..	24 „ 27	26 „ 41½	20½ „ 23½	24 „ 25½	18 „ 20½	20½ „ 23½	16 „ 17½	17½ „ 20½
Pieces .. ..	18½ „ 24½	21 „ 31½	16½ „ 18½	18½ „ 20½	14½ „ 16½	16 „ 18½	12½ „ 14½	14 „ 16½
Bellies .. ..	15 „ 20	17½ „ 31½	13½ „ 14½	15½ „ 17½	11 „ 13½	13 „ 15½	8½ „ 10½	11 „ 12½
Locks .. ..	12 „ 16	13 „ 22½	10 „ 11½	11 „ 12½	8½ „ 9½	9½ „ 10½	6½ „ 8½	8 „ 9½

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.	per lb.	per lb.	per lb.	per lb.	per lb.	per lb.
	d.	d.	d.	d.	d.	d.	d.
1903	12½	12	11½	11	11	10½	...
1904	11	10	10½	11	11½	12	...
1905	12	11¾	12½	12½	12½	12½	...
1906	12	12¼	12½	12¼	12	12¼	...
1907	12¼	12½	12½	12¾	12¾	11¾	...
1908	11¾	10	9¾	10¼	10¾	11¼	...
1909	11½	11¾	12	12	12½	12½	...
1910	12¼	12½	12¾	12¼	12½	12½	...
1911	12	12½	12	12	11½	11½	...
1912	11½	...	11¾	12	12	12¼	...
1913	12½	12½	12¼	12	12	12	...
1914	12½	12¾	12¾	12¾	11¾	11½	10¾
1915	11½	12	12½	12½	12¾	13	13½*

\*14½d. for 8th Series.

During the period covered by the table, Sydney-shipped greasy wool realised 14½d. to 9¾d. The maximum price was realised during 1915 owing to the abnormal demand for wool for military requirements; and the minimum was reached in 1908.

#### 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 at 30th June, 1915, the total was 2,477,592.

Year.	Cattle.	Year.	Cattle.	Year.	Cattle.
1861	2,271,923	1901	2,047,454	1909	3,027,727
1866	1,771,809	1902	1,741,226	1910	3,140,307
1871	2,014,888	1903	1,880,578	1911	3,194,236
1876	3,131,013	1904	2,149,129	1912	3,040,934
1881	2,597,348	1905	2,337,973	1913	2,822,740
1886	1,367,844	1906	2,549,944	1915	2,477,592
1891	2,128,838	1907	2,751,193		
1896	2,226,163	1908	2,955,934		

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 1914 the numbers of each breed, as far as could be ascertained, were :—

Breed of Cattle.	Pure and Stud.	Ordinary.	Total.
Shorthorn ... ..	72,839	516,302	589,141
Hereford ... ..	27,599	122,321	149,920
Devon ... ..	8,954	28,969	37,923
Black-polled ... ..	1,804	10,269	12,073
Red-polled .. ...	429	1,416	1,845
Ayrshire ... ..	8,666	51,532	63,498
Alderney ... ..	929	2,886	3,815
Guernsey ... ..	1,576	10,999	12,525
Holstein ... ..	643	3,748	4,391
Jersey ... ..	14,481	66,055	80,536
Red Lincoln ... ..	.....	10	10
Brittany ... ..	30	.....	30
Kerry ... ..	.....	10	10
Highland ... ..	40	120	160
<b>Total ... ..</b>	<b>137,940</b>	<b>817,937</b>	<b>955,877</b>
<b>Crosses (first crosses)—</b>			
Shorthorn—Hereford ... ..	.....	246,105	246,105
Shorthorn—Devon ... ..	.....	114,319	114,319
Hereford—Devon ... ..	.....	41,772	41,772
Ayrshire—Shorthorn ... ..	.....	173,421	173,421
Ayrshire—Holstein ... ..	.....	200	200
Black-polled—Shorthorn ... ..	.....	54,160	54,160
Red-polled—Shorthorn ... ..	.....	159	159
Jersey—Shorthorn ... ..	.....	53,724	53,724
Jersey—Ayrshire ... ..	.....	51	51
Jersey—Holstein ... ..	.....	160	160
Unrecognisable ... ..	.....	662,303	662,303
<b>Total ... ..</b>	<b>.....</b>	<b>1,346,314</b>	<b>1,346,314</b>
<b>Total—All Breeds ... ..</b>	<b>137,940</b>	<b>2,164,251</b>	<b>2,302,191</b>

The foregoing table does not include the whole of the cattle, as large numbers, principally in the metropolitan centres and the vicinity of towns, are not returned. As the statistical year now ends in June, it is impossible to estimate to what extent the figures are understated.

In 1914-15 the number of calvings recorded was 676,767.

There has been an appreciable increase in the number of dairy 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 30th June, 1915, was 426,173 only, an unusually large number having been dried-off on account of drought conditions. In addition to the milking cows, there were 344,247 dry dairy cows, 80,537 heifers within 3 months of calving, and 160,052 other heifers.

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 between twenty and 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 1914 was sixty-one—twenty-seven bulls and thirty-four cows.

The exports of New South Wales cattle to countries oversea during 1914-15 numbered 295. Of these 262, valued at £1,582, were ordinary cattle, and 33, valued at £548, 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. Owing to losses from drought the number fell to 733,341 at 30th June, 1915. 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, and at 30th June, 1915:—

Year.	Horses.	Year.	Horses.	Year.	Horses.
1861	233,220	1901	486,716	1909	604,784
1866	274,437	1902	450,125	1910	650,636
1871	304,100	1903	458,014	1911	689,604
1876	366,703	1904	482,663	1912	716,457
1881	398,577	1905	506,884	1913	746,170
1886	361,663	1906	537,762	1915	733,341
1891	469,647	1907	578,326		
1896	510,636	1908	591,045		

For purposes of classification the horses have been divided into draught, light-harness, and saddle horses, and the number of each particular kind, at 31st December, 1914, so far as could be ascertained from returns collected by the Stock Department, was as follows:—

Class.	Thoroughbred.	Ordinary.	Total.
Draught ... ..	37,808	242,217	280,025
Light-harness ... ..	15,747	134,951	150,698
Saddle ... ..	26,541	170,982	197,523
Total... ..	80,096	548,150	628,246

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, 40,015 ; light-harness, 28,033 ; saddle, 36,370 ; total, 104,418. Of these it is estimated that about 27,499 are suitable for the Indian and other markets.

#### IMPORT OF HORSES.

During 1914 the importations of horses from Great Britain and America numbered 80, including 58 thoroughbred horses. The horses were subject to the prescribed quarantine. In December, 1914, the Government landed a draft of 17 Clydesdale mares, purchased principally in Scotland, with the object of improving this breed in the State. They were placed temporarily at the Hawkesbury Agricultural College, pending removal to the North Bangaroo Stud Horse Farm in the Canowindra district.

#### EXPORT OF HORSES.

There is a considerable export trade annually to countries outside Australia, and 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 during the eighteen months ended 30th June, 1915:—

Countries.	Number.				Value.			
	1900.	1905.	1910.	1914-15. *	1900.	1905.	1910.	1914-15. *
					£	£	£	£
Burmah ... ..	.....	95	85	...	.....	2,625	2,743	...
Fiji ... ..	48	446	190	215	1,220	11,189	4,566	5,036
Hong Kong ..	5	404	...	...	115	15,021	.....	...
India .. ..	1,688	1,922	925	411	18,521	42,774	20,522	10,955
New Zealand ...	189	118	106	62	3,276	4,188	6,460	9,750
South Africa ..	7,714	8	1	1	124,485	1,780	25	20
Straits Settlements	295	121	42	1	7,440	3,110	6,645	50
China ... ..	1,489	85	1	...	41,600	2,041	60	...
Japan ... ..	.....	1,631	31	46	.....	26,495	1,620	2,400
Java ... ..	36	265	98	34	720	3,345	2,747	1,085
Philippine Islands	35	190	397	...	1,060	3,085	9,985	...
Other Countries ...	73	121	50	82	4,848	3,311	1,743	5,003
Total ... ..	11,572	5,406	1,926	852	203,285	118,964	57,116	34,299

\*Eighteen months ended 30th June, 1915.

For many years India offered the best market for Australian horses, but the trade 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 for ordinary

purposes mainly on account of the greater local demand. Since the commencement of hostilities in Europe large numbers of horses have been exported, but particulars are not available.

#### 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 to 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, 1915, 1,019 stallions were examined for certificates; of these 380 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. The examinations for 1914-15 were carried out in the majority of cases, but during 1915-16 they were abandoned owing to the shortage of veterinary officers, except at the Royal Show and at the August Horse Parade.

Shown in classes the examinations and rejections were as follows:—

Class.	Examined.	Rejected.	
		Number.	Per cent.
Draught ...	561	221	39.4
Light ...	261	98	37.5
Ponies ...	197	61	31.0
Total ...	1,019	380	37.3



## 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 ... ..	733,341	2,477,592	33,009,038	286,704
Victoria ... ..	493,779	11,043,604	10,545,632	192,002
Queensland ... ..	686,871	4,780,893	15,950,154	117,787
South Australia ... ..	253,333	226,565	3,674,547	66,237
Northern Territory ... ..	21,985	414,558	70,200	1,240
Western Australia... ..	163,863	311,553	4,831,727	57,934
Tasmania ... ..	41,423	169,575	1,624,450	37,778
Total ... ..	2,394,595	19,924,340	69,705,748	759,682
New Zealand ... ..	404,284	2,020,171	24,607,868	348,754
United Kingdom ... ..	1,699,640	12,131,370	28,181,540	3,783,780
Argentina ... ..	9,700,000	29,500,000	80,000,000	3,050,000
Austria ... ..	1,802,848	9,160,009	2,428,101	6,432,080
Belgium ... ..	262,709	1,830,747	*	1,348,514
Canada ... ..	2,993,099	6,066,001	2,038,662	3,111,900
Chile ... ..	457,845	1,968,620	4,602,317	221,384
Denmark ... ..	525,785	2,417,125	533,137	1,918,975
France ... ..	2,227,000	12,287,000	13,483,060	5,491,000
Germany ... ..	3,601,399	21,817,375	5,451,570	25,339,350
Hungary ... ..	2,005,019	6,266,867	6,659,858	6,824,657
Italy ... ..	906,820	6,193,861	11,162,926	2,507,798
Japan ... ..	1,582,125	1,388,703	2,946	309,995
Russia in Europe ... ..	22,529,000	32,704,000	37,240,000†	11,581
Spain ... ..	524,671	2,742,663	16,128,039	2,810,024
Union of South Africa ... ..	719,414	5,796,949	30,656,659	1,081,600
United States of America ... ..	21,166,000	61,441,000	49,162,000	68,047,000
Uruguay ... ..	556,307	8,192,602	26,286,296	180,099

\* Not available. † Includes goats.

## GOATS AND OTHER LIVE STOCK.

The number of goats in New South Wales at the end of 1914-15 was 41,204, including 7,360 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 1914-15 being 1,698, compared with 971 in 1911.

Donkeys and mules are not extensively used in New South Wales, the numbers during 1914-15 being 118 donkeys and 129 mules. 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 June, 1915, was

376 as compared with 662 at the close of the year 1913. 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 30th June, 1915, there were 708 public watering places, viz., 531 tanks and dams or reservoirs, 103 wells, and 74 artesian bores. During the next twelve months 22 additional watering places were provided, consisting of 19 tanks and dams, and 3 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, 1915, was:—Horses, 165,488; cattle, 1,575,581; sheep, 45,482,085. There were 28,507 inspections made by the Inspectors of Stock, at which 136,698 horses were inspected, 1,590,703 cattle, and 22,717,447 sheep. 29,871 permits and 284 renewed permits were issued.

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 1914-15 the number of sheep brands and ear-marks recorded and transferred were as follow:—

	Recorded.	Transferred.	Total Registered.
Fire Brands... ..	32	41	73
Tar Brands ... ..	1,066	189	1,255
Ear Marks ... ..	879	178	1,057
Total ... ..	1,977	408	2,385

HORSE AND CATTLE BRANDS.

The number of horse and cattle brands registered up to 30th June, 1915, was 123,220. The number of brands registered during the year was:—Horse brands (alone), 281; cattle brands (alone), 360; horse and cattle brands, 1,604; and camels, 8; making a total of 2,253. 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 1915 show great variations, due to supply and demand, quality, and in the case of

sheep, woolly or shorn skins. The months during which maximum and minimum average prices prevailed are also shown :—

Class of Stock.	Highest Price.		Lowest Price.	
	£ s. d.	Month.	£ s. d.	Month.
<b>Fat Stock—</b>				
<b>Bullocks and Steers—</b>				
Extra Prime Weighty ...	36 9 0	August	16 2 0	March
Prime Medium Weight, and Weighty ...	33 6 0	August	14 12 0	March
Prime Handy Weights ...	28 7 0	August	12 2 0	March
Prime Light ...	24 0 0	August	10 4 0	March
Good Weighty & Good ...	18 8 0	August	8 19 0	March
Cows—Good... ..	13 16 0	August	7 17 0	March
Medium ... ..	9 15 0	September	5 18 0	March
<b>Sheep—</b>				
<b>Merinos—</b>				
<b>Wethers &amp; Hoggets—</b>				
Extra Prime ... ..	1 19 0	July	1 1 3	January
Prime ... ..	1 11 3	July	1 0 0	March
Good ... ..	1 3 9	July and August	0 14 6	Jan and Feb.
Medium ... ..	0 16 3	August	0 10 3	February
<b>Ewes—</b>				
Extra Prime ... ..	1 15 3	July	0 18 0	January
Prime ... ..	1 11 3	July	0 16 3	March
Good ... ..	1 1 0	August	0 12 3	March
Medium ... ..	0 14 9	August	0 9 0	March
<b>Crossbreds—</b>				
<b>Wethers &amp; Hoggets—</b>				
Extra Prime ... ..	2 4 6	July	1 3 6	March
Prime ... ..	1 14 6	July	1 0 6	March
Good ... ..	1 5 3	July	0 16 6	March
Medium ... ..	0 19 6	July	0 12 0	February
<b>Ewes—</b>				
Extra Prime ... ..	1 18 6	August	1 1 0	March
Prime ... ..	1 10 0	July and August	0 18 0	January
Good ... ..	1 3 9	July	0 14 9	Jan. and Mar.
Medium ... ..	0 18 0	July	0 11 0	February
<b>Lambs—Suckers &amp; Woolly—</b>				
Extra Prime ... ..	1 6 0	August	0 18 3	February
Prime ... ..	1 2 6	August	0 15 6	March
Good .. ...	0 17 0	August	0 12 0	February
Medium ... ..	0 13 3	Aug. and Sept.	0 8 6	February

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 1915 the estimated values were as follow:—

Class of Stock.	Estimated fair average Price.		Class of Stock.	Estimated fair average Price.	
Horses—	£	s. d.		£	s. d.
Draught—Extra Heavy ...	25	0 0	Pigs—Baconers—Best ...	4	15 0
Medium ...	20	0 0	Good... ...	4	2 0
Light ...	14	0 0	Medium ...	3	13 0
Saddle and Harness ...	10	0 0	Light ...	2	18 0
Working Bullocks—Best ...	14	0 0	Backfatters—Best ...	8	15 0
Other ...	11	0 0	Good ...	6	15 0
Dairy Cattle—			Medium ...	5	5 0
Milkers—Best ...	14	0 0	Light ...	3	10 0
Good ...	11	0 0	Suckers ...	0	15 0
Inferior ...	7	0 0	Stores ...	1	7 0
Springers—Best ...	10	0 0	Goats—Angora ...	3	17 6
Other ...	7	0 0	Other ...	0	15 0
Pigs—Porkers—Best... ...	2	15 6	Camels ... ..	30	0 0
Good ...	2	7 0	Mules ... ..	27	10 0
Medium ...	1	18 6	Donkeys—Jacks (for breeding)	55	0 0
Light ...	1	12 0	Jennies ... ..	35	0 0

In the case of the horses, the average maximum price was £38 for extra heavy draught horses, and the minimum £5 for saddle and harness horses. In fat cattle, £25 7s. 6d. was the maximum for extra prime bullocks, and the minimum for extra prime cows £15 5s. Working bullocks ranged from £12 to £16. For dairy cattle, the maximum for best milkers was £18, and the minimum for good milkers, £8. The pigs brought prices ranging from £10 for backfatters to £1 8s. 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 during the season 1914-15 would appear as £18,848,000. The returns received from the different kinds of stock during the years 1891-1915 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	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
1914-15	3,004,000	11,250,000	2,498,000	2,096,000	18,848,000	10 2 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 1907 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.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
Wool—greasy	1,553	1,272	1,209	1,266	1,209	1,200	1,300	1,227	1,317
„ scoured	1,585	1,258	1,245	1,188	1,132	1,151	1,283	1,208	1,217
Tallow ...	1,303	1,176	1,125	1,250	1,188	1,215	1,261	1,151	1,351
Leather ...	1,150	1,017	972	1,109	1,133	1,161	1,333	1,592	1,670
Frozen Beef ...	1,010	1,008	1,250	1,250	1,375	1,375	1,625	1,834	2,750
„ Mutton	1,055	1,021	1,063	1,250	1,250	1,500	1,500	1,792	2,188
Skins—Hides	1,316	1,053	950	1,100	1,113	1,204	1,467	1,404	1,600
„ Sheep with wool	1,863	1,175	1,279	1,311	1,164	1,299	1,499	1,371	1,392
All articles...	1,354	1,122	1,137	1,214	1,194	1,327	1,367	1,365	1,620

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 at 30th June, 1915, was £1,864,034.

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 56, and in the country districts, 1,157 slaughter-yards, employing respectively 621, and 4,009 men; in all, 1,213 establishments and 4,630 men.

The following table shows the number of stock slaughtered during the year ended 30th June, 1915:—

Stock.	Metropolis.	Country.	Total.
Sheep ... ..	1,878,951	3,555,493	5,434,447
Lambs ... ..	88,704	487,390	576,094
Bullocks, &c. ... ..	131,171	188,607	319,778
Cows ... ..	86,244	163,966	250,210
Calves ... ..	49,628	15,722	65,350
Swine ... ..	123,584	139,120	262,704

These figures represent the stock killed for all purposes. Of the sheep and lambs, 3,153,859, including 1,157,505 killed on stations and farms, represent the local consumption; 418,587 sheep were required by meat-preserving establishments; 2,414,168 for freezing for export; and 23,927 were boiled down for tallow. All the cattle killed, except 115,710 treated in the meat-preserving works, 48,908 exported frozen, and 7,825 condemned and 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.
1905	1,568	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	281,650
1907	1,352	4,553	4,882,206	302,851	242,261	109,263	28,518	238,488
1908	1,216	4,056	4,840,367	361,125	233,006	114,689	28,879	210,319
1909	1,249	5,293	5,959,985	430,501	243,150	128,705	40,021	502,308
1910	1,282	4,328	7,032,102	448,932	275,497	156,110	52,840	290,328
1911	1,287	4,343	6,146,739	409,186	306,773	182,178	59,969	316,331
1912	1,271	4,294	5,387,578	424,604	329,153	206,228	77,079	352,178
1913	1,275	4,647	5,909,177	516,398	365,905	226,981	78,191	280,673
1914*	1,123	4,245	2,831,280	273,383	171,704	121,521	35,802	135,370
1915†	1,213	4,630	5,434,447	576,064	319,778	250,210	65,350	262,704

\* Six months ended 30th June. † Year ended 30th June. ‡ Includes a small number of Bulls.

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 1914 and 1915 are shown in the following statement:—

Animals.	1914. (January to June.)			Year ended 30th June, 1915.		
	Slaughtered.	Condemned.		Slaughtered.	Condemned.	
		Number.	Per cent.		Number.	Per cent.
Bulls ... ..	1,691	172	10·17	5,078	327	6·44
Bullocks ... ..	53,612	268	·50	108,883	826	·76
Cows ... ..	41,636	1,541	3·70	81,067	2,208	2·72
Calves ... ..	28,626	538	1·88	48,148	1,106	2·30
Sheep and Lambs ... ..	588,027	182	·03	2,116,844	206	·01
Pigs ... ..	31,848	378	1·19	65,718	718	1·09

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 1914 ranged from 26s. per 100 lb. in January to 37s. in December, and during 1915, from 35s. 6d. in March to 78s. 6d. in August.

#### 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	25,881,867	574,870
1914*	142,912	217,444	360,356	583,783	10,797,366	276,294
1915†	210,950	861,103	1,072,053	2,087,527	24,989,699	924,510

\* Six months—January to June.

† Year ended 30th June.

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 seventy-three steamers permanently engaged at 31st December, 1915, 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.	£
1906	4,082,756	7,645,935	341,963	609,275
1907	4,578,523	8,687,407	391,500	723,148
1908	4,335,771	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	5,350,070	9,576,446	612,620	1,000,536
1912	5,021,529	9,698,783	342,422	591,513
1913	5,330,290	10,907,992	695,955	1,285,397
1914	5,199,731	11,410,310	603,435	1,245,185
1915	4,707,859	13,872,141	.....	.....

Since the outbreak of war, the operations of the frozen meat trade in the United Kingdom have been abnormal as practically the whole trade was taken out of commercial hands and placed under official control. In this way the British Government was able to deal effectively with the shipping and other difficulties in maintaining supplies which would have been impracticable in the hands of private traders. The importations into the United Kingdom during 1914 and 1915 are less than usual, but large quantities of frozen meat were diverted to the continent for the use of the British forces in France and elsewhere.

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.
1906	d. 7½	d. 4	d. 3½	d. 3½	1911	d. 6½	d. 4½	d. 3½	d. 3½
1907	7½	4½	3½	3½	1912	7½	4½	3½	3½
1908	7½	4½	3½	3½	1913	7½	4½	4	4½
1909	6½	3½	3	3½	1914	8½	5½	4½	4½
1910	7½	4½	3½	3½	1915	9½	6½	5½	6½

The frozen beef imported into England from New South Wales in 1914 amounted to 150,531 cwt. valued at £292,607. The value of rabbits imported was £422,729, while preserved meat, other than salted, was valued at £635,079.

#### 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 each year since 1905 :—

Year.	Estimated Quantity of Tallow.		
	Produced.	Locally consumed.	Exported.
	tons.	tons.	tons.
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	39,751	7,179	32,572
1914*	17,434	3,699	13,735
1915†	35,593	8,257	27,336

\* Six months --January to June.

† Year ended 30th June.

The oversea exports of skins and hides from New South Wales are of considerable value, and show a large increase since 1901, as will be seen from the following statement. The other products of the pastoral industry are of minor importance, and leather, valued at £580,000 during the year ended June, 1915, is classified as a product of the manufacturing industry:—

Products.	Value of Oversea Exports.			
	1901.	1906.	1911.	1914-1915.
Skins and Hides—	£	£	£	£
Cattle ... ..	86,017	84,893	292,193	884,457
Horse ... ..	170	428	790	1,187
Rabbit and hare..	9,379	293,260	295,476	155,411
Sheep ... ..	151,144	314,722	260,007	520,609
Other ... ..	184,522	140,050	296,672	113,957
	431,232	833,353	1,145,138	1,675,621
Hoofs, horns, and bones ... ..	13,765	14,673	15,390	9,597
Bone dust ... ..	14,848	13,817	33,286	40,858
Hair ... ..	9,833	13,524	16,503	12,833
Lard and animal fats ... ..	312	2,557	4,841	2,935
Tallow ... ..	362,631	461,540	871,018	787,563
Glue-pieces and sinews ... ..	6,020	8,103	8,781	6,311
Furs ... ..	767	1,540	117	42
Total ... ..	839,408	1,340,107	2,095,068	2,535,760

#### 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, 1915, were as follow :—

Destructive Agent.	Losses in Sheep.					
	Number.			Value.		
	1913.	1914.	1915.	1913.	1914.	1915.
				£	£	£
Native Dogs ... ..	60,263	62,806	70,628	29,847	33,800	45,440
Tame Dogs ... ..	21,890	25,461	22,544	11,351	15,853	16,457
Foxes ... ..	77,918	61,366	68,395	30,432	26,157	30,311
Total ... ..	160,071	149,633	161,567	71,630	75,810	92,208

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 £11,183 to the end of June, 1915.

#### *Rabbit-proof Fencing.*

In order to prevent the spread of the pest, rabbit-proof fences have been erected by the Government 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 a fence extends from the Murray River northwards, 350 miles. On the Queensland border a fence has been erected between Barrington and the river Darling, at Bourke, 84 miles; another has been erected at the joint expense of the Governments of Queensland and New South Wales, from Mungindi to the Namoi River, about 115 miles. The total length of rabbit-proof fences erected by the State up to 30th June, 1915, was, approximately, 1,332 miles, at a cost of £69,888; by private persons, 99,203 miles, at a cost of £5,862,869; and by Pastures Boards, 550 miles, for £24,041.

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 are offered by the Pastures Protection Boards for the destruction of noxious animals, and during the year ended 30th June, 1915, the total amount paid as bonus was £9,393.

#### 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 Exports.		
	Frozen Rabbits and Hares.	Rabbit and Hare Skins.	Frozen Rabbits, Hares, and Skins.
	£	£	£
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	310,501	684,134
1914*	124,932	70,657	195,589
1915†	393,179	155,411	548,590

\* Six months—January to June.

† Year ended 30th June.

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 are patrolled continuously 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.

## DAIRYING INDUSTRY.

### DAIRY FARMING.

THE dairying industry is 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 at present the North Coast district is the main source of supply. It was not until the introduction of the creamery and factory system that any great development occurred, and 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 the season ended 30th June, 1915:—

Division.	Average No. of Dairy Cows in Milk during year.	Total yield of Milk.	Butter made.	Cheese made.
	No.	gallons.	lb.	lb.
Coastal—				
North Coast ... ..	225,418	114,511,991	47,954,567	308,800
Hunter and Manning ...	160,183	45,095,328	17,822,567	151,517
County of Cumberland ...	18,231	10,084,399	922,422	9,357
South Coast ... ..	86,437	37,383,890	9,910,597	5,081,920
Total ... ..	430,269	207,075,608	76,610,153	5,551,594
Tableland—				
Northern... ..	17,350	6,560,249	2,003,401	72,641
Central ... ..	13,819	5,425,623	1,287,706	157,075
Southern ... ..	8,721	3,437,190	880,037	20,434
Total ... ..	39,890	15,423,062	4,171,144	250,150
Western Slopes—				
North ... ..	12,844	5,154,794	1,086,928	225,690
Central ... ..	5,232	1,536,319	351,325	2,500
South ... ..	9,949	3,249,044	1,153,541	161,329
Total ... ..	28,025	9,940,157	2,592,094	389,519
Western Plains—				
North ... ..	2,030	764,287	56,977	.....
Central ... ..	3,694	1,135,473	120,106	.....
Total ... ..	5,724	1,899,760	177,083	.....
Riverina ... ..	8,295	3,187,186	567,407	165,364
Western Division ... ..	1,217	404,227	16,399	.....
Total, New South Wales	513,420	237,930,000	84,134,280	6,356,627

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 metropolis well-equipped factories have been established. In these localities the industry is conducted 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. During the 1914-15 season the area of dairy farms under this system was 89,218 acres, of which 5,393 acres were devoted mainly to the production of fodder crops, the balance of the area—83,825 acres—being used for grazing purposes. Of this area, 13,338 acres were in the North Coast, 48,171 acres in the Hunter and Manning Division, the balance being distributed as follows:—Western Slopes, 10,472 acres; South Coast, 8,313 acres; Tablelands, 2,841 acres; and Riverina, 690 acres.

Dairy share-farming was engaged in on 144 holdings on which 283 share-farmers and their families were employed.

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 June, 1915, it amounted to 1,251,453 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 the season ended 30th June, 1915, were as follows:—

Division.	Dairy Cows in Milk at 30th June, 1915.	Area of land under Sown Grasses.	Ensilage made.
	No.	acres.	tons.
<b>Coastal Division—</b>			
North Coast ... ..	178,687	870,415	75
Hunter and Manning ... ..	90,491	152,277	270
County of Cumberland ... ..	18,873	3,633	1,336
South Coast ... ..	60,843	180,754	6,652
Total ... ..	348,894	1,207,079	8,333
<b>Tableland Division—</b>			
Northern ... ..	12,963	14,353	740
Central ... ..	13,095	5,282	305
Southern ... ..	7,070	2,461	15
Total ... ..	33,128	22,096	1,060
<b>Western Slopes—</b>			
North ... ..	11,750	4,905	530
Central ... ..	5,793	2,519	.....
South ... ..	9,286	8,389	170
Total ... ..	26,829	15,813	700
<b>Western Plains—</b>			
North ... ..	2,228	250	300
Central ... ..	4,380	833	350
Total ... ..	6,608	1,083	650
Riverina ... ..	8,989	5,322	220
Western Division ... ..	1,725	60	.....
Total, New South Wales ... ..	426,173	1,251,453	10,963

## 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.
1905	442,950	162,919,000	368
1906	494,820	185,941,000	376
1907	506,395	183,303,000	362
1908	527,843	188,519,000	357
1909	566,378	201,183,000	355
1910	632,786	235,578,000	372
1911	638,525	237,623,000	372
1912	620,730	225,446,000	363
1913	600,420	231,592,000	386
1914-15	513,420*	237,930,000	442

\* Estimated average number in milk during season.

It is more accurate to base the average yield on the mean number of cows in milk during the year, and, owing to the change made recently in the statistical year, an attempt was made to ascertain this information. The effort was not entirely successful, and even under normal conditions much difficulty would be experienced, as the number depends not only on the actual cows milked, but also on the length of time during which they are in milk.

The dry dairy cows at 30th June, 1915, numbered 344,247, as compared with 189,769 at the end of 1913, so that it is evident to what extent dairying operations were restricted owing to the unusual dryness of the season during the first six months of 1915. The latest average yield, however, is probably a fairly accurate estimate of the average milking capabilities of local dairy cows, and, at all events, it is evident that there has been a substantial increase in the average yield since the first year quoted.

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.
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
1914-15	33·8	44·3	43·7



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 1913 and during the year ended 30th June, 1915, was treated:—

Purpose for which treated.	1913.	1914-15.
	gallons.	gallons.
Used on farms for making butter ... ..	13,484,060	11,344,765
"    "    "    cheese ... ..	3,244,531	2,637,610
Separated on farms, cream being sent to factories ...	171,136,221	180,328,513
Sent to butter factories or separating stations for butter.	1,109,094	792,603
Sent to butter factories or separating stations for sweet cream.	298,532	518,043
Sent to cheese factories ... ..	3,657,979	3,882,093
"    condensers ... ..	1,062,270	1,600,984
Pasteurised at factories for metropolitan market ...	10,694,468	10,287,280
Balance sold or otherwise used ... ..	26,904,845	26,538,109
Total ... ..	231,592,000	237,930,000

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 1905:—

Year.	Milk Separated for making Butter.			
	On Farms.		In Public Separating Stations.	Total.
	By hand.	By steam, &c.		
	gallons.	gallons.	gallons.	gallons.
1905	103,433,591	7,577,972	19,347,767	130,364,330
1906	110,859,572	5,499,445	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
1914-15	176,716,152	14,957,126	792,603	192,465,881

#### 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.
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
1914-15	11,272,165	3,805,378	181,193,716	80,328,902	192,465,881	84,134,280

The proportion of factory-made butter in the total production has increased from 72 per cent. in 1895 to over 95 per cent. during 1914-15; 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; during the year ended 30th June, 1915, the quantity of cheese made was only 37 per cent. more than in 1905, but the production of butter had increased by 66 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 during the 1914-15 season was equivalent to 80 per cent. of the total in all divisions.

The following table shows, for each year since 1905, the production of cheese in factories and on farms:—

Year.	Production of Cheese.		
	In Factories.	On Farms.	Total.
	lb.	lb.	lb.
1905	2,997,982	1,627,998	4,625,980
1906	3,459,641	1,999,004	5,458,645
1907	3,291,894	1,324,963	4,586,857
1908	3,269,389	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	4,872,165	1,748,483	6,620,648
1914-15	5,314,494	1,042,133	6,356,627

#### CO-OPERATIVE AND PROPRIETARY FACTORIES.

Most of the factories dealing with dairy produce are established on the co-operative principle; and during the season ended 30th June, 1915, 86 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	1,303,196
*1914	103	36,725,400	9	769,883
†1915	102	72,364,931	9	1,822,696
Proprietary Factories.				
1907	87	19,520,957	19	2,039,281
1908	69	15,777,276	23	1,953,258
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	8,868,852	18	2,058,514
*1914	30	3,490,423	16	833,897
†1915	34	7,937,230	18	1,947,735

\*Six months—January to June. †Year ended 30th June.

#### 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 three

factories in the State, situated at Bomaderry, Singleton, and Windsor. 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 by the condensers during 1914-15 was 1,600,984 gallons, and the output of the articles totalled 6,002,593 lb., valued at about £100,000.

## 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	1908	215,822
1865	146,901	1901	263,730	1909	237,849
1870	243,066	1902	193,097	1910	321,632
1875	199,950	1903	221,592	1911	371,093
1880	308,205	1904	330,666	1912	293,653
1885	208,697	1905	310,702	1913	288,090
1890	283,061	1906	243,370	1914-15	286,701
1895	223,597	1907	216,145		

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 June, 1915, and the production of bacon and ham during the previous twelve months:—

Division.	Swine.	Bacon and Ham cured.
	No.	lb.
Coastal—		
North Coast ... ..	123,684	7,527,638
Hunter and Manning ... ..	57,059	312,891
County of Cumberland ... ..	16,723	5,529,229
South Coast ... ..	24,483	453,094
Total ... ..	221,949	13,822,852
Tableland—		
Northern ... ..	9,825	318,466
Central ... ..	11,925	300,630
Southern ... ..	4,472	135,424
Total ... ..	26,222	754,460
Western Slopes—		
North ... ..	9,135	78,258
Central ... ..	5,210	102,456
South ... ..	8,677	253,130
Total ... ..	23,022	433,844
Western Plains—		
North ... ..	933	1,620
Central ... ..	2,642	54,552
Total ... ..	3,580	56,172
Riverina ... ..	8,656	245,110
Western Division ... ..	3,275	14,610
Total, New South Wales ... ..	286,704	15,327,048

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 ended 30th June, 1915, included the inspection of markets and piggeries within the metropolitan area; 120 premises and 79,801 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.
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	2,759,894	16,526,376
1913	12,874,666	2,317,597	15,192,263
1914-15	13,564,630	1,762,418	15,327,048

#### LARD.

Statistics showing the total production of lard are not available. During the year ended 30th June, 1915, the quantity made in bacon factories amounted to 634,373 lb., valued at £18,999; 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 the eighteen months ended 30th June, 1915, the oversea exports of lard and refined animal fats amounted to 141,647 lb., valued at £4,310, and the direct imports from oversea countries to 342,664 lb., valued at £9,306.

#### 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, at Wollongbar and Grafton experimental work is done in connection with the cross-breeding of cattle, and 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.

Instructors travel throughout the principal dairying districts during each year to give instruction and advice in cream-grading, butter and cheese-making, and in 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, since 1906:—

Year.	Oversea 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	17,331,117	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	1,560,709	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
1914*	6,495,303	294,774	46,881	1,448	68,035	3,255
1915†	23,281,233	1,162,790	342,138	9,865	177,549	8,487

\* Six months—January to June.

† Year ended 30th June.

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 nine 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
1914	122,528	3.08

#### 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.	1912-1913.		1913-1914.		1914-1915.		1915-1916. General Average.
	Top.	Bottom.	Top.	Bottom.	Top.	Bottom.	
	1912.		1913.†		1914.		1915.
	s.	s.	s.		s.	s.	
August ...	114	112	106½		*	*	*
September ...	118	114	109½		*	*	*
October...	119½	...	119		*	*	*
November ...	114½	115½	121		127	124	*
December ...	117½	...	120½		136	133	*
	1913.†		1914.		1915.		1916.
	s.	s.	s.	s.	s.	s.	s.
January ...	112	...	113½	110¾	†139½	...	143½
February ...	111½	...	112½	110	†132	...	149
March ...	111½	...	110½	107	†136	...	158
April ...	109	...	104½	101½	†132	...	158
May ...	109	...	104	98	†137	...	160
June ...	107½	...	104½	101½	†140	...	160
July ...	108	...	109½	107½	142	139½	160

\*No quotations. † General average given for this year. ‡ Australian butter.

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 for other steamers the rates varied from 10d. to 1s. 9d. For the 1905-6 season contract rates were 1s. 10d. for mail steamers and 1s. 9d. for cargo boats. On 1st October, 1907, the rates were increased to 2s. 6d. per box by mail steamers, but from the date of the mail contract with the Federal Government—1st February, 1910—the charge for butter carried by the Orient line of mail steamers was reduced to 2s. 4d. per box, the rate for the P. & O. mail steamers remaining unchanged. The charge for other steamers was fixed at 2s. per box.

These charges were not altered until the outbreak of war, when a 20 per cent. surtax was imposed in addition to the 5 per cent. primage. The rates were advanced twice during 1915, and again on 28th February, 1916, when the present charges were made for mail steamers and cargo boats, viz., 4s. and 3s. 9d. respectively, with primage added.

#### DAIRYING INDUSTRY.—VALUE OF PRODUCTION.

The value of the production from the dairying industry during 1914-15 was £5,693,000, to which may be added £538,000 obtained from the sale of swine, making a total of £6,231,000:—

	£
Butter ... ..	4,038,000
Cheese ... ..	170,000
Milk (not used for butter or cheese) ... ..	962,000
Milch cows ... ..	523,000
Swine ... ..	538,000
Total ... ..	£6,231,000

#### 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 1914-15 was £589,593.

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 during 1914-15 to be approximately £1,597,000.

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
1914-15*	3,140,635	182,141	17,996	152,181	5,924	12,437,993

\* Year ended 30th June, 1915.



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.
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
1914-15	29,857	9,691	39,548	1,143,605	38·4	26,676

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 1914-15, owing to a continuation of the dry conditions, the yield fell to 38·4 lb., the lowest figures in the decennium.

The estimated value of the production in 1914-15 of honey was £16,600, and of beeswax £1,600, the production for each division being as follows:—

Division.	Honey.	Beeswax.
	lb.	lb.
Coastal .. .. .	543,519	12,403
Tableland .. .. .	426,916	10,196
Western Slopes .. .. .	148,008	3,464
Western Plains and Riverina	22,872	533
Western .. .. .	2,290	80
Total .. .. .	1,143,605	26,676

## 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 7½ 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 constructional woods as iron-bark, tallow-wood, and turpentine, whilst in other timbers 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 subsequent years little was done to protect the forest resources; timber was cut as requirements prompted, no heed was 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, a Forestry Department was established, and a Director of Forestry and other officers were appointed under the Forestry Act, 1909. This Act was repealed recently by the Forestry Act, 1916. The new Act provides for the constitution of a Forestry Commission, consisting of three members, one of whom is to be Chief Commissioner, each commissioner being appointed for a term of seven years.

The Commission is charged with the administration of the Forestry Act, 1916, which provides for the control and management of the State forests and timber reserves; for the training of forest officers, for the conduct of research work, and for the collection of statistics in connection with forestry.

The Commission may dispose of timber and products or any State forest or timber reserve, and—

- (a) take and sell such timber and products;
- (b) convert any such timber into logs, sawn timber, or any other merchantable article, and sell the same;
- (c) convert any such products into merchantable articles, and sell the same;
- (d) construct roads, railways, and tram-lines and other works for the transport of timber; and purchase, rent, or charter and use vehicles and vessels, with the necessary motive power;
- (e) construct, purchase, or rent sawmills and other mills, with all the necessary machinery and plant for converting timber, and manufacturing articles from timber, and use such mills for those purposes.

The Commission may purchase horses, cattle, and sheep, and depasture them on State forests, and may sell such horses, cattle, and sheep.

One-half of the gross amount received from royalties, licenses, and permits, and from the sale of timber, other than the output of the mills as indicated in (e) above, is to be set apart for afforestation, reafforestation, survey and improvement of State forests and timber reserves, and for purposes incidental thereto, provided that the expenditure of an amount exceeding £5,000 on any particular work shall be subject to the approval of the Minister.

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. After the expiration of three years from the commencement of the Act there must be not less than 5,000,000 acres of land in New South Wales dedicated as State forests.

All areas occupied or leased for mining or for other purposes within a State forest are subject to the provisions of the Forestry Act, and the Commission, with the approval of the Minister, may issue, on such conditions as it thinks fit, and for any term not exceeding twenty years, leases of land within State forests for grazing or for any purpose approved by the Commission and not opposed to the interests of forestry; such leases will be termed "Forest leases."

Timber-getters' and other licenses will be issued by the Commission, and exclusive rights to take timber products from specified areas of State forest or timber reserves may also be granted.

Every person conducting a saw-mill 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 capacity of different classes of hardwood forest for reforestation, 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, 1915, the total area of State lands reserved for the preservation of timber was 7,273,235 acres, as compared with 7,508,938 acres 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 hardwoods.	0.47	...	46
Red mahogany ...	0.44	24	54				
Woollybutt ...	0.65	28	43	BRUSH AND SOFTWOODS.			
Flooded gum ...	0.87	28	32	(Coastal and highlands.)			
Turpentine ...	0.44	30	68	Silky oak ...	0.65	24	37
Bloodwood ...	0.57	18	31	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 hardwoods.	0.58	...	48	Average, brush and softwoods.	0.59	...	45

## 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.

The distribution of plants from Gosford during the year ended 30th June, 1915, was as follows:—

## Plantations—

Gosford and Hogan's Brush	...	...	...	...	4,500
Tuncurry	...	...	...	...	81,625
Armidale	...	...	...	...	12,240
Departmental Grants	...	...	...	...	2,665
Agricultural Farms and Public Institutions	...	...	...	...	5,125
Exchanges	...	...	...	...	725
Total...	...	...	...	...	106,880

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, 1915, 112,480 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 reafforestation treatment have been selected near Grafton, Bellingen, and Cooperook; and reafforestation 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, 1915, there were 571 saw-mills licensed. The employees numbered 4,808, and the value of plant and machinery was estimated at £571,525. The output of native timber amounted to 140,940,000 superficial feet, valued at the mills at £1,016,569.

## 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.	Imports.	Exports.	Year ended 30th June.	Imports.	Exports.
	£	£		£	£
1910	879,701	247,428	1913	1,436,922	248,020
1911	1,014,058	285,572	1914	1,405,779	261,607
1912	1,147,414	279,960	1915	1,145,649	198,288

## FORESTRY LICENSES AND PERMITS.

The following return shows the licenses and permits current during the first six months of 1914 and during the year ended 30th June, 1915:—

Description.	Amount of Fee.			Total Fees collected.	
	Per Month.	Per Quarter.	Per Year.	January to June, 1914.	Year ended 30th June, 1915.
	s. d.	s. d.	s. d.	£	£
Timber License (subject to Royalty) ...	2 6	7 6	.....	3,870	6,454
Fuel License ...	5 0	10 0	40 0		
Products License ...	2 6	7 6	.....		
Grazing Permit ...	1 0	.....	.....	140	545
Saw-mill License ...	(Subject to payment of agistment fees, as assessed by Forestry Officers.)				
	..... 20 0 (When issued after 30th June in any year, 10s. for unexpired portion of the year.)				
Special License ...	.....	7 6	30 0	116	206
Occupation Permit ...	1 0	.....	.....	169	275
	(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 ...			504	944
	Total ... ..			£ 4,799	8,424

## TIMBER LICENSES.

The revenue collected by the State from Timber Licenses and from Royalty on timber during each year since 1906 is given in the subjoined table:—

Year.	Timber Licenses, &c.	Royalty on Timber.	Total.	Year.	Timber Licenses, &c.	Royalty on Timber.	Total.
	£	£	£		£	£	£
1906	9,199	38,981	48,180	1911	11,153	79,165	90,318
1907	9,955	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*	6,593	39,531	46,124
1910	10,877	70,960	81,837	1915†	11,365	76,021	87,386

\* Six months ended 30th June.

† Year ended 30th June.

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 strength and durability.

#### INTERSTATE FORESTRY CONFERENCES.

Interstate Conferences of Forest Officers of Australia were held in 1911, 1912, and 1916, to secure 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, and the establishment of an Australian Journal of Forestry, &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 contain numerous varieties of fish, but the fishing industry has not been developed commercially. The vast mineral, pastoral, and agricultural resources of the State have presented more profitable avenues for the investment of capital, so that the development of 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.

Under the State trawling scheme, operations commenced in June, 1915, but as the industry is essentially a commercial project it was declared to be an industrial undertaking, and is therefore carried on independently of the other fisheries of the State.

### 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 1915 was 3,275, and of fishing-boat licenses 1,638; the fees received from these 4,913 licenses amounted to £1,100.

### OYSTER LEASES.

For the purposes of oyster-culture, tidal Crown lands below an approximate high-water 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 high-water 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 1915 applications for leases numbered 346, aggregating 198,600 yards of foreshore and 81½ acres of off-shore leases; while at the end of the year the existing leases numbered 2,690, and 302 special authorities to remove oysters; the length of foreshores held was 847,013 yards, and there were deep-water leases to the extent of 146½ acres. The deposits paid with the applications for leased areas were £770, while the rentals received during the year for leased areas were £5,811. Licenses issued to oyster vendors numbered 314, the fees received being £290.



## 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, tailor, trevally, leather-jacket, and others are gradually gaining favour in the local markets.

Details of the Government trawling scheme and particulars regarding the marketing of fish and oysters are given in the chapter of this Year Book relating to Food and Prices.

*Fish.*—Exclusive of trawled fish, the quantity consigned to Sydney and Newcastle markets during 1915 totalled 196,378 baskets, of which 3,191 baskets were condemned. In addition, 5,094 baskets of fish were consigned from the Tweed River to Brisbane, and 16,425 baskets are recorded as having been sold in various fishing centres in coastal areas, but these figures are incomplete. A basket of fish is calculated at 84 lb. weight.

As usual the bulk of the supplies came from the estuaries and lakes on the northern part of the coast-line. A small proportion, chiefly snapper, came from the ocean, this being principally the produce of the long-line ("Jacob") Fishery. The six main sources of the fresh fish supply are indicated below, the weights being exclusive of the quantities condemned:—

Clarence River ... ..	3,374,000 lb.	Botany Bay and George's	
Port Stephens ... ..	2,027,000 "	River ... ..	1,118,000 lb.
Wallis Lake ... ..	1,472,000 "	Lake Macquarie ... ..	1,112,000 "
Tuggerah Lakes... ..	1,660,000 "		

Notwithstanding the immense shipping development and consequent increase of traffic, and the large reclamation of foreshores of recent years, it is of special interest to note that the marketed production from Port Jackson was as much as 334,000 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 1915 was 148,260; 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 record of local sales show that 1,548 were disposed of; these figures, however, are incomplete, as they do not cover the whole coast.

*Prawns.*—A quantity of 6,965 baskets, or, approximately, 278,600 quarts, of marine prawns (*Penæus*) was marketed during 1915. Local returns (incomplete, as before mentioned) show an additional production of 26,840 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 (*Lupa*) and the Mangrove (*Scylla*). The number of crabs marketed amounted to 2,595 dozens.

*Oysters.*—For the year 1915 the oyster production of the State amounted to 20,682 sacks of the Rock Oyster (*Ostrea cucullata*). This out put was principally the result of artificial cultivation.

*Whaling.*—The operations of the modern Norwegian Whaling Company were suspended during 1914 and 1915, and probably they will not be resumed until the close of the war. 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 quantities ranging from five casks to 150 casks, or 25 tons.

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 in June and ends in November—though whales may be taken before and after that period.

*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 1915 was approximately 273,973, made up as follows:—

Fresh Fish...214,706 baskets	...	...	...	...	...	£	214,706
Crayfish ... 11,650 dozen	...	...	...	...	...		6,990
Prawns ... 7,636 baskets	...	...	...	...	...		9,545
Crabs ... 3,040 dozen	...	...	...	...	...		1,368
Oysters ... 20,682 sacks	...	...	...	...	...		41,364
Total Value ... ..							£273,973

The value of fish, fresh and preserved, imported into the State of New South Wales during 1915 was £364,664.

#### 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. Since the initiation of the Government trawling scheme, of which full details are given in the chapter relating to "Food and Prices," further extensive fishing grounds have been discovered.

#### 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.

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 Eden Whaling Industry was a practical failure during 1914 and 1915. One whale was killed at Twofold Bay in 1914, but although several were seen during 1915 no captures were effected. The absence of whales during the last two seasons is unaccountable, but the industry 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 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 the 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 conditions—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 depleted.

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 being most abundant in the vicinity of the mud. They 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 multitudes 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 bi-sexual.

Even after the spat has passed its short free swimming stage and has settled down, it is surrounded by enemies. Among the numerous active enemies are various fishes, boring molluscs, worms, starfishes, and a boring sponge, and among the passive forms are 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.

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, as 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.

#### *Persons and Boats employed in Oyster Culture.*

During 1915 there were 405 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 354. 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 boats and equipment used was £12,521. The number of boats varies at different periods of the year, so that the information relating to number and value is approximate only.

## APPENDIX.

SINCE the chapters of the Official Year Book for 1915 went to press, the following additional information has become available.

### WAR LEGISLATION.

A brief review is appended of the special legislation enacted in the Parliaments of New South Wales and of the Commonwealth in order to cope with emergencies arising from the state of war, and to organise the national resources for war purposes.

#### STATE ACTS.

Shortly after the declaration of war, the Postponement of Debts Act, 1914, was passed to empower the Governor to postpone, by proclamation, the payment of debts; the interest chargeable in respect of a postponed debt will be continued, but not payable during postponement. The Act will continue in force until six months after the war. There has been no necessity, so far, for the issue of any proclamation.

The Commissioners of the Government Savings Bank were empowered under the Government Savings Bank Amendment Act, 1914, to prescribe conditions and periods of notice to be given in respect to withdrawals.

The Motor Tax Management Act, 1914, the Finance (Taxation) Acts, 1914 and 1915, and the Finance Taxation Management Act, 1915, provide for imposing and collecting additional taxes upon motor vehicles, incomes, racing clubs and associations, bookmakers and betting tickets.

The Commonwealth War Loan (Investment Enabling) Act, 1915, and the Commonwealth Loans (Investment Enabling) Act, 1915, authorise trustees and others to invest in Stock, Treasury Bills, and Bonds of the Commonwealth any property which they are not expressly forbidden to invest in Government Stock or securities.

A number of Acts were passed for the benefit of men enlisting in the expeditionary forces, viz. :—The Constitution Amendment Act, which enables members of the State Parliament to serve in the military or naval forces without incurring disqualification by reason of accepting an office of profit under the Crown; the Apprentices Amendment Act, 1915, which protects the interests of apprentices who enlist for war service; the Probate Duties War Exemption Act, 1915, which exempts from stamp and probate duties the estates of persons dying on active service, or as the result of injuries or diseases contracted on active service, with the Commonwealth or other British forces; also any estates the subject of settlement, trust, disposition, conveyance, transfer, vesting, purchase, investment, or gift made by persons so dying.

The Medical Practitioners Amendment Act, 1915, was passed to permit medical students at the Sydney University who desire to volunteer for war service to complete their course in a shorter period of time than five years, the minimum fixed by the Medical Practitioners Act of 1912. Graduates of German and Austrian Universities and Medical Schools, and German and Austrian subjects, are excluded from registration as medical practitioners in New South Wales.

The Trustees Delegation of Powers Act, 1915, authorises trustees, executors, and administrators temporarily absent, or about to depart from, the State, to delegate their powers for a maximum term of two years.

Under the Returned Soldiers Settlement Act, 1916, land may be set apart for the settlement of members of the Commonwealth Naval and Military Forces, or residents of Australia joining the forces of Great Britain, who return to New South Wales after service abroad; special tenures are created for these settlers, and financial and other assistance may be granted to them.

With regard to food supplies, three important enactments were passed. The first was the Necessary Commodities Control Act, 1914, which provided for the control of prices of articles used for ordinary food consumption, and of coal, firewood, gas, and other fuel. The fixing of prices was taken over by the Commonwealth Government in July, 1916, and the operations of the State body were superseded in consequence. The two other Acts were the Wheat Acquisition Act, 1914, which enabled the State Government to compulsorily acquire the wheat harvest of 1914-15, and the Meat Supply for Imperial Uses Act, 1915, to secure supplies of meat for the use of the Imperial Government during the war. Details of the operations under these statutes are shown in the chapter relating to "Food and Prices."

The Munitions Act, 1915, authorises the Chief Commissioner for Railways to manufacture and supply arms and munitions of war.

The Commonwealth Powers (War) Act (No. 65, 1915).—The Commonwealth Government had made arrangements for submitting to the vote of the electors in December, 1915, certain proposals for extending the powers of the Commonwealth Parliament, but in the preceding month an agreement was made between the State Premiers and the Prime Minister of the Commonwealth that the Premiers would bring forward in their respective Parliaments legislation for referring these powers to the Federal Parliament, and that the Commonwealth Government would postpone the Referendum during the currency of the war. The New South Wales Act will operate during the war and for twelve months after the declaration of peace.

Under this Act the following matters are referred to the Commonwealth:—

- (i) Trade and Commerce.
- (ii) Corporations, including the creation, dissolution, regulation and control of corporations (State and Foreign), exclusive of municipalities, and religious, charitable, scientific, or artistic societies.
- (iii) Employment and unemployment; strikes and lock-outs; maintenance of Industrial peace; settlement of Industrial disputes.
- (iv) Conciliation and Arbitration for the prevention and settlement of Industrial disputes relating to State Railways.
- (v) Trusts, combinations, monopolies, and arrangements relating to the production, manufacture or supply of goods, or the supply of services, including ownership of means of production, manufacture, or supply.
- (vi) The conduct, by or under the control of the Commonwealth, of any industry or business of producing, manufacturing or supplying specified goods or services, which have been declared to be subjects of monopolies, and the acquisition of properties connected with such industries. This does not apply to undertakings carried on by State Governments, nor to State Railways; and the rates and fares charged by Railway authorities cannot be altered.

The Liquor Referendum Act, 1916, submitted to a referendum the question of the hour at which premises licensed for the sale of intoxicating liquors should be closed during the currency of the war. It was brought forward in response to a popular demand for the restriction of the consumption of alcoholic liquors by closing licensed houses earlier than 11 p.m., the statutory closing hour. The result of the referendum will be found on page 944.

The Enemy Contracts Annulment Act, 1915, provides for the annulment or termination of contracts with or for the benefit of enemy subjects. The Naturalised Subjects Franchise Act, 1916, suspends from certain privileges naturalised British Subjects of enemy origin, *i.e.*, persons who at the time of naturalisation were subjects of any country with which the British Empire is at war. During the continuance of the war no such person may participate, as candidate or elector, in the elections of the State Parliament, or municipal or shire councils, nor sit in such assemblies, nor officiate as justice of the peace, coroner, member of licensing bench, or juror, nor obtain a license or renewal of license under the Liquor Act. No person convicted under the Commonwealth War Precautions Act under circumstances which indicate disloyalty will be allowed to vote at Parliamentary, municipal, or shire elections.

#### COMMONWEALTH ENACTMENTS.

In the Federal Parliament the following legislation was passed to enable the Government to make adequate provision for the safety and defence of the Commonwealth :—

The War Precautions Act, 1914, and two amendments in 1915, empower the Governor-General to make regulations and orders for the safety of the Commonwealth, in particular with a view to prevent persons communicating with the enemy in order to jeopardise the operations of His Majesty's forces, or to assist the enemy; to prevent the transmission abroad, except through the post, of any letter, newspaper, &c.; to secure the safety of means of communication, railways, docks, harbours, and public works; to prevent the spread of reports likely to cause disaffection or alarm; to secure the navigation of vessels in accordance with the direction of the naval authorities; to prevent assistance to the enemy; to secure the successful prosecution of the war; and to cause the detention of any person in military custody. The Minister for Defence may take possession of any factory or of its output for the production of war supplies, and authority is given for the supervision and detention of aliens, for the application to naturalised persons of regulations relating to aliens, and for the prevention of the exportation of money or goods.

The War Census Acts of 1915 enable the Government to take a Census to obtain information regarding the national resources.

The Defence Acts of 1914 and 1915 amend the defence laws in view of special conditions arising from the state of war and from the despatch of expeditionary forces abroad.

The Customs Act, 1914, gives the Governor-General authority to prohibit the exportation of any goods in time of war.

The Patents, Trade Marks, and Designs Acts, 1914 and 1915, provide for the avoidance or suspension of any patent or licence or registration of trade mark or design for the benefit of a person who is the subject of any State at war with the King, and for the transfer of such rights to other persons.



The Trading with the Enemy Acts, 1914, prohibit trade with or for the benefit of the enemy. Persons acting in contravention of these statutes may be prosecuted either summarily or upon indictment; the authorities are empowered to conduct searches of premises, books, &c., and the High Court, on the application of the Minister, may appoint a controller of a firm or company trading with the enemy, or so affected by the state of war, as to prejudice the effective continuance of its trade or business. The Controller-General of Customs may receive and hold in trust, till after the termination of the war, moneys for the discharge of debts due to enemy subjects.

The Enemy Contracts Annulment Act, 1915, provides for the annulment of contracts with or for the benefit of the enemy, and for the termination of contracts suspended during or on account of the war.

The Judiciary Acts of 1914 and 1915 conferred on the High Court of Australia, original jurisdiction in matters of Admiralty or Maritime Jurisdiction, and extended its powers during the war and for six months after, to include trials of indictable offences against the laws of the Commonwealth. The High Court Procedure, 1915, determines the procedure in trials of these offences.

The Crimes Act, 1914, and its amendment of 1915, relate to offences against the Commonwealth, such as treason, mutiny, offences against the administration of justice, or relating to coinage, forging, breach of official secrecy, conspiracy, &c.

The Commonwealth Inscribed Stock Act, 1915, amends the principal Acts, 1911-13, to facilitate the raising of war loans.

The War Loan Act, 1914, and the War Loan Act (No. 2), 1915, authorise the Commonwealth Government to borrow money from the Imperial Government, and the War Loans Acts (No. 1 and No. 3), 1915, authorise the raising of loans for war purposes.

The Treasury Bills Act, 1914, authorises the issue of Treasury Bills, and the Treasury Bills Act, 1915, authorises the Treasurer to borrow money from the Australian notes' account without issuing Treasury bills.

The Sugar Purchase Act, 1915, and the Freight Arrangements Act, 1915, authorise the Government to borrow money from the Commonwealth Bank, the former for the purchase of sugar and the payment of Customs duty on sugar imported to supply the local shortage, and the latter to obtain freight to carry the wheat crop to oversea markets.

The Commonwealth Bank Act, 1914, amends the Act of 1911, and makes provision for increasing the capital of the bank, and for the establishment of branches and agencies in other parts of the British Empire.

The Australian Notes Act, 1914, repealed the clause of the principal Act, 1910-1911, which prescribed that Australian notes should bear date of issue from the Treasury.

Additional taxes were imposed by a number of statutes, viz., the Estate Duty Assessment and the Estate Duty Acts, 1914, to impose duties upon the estates of deceased persons, exemptions being granted in the case of persons dying during the war or within one year after its termination, on active service, or as the result of injuries or disease contracted on active service. The Land Tax and Land Tax Assessment Acts, 1914, increased the amount of tax upon land, and the Income Tax Assessment and the Income Tax Acts, 1915, imposed a tax upon incomes.

In connection with the administrative arrangements of the Commonwealth Government, the Ministers of State Act, 1915, increased the number of Ministers from seven to eight, thus making provision for the appointment of

the Minister for the Navy; while the Wireless Telegraphy Act, 1915, authorised the transfer of control from the Postmaster-General to the Minister for the Navy.

The Belgian Grant Act, 1914, authorised the appropriation of £100,000 out of Consolidated Revenue in aid of the Government of Belgium.

The War Pensions Acts of 1914 and 1915 make provision for pensions for soldiers and their dependents; details are shown elsewhere in this publication.

The Officers Compensation Act provides for compensation to the widow of Major-General Sir W. T. Bridges, K.C.B., C.M.G., who lost his life on active service in Gallipoli.

The Commonwealth Public Service Act, 1915, provides *inter alia* for preference in appointments to members of expeditionary forces who have served with satisfactory record; for leave of absence, without pay, to Commonwealth Public Service officers joining the expeditionary forces or called up for service under the Defence Acts; for raising the maximum age for entrance to the clerical division from 21 to 25 years; and for the extension of eligibility for appointment, until nine months after the termination of the war, of persons eligible at the commencement of the Act.

The Quarantine Act, 1915, extends the power of the Government in relation to infectious diseases, which became necessary in consequence of the opening of the Panama Canal and the inauguration of a new trade route through an area infected with yellow fever, and in view of the possibility of the introduction of infectious diseases by soldiers returning from service abroad.

The Referendum (Constitution Alteration) Acts, 1915, relate to the submission of certain proposed laws to the electors, and its postponement is noted on page 940.

The Compulsory Voting Act, 1915, was passed to provide for compulsory voting at this referendum.

#### POPULATION.

The total population on the 31st December, 1915, was 1,868,644, viz., 951,391 males and 917,253 females. At the 30th June, 1916, the total was 1,856,093, a decrease of 12,551 due to the excess of departures.

The following figures show the movement of population from the 31st December, 1915, to the 30th June, 1916 :—

Population, 31st December, 1915	...	...	...	1,868,644
Births during Half-year ended 30th June,				
1916	...	...	...	25,736
Deaths during Half-year ended 30th				
June, 1916	...	...	...	9,892
				<hr/>
Increase by excess of Births...	...	...	...	15,844
Arrivals during Half-year ended 30th				
June, 1916...	...	...	...	211,202
Departures during Half-year ended 30th				
June, 1916	...	...	...	239,597
				<hr/>
Decrease by excess of Departures	...	...	...	28,395
				<hr/>
Net decrease during Half-year ended 30th June, 1916	...	...	...	12,551
				<hr/>
Population on 30th June, 1916	...	...	...	1,856,093
				<hr/>

## VITAL STATISTICS.

During 1915 the marriages numbered 18,129, as against 17,353 during 1914. The recorded births in 1915 were :—Males, 27,105, and Females, 25,780. Deaths numbered 11,457 Males, and 8,153 Females, the excess of births over deaths being 33,275, representing 17·81 per 1,000 of population.

During the half-year ended 30th June, 1916, the births were 25,736; deaths, 9,892; and marriages, 8,746.

## LIQUOR REFERENDUM.

RESULT OF POLL TAKEN 10TH JUNE, 1916.

The real issue was between the hours of 6 p.m. and 9 p.m., as the votes cast for the other hours were very small. The following statement gives the distribution in the various districts, and the result shows a majority in favour of closing at 6 p.m. :—

Electorates.	Votes Recorded for each Hour.						
	6 p.m.	7 p.m.	8 p.m.	9 p.m.	10 p.m.	11 p.m.	Total.
City ... ..	10,686	216	1,388	14,952	87	94	27,423
Suburban ... ..	172,067	2,294	8,994	65,505	317	460	249,667
Country ... ..	164,741	2,320	10,752	98,385	971	2,639	279,808
Total ... ..	347,494	4,830	21,134	178,842	1,405	3,193	556,898

The following table shows the total votes recorded, and the proportion to the number of electors enrolled :—

Electorates.	Total Votes Recorded.			Proportion of Votes recorded to Numbers of Electors enrolled.		
	Males.	Females.	Total.	Males.	Females.	Total.
City ... ..	15,177	13,353	28,530	43·03	44·40	43·66
Suburban ... ..	121,923	134,942	256,865	56·56	56·72	56·65
Country ... ..	170,511	123,200	293,711	55·42	50·19	53·10
Total ... ..	307,611	271,495	*579,106	55·08	52·88	54·02

\* Includes 22,208 Informal Votes.

## WAR RELIEF FUNDS.

After the outbreak of the war various funds were established for the relief of the distressed inhabitants of Allied countries, also for the assistance and comfort of wounded and returned soldiers, and for aid to dependents of those who lost their lives.

The following table shows the objects of the Funds, and the amounts contributed to 31st August, 1916:—

Fund.	Object.	Contributions to 31st August, 1916.
		£
Australia Day ... ..	For the relief of sick and wounded Australian soldiers and sailors.	816,115
National Belgian Relief Fund.	To relieve distress in Belgium ... ..	657,879
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The amount shown for the Repatriation Fund is approximate, and is exclusive of about £30,000 promised in money, land, stock, &c.

In addition to the amount shown above as contributed in cash, goods in kind were supplied to a very large extent, the value of which was estimated

at £233,000 to the 31st July, 1916. The goods were forwarded as follows:—Messrs. Farmer & Co., £100,000; Red Cross (N.S.W. division), £99,200; Citizens' War Chest, £13,000; Chamber of Commerce War Food Fund, £10,540; French Australian League of Help, £3,400; Tanned Sheepskin Clothing Fund, £5,660; Australian Nurses' Gift, £1,150; and Y.M.C.A., Field Services, £50.

### FAIR RENTS.

For the purpose of determining the amount which should be a fair rental of dwellings valued at less than £156 per annum, an Act was passed on the 29th December, 1915, which provided for the establishment of Fair Rents Courts, consisting of a Stipendiary or Police Magistrate, and also for the appointment of Registrars and other necessary officers.

In order to determine the fair rent the Court must ascertain the capital value of the dwelling, which is the unimproved capital value of the land plus the estimated cost of erecting a dwelling similar to that existing at the date of the application, less a fair sum for depreciation.

The rental is fixed on the capital value at a rate not less than that charged on overdrafts by the Commonwealth Bank of Australia, and not more than  $2\frac{1}{2}$  per cent. above such amount, plus rates, taxes, repairs, maintenance, insurance, and depreciation. The amount fixed by the Court remains in force from six months to three years when specifically stated, but if no special period be mentioned, the duration is three years.

The first sittings of the Fair Rents Court were held on the 13th March, 1916. The operations of the Act may be applied to any localities proclaimed by the Governor, but up to the present, the cases have been confined to the metropolitan area.

The number of appeals dealt with during the first six months of its operations was 230 (exclusive of 8 shops and dwellings). Of these, 57 were unaltered and 2 were increased, leaving 171 cases for which reductions were granted, or 74.3 per cent. of the total applications.

The minimum rent appealed against was 7s. for a property at Newport, which was not altered. The next lowest was for premises valued at 7s. 6d. per week, for which a reduction of 1s. 6d. was granted. The highest amount was £2 11s. per week, which was reduced to £2 5s.

The amount of the reduction varied from 6d. to 15s. per week, the latter being the largest absolute decrease allowed, and was granted in respect of a property at Forest Lodge, the rent of which was reduced from £2 to £1 5s.

The average reduction was 11.2 per cent., ranging from 9.9 per cent. on premises producing over £1 per week, to 11.9 per cent. on properties rented at less than £1.

In one case the period of the adjustment was for six months, while 160 applicants were allowed twelve months, and in 10 instances no limit was fixed.

The districts from which the applications came were:—City, 41; Eastern Suburbs, 82; Western Suburbs, 59; Redfern and adjacent suburbs, 27; Glebe, 11; Illawarra Suburbs, 3; and Northern Suburbs, 7.

The houses generally affected were those producing a rental of £1 and under, the number of applicants under this heading being 160, while for premises rented above £1, the number was 70. The number under 10s. per week was 5; 10s. to 12s. 6d., 34; 12s. 6d. to 15s., 20; 15s. to 17s. 6d., 54; 17s. 6d. to £1, 36; £1 to £1 2s. 6d., 18; £1 2s. 6d. to £1 5s., 14; £1 5s. to £1 7s. 6d., 20; £1 7s. 6d. to £1 10s., 5; £1 10s. and upwards, 24.

## PUBLIC FINANCES, 1915-16.

The total net revenue of the State during the year ended 30th June, 1916, was £19,629,442, the principal contributing sources being as follows :—

				£
Commonwealth Returns	...	...		2,297,872
Taxation :—				£
Stamp Duties	...	...	1,168,546	
Land Tax	...	...	3,190	
Income Tax	...	...	1,707,403	
Motor Tax	...	...	54,868	
Betting Taxes	...	...	31,330	
Licenses...	...	...	151,884	
				3,117,221
Land Revenue	...	...		1,797,250
Railways and Tramways	...	...		9,990,502
Water Supply and Sewerage	...	...		942,753
Other Sources	...	...		1,483,844
				£19,629,442

The total expenditure chargeable to the Consolidated Revenue proper was £19,286,633, the distribution being :—

				£
Governmental (including Interest on Public Debt not charged to Business Undertakings)	...	...	7,917,536	
Railways and Tramways (including Interest)	...	...	10,107,149	
Water Supply and Sewerage (including Interest)...	...	...	841,278	
Sydney Harbour Trust (including Interest)	...	...	420,670	
				£19,286,633

An additional sum of £235,000 was transferred in aid of the Public Works Fund.

The receipts from all sources, including advances recovered, &c. were £19,703,518, and the disbursements, including advances, transfers, &c., amounted to £19,553,927, showing a surplus on the year's transactions of £149,591.

The total Loan Expenditure (exclusive of redemptions) during the year was £8,173,104. The amount for each service is shown below :—

				£
Railways and Tramways	...	...		4,983,632
Water Supply and Sewerage—				
Metropolitan and Hunter District	...	...	968,810	
Murrumbidgee Irrigation Area	...	...	351,974	
Country Towns	...	...	181,476	
Water and Drainage Trusts, &c.	...	...	33,104	
				1,535,364
Sydney Harbour Trust	...	...	580,438	
Other Works and Services	...	...	1,073,670	
				£8,173,104

The Public Debt outstanding on the 30th June, 1916, was £130,514,018, or £70 6s. 4d. per inhabitant, and the annual interest payable thereon was £4,848,970, the average rate being 3·71 per cent. The increase during the year was £2,778,613, as shewn in the following statement:—

	£	£
Public Debt on 30th June, 1915 ...		127,735,405
<i>Add</i> Loans floated during		
1915-16 ... ..	5,592,638	
<i>Less</i> Repayments during 1915-16	2,814,025	
	<hr/>	
Net increase ... ..		2,778,613
		<hr/>
Public Debt on 30th June, 1916		130,514,018

It will be seen that during 1915-16 the Debt increased by £2,778,613, although the Loan Expenditure was £8,173,104. The explanation is that a considerable amount of the loans floated during the year ended 30th June, 1915, was not credited to the General Loan Account until the following year, notwithstanding that the Debt outstanding on the 30th June, 1915, included all loans negotiated.

## APPENDIX.

SINCE the chapters of the Official Year Book for 1915 went to press, the following additional information has become available.

### WAR LEGISLATION.

A brief review is appended of the special legislation enacted in the Parliaments of New South Wales and of the Commonwealth in order to cope with emergencies arising from the state of war, and to organise the national resources for war purposes.

#### STATE ACTS.

Shortly after the declaration of war, the Postponement of Debts Act, 1914, was passed to empower the Governor to postpone, by proclamation, the payment of debts; the interest chargeable in respect of a postponed debt will be continued, but not payable during postponement. The Act will continue in force until six months after the war. There has been no necessity, so far, for the issue of any proclamation.

The Commissioners of the Government Savings Bank were empowered under the Government Savings Bank Amendment Act, 1914, to prescribe conditions and periods of notice to be given in respect to withdrawals.

The Motor Tax Management Act, 1914, the Finance (Taxation) Acts, 1914 and 1915, and the Finance Taxation Management Act, 1915, provide for imposing and collecting additional taxes upon motor vehicles, incomes, racing clubs and associations, bookmakers and betting tickets.

The Commonwealth War Loan (Investment Enabling) Act, 1915, and the Commonwealth Loans (Investment Enabling) Act, 1915, authorise trustees and others to invest in Stock, Treasury Bills, and Bonds of the Commonwealth any property which they are not expressly forbidden to invest in Government Stock or securities.

A number of Acts were passed for the benefit of men enlisting in the expeditionary forces, viz. :—The Constitution Amendment Act, which enables members of the State Parliament to serve in the military or naval forces without incurring disqualification by reason of accepting an office of profit under the Crown; the Apprentices Amendment Act, 1915, which protects the interests of apprentices who enlist for war service; the Probate Duties War Exemption Act, 1915, which exempts from stamp and probate duties the estates of persons dying on active service, or as the result of injuries or diseases contracted on active service, with the Commonwealth or other British forces; also any estates the subject of settlement, trust, disposition, conveyance, transfer, vesting, purchase, investment, or gift made by persons so dying.

The Medical Practitioners Amendment Act, 1915, was passed to permit medical students at the Sydney University who desire to volunteer for war service to complete their course in a shorter period of time than five years, the minimum fixed by the Medical Practitioners Act of 1912. Graduates of German and Austrian Universities and Medical Schools, and German and Austrian subjects, are excluded from registration as medical practitioners in New South Wales.



The Trustees Delegation of Powers Act, 1915, authorises trustees, executors, and administrators temporarily absent, or about to depart from, the State, to delegate their powers for a maximum term of two years.

Under the Returned Soldiers Settlement Act, 1916, land may be set apart for the settlement of members of the Commonwealth Naval and Military Forces, or residents of Australia joining the forces of Great Britain, who return to New South Wales after service abroad; special tenures are created for these settlers, and financial and other assistance may be granted to them.

With regard to food supplies, three important enactments were passed. The first was the Necessary Commodities Control Act, 1914, which provided for the control of prices of articles used for ordinary food consumption, and of coal, firewood, gas, and other fuel. The fixing of prices was taken over by the Commonwealth Government in July, 1916, and the operations of the State body were superseded in consequence. The two other Acts were the Wheat Acquisition Act, 1914, which enabled the State Government to compulsorily acquire the wheat harvest of 1914-15, and the Meat Supply for Imperial Uses Act, 1915, to secure supplies of meat for the use of the Imperial Government during the war. Details of the operations under these statutes are shown in the chapter relating to "Food and Prices."

The Munitions Act, 1915, authorises the Chief Commissioner for Railways to manufacture and supply arms and munitions of war.

The Commonwealth Powers (War) Act (No. 65, 1915).—The Commonwealth Government had made arrangements for submitting to the vote of the electors in December, 1915, certain proposals for extending the powers of the Commonwealth Parliament, but in the preceding month an agreement was made between the State Premiers and the Prime Minister of the Commonwealth that the Premiers would bring forward in their respective Parliaments legislation for referring these powers to the Federal Parliament, and that the Commonwealth Government would postpone the Referendum during the currency of the war. The New South Wales Act will operate during the war and for twelve months after the declaration of peace.

Under this Act the following matters are referred to the Commonwealth:—

- (i) Trade and Commerce.
- (ii) Corporations, including the creation, dissolution, regulation and control of corporations (State and Foreign), exclusive of municipalities, and religious, charitable, scientific, or artistic societies.
- (iii) Employment and unemployment; strikes and lock-outs; maintenance of Industrial peace; settlement of Industrial disputes.
- (iv) Conciliation and Arbitration for the prevention and settlement of Industrial disputes relating to State Railways.
- (v) Trusts, combinations, monopolies, and arrangements relating to the production, manufacture or supply of goods, or the supply of services, including ownership of means of production, manufacture, or supply.
- (vi) The conduct, by or under the control of the Commonwealth, of any industry or business of producing, manufacturing or supplying specified goods or services, which have been declared to be subjects of monopolies, and the acquisition of properties connected with such industries. This does not apply to undertakings carried on by State Governments, nor to State Railways; and the rates and fares charged by Railway authorities cannot be altered.

The Liquor Referendum Act, 1916, submitted to a referendum the question of the hour at which premises licensed for the sale of intoxicating liquors should be closed during the currency of the war. It was brought forward in response to a popular demand for the restriction of the consumption of alcoholic liquors by closing licensed houses earlier than 11 p.m., the statutory closing hour. The result of the referendum will be found on page 944.

The Enemy Contracts Annulment Act, 1915, provides for the annulment or termination of contracts with or for the benefit of enemy subjects. The Naturalised Subjects Franchise Act, 1916, suspends from certain privileges naturalised British Subjects of enemy origin, *i.e.*, persons who at the time of naturalisation were subjects of any country with which the British Empire is at war. During the continuance of the war no such person may participate, as candidate or elector, in the elections of the State Parliament, or municipal or shire councils, nor sit in such assemblies, nor officiate as justice of the peace, coroner, member of licensing bench, or juror, nor obtain a license or renewal of license under the Liquor Act. No person convicted under the Commonwealth War Precautions Act under circumstances which indicate disloyalty will be allowed to vote at Parliamentary, municipal, or shire elections.

#### COMMONWEALTH ENACTMENTS.

In the Federal Parliament the following legislation was passed to enable the Government to make adequate provision for the safety and defence of the Commonwealth :—

The War Precautions Act, 1914, and two amendments in 1915, empower the Governor-General to make regulations and orders for the safety of the Commonwealth, in particular with a view to prevent persons communicating with the enemy in order to jeopardise the operations of His Majesty's forces, or to assist the enemy; to prevent the transmission abroad, except through the post, of any letter, newspaper, &c.; to secure the safety of means of communication, railways, docks, harbours, and public works; to prevent the spread of reports likely to cause disaffection or alarm; to secure the navigation of vessels in accordance with the direction of the naval authorities; to prevent assistance to the enemy; to secure the successful prosecution of the war; and to cause the detention of any person in military custody. The Minister for Defence may take possession of any factory or of its output for the production of war supplies, and authority is given for the supervision and detention of aliens, for the application to naturalised persons of regulations relating to aliens, and for the prevention of the exportation of money or goods.

The War Census Acts of 1915 enable the Government to take a Census to obtain information regarding the national resources.

The Defence Acts of 1914 and 1915 amend the defence laws in view of special conditions arising from the state of war and from the despatch of expeditionary forces abroad.

The Customs Act, 1914, gives the Governor-General authority to prohibit the exportation of any goods in time of war.

The Patents, Trade Marks, and Designs Acts, 1914 and 1915, provide for the avoidance or suspension of any patent or licence or registration of trade mark or design for the benefit of a person who is the subject of any State at war with the King, and for the transfer of such rights to other persons.

The Trading with the Enemy Acts, 1914, prohibit trade with or for the benefit of the enemy. Persons acting in contravention of these statutes may be prosecuted either summarily or upon indictment; the authorities are empowered to conduct searches of premises, books, &c., and the High Court, on the application of the Minister, may appoint a controller of a firm or company trading with the enemy, or so affected by the state of war, as to prejudice the effective continuance of its trade or business. The Controller-General of Customs may receive and hold in trust, till after the termination of the war, moneys for the discharge of debts due to enemy subjects.

The Enemy Contracts Annulment Act, 1915, provides for the annulment of contracts with or for the benefit of the enemy, and for the termination of contracts suspended during or on account of the war.

The Judiciary Acts of 1914 and 1915 conferred on the High Court of Australia, original jurisdiction in matters of Admiralty or Maritime Jurisdiction, and extended its powers during the war and for six months after, to include trials of indictable offences against the laws of the Commonwealth. The High Court Procedure, 1915, determines the procedure in trials of these offences.

The Crimes Act, 1914, and its amendment of 1915, relate to offences against the Commonwealth, such as treason, mutiny, offences against the administration of justice, or relating to coinage, forging, breach of official secrecy, conspiracy, &c.

The Commonwealth Inscribed Stock Act, 1915, amends the principal Acts, 1911-13, to facilitate the raising of war loans.

The War Loan Act, 1914, and the War Loan Act (No. 2), 1915, authorise the Commonwealth Government to borrow money from the Imperial Government, and the War Loans Acts (No. 1 and No. 3), 1915, authorise the raising of loans for war purposes.

The Treasury Bills Act, 1914, authorises the issue of Treasury Bills, and the Treasury Bills Act, 1915, authorises the Treasurer to borrow money from the Australian notes' account without issuing Treasury bills.

The Sugar Purchase Act, 1915, and the Freight Arrangements Act, 1915, authorise the Government to borrow money from the Commonwealth Bank, the former for the purchase of sugar and the payment of Customs duty on sugar imported to supply the local shortage, and the latter to obtain freight to carry the wheat crop to oversea markets.

The Commonwealth Bank Act, 1914, amends the Act of 1911, and makes provision for increasing the capital of the bank, and for the establishment of branches and agencies in other parts of the British Empire.

The Australian Notes Act, 1914, repealed the clause of the principal Act, 1910-1911, which prescribed that Australian notes should bear date of issue from the Treasury.

Additional taxes were imposed by a number of statutes, viz., the Estate Duty Assessment and the Estate Duty Acts, 1914, to impose duties upon the estates of deceased persons, exemptions being granted in the case of persons dying during the war or within one year after its termination, on active service, or as the result of injuries or disease contracted on active service. The Land Tax and Land Tax Assessment Acts, 1914, increased the amount of tax upon land, and the Income Tax Assessment and the Income Tax Acts, 1915, imposed a tax upon incomes.

In connection with the administrative arrangements of the Commonwealth Government, the Ministers of State Act, 1915, increased the number of Ministers from seven to eight, thus making provision for the appointment of

the Minister for the Navy; while the Wireless Telegraphy Act, 1915, authorised the transfer of control from the Postmaster-General to the Minister for the Navy.

The Belgian Grant Act, 1914, authorised the appropriation of £100,000 out of Consolidated Revenue in aid of the Government of Belgium.

The War Pensions Acts of 1914 and 1915 make provision for pensions for soldiers and their dependents; details are shown elsewhere in this publication.

The Officers Compensation Act provides for compensation to the widow of Major-General Sir W. T. Bridges, K.C.B., C.M.G., who lost his life on active service in Gallipoli.

The Commonwealth Public Service Act, 1915, provides *inter alia* for preference in appointments to members of expeditionary forces who have served with satisfactory record; for leave of absence, without pay, to Commonwealth Public Service officers joining the expeditionary forces or called up for service under the Defence Acts; for raising the maximum age for entrance to the clerical division from 21 to 25 years; and for the extension of eligibility for appointment, until nine months after the termination of the war, of persons eligible at the commencement of the Act.

The Quarantine Act, 1915, extends the power of the Government in relation to infectious diseases, which became necessary in consequence of the opening of the Panama Canal and the inauguration of a new trade route through an area infected with yellow fever, and in view of the possibility of the introduction of infectious diseases by soldiers returning from service abroad.

The Referendum (Constitution Alteration) Acts, 1915, relate to the submission of certain proposed laws to the electors, and its postponement is noted on page 940.

The Compulsory Voting Act, 1915, was passed to provide for compulsory voting at this referendum.

#### POPULATION.

The total population on the 31st December, 1915, was 1,868,644, viz., 951,391 males and 917,253 females. At the 30th June, 1916, the total was 1,856,093, a decrease of 12,551 due to the excess of departures.

The following figures show the movement of population from the 31st December, 1915, to the 30th June, 1916 :—

Population, 31st December, 1915	...	...	...	1,868,644
Births during Half-year ended 30th June,				
1916	...	...	...	25,736
Deaths during Half-year ended 30th				
June, 1916	...	...	...	9,892
				<hr/>
Increase by excess of Births...	...	...	...	15,844
Arrivals during Half-year ended 30th				
June, 1916...	...	...	...	211,202
Departures during Half year ended 30th				
June, 1916	...	...	...	239,597
				<hr/>
Decrease by excess of Departures	...	...	...	28,395
				<hr/>
Net decrease during Half-year ended 30th June, 1916	...	...	...	12,551
				<hr/>
Population on 30th June, 1916	...	...	...	1,856,093
				<hr/>

## VITAL STATISTICS.

During 1915 the marriages numbered 18,129, as against 17,353 during 1914. The recorded births in 1915 were:—Males, 27,105, and Females, 25,780. Deaths numbered 11,457 Males, and 8,153 Females, the excess of births over deaths being 33,275, representing 17·81 per 1,000 of population.

During the half-year ended 30th June, 1916, the births were 25,736; deaths, 9,892; and marriages, 8,746.

## LIQUOR REFERENDUM.

## RESULT OF POLL TAKEN 10TH JUNE, 1916.

The real issue was between the hours of 6 p.m. and 9 p.m., as the votes cast for the other hours were very small. The following statement gives the distribution in the various districts, and the result shows a majority in favour of closing at 6 p.m. :—

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Electorates.	Total Votes Recorded.			Proportion of Votes recorded to Numbers of Electors enrolled.		
	Males.	Females.	Total.	Males.	Females.	Total.
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After the outbreak of the war various funds were established for the relief of the distressed inhabitants of Allied countries, also for the assistance and comfort of wounded and returned soldiers, and for aid to dependents of those who lost their lives.

The following table shows the objects of the Funds, and the amounts contributed to 31st August, 1916 :—

Fund.	Object.	Contributions to 31st August, 1916.
Australia Day ... ..	For the relief of sick and wounded Australian soldiers and sailors.	£ 816,115
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### FAIR RENTS.

For the purpose of determining the amount which should be a fair rental of dwellings valued at less than £156 per annum, an Act was passed on the 29th December, 1915, which provided for the establishment of Fair Rents Courts, consisting of a Stipendiary or Police Magistrate, and also for the appointment of Registrars and other necessary officers.

In order to determine the fair rent the Court must ascertain the capital value of the dwelling, which is the unimproved capital value of the land plus the estimated cost of erecting a dwelling similar to that existing at the date of the application, less a fair sum for depreciation.

The rental is fixed on the capital value at a rate not less than that charged on overdrafts by the Commonwealth Bank of Australia, and not more than 2½ per cent. above such amount, plus rates, taxes, repairs, maintenance, insurance, and depreciation. The amount fixed by the Court remains in force from six months to three years when specifically stated, but if no special period be mentioned, the duration is three years.

The first sittings of the Fair Rents Court were held on the 13th March, 1916. The operations of the Act may be applied to any localities proclaimed by the Governor, but up to the present, the cases have been confined to the metropolitan area.

The number of appeals dealt with during the first six months of its operations was 230 (exclusive of 8 shops and dwellings). Of these, 57 were unaltered and 2 were increased, leaving 171 cases for which reductions were granted, or 74·3 per cent. of the total applications.

The minimum rent appealed against was 7s. for a property at Newport, which was not altered. The next lowest was for premises valued at 7s. 6d. per week, for which a reduction of 1s. 6d. was granted. The highest amount was £2 11s. per week, which was reduced to £2 5s.

The amount of the reduction varied from 6d. to 15s. per week, the latter being the largest absolute decrease allowed, and was granted in respect of a property at Forest Lodge, the rent of which was reduced from £2 to £1 5s.

The average reduction was 11·2 per cent., ranging from 9·9 per cent. on premises producing over £1 per week, to 11·9 per cent. on properties rented at less than £1.

In one case the period of the adjustment was for six months, while 160 applicants were allowed twelve months, and in 10 instances no limit was fixed.

The districts from which the applications came were:—City, 41; Eastern Suburbs, 82; Western Suburbs, 59; Redfern and adjacent suburbs, 27; Glebe, 11; Illawarra Suburbs, 3; and Northern Suburbs, 7.

The houses generally affected were those producing a rental of £1 and under, the number of applicants under this heading being 160, while for premises rented above £1, the number was 70. The number under 10s. per week was 5; 10s. to 12s. 6d., 34; 12s. 6d. to 15s., 20; 15s. to 17s. 6d., 54; 17s. 6d. to £1, 36; £1 to £1 2s. 6d., 18; £1 2s. 6d. to £1 5s., 14; £1 5s. to £1 7s. 6d., 20; £1 7s. 6d. to £1 10s., 5; £1 10s. and upwards, 24.

## PUBLIC FINANCES, 1915-16.

The total net revenue of the State during the year ended 30th June, 1916, was £19,629,442, the principal contributing sources being as follows :—

				£
Commonwealth Returns	...	...		2,297,872
Taxation :—				£
Stamp Duties	...	...	1,168,546	
Land Tax	...	...	3,190	
Income Tax	...	...	1,707,403	
Motor Tax	...	...	54,868	
Betting Taxes	...	...	31,330	
Licenses...	...	...	151,884	
				<hr/>
				3,117,221
Land Revenue	...	...	...	1,797,250
Railways and Tramways	...	...	...	9,990,502
Water Supply and Sewerage	...	...	...	942,753
Other Sources	...	...	...	1,483,844
				<hr/>
Total	...	...	...	£19,629,442

The total expenditure chargeable to the Consolidated Revenue proper was £19,286,633, the distribution being :—

				£
Governmental (including Interest on Public Debt not charged to Business Undertakings)	...	...	...	7,917,536
Railways and Tramways (including Interest)	...	...	...	10,107,149
Water Supply and Sewerage (including Interest)...	...	...	...	841,278
Sydney Harbour Trust (including Interest)	...	...	...	420,670
				<hr/>
Total	...	...	...	£19,286,633

An additional sum of £235,000 was transferred in aid of the Public Works Fund.

The receipts from all sources, including advances recovered, &c. were £19,703,518, and the disbursements, including advances, transfers, &c., amounted to £19,553,927, showing a surplus on the year's transactions of £149,591.

The total Loan Expenditure (exclusive of redemptions) during the year was £8,173,104. The amount for each service is shown below :—

				£
Railways and Tramways	...	...		4,983,632
Water Supply and Sewerage—				
Metropolitan and Hunter Dis-			£	
trict	...	...	968,810	
Murrumbidgee Irrigation Area	...	...	351,974	
Country Towns	...	...	181,476	
Water and Drainage Trusts, &c.	...	...	33,104	
				<hr/>
				1,535,364
Sydney Harbour Trust	...	...	...	580,438
Other Works and Services	...	...	...	1,073,670
				<hr/>
Total	...	...	...	£8,173,104



The Public Debt outstanding on the 30th June, 1916, was £130,514,018, or £70 6s. 4d. per inhabitant, and the annual interest payable thereon was £4,848,970, the average rate being 3·71 per cent. The increase during the year was £2,778,613, as shewn in the following statement:—

	£	£
Public Debt on 30th June, 1915 ...		127,735,405
Add Loans floated during		
1915-16 ... ..	5,592,638	
Less Repayments during 1915-16	2,814,025	
	-----	
Net increase ... ..		2,778,613
		-----
Public Debt on 30th June, 1916		130,514,018

It will be seen that during 1915-16 the Debt increased by £2,778,613, although the Loan Expenditure was £8,173,104. The explanation is that a considerable amount of the loans floated during the year ended 30th June, 1915, was not credited to the General Loan Account until the following year, notwithstanding that the Debt outstanding on the 30th June, 1915, included all loans negotiated.

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